



HOUSING NSW

MRP08 MAINTENANCE TECHNICAL SPECIFICATION

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Section 1

INTRODUCTION

SECTION 1 – INTRODUCTION

INTRODUCTION

The Specifications deal with the technical requirements associated with the repair, maintenance and upgrading of properties maintained by the Principal. The document is divided into the following Sections:

Section 2 - Carpentry and Joinery & Minor Repair Work
Section 2a - Fire Safety Works
Section 3 - General Maintenance Work
Section 4 - Electrical Works
Section 5 - Plumbing Works
Section 6 - Painting Works
Section 7 - Carpet and Vinyl Tiles
Section 8 - Lawns, Grounds, Gardens and Common Area Cleaning Works And Management
Section 9 - Schedule of Timber Species and Durability Ratings and Drawings
Section 10 - Component Schedule

The Warranties to be provided by the Contractor are specified in Section 10.

The Specifications must be read in conjunction with all other relevant contract documents.

GENERAL

For the extents of works, contractors should refer to either the:

- Property Assessment Survey, and/or
- Asset Dwelling Service, and/or
- Schedule of Works, and/or
- Life Cycle Program, and/or
- Works Order, and/or
- Schedule of Rates

DRAWINGS

The Drawings in Section 9 are a guide only and must not be used for construction purposes. The Contractor must complete the drawings required for construction and provide these and as built drawings to the Principal.

The Principal will provide a schedule of works to the contractor that will require 'Work as Executed' drawings to be completed, detailed and submitted to the Principal.

All work must comply with all relevant codes and standards, and the contractor must provide all necessary material, labour and plant required for the work. Current safe work practices must be used. Provide all items referred to in the Contract, or contemplated therein, and otherwise necessary to complete the Works.

The Principal will provide a schedule of items to the contractor that will be required to be retained by the Contractor after replacement, bagged and tagged and retained until the Principal gives approval to dispose of them, following a Quality Audit. The Principal may amend the list of retained items to suit the audit requirements and results of the Contract

The Contractor will provide a Schedule of Products which is equivalent to the Principal's Component Schedule for approval prior to the start of the contract.

The Contractor will provide external and Internal colour schemes, which is equivalent and consistent to the Principal's colour schemes, for approval prior to the start of the contract.

TERMINOLOGY – The Glossary of Building Terms (HB 50 – 2004) published by NCRB and Standards Australia is used as a reference source for building terminology for this document.

SECTION 1 – INTRODUCTION

END OF SECTION

Section 2

CARPENTRY & JOINERY AND MINOR REPAIR WORK

SECTION 2 – CARPENTRY & JOINERY AND MINOR REPAIR WORK

1. GENERAL

SCOPE: This section deals with carpentry, joinery, reglazing of windows, internal glazing and mirrors, the provision of all door and window hardware, the repair and/or supply and installation of timber and or aluminium windows and doors, the repair/renewal of kitchen cupboards, timber joinery, wall and ceiling linings, clothes hoists, fly screens to doors and windows, floors, porches, exterior wall cladding and minor brickwork.

For the extents of works, contractors should refer to either the:

- Property Assessment Survey, and/or
- Asset Dwelling Service, and/or
- Schedule of Works, and/or
- Life Cycle Program, and/or
- Works Order, and/or
- Schedule of Rates

STANDARDS: All work to be performed must be carried out to the current regulatory authorities requirements as applicable to the type of work being performed whether specifically mentioned or not. Examples of Standards under this minor repairs section are (but not limited to) the following:

AS 1231: Aluminium and Aluminium alloys
AS 1288: Glass in buildings - Selection and installation
AS 1684.1: Residential timber-framed construction
AS/NZS 1859.1: Reconstituted wood-based panels - Specifications – Particleboard
AS/NZS 1859.2: Reconstituted wood-based panels - Specifications - Dry-processed fibreboard
AS/NZS 1859.4: Reconstituted wood-based panels - Specifications - Wet-processed fibreboard
AS/NZS 1860.1: Particleboard flooring – Specifications
AS 1905.1: Components for the protection of openings in fire-resistant walls - Fire-resistant door sets.
AS 2047: Windows in buildings - Selection and installation
AS/NZS 2269: Plywood - Structural
AS/NZS 2588: Gypsum plasterboard
AS/NZS 2699.2: Built-in components for masonry construction - Connectors and accessories
AS/NZS 2699.3: Built-in components for masonry construction - Lintels and shelf angles (durability requirements)
AS/NZS 2699.1: Built-in components for masonry construction - Wall ties
AS 2796.1: Timber - Hardwood - Sawn and milled products - Product specification
AS 2904: Damp Proof Courses and Flashings
AS/NZS 2908.1: Cellulose-cement products - Corrugated sheets
AS 3700: Masonry structures
AS 3715: Metal Finishing
AS 4055: Wind loads for housing
AS 4145.2: Locksets - Mechanical locksets for doors in buildings
AS 4200.1:
AS 4200.2:
AS 4456:
AS 4506: Metal Finishing – Thermoset Powder Coatings
AS 4785.1: Timber - Softwood - Sawn and milled products - Product specification
AS 5039: Security Screen Doors and Security Window Grilles and
AS 5040: Installation of security doors and window grills
AS 5041: Methods of Testing Security Screen Doors and Security Window Grilles

SECTION 2 – CARPENTRY & JOINERY AND MINOR REPAIR WORK

2. GLAZING

MATERIALS: To AS1288, where no glass type or thickness is given with particular consideration for human impact.

CLEAR GLASS: Provide clear float glass processed to give flat parallel surfaces.

WIRED POLISHED GLASS: Provide Georgian wired steel mesh clear glass.

LAMINATED GLASS: Provide standard clear with high adhesion interlayer.

GLASS MIRROR: Provide silvered float glass with back face plastic sprayed.

OBSCURE GLASS: Where located in a bathroom or WC, glaze with cast pattern on the inside face. Match pattern to existing or similar.

SAFETY GLASS: Provide permanently branded safety glass of the following grades:

- clear toughened safety glass grade 'A', or
- clear laminated safety glass grade 'B'.

LOUVRE BLADES: Provide safety glass, having ground and arised edges.

GLAZING ACCESSORIES: Provide glazing materials including putty, glazing compounds, sealants, gaskets, glazing tapes, spacing strips, spacing tapes, spacers, setting blocks and the like appropriate for the application conditions and the required performance to manufacturers written specification.

WORKMANSHIP:

INSTALLATION: Use methods that ensure each piece of glass is held firmly in place by permanent means applicable to its location without damage to, or failure of, glass or glazing materials. Ensure external glazing is watertight and prevents the entry of rainwater into the building.

BROKEN GLAZING: Demolish and remove from site all broken glazing, including mirrors and clean out rebates. Repair glass to match existing.

GLASS REPLACEMENT IN HIGH VANDALISM AREAS: When replacing glass in high vandalism areas, contractors can approach the Principal for approval to install Polycarbonate material.

3. ALUMINIUM / TIMBER WINDOWS AND SLIDING DOORS

GENERAL: Provide proprietary windows and sliding doors including all the necessary hardware and accessories. Comply with the Section 10, Component Schedule, testing and performance requirements.

SAMPLES: Submit samples, on request, of full size sections with the selected finish and hardware for all profiles offered.

MATERIALS - ALUMINIUM WINDOWS AND SLIDING DOORS:

TIMBER REVEALS: Comply with the Schedule of Timber Species and Durability Ratings in Section 9.

SECTION 2 – CARPENTRY & JOINERY AND MINOR REPAIR WORK

WINDOW AND DOOR FINISH: Provide a minimum 20 micron anodic film thickness and powder coat paint a minimum 50 micron thick. Ensure all finished surfaces show uniformity of gloss and colour (to match the approved sample) and are free of all painting defects.

MATERIALS - TIMBER WINDOWS AND SLIDING DOORS:

EXTERIOR FRAMES: Provide heads, jambs, frames, mullions and transoms in accordance with the Schedule of Timber Species and Durability Ratings in Section 9, manufactured to match the existing.

SASHES: Match the existing where available.

FLASHINGS: Provide 0.7mm thick bituminous coated Zinc or equivalent, in accordance with the frame manufacturers written specification.

LOUVRES: Refer to Section 10 - Component Schedule for LOUVRE windows, or equal.

WORKMANSHIP:

HANDLING: Handle, unload and store components to suit manufacturers written specification and prevent distortion, prefinished surfaces rubbing together, and contact with mud, moisture and other damaging materials. Replace all damaged items at no cost to the Principal.

CORROSION PROTECTION: Before fixing, apply suitable barriers of bituminous coatings, slips or underlays between dissimilar metals and between concrete or masonry and aluminium.

FIXING: Fit flashings to frames and framing as required. Fix frames in place to suit manufacturers written specification, plumb, level and true to line and face without distortion and with all opening sashes operating easily. Fit all architraves, mouldings and trims as required. Seal frames to adjoining structures as recommended by manufacturers to make weather tight where necessary.

PROTECTIVE COVERINGS/COATINGS: Retain these in place during fixing wherever possible. Provide additional protection as necessary to prevent the marking of surfaces in completed work.

REPAIRS - EXISTING ALUMINIUM WINDOWS AND SLIDING DOORS: Straighten or replace aluminium sections and rescue all aluminium, and where matching beads are unobtainable provide a solid rectangular extrusion shall be screw fixed and bedded with sealant or neoprene weather-strips. Match the existing with replacement weather-strips. Supply and fit set of rollers to match existing sliding doors. Fix sealing strips as required with profile sizes to suit.

REPAIRS - EXISTING TIMBER WINDOWS AND SLIDING DOORS: Repair by replacing timber sections with similar profiles to those existing, e.g. head, jamb, sill, mullion, etc. Reinstate all weather grooves. Check for and ensure full swing and ease of action. Supply and fit sets of rollers to match the existing sliding doors. Re-seat or replace hinges where required and if needed plane sashes to provide an even gap all around that is sufficient to allow finishing without binding. Where necessary replace rusting screws with non-ferrous type screws.

REPLACEMENT OF ALL WINDOWS IN A BUILDING: When replacing all windows in a building the contractor is to report the aggregate solar heat gain calculation to the Principal for prior approval of the replacement windows are given.

SECTION 2 – CARPENTRY & JOINERY AND MINOR REPAIR WORK

4. TIMBER DOORS

TIMBER DOORS: Comply with Section 10, Component Schedule.

TIMBER/STEEL DOOR FRAMES: Comply with Section 10, Component Schedule.

FIRE RATED DOOR FRAMES: Comply with Section 10, Component Schedule. Provide as part of an approved one hour fire-rated door set assembly.

5. HARDWARE

MATERIALS: Provide hardware to windows and doors shall be provided by the Contractor to match existing. Refer to Section 10 - Component Schedule.

WORKMANSHIP:

INSTALLATION: Fit hardware to doors, windows and joinery furniture in existing positions. Unless otherwise described, match door, window and joinery furniture existing throughout. Provide all necessary fixings to suit the conditions. Conceal fixings where possible. For exterior work, provide aluminium, stainless steel or brass screws and fixings are to be used as appropriate. Avoid junctions of incompatible materials and replace where these occur. Provide fixings of sufficient strength and dimensions to suit the items and materials concerned and to sustain the loads and operation of the equipment as necessary. Remove any non-standard hooks, nails, screws and fittings from windows and doors, and make good as required.

DOORS: Hang exterior doors on a minimum of 3 x 100mm fixed pin hinges, with electro galvanised finish or in brass. Hang interior doors on 1 pair of 90mm loose pin hinges for standard doors and 3 x 90mm loose pin hinges for full height doors. Re-hang existing doors and windows with existing hinges when the hinges are in good condition.

DOOR CLOSERS: Provide door closers where indicated for fire egress purposes, such as with access to common stairwells in multi-level, and multi-unit buildings. Provide types and sizes in accordance with relevant codes. Provide certification of compliance with the relevant code where a door closer is fitted on a fire door.

CHANGE KEYING COMBINATIONS: Remove the cylinder to entry door deadlocks, screen door locks, garage door locks and if applicable keyed window locks. All new/replacement lock cylinders are to be keyed alike to the existing lock system, unless the property is Vacant and Principal's Representative directs that all lock cylinders are to be replaced, in this case all new lock cylinders are to be keyed alike to a new combination. Provide two new keys for each new lock installed. If locks are master keyed all replacement locks and cylinders must be keyed alike to the master key.

HARDWARE SCHEDULE: Comply with Section 10, Component Schedule with hardware for:-

- Front and rear entry doors
- Common area entrance doors
- Balcony/porch doors
- Internal doors
- Heavy duty screen doors
- Storeroom & toilet doors
- Electric meter cupboards
- Electric meter cabinets

SECTION 2 – CARPENTRY & JOINERY AND MINOR REPAIR WORK

WINDOWS - ALUMINIUM/TIMBER: Provide the following hardware:-

Double Hung:

- keyed window lock
- sash fastener
- sash balances
- sash lifts

Casement/Hopper:

- keyed window lock
- sash fastener
- window stays

Sliding:

- keyed window lock
- sash fastener

Awning:

- keyed window winder

MISCELLANEOUS: Provide the following hardware:-

Kitchen Cupboards (HMR/MDF):

- 'D' Handle
- concealed side wall-mounted hinges with 170° swing

Kitchen Cupboards (Timber)

- cupboard vent
- 'D' Handle
- double nylon rollers or double brass ball catch.
- cupboard door hinges

Kitchen Drawer:

- 'D' Handle
- integrated drawer slide system

Kitchen:

- Tea towel bar

Bathroom:

- Toilet paper holder
- bath towel rail
- shower curtain rail
- stainless steel grab rails
- soap holder
- robe hooks
- shaving cabinet and/or mirror

6. JOINERY

GENERAL: Comply with the Schedule of Timber Species and Durability Ratings in Section 9 for joinery materials. Prevent or rectify any surface defects.

ARCHITRAVES / SKIRTINGS / MOULDINGS: Comply with the Schedule of Timber Species and Durability Ratings in Section 9. Match existing profiles as applicable.

TIMBER STAIRS: Provide closed type stairs unless otherwise directed by the Principal's Representative.

SECTION 2 – CARPENTRY & JOINERY AND MINOR REPAIR WORK

HANDRAILS: Provide and fix handrails to match the existing. Where new stair handrails are required, mount them on offset brackets on every stud at a minimum height of 865mm above the pitch line of the stairs and 1m above the landing.

LINEN CUPBOARD: Fit out cupboards with full depth 16mm high moisture resistant particleboard or high moisture resistant medium density fibreboard. Screw-fix shelves to 25mm rails along the back and ends at max 360mm centres vertically.

BUILT-IN WARDROBES: Comply with Section 10, Component Schedules unless replacing components ONLY, then replace like with like.

TRIM: Where a whole section of trim is defective remove, scribe and fit architraves to interior joinery, skirting to all walls, and timber bead to match the existing. Use single lengths. Piecing of short sections will not be accepted.

EASING OF DOORS: Check door closing and swing and ensuring ease of action. Re-seat or replace hinges where required and, where needed, plane doors to provide an even gap all round, that is sufficient to allow finishing without binding. Include to paint disturbed surfaces or raw edges following easing.

7. KITCHEN CUPBOARDS

GENERAL: Comply with Section 10, Component Schedule and the standard details in Drawing Nos. KD1 to KD11 in Section 9.

Where kitchen cupboards are specified by the linear metre, construct the cupboards in modular fashion to facilitate any subsequent replacement that may be required.

Seal bench tops to walls with a silicone sealant and provide a flexible waterproof sealant between tiles and bench top. Ensure that all openings or spaces between or behind kitchen cupboards and walls are sealed and vermin proof, including relocate or close and patch wall vents as required to suit installation of kitchen cupboards.

REPLACEMENT DOORS AND DRAWERS TO CABINETS: Match the existing fittings.

REPLACEMENT SHELVES: Provide either a Melamine or painted finish to match the existing.

8. BATHROOM

GENERAL: Comply with Section 10, Component Schedule with bathroom accessories and fittings.

SHAVING CABINET: Surface mount or recess the cabinet.

VANITY UNIT: Construction and/or repairs and installation as for kitchen cupboards.

BATHROOM FITTINGS: Screw fit fittings (e.g. towel rails, toilet roll holder, grab rails etc.) using S.S. screws.

REFIXING FITTINGS: Where fittings (e.g. towel rails, toilet roll holder, grab rails etc.) are to be refixed, reinstall the fittings in the existing locations. Where the existing location is no longer appropriate, either refix in a new location

SECTION 2 – CARPENTRY & JOINERY AND MINOR REPAIR WORK

as directed or provide 75mm x 25mm cleat screws fixed or remove wall sheet, install additional noggins to wall, re-sheet and make good wall and refix fitting.

9. WALL AND CEILING LININGS

MATERIALS:

PLASTERBOARD SHEETING: Approved manufacture branded with recessed edges. For walls 10mm thick minimum. For ceilings 10mm thick for ceiling joists at 450 c/s and 13mm for 600 c/s.

FIBRE CEMENT SHEETING: 6mm thick with recessed edges, Type B, Category 2.

CORNICE: Provide plasterboard 90mm thick Scotia type. Where walls are masonry, nail to ceiling framing. Do not nail to wall plates.

ACCESSORIES: Supply and install to suit manufacturers written specification adhesives, nails and clouts, perforated angles, jointing tape, jointing cement etc.

WALL LININGS - PLASTERBOARD: Fix horizontally and in single length for walls up to 4800mm, high and stagger butt joints on both sides of internal walls, with no joints occurring in line with window or door studs.

Fix plasterboard wall lining by the adhesive-nail/screw on system in accordance with manufacturers written specification.

WALL LININGS - FIBRE CEMENT SHEET: Fix horizontally using maximum length sheets for walls to minimise butt joints.

WET AREAS: Provide the flashings, trims and sealant necessary to ensure that wet areas are waterproof.

TILED WALLS: Fix fibre cement wall lining sheets with nails or screws only. Use spacings in accordance with manufacturers written specification. Take special care when fixing fibre cement sheets, where junctions between walls and floors are flashed, that fasteners do not penetrate the flashings.

EXTERNAL ANGLES: Where no other corner finish is specified or detailed, finish with 25mm x 25mm x 0.5mm gauge galvanised iron purpose made perforated angle. Fix metal angle to corners with galvanised nails spaced max.150mm apart, with the arris edge plumb. Fill and set as specified for butt joints.

CEILING LININGS - GYPSUM PLASTERBOARD/FIBRE CEMENT SHEET: Fix all ceiling lining before wall sheeting is applied.

Fix ceiling lining by the adhesive-nail/screw on system in accordance with manufacturers written specification.

Provide butt joints only in ceiling sheets where the length exceeds 4800mm.

10. EXTERNAL WALL CLADDING

MATERIALS:

SECTION 2 – CARPENTRY & JOINERY AND MINOR REPAIR WORK

FIBRE CEMENT: Type A, Category 2.

Proprietary system flat sheets, smooth or textured: Minimum 4.5mm thick with timber frames. Minimum 6.0mm thick with metal frames.

Proprietary system planks, smooth or textured: Minimum 7.5mm thick.

HARDBOARD: Exterior grade. Provide proprietary system planks, smooth or textured, as directed, minimum 9.5mm thick.

SARKING: To AS4200.1 and installation to AS4200.2

WALL SARKING and INSULATION: Insulate walls to comply with BASIX optimum rating for the appropriate climate zone when renewing either internal (for the entire room) or external wall sheeting (when renewing whole side of house) only.

GENERAL: Provide vapour permeable sarking and insulation under cladding, which does not provide a permanent waterproof seal, including

- Boards fixed vertically or diagonally
- Boards or planks fixed in exposed locations where driven rain can penetrate the joints, and
- Unpainted or unsealed cladding

INSTALLATION: Apply to the outer face of external stud walls from the top plate down over the bottom plate and flashing. Run across the studs and lap at least 150mm at joints.

WALL CLADDING - COMPLETE: Cover framing with Reflective foil. Provide proprietary plank or sheet (as directed) cladding systems to manufacturers written specification, including any necessary jointing and flashing.

WALL CLADDING – REPAIR: Cut damaged External wall cladding to a line of suitable fixings (studs etc) and replace with necessary jointing and flashing.

EAVES, SOFFITS, BARGEBOARD – Repair: Cut damaged Eaves, Soffits, Bargeboards etc to a line of suitable fixings (rafters, beams etc) and replace with necessary jointing and flashing.

FINISHING: Paint to match the existing. Comply with Section 6, Painting Works.

11. FRAMING

MATERIALS/WORKMANSHIP: Provide additional timber members as required to support lining, cladding, hardware, fixtures and fittings. Provide fastenings of types appropriate for their purposes, sufficient to transmit the loads and stresses imposed and to ensure the rigidity of the assembly, and install them without splitting or otherwise damaging the timber.

12. FLOORING

MATERIALS:

TIMBER STRIP FLOORING: Provide grades equal to those required by the Schedule of Timber Species and Durability Ratings in Section 9.

SECTION 2 – CARPENTRY & JOINERY AND MINOR REPAIR WORK

STRUCTURAL PARTICLE BOARD: Bond Type A. Tongue and grooved sheets on the longitudinal edge. Provide minimum 19mm thick for 450mm joist spacing, and minimum 22mm thick for 600mm joist spacing.

STRUCTURAL PLYWOOD: Bond Type A. Tongue and grooved sheets on the longitudinal edge.

Minimum Thickness for F8

- Joint spacing up to 450mm = 14mm
- Joint spacing 450mm up to 600mm = 19.5mm

Minimum Thickness for F11

- Joint spacing up to 450mm = 13mm
- Joint spacing 450mm up to 600mm = 18.5mm

COMPRESSED FIBRE CEMENT: Type A, Category 4. For wet area flooring, provide minimum 15mm thick for 450mm joist spacing, and minimum 18mm thick for 600mm joist spacing.

ADHESIVE: Provide adhesive as per manufacturers written specification.

SETTING OUT FOR SERVICES: At the earliest opportunity set-out the position and sizes of all holes, recesses and chases for services, pipes, conduits, equipment and their trimming out.

Obtain approval from the Principal's Representative for any new locations of penetrations for fittings, pipes and conduits before fixing flooring.

FIXING TIMBER STRIP FLOORING: Lay strip flooring across joists with staggered joints. Cramp and double nail flooring at regular intervals to ensure there are no gaps between boards. Punch all nails.

FIXING PLYWOOD: Lay sheets across joists in a staggered pattern with all edges and joints fully supported. Provide fixings in accordance with manufacturers written specification. Provide a 2-3mm gap at the perimeter of floors for sheet expansion.

FIXING PARTICLEBOARD: Do not expose particleboard flooring to the weather. Lay sheets across the joists in a staggered pattern from the centre of large areas with all edges and joints full supported. Do not allow water to pond on the floor surface.

FIXING COMPRESSED FIBRE CEMENT: Lay sheets across joists in a staggered pattern with sheet ends fully supported. Screw fix in accordance with manufacturers written specification.

PENETRATIONS: Site measure for all penetrations and cut to tight fit with a hole-saw or similar for pipe work and the like where penetrations of flooring occur. Repair existing penetrations as required.

13. BRICKWORK

MATERIALS:

BRICKS: Provide metric standard bricks of even size and shape with true arrases.

CLAY BRICK DURABILITY: Below damp proof course use exposure category to AS4456.

SECTION 2 – CARPENTRY & JOINERY AND MINOR REPAIR WORK

BLOCKS: Provide concrete masonry bricks in accordance with the appropriate Australian Standards.

LINTELS:

GENERAL: Proprietary cold-formed flat based type designed to AS4600.

MATERIAL: Mild steel galvanised to AS4680, minimum coating mass = 600g/m². Do not cut after galvanising. Sections to be mild steel hot dip galvanised after fabrication.

DAMP PROOF COURSE: To the appropriate Australian Standards.

WALL TIES: Provide pressed mild steel ties with spiked ends for fixing, galvanised after fabrication.

MORTAR: Mix 1 part Portland cement, 3 parts sand and water with 1/10th part hydrated lime or an appropriate admixture. Use admixtures to suit manufacturers written specification.

VERMIN STOP: Provide galvanised steel wire "chicken mesh" netting strips with reinforced edges and galvanised staples for fixing.

BRICK WORK: Lay bricks on a full bed of mortar and ensure the joints are completely full. Do not mix or change the brick type laid from course to course. In face work, distribute the colour range of units to prevent colour concentrations.

BOND: Lay using stretcher bond unless otherwise required to match existing.

WALL TIES: Fix ties to the face of studs without damaging the building paper, and place and space as appropriate.

MORTAR: Provide to the maximum practical density, fully laid, firmly placed, correctly cured and not re-tempered. Ensure joints are 8mm min. to 10mm max. wide and uniform.

POINTING: Integrate pointing colouring with the mortar, and point as the laying work proceeds after an initial stiffening period.

WEATHERING: Joint to a concave tooled form as the laying work proceeds and after an initial stiffening period.

WEEPHOLES: Rake out every third perpend where weep holes are required.

CO-ORDINATION: Co-ordinate the building-in of all exterior joinery and items required to be fitted as the work proceeds. Rake out for or build-in flashings as required.

ALUMINIUM: Insure that all aluminium is cleaned immediately of any mortar droppings.

REPAIRS: Carry out repairs in accordance with materials and workmanship required.

EFFLORESCENCE: Remove this where it appears, with a stiff bristle broom, wiping with a damp sponge and washing well with clean water.

CLEANING: Clean the face of brickwork with acid wash in accordance with the brick manufacturers written specification to remove all stains and excess mortar.

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14. FLYSCREENS

SCREEN DOORS - HINGED AND SLIDING: Comply with Section 10, Component Schedule.

FLYSCREENS TO WINDOWS: Use cold roll formed aluminium of $\frac{3}{4}$ hard 5005 alloy grade for all sections. Use rectangular hollow sections cold roll formed from 0.6mm pre-painted aluminium, with the edges of frames lockseamed and "continuously stitched" to ensure torsional rigidity, and external dimensions 25mm x 11 mm. Suitable extruded sections may be used in lieu of roll formed members. Fix together with press formed 1.62mm inserts "interference" fitted in the frame section. Provide hard grade anodised aluminium or fibreglass flyscreen mesh fixed in position within the frame with tubular P.V.C. retaining strip for the full perimeter of frame, and provide cross bracing when the height or width of screen exceeds 1200mm.

Use one of the following methods, to suit application, when installing window screens:-

- Face fix using stepped turn buttons, minimum 4 per screen.
- Fix externally on a 50mm x 25mm timber frame screw fixed (where structural integrity of the window is not compromised).
- Provide double aluminium sliding track with horizontal sliding screens.
- Internally fit screen with "Magi Flap" type access to the window fastener.

15. EXTERIOR WORK

GENERAL: This clause deals with the repair or replacement and supply and installation of the following items, including hardware:-

- Existing and new clotheslines (Refer to Section 10, Component Schedule for requirements)
- Existing and new letterboxes (Refer to Section 10, Components Schedule for requirements)
- Existing and new timber decking
- Existing and new verandah posts
- Existing handrails

MATERIALS:

SITE-MIX CONCRETE: Comply with Section 3.5, Concrete Works.

PIPE HANDRAILS AND BALUSTRADES: Comply with Section 3.6, Metal worker.

GALVANISING: After fabrication completely remove all surface contaminants and otherwise prepare surfaces in a accordance with Section 6.1, and hot dip galvanised

TIMBER: Provide grades equal to those required by the Schedule of Timber Species and Durability Ratings in Section 9 or another appropriate standard approved for the application.

UNSEASONED TIMBER: If unseasoned timber is provided or variations in moisture content are likely, make allowance for shrinkage, swelling and differential movement.

DURABILITY:

GENERAL: Provide timbers with natural durability appropriate to the conditions of use, or preservative treated timbers or equivalent durability.

SECTION 2 – CARPENTRY & JOINERY AND MINOR REPAIR WORK

NATURAL DURABILITY CLASSIFICATION: To AS1604 (*Timber – Preservative treated – Sawn or round*) Table F2.

MINIMUM REQUIREMENTS:

- Class 1: Timbers in contact with the ground.
- Class 2: Timbers above ground, not in continuous contact with moisture, well ventilated, protected from moisture but exposed to the weather.
- Class 3: Timbers above ground, not in continuous contact with moisture, well ventilated, protected with a finish and well maintained.
- Class 4: Timbers fully protected from moisture, indoors, above ground and well ventilated.

PREVENTATIVE TREATMENT

STANDARD: To AS1604 (*Timber – Preservative treated – Sawn or round*) Table D1.

FIXINGS - BOLTS, SCREWS & NAILS: Provide galvanised steel, brass or stainless steel fixings to suit the location and application.

STANDARD: To AS3566 (*Screws – Self drilling – For the building and construction industries*) corrosion resistance class 2.

TIMBER FASTENERS

METAL WASHERS: Provide washers to the heads and nuts of all bolts and coach screws.

STEEL STRAPS: Zinc-coated steel to AS1397 (Steel sheet and strip – Hot dipped zinc coated or aluminium/zinc-coated)/Z275, minimum size 25 x 1mm or 30 x 0.8mm.

GALVANISING: Galvanize mild steel components (including fasteners) to AS1214 (*Hot-dip galvanised coatings on threaded fasteners (ISO metric coarse thread series)*) or AS/NZS4680 (*hot-dip galvanised (zinc) coatings on fabricated ferrous articles*), as appropriate, if:-

- Exposed to weather,
- embedded in masonry, or
- in contact with chemically treated timber.

WORKMANSHIP: All work must be in accordance with the best trade practice, and include those methods, practices and processes contained in all relevant manufacturers written specification.

CLOTHESLINE (EXTENDALINE): Install and repair to manufacturers written specification.

CLOTHESLINE (AWNING TYPE): Install and repair to manufacturers written specification.

CLOTHESLINE (ROTARY TYPE): Install and repair to manufacturers written specification. Ensure parts compatible with the existing clotheslines. Where re-wiring is required, remove the existing wire and replace with new 6 stranded galvanised wire, and tension the wire as required. Plumb clotheslines and re-concrete as required.

FOOTINGS - CLOTHESLINE / LETTERBOX: Dig 200mm dia x 500mm deep footings for clotheslines and 250mm x 250mm x 350mm deep footings for letterboxes. Set clothesline and letterbox posts plumb in the excavated footings and set in concrete.

SECTION 2 – CARPENTRY & JOINERY AND MINOR REPAIR WORK

LETTERBOX REPAIRS: Complete the repairs with suitable new components, unless otherwise specified to return the fixture to its original condition.

Where components require re-securing, use new non-corroding fasteners to effect permanent repairs. Prior to completing work test for the soundness of fixings.

NEW LETTERBOX: Where required, replace existing letterboxes with new approved to Australia Post requirements, a freestanding pre-finished letterboxes. Provide new pre-finished posts in 38mm square or 38mm dia. round tubular steel fitted with a 75mm x 75mm attachment plate to match letter box. Site the letterbox to allow good access. Provide new riveted street numbers as necessary.

LANDING FLOORING: Remove existing damaged flooring and supply and fit new strip flooring to match the existing as directed. All joints must be staggered and nails HD galvanised and punched below surface. Provide new material in accordance with clause, Flooring, in this section.

NEW VERANDAH POST: Where required, remove existing veranda posts and replace them with like sized H3 treated veranda posts full height, complete with galvanised stirrup bases. In all cases prime mortices, housings, cut ends and all faces of D.A.R. timber with suitable timber primer and fix galvanised stools with M12 galvanised bolts. Fix the stools to concrete using 12mm masonry anchors.

REPLACE EXISTING PORCH BLADE & SOLE PLATE: Where required, remove existing porch blades and sole plates and replace them with H3 treated pine to match the existing. Chamfer edges and paint to match the existing.

REPLACE EXISTING HANDRAILS: Where directed to remove damaged/unsound existing timber handrails, replace them with timber handrails to match the existing. In all cases prime mortices, housings, cut ends and all faces of D.A.R. timber with suitable timber primer prior to fixing or assembly.

Comply with Section 3.6 Metal worker, with galvanised steel pipe handrails.

FENCING REPAIRS: Comply with Section 3.7 Timber and Metal Fencing.

16. COMPLETION

Clear away and dispose of all rubbish, and clean and make good any soiled or damaged surfaces arising out of the work on completion.

END OF SECTION

Section 2(a)

FIRE SAFETY WORKS

SECTION 2(a) – FIRE SAFETY WORKS

1. GENERAL

SCOPE: This section deals with the Fire Safety Works as identified in the Fire Risk Management Plan Implementation Manual.

Refer to the Fire Risk Management Implementation Manual, Work Orders and Fire Schedule of Rates for extent.

2. Fire Rated Plasterboard Ceiling Systems

- Fire rated plasterboard ceiling systems shall be formulated so that when used in a ceiling system it enables the ceiling to meet the requirements for an FRL of 60/60/60 or a Resistance to the Incipient Spread of Fire for 60 minutes when tested in accordance with Australian Standard AS 1530.4 – Fire Resistance Tests of Elements of Building Construction.
- Any hanger, its attachments to the supporting structure and grid system shall withstand without failure a load of 1.4KN.
- Test report to be provided.

3. Fire Rated Plasterboard Shaft Systems

- Where required by the FRMPIM a fire rated plasterboard shaft shall be constructed to achieve an FRL of 60/60/60 when tested in accordance with Australian Standard AS 1530.4 – Fire resistance Tests of Elements of Building Construction.
- Shaft systems must meet the structural requirements for light weight construction which requires tests to the following standards:
 - Resistance to Static Pressure – ASTM E72-80
 - Resistance to Impact – ASTM E695-79
 - Surface Indentation – AS2185 – Appendix A2
 - BRANZ Test Report – STO349
- When tested in accordance with AS 1530.3 contain a Spread of Flame index of zero (0).
- Test report to be provided.

4. Fire Rated Plasterboard Bulkhead Systems

- Fire rated plasterboard bulkhead systems shall be formulated so that when used in a bulkhead system it enables the ceiling to meet the requirements for an FRL of 60/60/60 or 90/90/90 when tested in accordance with Australian Standard AS 1530.4 – Fire Resistance Tests of Elements of Building Construction.
- Any hanger, its attachments to the supporting structure and grid system shall withstand without failure a load of 1.4KN.
- Test report to be provided.

5. Fire Dampers

- Fire dampers shall be formulated to meet the requirements for an FRL of 60/60/60 when tested in accordance with Australian Standard AS 1530.4 – Fire Resistance Tests of Elements of Building Construction.
- Fire dampers must pass the requirements for the air leakage test specified in Clause 5.3 of AS 1682.1.
- The mounting flange, casing, and blades of the fire damper shall be made from-
 - Stainless steel complying with AS 1449;

SECTION 2(a) – FIRE SAFETY WORKS

- Zinc coated steel sheet complying with AS 1397 with a coating not less than Z275; or
- Castings of malleable ferrous materials or other alloys having a temperature fusion not less than 1000°C.
- Materials for moving parts (including blade and linkage shafts and linkage bearings) shall be stainless steel complying with AS 1444, commercial brass or bronze complying with AS 1567 or a polyamide or polyfluoride.
- Linkages, springs and other moving parts which form part of the closing mechanisms shall be made of stainless steel grade 301, condition H of AS 1449 or equivalent or phosphor bronze, grade 518B, temper H of AS 1566 or equivalent.
- Where intended to be used in a horizontal direction within a roof-ceiling system the prototype fire damper shall have been tested for the purpose for which it is intended.
- If activated by a thermally released link, it shall be tested to comply with AS 1890. For horizontal mounted fire dampers, the thermally released link shall be located within the casing, in the plane normal to air flow.
- Test report of any product to be provided.

6. Rockwool Insulation

- Rockwool or other mineral wool to be used in all applications must be fire resistant and achieve a FRL when installed of a minimum of -/60/60.

7. Fire Stopping Materials

- Fire stopping material or materials must comply with the nominated properties or replicate a system tested in accordance with AS 4072.1 and AS 1530.1
- The installed fire stopping materials must replicate the tested system and achieve an FRL of not less than that specified in the FRMPIM of the penetrated floor/wall or ceiling assembly.
- Penetrations shall be protected by a system that has been tested in accordance with AS 4072.1 and AS 1530.1.
- Test certificates to be provided.

8. Fire Rated Doorsets

- To comply with the requirements of AS 1905.1 Fire – Resistant Doorsets.

9. Fire & Smoke Seals

- The seals are to have undergone tests with proprietary fire doors and/or solid core doors.
- Seals are to have been tested in accordance with AS 1530.7 to be capable of limiting smoke at 200°C for 30 minutes.
- Independent tests are to be provided that demonstrate that the product does not suffer from any significant wear and tear for up to and exceeding 95,000 open and close cycles.

10. Intumescent Paint

- Fire rated paint shall have been tested to achieve a FRL of 60/60/60 when applied to plasterboard and/or pressed metal ceilings in accordance with AS 1530.4

SECTION 2(a) – FIRE SAFETY WORKS

- Fire rated paint shall have been tested to achieve a FRL of 60 minutes when applied to sheetrock and lath & plaster in both wall and ceiling assemblies in accordance with AS 1530.4 – Fire Resistance Tests of Elements of Building Construction or the American Society for Testing Materials (ASTM) E 119 - Standard Test Method for Fire Tests of Building Construction and Materials. .
- Fire rated paint shall have been tested to achieve a 1 hour fire endurance test in wall and/or ceiling assemblies constructed of gypsum, fibreglass, aluminium, asbestos products, particle board, fibrous cement sheeting, pressed metal, plywood panels and timber in accordance with AS 1530.4 – Fire Resistance Tests of Elements of Building Construction or the American Society for Testing Materials (ASTM) E 119 - Standard Test Method for Fire Tests of Building Construction and Materials. .
- Intumescent paint to begin to expand at a temperature not exceeding 190°C.
- Independent tests are to be provided that indicates drying time of a single coat of intumescent paint not less than 450 microns (without the need for mechanical aids), does not exceed 4 hours in any season assuming weather conditions are appropriate to apply the product.
- Independent tests are to be provided that indicates the product is non-toxic.
- Independent tests shall be provided indicating that the product can be applied over existing non-fire retardant paint.
- The product shall not contain a flashpoint.
- Product to have a minimum 20 year guarantee for internal applications.

11. Radiant heat Attenuating Screens

- The radiant heat attenuating screens are to have the following characteristics:
 - o Material to be stainless steel,
 - o Wire diameter of screen not less than 0.8mm,
 - o Weave characteristics not less than 394 strands per metre,
 - o Screens are to be of non-combustible construction and shall not contain any components that will ignite when subjected to radiant heat, and
 - o Fixing of the gauze to the frame shall be by weld or clamping with a continuous metallic strip fixed to the frame with metallic fasteners.

12. Fire Collars

- Tested and approved in accordance with AS 1530.4 – Fire Resistance Tests of Elements of Building Construction or British Standards BS 476: Part 20 to seal both PVC and PP pipes from 32mm up to 110mm in penetrations through fire rated floor and wall components for up to 90 minutes.
- Product to have been tested as a retrofit fire stop collar.
- Independent tests to be provided to indicate that the maximum temperature resistance (fire stop collar shall begin to activate) shall not exceed 120°C.

END OF SECTION

Section 3

GENERAL MAINTENANCE WORK

SECTION 3.1 – DEMOLITION

Section 3.1

DEMOLITION

SECTION 3.1 – DEMOLITION

1. GENERAL

SCOPE: This section deals with the demolition of existing work as needed to carry out new work. It covers the whole or part demolition of structures. The work is to be carried out in such a way as to minimise the risk to health and safety and damage to the immediate environment.

OH&S AND SAFE WORKING PRACTICES: Refer Legislative and Policy Conditions.

ENVIRONMENTAL MANAGEMENT: Refer Legislative and Policy Conditions.

WASTE MANAGEMENT – Refer Legislative and Policy Conditions.

The work is to be carried out in accordance with the Legislative and Policy Conditions in particular the following Acts, Codes of Practice, Standards and/or Guidelines as amended:

- AS 2601: Demolition of structures,
- AS/NZS 4576 : Guidelines for scaffolding,
- NOHSC:2002 : Guide to the control of asbestos hazards in building and structures,
- Landcom - Managing Urban Storm water: Soils and Construction, (*the Blue Book*).

and all other relevant standards, Acts, codes of practice and guidelines.

AUTHORITIES:: Obtain all relevant permits and consents prior to commencement of all work under the Contract. The Contractor is to pay all fees and charges.

MAINS POWER SUPPLY: The disconnection and re-connection of mains power must only be undertaken by the local energy authority or by a suitably licensed and qualified electrician. Prior to disconnection and re-connection of the mains power approval by the local energy authority must be obtained.

FIXED APPLIANCES: The disconnection and re-connection of fixed appliances must be undertaken by a suitably licensed and qualified tradesman, ie: electrician and plumber.

BURNING OFF: Burning of materials arising from the demolition is not permitted on Site.

DEMOLITION LICENSING: Contractors are required to be properly licensed to carry out demolition work in accordance with the Occupational Health and Safety (Demolition Licensing) Regulation 1996. Generally the Regulation applies to demolition work done to a building, structure or installation that is 4 metres or more in height, being work involving mechanical felling.

DEMOLISHED MATERIALS: Become the property of the Contractor except where otherwise specified in the Contract. Remove from Site as work proceeds to waste management depots relevant for the type of materials to be disposed

SALVAGED ITEMS or HERITAGE ITEMS: Where identified, salvaged items or heritage items which are to remain the property of the Principal must be carefully dismantled, stored safely and recorded on a salvaged/heritage component register.

SOIL TESTS: Where hazardous materials or contamination is suspected, immediately notify the Principal's Representative for further instruction.

SECTION 3.1 – DEMOLITION

STOCKPILE TOPSOIL: Where required or directed by the Principal's Representative, stockpile excavated topsoil on Site. Keep separate from other excavated materials. Spread and level where directed before Completion of the Works.

EXPLOSIVES

Do NOT use explosives in demolition

2. PREPARATORY WORK

DEMOLITION WORK PLAN: Refer to AS 2601, Appendix A - Demolition Checklist, utilising the information obtained by the Contractor with the preliminary investigations, develop and prepare a Site-specific Safety Management Plan (refer OH&S Management Systems Guidelines – Section 5) for the proposed demolition works.

SERVICES: Before starting demolition ensure all services have been disconnected or removed as required.

SOIL AND WATER MANAGEMENT: Refer Environmental Management Plan. Erosion and sediment control measures are to be implemented on Site prior to the start of any demolition, clearing, scrub removal, bulk earthworks and excavations. These controls are to be maintained and / or varied as specified during the works. Refer to Landcom - Managing Urban Storm water: Soils and Construction, (*the Blue Book*).

3. PRECAUTIONARY MEASURES

ADJOINING PROPERTY: Take all precautionary measure necessary to avoid damage or nuisance to adjoining properties. Where it is considered necessary carry out a dilapidation report on neighbouring properties, particularly where buildings abut adjoining boundaries. Provide a copy of this report to the Principal's Representative prior to commencing the Works.

PROTECTION: Protect parts of the Site and Site structures that are to be retained. Cut away and strip out with care to reduce the amount of making good to a minimum. Damage resulting from failure to protect adequately is to be made good at no cost to the Principal.

TEMPORARY SCREENS: Erect suitable screens wherever penetration of weather, dust and dirt is to be prevented and adjust as necessary as work proceeds.

SUPPORTS: Provide supports and brace existing structure as necessary during cutting of new openings or replacement of structural parts. Prevent debris from overloading any part of the structure. Do not remove supports until new work is strong enough to support the existing structure so that all work is at all times structurally stable and sound.

SECURITY: Prevent access by unauthorised persons. Leave property/work area safe at close of each day's work.

DANGEROUS HAZARDS: Illuminate and protect as necessary all holes, unsafe building and other hazards.

FLAMMABLE OR EXPLOSIVE CONDITIONS: Take precautions to prevent fire or explosion and take all necessary actions to alert appropriate authority where a danger exists.

EXISTING TREES: Protect all trees and shrubs from damage, throughout the course of the work or unless otherwise indicated in the Contract.

SECTION 3.1 – DEMOLITION

SEPARATION OF HAZARDOUS MATERIALS: Where it is difficult to separate hazardous materials for disposal, e.g. fire affected hazardous materials, all combined materials must be disposed of as if classified hazardous. Refer to Department of Environment and Conservation (NSW) for further direction where uncertain.

ASBESTOS DECONTAMINATION: Refer to Legislative and Policy Conditions, Occupational Health and Safety Management - Asbestos

Requirement

Where the Contractor is responsible for asbestos decontamination work, including stripping, encapsulation or removal, comply with and carryout all work in accordance with the relevant statutory requirements, standards, codes and guidelines, including but not limited to the requirements of the following, where applicable;

- Occupation Health & Safety Act 2000
- Occupational Health & Safety Regulations 2001
- Work Cover requirements
- Work Safe Australia – Asbestos: Code of Practice and Guideline Notes
- Environmentally Hazardous Chemical Act 1985
- Waste Avoidance & Resources Recovery Act 2001

Where registration or a licence for asbestos decontamination work are required, submit a copy of the current licence or registration certificate.

Notification

Notify the local office of Work Cover and the Principal's Representative of the intention to commence any asbestos decontamination not less than seven (7) days prior to such work commencing.

Work Method

In addition to any other occupational health and safety management provision in the Contract, provide also the following details of the proposed work:

- description of the work to be done, proposed methods and work area;
- description and location of the decontamination units and changing areas;
- location of drains to be used and type of liquid waste filters;
- type of respirators or air hoods;
- description of what will take place if an asbestos fibre leak occurs, and
- what emergency plans including communication will be in place.

Notwithstanding and other provisions in the Contract, submit a program and management plan (integrated with the Environmental Management Plan, OH&S Management Plan(s) and Safe Work Method Statements), which outline how the requirements of this Clause Asbestos Contamination will be met.

Monitoring:

The principal may engage an independent contractor to provide dust and other required monitoring by an independent testing authority on each day during contamination and on completion of decontamination in each area where decontamination occurred, provide a Clearance Certificate to the Principal's Representative.

SECTION 3.1 – DEMOLITION

4. DEMOLITION WORK

STANDARD: To AS2601:

- Demolish buildings and structures, where ordered, down to existing finished ground level. Do not remove support to adjacent property.
- Remove and dispose of old foundations, floor slabs and paths and remove.
- Remove and dispose of old drains, manholes, services and remove and cap all drains to local council requirements.
- Remove and dispose of old tanks and underground structures and remove.
- On completion of removal and back filling of trenches etc, all backfilled material must be compacted.

TEMPORARY SUPPORT: Provide temporary supports for sections of existing buildings that are to be altered.

ADJACENT STRUCTURES: Provide supports to adjacent structures, where necessary, to prevent damage resulting from the works.

REINSTATE AND MAKE GOOD any damage, resulting from the demolition, to property, existing work or services and adjoining property or structures at no cost to the Principal.

5. COMPLETION

ON COMPLETION: Leave site clear of all rubble and materials resulting from demolition work.

END OF SECTION

Section 3.2

REINSTATEMENT OF FIRE DAMAGED PROPERTY

SECTION 3.2 – REINSTATEMENT OF FIRE DAMAGED PROPERTY

1. GENERAL

SCOPE OF WORKS: This section sets out specific requirements related to the reinstatement of fire damaged property. Any additional work discovered in the course of demolition, reconstruction and cleaning as a result of fire, heat, water, smoke or other by-product of the fire shall be notified to the Principal's Representative. Failure to do so may make a claim for variations invalid.

CROSS REFERENCES: Refer to sections

- Section 3.1. - Demolition
- Section 3.4 – Roofing
- Section 4 – Electrical Works
- Sections 6 - Painting
- Section 9 - Timber Schedule and Drawing Details
- Section 10 - Component Schedule, and any other section where appropriate.

The work is to be carried out in accordance with the Legislative and Policy Conditions and in accordance with all the relevant Acts, Codes of Practice, Standards and/or Guidelines as amended and where appropriate in accordance with the other Sections of this document.

MAINS POWER SUPPLY: The disconnection and re-connection of the mains power must be undertaken by the local energy authority or suitable licensed and qualified electrician. Prior to disconnection and re-connection of the mains power approval by the local energy authority must be obtained.

FIXED APLIANCES: The disconnection and re-connection of fixed appliances must be undertaken by a suitable licensed and qualified tradesperson ie: electrician or plumber.

WEATHER PROTECTIONS AND SECURITY: The Contractor must take all necessary precautions to protect the building from the effects of weather or lack of security through the damaged portions. Any further damage arising from a lack of protection from weather or lack of security shall be made good at no cost to the Principal.

PROTECTION OF UNDAMAGED ITEMS: Protect and screen all areas and objects undamaged by the fire from possible damage resulting from the reinstatement process.

2. MATERIALS AND DETAILS

REPLACEMENT OF MATERIAL: For general purposes new materials and details are to match existing except:

- Where asbestos or lead based paints are encountered, or
- Otherwise required to conform to the Building Code of Australia, any relevant Australian Standard or Government Regulations

Where the material is no longer available recycled material is acceptable subject to inspection and approval by the Principal's Representative. Replacement material must, however, comply with the performance requirements of the specified material.

MATERIAL/ROOFING CONTAINING ASBESTOS: Patching of existing asbestos cement sheets is not permitted. Replace with alternative roofing material in whole sheets. The extent of roofing removal and replacement due to the

SECTION 3.2 – REINSTATEMENT OF FIRE DAMAGED PROPERTY

effects of fire is to be agreed with the Principal's Representative prior to commencement of work and all work carried out in accordance Section 3.1.3 Asbestos Decontamination.

CHARRED TIMBER: All charred timber shall be removed and replaced with new timber. Where any timber is smoke stained it may be retained, but it must be deodorised and later covered by either sheet materials or paint.

EXISTING DEFECTIVE MATERIALS: Where existing defective materials or fittings are encountered in the course of reinstatement the Contractor shall notify the Principal's Representative immediately in order that instructions can be issued for repairs. No such repair work shall be undertaken without approval.

END OF SECTION

SECTION 3.3 – CLEANING

Section 3.3

CLEANING

SECTION 3.3 – CLEANING

1. GENERAL

SCOPE: This section deals with the cleaning of the interior and exterior of dwellings, and steam and/or dry cleaning of carpets.

The work is to be carried out in accordance with the Legislative and Policy Conditions in particular the following Acts, Codes of Practice, Standards and/or Guidelines as amended:

- AS/NZS 3733 Textile floor coverings – Cleaning maintenance of residential and commercial carpeting, and all other relevant standards, Acts, codes of practice and guidelines..

2. MATERIALS

GENERAL: All material solutions and preparation shall be appropriate for their intended use. Where the specification calls for a “suitable cleansing agent” the agent shall contain *Sodium Hypochlorite*. Dilution is to be as per manufacturers instruction all cleaning materials shall be accepted industry standard products.

3. INTERNAL CLEANING

RUBBISH: All rubbish inside and/or under the dwelling, on all balconies, and in the roof area and/or on the roof of the dwellings, and, where directed, blinds and curtains are to be removed from the Site.

WALLS, CEILINGS FITTINGS, FIXTURES AND WOODWORK: All to be thoroughly dusted and wiped clean. Wall tiles to be thoroughly washed down with a suitable cleansing agent and left to dry. Wall and ceiling vents to be thoroughly cleaned and dusted. Remove marks from walls, ceilings, fittings, fixtures and woodwork using a suitable cleaning material for surface materials.

FLOORS: Including front and rear porches, to be thoroughly swept and washed clean and wiped dry. All extraneous tacks, nails, staples, etc, are to be removed.

FLOORS: Thoroughly wash down floors using a suitable cleaning agent to provide grease, dust free surface. Remove all stains.

FLOOR COVERINGS: Vinyl and/or linoleum are to be mopped over with a suitable cleansing agent and left to air-dry.

CERAMIC FLOOR TILES: Ceramic floor tiles are to be thoroughly washed with a suitable cleansing agent and left to air-dry.

CARPETS: Carpets are to be spot cleaned of minor stains and thoroughly vacuumed using commercial quality plant.

WINDOWS and DOORS: Doors and Glass to be cleaned inside and outside, and internal woodwork including sills to be washed and wiped dry. Window and door frames and/or surrounds to be washed clean with warm soapy water and wiped dry. Spot clean with a non-abrasive liquid cleanser where necessary.

MOULD: All mould covered surfaces shall be cleaned using a solution of mould inhibiting product.

SECTION 3.3 – CLEANING

APPLIANCES AND FITTINGS:

- STOVE - To be thoroughly cleaned both inside and out, including removable parts - burners, frets, hotplates, oven slides and other fittings that are to be removed, cleaned and replaced. Exterior surfaces and removable parts to be cleaned with a suitable cleansing agent.
- BATH, BASIN, SINK, TUBS AND PEDESTAL PAN - To be thoroughly cleaned with a suitable cleansing agent. Where sanitary or other fittings have seriously soiled surfaces, after cleaning, disinfect and wash clean of all residues.
- CUPBOARDS AND CABINETS - To be thoroughly cleaned inside and outside, washed with a suitable cleansing agent and left to dry. Inside of meter boxes to be cleared of rubbish and dirt.
- KITCHEN BENCH TOPS AND SPLASH TILES - To be washed with a suitable cleansing agent and left to dry.
- FLYSCREENS - Where fitted, to be washed clean.
- BLINDS - Where fitted, to be thoroughly cleaned and dusted
- WARDROBES / CLOSETS etc - To be swept and washed out with disinfectant
- GREASE TRAP - To be emptied and scrubbed out.
- RANGEHOODS – Filters to be removed and cleaned and reinstalled. Unit to be thoroughly washed and all grease removed.
- EXHAUST FAN – Grille to be removed and cleaned, blades to be cleaned and grille re-installed.
- LIGHT SWITCHES AND GPO's - to be dusted and thoroughly cleaned.

NOTE: The need for cleaning of grease traps is confined to un-sewered areas.

LIFT AND REMOVE FLOOR COVERINGS: All floor coverings required to be replaced, underlays and fixings (such as battens, tacks, nails, and staples) are to be lifted, as directed and removed from Site. Room to be swept on completion.

CARPET CLEANING: When required, soiled carpets are to be cleaned using one of the following carpets cleaning methods and in accordance with AS/NZS 3733

HOT WATER INJECTION AND EXTRACTION METHOD:

Before commencing any hot water injection and extraction cleaning, the carpet is to be made ready as follows:

- All litter and loose surface soils are to be removed by vacuuming.
- Where necessary pile lift the carpet thoroughly.
- Remove all marks by applying the appropriate spot or stain remover. Rinse and remove excess chemicals.
- Apply a pre-spray to the whole of the area to be cleaned ensuring sufficient levels are applied to heavily soiled traffic areas. To achieve the best results pre-spray should be brushed into the pile by means of a stiff broom or carpet rake and left for the period of time recommended by the manufacturer.
- The hot water injection and extraction unit is to be filled with water, heated (50°C to 95°C) and depending on the type and degree of soiling add detergent, sanitising solution or deodorant as required.

SECTION 3.3 – CLEANING

OR,

SURFACE (DRY) CLEANING METHOD:

Before commencing dry cleaning the carpet is to be made ready as follows:

- All litter and loose surface soils are to be removed by vacuuming.
- Remove all marks by applying the appropriate spot or stain remover. Rinse and remove excess chemicals.
- Apply a pre-spray to small areas at a time, approximately 2m x 2m, clean the area and move to the next area and repeat the process. To achieve the best results pre-spray should be applied in accordance manufacturers written specification.
- Deodorise carpets once cleaned.

The contractor is to ensure any damage and/or markings caused during the cleaning process to walls or any other surface is rectified.

4. EXTERNAL CLEANING - HOUSES, UNITS AND TOWN HOUSES:

All rubbish in the grounds of, under and on the dwelling (including tree and shrub loppings and garden refuse) and in meter boxes is to be removed from the Site. Grease traps to houses to be cleaned.

Carports, garages, tool sheds and store sheds are to have rubbish removed, floors swept and thoroughly washed with degreasing agent, internally and externally, as directed.

NOTE: The use of hoses for internal cleaning including washing down is NOT permitted.

EXTERNAL WASH DOWN: If required, washing is to be with detergent and water. Completely wash down with soft brush entire exterior of walls and soffits including glazing. After washing, thoroughly rinse off with clean water and allow to dry naturally.

5. ADDITIONAL INTERNAL CLEANING

SEALING AND POLISHING: Vinyl flooring is to be cleaned to manufacturers specified requirements.

6. ADDITIONAL EXTERNAL CLEANING

MOWING: Front and rear lawns, including nature strips, are to be mowed to a neat even finish - a maximum height above ground level of 25mm. Lawn edges where abutting buildings, footpaths, drive tracks, meters, downpipes, letterboxes, fences, slabs, street gutters, etc. are to be neatly trimmed. All grass clippings are to be removed from the Site.

CUTTING LONG GRASS: To slash/cut grass to front and rear lawns, including nature strips that have reached a height of 300mm or more

SECTION 3.3 – CLEANING

7. COMPLETION

ON COMPLETION: Take away from Site all waste and unused materials. Leave all internal doors open while Contractor is on Site, including cupboard doors to allow all surfaces to dry naturally.

ALL SURFACES: Shall be left thoroughly clean and free of stains and cleaning compound residues. All cleaning is to be carried out with clean brooms, mops, cloths etc., and with a liberal use of a suitable cleansing agent (see above), detergent, deodorant or domestic cleaner where appropriate or as directed.

END OF SECTION

SECTION 3.4 – ROOFING

Section 3.4

ROOFING

SECTION 3.4 – ROOFING

1. GENERAL

SCOPE: This section deals with the complete re-roofing and/or repair of existing sheet and tile roofing applied to different types of existing roofs, along with all necessary accessories to make a watertight roof.

CROSS REFERENCES: Refer to sections:

- Section 2: Carpentry & Joinery and Minor Repair Work.
- Section 3.1: Demolition – Asbestos Decontamination.
- Section 4: Electrical Works
- Section 5: Plumbing Works
- Section 9: Timber Schedule and Drawing Detail
- Section 10: Component Schedule, and any other section where appropriate.

The work is to be carried out in accordance with the Legislative and Policy Conditions in particular the following Acts, Codes of Practice, Standards and/or Guidelines as amended:

- AS 1684.1: Residential timber-frames construction.
- AS/NZS 1170.0: Structural design actions.
- AS 1720.1: Timber structures Part 1 Design methods.
- AS 1170. 0: Structural Design action – General Principals.
- AS 1562.1: Design & installation of sheet roof and wall cladding. AS 2049 : Roof tiles.
- AS 2050: Installation of roof tiles.
- AS/NZS 4200.1: Pliable building membranes and underlay (sarking).

and all other relevant standards, Acts, codes of practice and guidelines. as amended.

2. MATERIALS

GENERAL: The supply of roof tiles and roof sheeting and associated accessories in accordance with the required standards and Section 10 - Component Schedule. Where no listing found notify the Principal's Representative with report and recommendation and details of Manufacturers warranties.

REPAIRS TO CONCRETE OR TERRACOTTA TILE ROOF: By replacing with new tiles to match existing or if necessary, where new components are unavailable, recycled tiles of matching pattern and colour are to be of a minimum standard equal to the remainder of the roof.

3. WORKMANSHIP

INVESTIGATE ROOF LEAKS: Locate roof leak and repair. Where repairs would be extensive, precluding an immediate repair, report back to the Principal's Representative on condition and extent of repairs required. On approval by the Principal's Representative, provide temporary repair (fit tarpaulin). Provide a written report along.

REPLACE ROOFING SHEETS AND FIX NEW SHEETS: Use a fastening system recommended by the manufacturer of the specified profiled metal roofing making due allowance for dynamic local wind pressures on the building and thermal movement in the sheet.

SET OUT: Set out the planned layout before fixing commences to ensure true lines, correct relationship to module, grid and roof features.

SECTION 3.4 – ROOFING

SEALANT: Use a neutral curing silicone or synthetic rubber based paintable sealant recommended by the roofing manufacturer.

CLOSURE STRIPS: Provide Bituminous compressible foam strips to fit profiled sheets where required.

PROFILED METAL ROOFING: Fold ends and seal cut edges all to manufacturers written specification.

METAL SEPARATION: Prevent direct contact between incompatible roofing systems, fixings and other products. Note, Zinalume sheets can be used as replacement sheets for damaged galvanised sheets as a galvanised steel roof. Follow manufacturers written specification.

SHEET METAL ROOFING: Supply and fix complete with all matching accessories, flashed to all roof features and penetrations and all to manufacturers written specification. Form stop-ends and downturns as necessary to aid in flashing. Provide foil faced insulation blanket - 50mm thick.

BATTENS: Fix to roofing manufacturers written specification and with all joints fully supported and staggered.

INSULATION: Insulate Roof space with Sarking and Batts to comply with BASIX optimum rating for the appropriate climate zone.

NEW SHEETS: Fix in place using the fastening system recommended by the manufacturer of the specified profiled metal roofing making due allowance for dynamic local wind pressures or earthquake loadings on the building and thermal movement in the sheet.

ROOF FLASHINGS: Fix to verges, ridges, hips, walls and penetrations where required to match manufacturers written specification to make the building completely watertight. Co-operate with the plumber for flashing penetrations related to plumbing work.

VERMIN PROOFING: The roof, wall, down pipes and vents shall be completely bird and vermin proof. Provide and fix all materials required for this purpose.

VALLEY (PROFILED METAL ROOFING): Machine cut sheet to a neat clear line leaving a minimum gap of 100mm. Form and fix bird proofing to valley battens. Fix all cut sheets.

WIND AND EARTHQUAKE LOADINGS: Use fixings and methods that will be capable of sustaining the loads appropriate to the area.

CONCRETE / TERRACOTTA TILES: Fixed to manufacturers written specification, flashed to all roof features and penetrations, fitted with anti-ponding boards all to manufacturers written specification.

FIXING CONCRETE TILES ~ RIDGE: Fix ridge tiles to manufacturers written specification.

CONCRETE TILES TO RIDGES AND HIPS: Support and bed edges and joints of ridge and hip tiles in mortar or 'Flexi-point' to manufacturers written specification.

VALLEY (CONCRETE TILES): Machine cut tiles to neat clean line leaving a minimum gap of 100mm. Form and fix bird proofing to valley battens. Fix all cut tiles.

VERGE (CONCRETE TILES): Fix gable end barge tiles to manufacturers written specification.

SECTION 3.4 – ROOFING

GUTTER GUARD: Gutter Guards are to be zincalume, factory pre-painted Colorbond (colour to match guttering). Gutter Guard is to be securely fixed underneath the roof and to the gutter.

4. COMPLETION

This work shall be completed with all necessary flashings, valleys, ridges and hips all properly installed as the work proceeds so that the finished roof is completely weather-tight.

Remove all trade rubbish and unused materials from the roof and surrounds regularly during the work as well as at completion. Sweep down the completed roof and clean out all guttering and rainwater pipes. Remove all trade waste from Site.

Warranties

Submit details of all manufacturers warranties to the Principal's Representative.

Maintenance Manual

On completion of a complete re-roofing submit a manual of recommendations from the roof manufacturer or supplier for the maintenance of the roofing system including, frequency of inspection and recommended methods of access, inspection. Cleaning, repair and replacement.

END OF SECTION

Section 3.5

CONCRETE WORKS

SECTION 3.5 – CONCRETE WORKS

GENERAL

SCOPE: This section deals with the demolition / removal of existing concrete, excavation, filling, base preparation, reinforcement and for the supply and laying of concrete.

CROSS REFERENCES: Refer to sections:

- Section 2: Carpentry & Joinery and Minor Repair Work
- Section 3.1: Demolition
- Section 3.6: Metalworker

The work is to be carried out in accordance with the Legislative and Policy Conditions in particular the following Acts, Codes of Practice, Standards and/or Guidelines as amended:

- AS 2870: Residential Slabs And Footings - Construction
- AS 3727: Guide To Residential Pavements
- AS 3600: Concrete structures
- AS 3799: Liquid membrane-forming curing compounds for concrete
- The Building Code of Australia.

and all other relevant standards, Acts, codes of practice and guidelines..

WEAK SUB-GRADE: Where there is excessive settlement in the existing surface or there are soft ground conditions the Contractor shall advise the Principal's Representative, and continue only as directed.

SOIL AND WATER MANAGEMENT: Refer to the Legislative and Policy Conditions – Environmental Management clause.

DRAINAGE: The Contractor shall ensure prior to commencing work that the proposed surface levels and grades shall drain all surface water to a suitable storm water drainage system.

DEFINE BOUNDARIES: The Contractor is to ensure that the completed work lies within the defined boundaries of the particular property.

INSPECTIONS: Do not place concrete until all excavations, boxing and reinforcing have been inspected and passed by the Principal's Representative.

2. MATERIALS

Concrete may be either ready mixed or mixed on Site, as specified hereunder and at no variation to the Contract for either type chosen.

CONCRETE MIX:

Water: Clean, free from oil, salt, acid, alkali or other deleterious substances.

Sand: To be clean, sharp and free from salt or other impurities.

Cement: Cement must be fresh and taken from unopened bags. Cement stored on Site to be adequately protected from moisture.

Coarse Aggregate: To be clean, hard tough and durable crushed stone and/or gravel, free from elongated pieces, dust clay or other deleterious matter.

SITE MIXED CONCRETE: Accurately measure all materials forming concrete using suitable gauge boxes. Mix in a suitable power mixer with the addition of sufficient water to ensure workability of concrete. Upon leaving mixer,

SECTION 3.5 – CONCRETE WORKS

slump must be not less than 50mm or more than 100mm using a standard cone. Make slump tests when directed by the Principal's Representative. Add no water to concrete after leaving mixer. Mix concrete in the proportions of -

- 4 parts of 20mm gauge, coarse aggregate.
- 2 parts sand.
- 1 part cement.

READY MIXED CONCRETE: The Company supplying ready mixed concrete may be required to submit statistical evidence of quality control measures adopted to ensure the supply of concrete conforming to specified requirements.

STRENGTH: Order ready mixed concrete by stating following:-

- (a) Average strength of concrete 20 MPa at 28 days.
- (b) Slump 75mm (plus or minus 12mm).
- (c) Maximum size of aggregate 20mm.

3. CLEARANCE / EXCAVATIONS / FILLING

PREPARATION: Site Preparation. Remove all turf, vegetation, trees, topsoil, stumps and rubbish from the area to be built on.

4. EXCAVATION

GENERAL EXCAVATION: Trim ground to required profiles, batters, falls and levels. Remove all loose material. Protect all cut faces from collapse. Keep all excavations free from water. General excavation is assumed to be in material other than rock.

ROCK: If rock is encountered during excavations, contractor must advise the Principal's Representative for direction.

FILLING: Provide and thoroughly consolidate suitable filling (75mm thick road base where required under reinforced concrete driveways) where directed within the area to be paved. Compact fill with mechanical plate compactor to the satisfaction of the Principal's Representative.

5. CONCRETE PAVEMENT

WORKMANSHIP: Lay and finish paving generally as specified in alternative bays not exceeding 20m² in area and 75 to 150mm thick as specified.

FORMWORK: To be securely fixed and braced, have sufficient strength to support all loads and with joints and linings tight enough to prevent loss of water. Curves are to be smooth in appearance. Hose out to clean thoroughly and keep wet before and after concrete is placed.

CONTROL JOINTS: Control joints to be provided as specified in AS3727, Table 2

REINFORCEMENT: Reinforce slabs with reinforcing mesh, free from rust or any coating. Place reinforcement centrally in the slab and support on suitable saddles.

SECTION 3.5 – CONCRETE WORKS

FINISH TO CONCRETE: Generally provide a non-slip finish (broom or as directed) to surfaces with use of a smooth edging tool to joints and edges as per standard practices.

6. CONCRETE PATHS AND DRIVEWAYS

Lay between properly supported forms, in bays, 75mm thick paths, 100mm thick wheel tracks, and 150mm thick Driveways. Provide 10mm thick bituminous expansion strips between every third bay to full depth of concrete.

Finish concrete as laid with a mixture of 2:1 sand and cement, sifted on and trowelled or broomed to a non-slip finish. Run clean tooled joint at all junctions of slabs. Round off all outer free edges with a suitable edging tool.

PATH / WHEEL TRACK / DRIVEWAY REPAIRS: Cut back broken paving to solid edge. Break up and remove broken sections of concrete from Site. Supply and lay 75mm, 100mm, or 150mm thick concrete (broom finish).

7. CONCRETE RAMPS

MASS CONCRETE RAMPS: Form up and pour mass concrete ramp to a maximum rise of 450mm, gradient not to exceed 1:20. Ramp to be 1200mm wide (min) and finished to a non-slip finish.

BRICK AND CONCRETE RAMPS: Where the rise of a ramp exceeds 450mm, ramps are to be formed up and poured on 300 x 250mm (min) footing and 110mm brickwork and finished to non-slip finish. Ramp to be 1200mm wide (min) with the gradient not exceeding 1:20. Refer to Minor Repair Work Section for laying of brickwork.

HANDRAILS TO RAMP: Refer to Section 3.6 Metalworker for provision of handrails.

8. CURING OF CONCRETE

Protect fresh concrete from premature drying and extremes of temperature. Use suitable methods to limit evaporative drying and keep damp for not less than seven days. Ensure curing of slabs commences as soon as possible after final finishing by immediately covering the concrete with an impervious membrane, or Hessian kept wet, until curing begins or the application of a curing membrane. Make sure any membrane used will not affect subsequent applied finishes.

9. CONCRETE LAY BACKS

Concrete laybacks shall be constructed to meet the requirements and approval of the Local Authority. Work includes all Local Authority fees and charges including tipping fees as required.

10. VEHICLE CROSSOVERS

Vehicle crossings shall be constructed to meet the requirements and approval of the Local Authority. Work includes tipping fees as required.

SECTION 3.5 – CONCRETE WORKS

11. TOP SOIL, GRASS SEEDS AND/OR TURF

Top dressing soil, grass seeds for sowing and/or turf are to be of similar type to surrounding grasses.

12. COMPLETION

REINSTATEMENT: The whole of the Site shall be reinstated to its original condition as existing prior to the Works.

All excavated surplus soil is to be removed from the Site, with clean topsoil to be supplied, rolled and sowed with grass seeds or turf to finish level with top of concrete. All broken and surplus concrete is to be removed from the Site. Clear away all trade rubbish and remove from Site. Work includes all tipping fees as required.

END OF SECTION

Section 3.6

METALWORKER

SECTION 3.6 – METALWORKER

1. GENERAL

SCOPE: This section deals with the supply / repair and installation of grab rails, handrails, steel support posts, wrought iron railings, meter / foundation doors, garage doors, heavy duty grills, bollards, meter / downpipe guards, mobile bins, steps and landings.

Handrails must comply with all relevant standards and codes. The Drawing Numbers MR1, MR2, MR3, MW1, MW2, MW 3, MW4 and MW5 are a guide only and must not be used for construction purposes. Complete these drawings for required construction and provide these as built drawings certified for structural adequacy to the Principal.

CROSS REFERENCES: Refer particularly to sections:-

- Section 2 – Carpentry & Joinery and Minor Repair Work.
- Section 3.5 - Concrete Works.
- Section 9 - Timber Schedule and Drawing Details.
- Section 10 - Component Schedule.

Carried out the work in accordance with the Legislative and Policy Conditions and particularly the following:-

- AS 1074 Steel tubes and tubulars for ordinary service
- AS/NZS 1554 .1: Structural steel welding
- AS 1428.2: & AS 1428.1: Design for access and mobility
- AS/NZS 4586 - Slip resistance classification of new pedestrian surface materials
- CSIRO SR1.2002 – Surface
- The Building Code of Australia
- All other relevant Acts, codes of practice, standards and guidelines.

2. MATERIALS AND WORKMANSHIP

GENERAL: All materials used, unless otherwise specified, must be the best of their respective kinds. Carry out all works specified and in accordance with best trade practice. Keep all members true, free from twist and other distortion. Drill all holes. Form any bends in tubes without deforming the true cross-section.

GALVANISING: Applied galvanising by the hot dip process. Ensure minimal drilling, tapping, cutting or welding is undertaken after galvanising.

Ensure each surface after galvanising carries an unbroken covering of zinc, uniform in thickness with a coating weight of at least 500 g/m² for steel over 5mm thick and at least 450 g/m² for steel between 1mm and 5mm thick.

GARAGE DOORS: Refer to Section 10, Component Schedule, for the requirements. Provide single panel lift or rolling shutter types.

MOBILE BINS: Repair and replace mobile bins in accordance with the requirements of the local authority relevant to location of dwelling.

HAND AND GRABRAILS: Refer Drawings for details.

SECTION 3.6 – METALWORKER

LANDINGS WITH STEPS AND HANDRAILS: Construct these of precast concrete and galvanised steel, all of suitable manufacture. Where site welding is necessary, prime all welded joints with suitable rust inhibiting paint, equal to "Zincillate" or "Galvafrid". Refer to BCA Table D2.13 Riser and Going Dimensions.

STAIR STRINGERS AND LANDING BEARERS: Provide 100mm deep x 50mm wide M.S. tube OR 71mm deep x 51mm wide x 6.5mm M.S. angle.

STEP BRACKETS: Provide 51mm x 5mm M.S. flat bar OR 51mm x 51mm x 6.5mm M.S. angle welded to 51mm face of angle.

FIXING BRACKETS: Provide 63mm x 6.5mm bent down where practicable, drilled for fixing. Where down fixing is not practicable, fixing brackets may be turned up.

RISE: Provide 170mm nominally rise from top of tread to top of tread equalised in each case with 180mm maximum and 160mm minimum. Where not more than three steps are required, the minimum rise may be reduced to 150mm.

STEP TREAD: Provide 900mm x 260mm x 50mm thick, non-slip surface, reinforce with F8TH trench mesh, fix each end with one 63mm x 5mm cadmium plated cup head bolt, nut and washer.

LANDING TREADS: As for step treads, but 535mm wide fixed each end with two (2) bolts, OR full size of landing, supported on inverted angles and unbolted.

TIE BARS TO LANDINGS: Provide two (2) 25mm x 5mm galvanised bolts to bearers.

BASE FOR STRINGER AND STANDARDS: Provide 300mm x 300mm x 150mm thick precast concrete footings each having 25mm galvanised pipe dowel cast in to extend 75mm above the top of footing.

LANDING STANDARDS: Provide 50mm dia. galvanised pipe, bolted to bearers at top.

NEWEL AND HANDRAILS: Provide 35mm dia. galvanised pipe newels and 50mm handrail/top rail, and weld all joints. Provide galvanised fixing lugs and angles - where fixing to timber walls provide fillet welded angle frame between rails and coach screw fixing. Provide intermediate standards at less than 1200mm centres, and top handrail 1000mm above the landing or step tread.

FIXING BOLTS: Provide cadmium plated, galvanised, brass and stainless steel bolts complete with nuts and washers to suit location and application.

FREE STANDING STARTER POST: Provide formed by the bending of the top handrail in a continuous curve until the post vertical position is at 90° to the tread surface.

GALVANISING: Hot dip galvanise all fabrications, except handrails, newels and standards.

ERECTION: Keep standards plumb and other sections level where applicable. Secure turned down landing fixing brackets to brickwork; with two (2) 10mm diameter masonry bolts. Where fixing to brickwork is not practicable, secure turned up landing fixing brackets to the edge of concrete slabs with bolts as above. Provide additional centre standard to stringers when more than eight (8) treads are required.

Provide additional bracing where the landing height exceeds 1830mm.

SECTION 3.6 – METALWORKER

WELDING: To AS/NZS 1554.1.

CONCRETING OF POSTS: Refer to Section 3.5, Concrete Works, for mixing on site concrete. Posts to be set in a minimum 250mm dia x 600mm deep concrete footing.

FOUNDATION DOOR AND FRAME: The frame to be constructed 75mm x 50mm x 5mm hot dipped galvanised and the steel door from 40mm x 40mm x 5mm hot dipped galvanised steel. The door mesh to be equal to Expamet WK 25-17 Grade. Doors to be fitted with 2 x 15mm solid hinges, 100mm long door latch to be made from 40mm x 6mm flat bar, 100mm long with a slot 12mm wide x 60mm long to slip over lug on frame to allow locking of door with padlock.

GAS METER DOOR AND FRAME: The door and frame to be constructed from 50mm x 50mm x 3mm angle iron, door mesh to be equal to Expamet WK 25-17 Grade. Door to be fitted with 2 x 15mm solid hinges, 100mm long door latch to be made from 40mm x 6mm flat bar, 100mm long with a slot 12mm wide x 60mm long to slip over lug on frame to allow locking of door with padlock.

DOWN PIPE GUARD: Fabricate a galvanised metal guard to base of downpipe. Guards to be fabricated from 3mm galvanised sheet and folded to wrap around existing downpipes with a min 20mm clearance. Fixed to brickwork - minimum 6 fixings, to a minimum height of 1300mm from ground level.

STEEL TUBE BOLLARDS: Fabric from heavy steel tube, to a minimum nominal size DN100 to AS 1074. Seal both ends with fabricated end caps, spot-welded and ground smooth.

Finish: Galvanise after fabrication.

Footings: Encase in a concrete footing at least 600mm deep x 250mm diameter.

On slabs: Weld on 10mm thick base plate drilled for 4 bolts, and bolt with masonry anchors.

Base plate to be minimum 50mm clear around the bollard, with fixings in corners.

RAMPS: All steel and metal accessories indicated on Drawings MR01 to MR03 are to be hot dipped galvanised as specified.

RAMP PANELS: CFC panels as shown on Drawings MR01, MR02 and MR03. The surface to be thoroughly cleaned and prepared for treatment as per manufacturer's specification. Apply an anti-slip surface coating compliant to AS/NZS 4586 - Slip resistance classification of new pedestrian surface materials and CSIRO SR1.2002 – Surface

3. COMPLETION

Clear and remove from the site all rubble and surplus materials resulting from the work.

END OF SECTION

Section 3.7

TIMBER AND METAL FENCING

SECTION 3.7 – TIMBER AND METAL FENCING

1. GENERAL

SCOPE: This section deals with the supply and erection of new fences and gates including hardware. Refer to the Work Order for the extent of the work to be carried out.

CROSS REFERENCES: Refer particularly to sections: -

- Section 2 – Carpentry & Joinery and Minor Works
- Section 3.5 - Concrete Works
- Section 9 - Timber Schedule and Drawing Details
- Section 10 - Component Schedule

GENERALLY: New fencing on existing boundary lines, unless otherwise directed.

A variation will be directed where clearing of the fencing line requires the removal of building materials, rubbish, garden refuse, sheds or other structures, or heavy growth of vines on that line. All fencing work includes the cost to clear the fence line of other minor growth and to exercise all reasonable precautions to protect shrubbery, plants and other property and prevent damage to property with fencing operations.

ADJOINING RAIL CORP or RTA PROPERTY: Where replacement of fencing is required for a property adjoining land owned by RailCorp (rail infrastructure) or RTA (Arterial Roads) the following action is be required:

- Where directed and there is existing fence to be replaced between the Rail line / Arterial Road, the contractor is to erect a temporary 2100mm chain wire security fence, Type 1-A Railless Security Fence Plain Top with 2.5mm light duty mesh to prevent public or animal access to RailCorp/RTA property during replacement works and the removal of the security fence at completion of the work.
- Where there is NO existing fencing the contractor is to advise the Principal's Representative immediately prior to any work commencing, as this work must be done under the Dividing Fences Act.

Fences and gates must comply with the requirements of Drawing Numbers MF1 to MF 6 inclusive.

POSITION OF 'CUT-OFF' FENCING: Unless otherwise directed, position gates and "cut-off" fencing from front of cottage to the existing dividing fence on either side of a cottage. Locate of cut-off fences so that gas, electricity and water meters are on the street side of the fences.

Where the existing meter board is positioned on the side of the cottage keep cut-off fence to the rear of the meter board.

Where gas bottles are located on "off-drive" side of the cottage, provide a single gate for access to the gas bottles and keep the fence forward of the gas bottles.

Position cut-off fencing and gates on full curtain walls, wherever possible and not on piers.

Generally take fencing square off the cottage to the boundary fence line, and where applicable return it along return fence lines to paling or metal clad fence.

Keep fencing and gates (closed) in a straight line square off existing fences and the building when these are parallel. Where they are not parallel, position gates at 90° to paving to give maximum effective width to the gate opening and centrally positioned gates over drive tracks. Provide nominal width openings for gates of 900mm for single gates and 2750mm to 3000mm for double gates. Construct double gates in two equal leaves. Set them into

SECTION 3.7 – TIMBER AND METAL FENCING

the double gate opening, and concrete in position, using a 20mm diameter G.I. pipe 150mm long as a keeper for a drop bolt in both closed and open positions. Should the bolts not reach the hold open in ground keepers provide gal. parrot-beak type holding device fixed either to a wall or a new gal. posts.

Provide new posts at either end of the "cut-off" fencing. Fixing of panels to existing timber fences or brickwork will not be accepted, it is necessary to use a small panel of 150mm width or less, to complete a section of fencing.

In such cases where a small panel of 150mm width or less is used, securely fix the panel with loxins or similar to brickwork, or screw fixed the panel to timber fence posts. Otherwise terminate fences adjoining buildings 25mm clear of wall cladding.

PRIVATE OWNER FENCING: NO EXTRA WORK may be done on fencing jointly owned by the Principal and a Private Owner, without prior approval in writing.

2. TIMBER FENCES

GENERAL: All timber must comply with the Timber Marketing Act. Refer to Section 9, Drawing No. TS1, Schedule of Timber Species and Durability Ratings, for timber species, grade of timber and standard details.

HARDWOOD: Provide Eastern Australian hardwood to AS 2082, with posts and walings being minimum durability Class 1 or 2.

PINE: Provide first quality radiata pine, pressure preservative treated and/or cypress pine. Where softwoods meet minimum durability Class 1 or 2, preservative treatment is not required.

Coat all timber fencing posts, waling pieces, and the like with Type A creosote to 100mm above the finished ground level. Creosote is not required where timber has been preservative treated to Hazard 4 or 5.

Where rock is encountered, sink posts to a depth of 375mm and surround with at least 100mm 4:2:1 concrete mix.

PALING FENCES: Comply with the standard details in Drawing Nos. MF1 to MF4 in Section 9.

SAWN HARDWOOD POSTS AND HARDWOOD RAILS: Provide angle, junction, gate and terminating posts against front, return and cut-off fencing, and the like in 125mm x 125mm H.W. with corners cut off. Sink posts in the ground to a minimum depth of 600mm and surround with at least 100mm 4:2:1 concrete mix.

Intermediate posts to be 125 x 50mm end section with corners cut off, spaced at a maximum of 2400mm centres, sunk 600mm into ground. 600 x 150 x 25mm waling pieces to be fitted closely and vertically to faces of posts and nailed to post not less than 75mm from top of waling piece.

Provide 75mm x 50mm H.W. rails morticed through posts, splay cut to fit under and over, breaking the joint on alternate posts and well nailed.

GALVANISED POSTS AND HARDWOOD OR PRESERVATIVE TREATED PINE RAILS: Provide angle, junction, gate, terminating posts in 75mm x 75mm x 2.5mm galvanised square section and intermediate posts in 50mm x 50mm x 2.5mm galvanised square section (capped). Set posts in 4:2:1 concrete mix, 200mm x 200mm x depth as set out on Drawing No. MF4.

SECTION 3.7 – TIMBER AND METAL FENCING

Provide 75mm x 50mm H.W. or pine rails. Neatly fix three rows of rails for lapped and/or lapped and capped fences, and two rows of rails for closed paling fences, with breaking joints on alternate posts, well spiked and secured to each post with 10mm diameter galvanised bolt through 50mm x 50mm x 3mm galvanised washer fitted under the nut and against the rail. Fix top rails 225mm below the top line of the fence for lapped or closed paling fences, and 25mm below the top line for lapped and capped fences. Fix bottom rails 225mm above ground level. Where fitted, centre the middle rail between the top and bottom rails.

PALINGS: Cut-off the corners of the tops of all palings. Keep the tops of palings to an even plane and finish bottoms at ground level. Maximum tolerance is 50mm above ground level over no more than 1 metre in any one panel of fencing.

Where directed, rake the panel adjoining return, cut-off or front fencing.

CLOSE PALINGS (HARDWOOD OR PRESERVATIVE TREATED PINE): Cover the rails with 100mm wide by 15mm thick (plus or minus 2mm) hardwood or preservatised pine palings, square cut to a line at top with corners cut off and double nailed with 50 x 2.8mm galvanised flat head nails, slightly skew driven into each rail. Palings to be a minimum 100mm wide and not more than 125mm wide.

PRESERVATIVE TREATED PINE POSTS AND RAILS: Provide angle, junction, gate and terminating posts in minimum 125mm x 125mm pine. Sink posts in the ground to the depth set out in Drawing No. MF4, and surround with at least 100mm 4:2:1 concrete mix.

Provide intermediate posts in a minimum 125mm x 75mm pine, spaced at a maximum of 2400mm centres, sunk 600mm into the ground. Fix 600mm x 150mm x 25mm waling pieces closely and vertically to faces of posts and nail them to post not less than 75mm from the top of waling pieces.

Fix three rows of rails for lapped and/or lapped and capped fences, and two rows of rails for lapped (closed) fences, in 75mm x 50mm pine housed or morticed through posts. Join rails with scarf joints, breaking joint on alternate posts, with rails well spiked and secured to each post with 10mm diameter galvanised bolt through 50mm x 50mm x 3mm galvanised washer fitted under the nut and against the rail. Fix top rails 225mm below the top line of the fence for lapped fences, and 25mm below the top line for lapped and capped fences. Fit bottom rails 225mm above ground level. Where fitted, centre the middle rail between the top and bottom rails.

LAPPED PALINGS (HARDWOOD OR PRESERVATIVE TREATED PINE): Cover the rails with minimum 100mm wide (not more than 125mm wide) by 15mm thick (plus or minus 2mm) hardwood or preservatised pine palings. Space the first layer of palings 70mm apart to allow for a minimum lap of 15mm on each side, and double nail then with 50mm x 2.8mm galvanised flat head nails, slightly skew driven into each rail. Double nail lapped palings (second layer) with 65mm x 2.8mm galvanised flathead nails, driven into each rail, lapping first layer palings by 15mm each side.

Square cut palings to a line at the top and cut-off the corners.

LAPPED AND CAPPED PALINGS (HARDWOOD OR PRESERVATIVE TREATED PINE): As for lapped palings, except the tops of palings are to protrude a maximum of 12mm above the top rail. Palings are not to be less than 100mm wide and not more than 125mm wide.

Fix a preservatised pine (TP) angled top capping board, 112mm x 38mm with 51mm x 12mm bottom rebate, to the top rail with 65mm x 2.8mm galvanised bullet head nails at 300mm spacings.

SECTION 3.7 – TIMBER AND METAL FENCING

GATES: Comply with standard details on Drawing Nos. MF 5 and MF 6 in Section 9, match the fencing, and provide complete with hinges and latching devices and drop bolt with double gates.

Provide nominal width openings for gates of 900mm for single gate and 2750mm (2700mm minimum to 3000mm maximum) for double gates. Construct double gates in two equal leaves.

Set into double gate openings a 20mm diameter galvanised pipe 150mm long as a keeper for a drop bolt, and concrete the pipe in position.

FOOTINGS: refer to Section 3.5.8

3. METAL FENCES

ROLL TOP GALVANISED/POWDER COATED WELD MESH FENCING: Construct steel mesh panelled fencing in the positions shown on layout plans and to the specified heights.

Apply hot dip galvanise after fabrication is complete, and ensure no drilling, tapping or welding is undertaken after galvanising.

Powder coat all parts, panels, posts, caps, clips and bolts, gates, hinges and catches after hot dip galvanising and fabrication is complete, and ensure no drilling, tapping, raking or welding is undertaken after powder coating.

Provide 50mm O.D. x 2.9mm wall thickness galvanised pipe or 50mm x 50mm x 2.5mm galvanised steel square section for intermediate posts. Provide single gateposts in 50mm O.D. x 2.9mm wall thickness galvanised pipe. Provide double gateposts in 60.3mm O.D. x 2.9mm wall thickness galvanised pipe. All posts must be in accordance with AS1450. Crimp posts approximately 200mm from bottom of the post and provide 1350mm long posts for 750mm high fences, 1500mm long posts for 900mm high fences and 1800mm long posts for 1200mm high fences.

Space posts generally to suit 2400mm panels, but where necessary to avoid unsightly short panels, space posts to provide even panel lengths.

Sink posts into the ground and consolidate with minimum 230mm diameter x 500mm deep 4:2:1 mix concrete. Where rock is encountered, sink posts into the ground 375mm and surround with 4:2:1 concrete mix.

Cap the top of each post with a "Knock on" type galvanised friction cap. Extend posts above the infill by the height of the "Knock on" cap.

Infill between posts with roll top galvanised fencing panel 2.4m long x the specified heights with ground clearance of approximately 80mm, with mesh panels made from 5mm diameter bright wire in accordance with AS1303, and wires electrically welded to form 50mm x 150mm mesh, with vertical wires at 50mm centres and horizontal wires at 150mm centres.

Form wire mesh into a panel having a shape top and bottom with a bend at 90° to face for 50mm and then at approximately 65° for either 75mm or 150mm to form an open triangle.

Fix panels to posts with 25mm x 25mm x 1.6mm galvanised "U" type clips, either drilled to receive and fixed with 8mm diameter hex head galvanised bolts passing through clip, post and clip of adjoining panels, or affixed with a 12 G self drilling screw. Provide 750mm and 900mm high panels with three fixing points at each end, and 1200mm high panels with four fixing points at each end.

SECTION 3.7 – TIMBER AND METAL FENCING

Where mesh infill panels are specified in under floor areas, provide 100mm mesh overlap to face of brick piers and curtain walls, and fix with 25mm x 25mm x 1.6mm galvanised "H" clips drilled to receive and with 8mm "Loxin" type fixing.

At the junction with park rail fencing provide suitable "V Shaped Galvanised" brackets fixed to the pipe post and rail.

Generally, ensure fence panels and gates have a ground clearance of approximately 80mm. Where site levels create unacceptable clearance under panels, use stepped or raked panels subject to the prior approval of the Principal's Representative.

Provide gate frames in 26.9mm O.D. pipe bent to provide suitable radius at corners. Clean off and match welds to 150mm x 50mm mesh properly welded to the frame.

Provide double gates with two equal leaves or one 1800mm and one 900mm leaf as directed, nominal opening size of 2750mm (2700mm minimum to 3000mm maximum), with a bow type and drop bolt catch fitted on the side of each gate, and provide 2 x 20mm diameter G.I. pipe keepers 150mm long for drop bolts, projecting as required and concreted in position to secure the gates closed, and also provide 2 x 20mm diameter G.I. pipe keepers 150mm long for drop bolts, projecting as required and concreted in position to secure the gates in the open position, as the Site demands or as directed. If due to sloping ground level, hold open keeps are not appropriate, allow to install a gal cabin hook or parrot beak type hold open device, attached to a new gal post in position as required.

Provide single gates to fit a nominal 900mm opening, with a "D" latch and striker catch.

SCREEN STEEL PANEL FENCING: Assemble and erect all fencing in accordance with the manufacturers written specification.

SCREEN DETAILS: Provide:-

Sheeting: Double sided colour bond, thickness 0.40mm, width 760mm, with length 890 for 900mm high fence, 1490mm for 1500mm high fence and 1790mm for 1800mm high fence, and max. panel length 2360mm.

Post: Post length 1500mm for 900mm high fence, 2100mm for 1500mm high fence and 2400mm for 1800mm high fence, with zincalume or colour bond finish to match the sheeting and powder coating where required.

Rails: Identical length and dimensions of top and bottom rails but the bottom rail is slotted to allow for the drainage of water.

Fixing: All fixing or equivalent.

Colour: Colour as directed.

Provide all gates of a suitable manufacture that match existing fencing, with suitable hinge and latching devices, and drop bolts for double gates. Ensure the minimum distance between closing stiles of double gates is 25mm.

Provide gateposts in 65mm x 65mm x 2.5mm galvabond steel rectangular hollow section, fitted with suitable galvanised hinge plates and latching devices. Sink posts into the ground to a depth of 600mm and surround with

SECTION 3.7 – TIMBER AND METAL FENCING

250mm diameter of 4:2:1 concrete. Where coloured posts are required, use powder coated finish to posts and fittings.

Erect fence panels plumb and level and in straight lines from the starting point to the end of each run. On sloping sites provide stepped panels where possible with a maximum ground clearance to bottom rail not exceeding 50mm, and the bottom rail not in contact with the ground surface. Where the fall on the ground exceeds 150mm per section install raked panels.

Provide tapered panels with tops raking from 1500mm high to 900mm where directed by the Principal's Representative, with rails and sheeting to suit the length of panel required.

Where a fence changes direction provide a matching metal fence post 65mm x 65mm x 2.5mm.

4. LOOPED POOL TYPE FENCING

PROFILE: Provide tubular looped top fencing.

DIMENSIONS:	Panel height/width- a) 900mm/ 2400m maximum b) 1200mm/ 2400m maximum
SPACINGS:	Distance between rails a) 735mm b) 1035mm
TUBE SPACINGS:	For both a) & b) 100mm centres (approximately)
GATE WIDTH:	Single 980mm, double 2750mm and 3000mm
MATERIALS:	
INTERMEDIATE POSTS:	50mm x 50mm x 1.6mm hollow section (galvanised)
GATEPOSTS:	65mm x 65mm x 2.5mm square hollow section (galvanised)
RAILS:	33mm x 33mm x 1.6mm Architectural Profile with domed top (galvanised) OR 36mm x 25mm x 1.6mm rectangular section.(galvanised)
VERTICAL TUBES:	16mm DIA x 1.2mm (galvanised) looped to height of 115mm above top rail
WELDING:	Silicone bronze
POWDER COATING:	Use Four stage pre-treatment as per Taubmans/Ansol/Dulux data:- a) Alkaline degreasing b) Rinse c) Zinc Phosphate d) Rinse

Application thickness 70 - 110 microns, curing temp base material is to be heated to 200°C for 10 minutes.

CATCHES:	"D" Latch and Striker
HINGES:	Butt hinges caps: Black plastic (knock on type)
FIXING BRACKETS:	"L" brackets
SCREWS:	12 x 20 Tek Screws or equivalent

SECTION 3.7 – TIMBER AND METAL FENCING

Ensure all panels are a maximum of 100mm above ground level.

Concrete all posts into the ground to a depth of 500mm in holes 250mm x 250mm x 600mm deep.

Paint/coat all fixings the same colour as the fence.

5. COMPLETION:

On completion, remove all surplus materials and debris from the site and leave work areas and sites in a clean and tidy condition.

END OF SECTION

Section 3.8

TREE PRUNING / REMOVAL

SECTION 3.8 – TREE PRUNING / REMOVAL

1. GENERAL

SCOPE: This section deals with pruning, removal and stump grinding of trees. Refer to Work Order for extent of work to be carried out.

The work is to be carried out in accordance with the Legislative and Policy Conditions in particular the following Acts, Codes of Practice, Standards and/or Guidelines as amended:

- AS 4373 : Pruning of amenity trees
- AS 4419 : Soils for landscaping and garden use
- Code Of Practice: Amenity Tree Industry

and all other relevant standards, Acts, codes of practice and guidelines..

LOCAL AUTHORITY TREE PRESERVATION ORDERS: Where required, the Principal's Representative will arrange for and provide a copy to the Contractor prior to commencement of the Works. The Contractor is to make sure that liaison is maintained with the Principal's Representative and that the conditions of the approvals are met.

Where no preservation order is provided to the Contractor, and on visiting the Site, the contractor believes the work as ordered requires an approval from the local Authority, the Contractor is NOT to undertake any work, and to contact the Principal's Representative.

QUALIFICATIONS: Tree Pruning and Removal work is to be carried out by a qualified Arborist, and/or member of the National Arborists Association of Australia or equivalent. A suitably qualified Arborist must be on Site at all times whilst the work is being carried out.

ACCESS AND SAFETY: Safe pedestrian and vehicular access is to be maintained for residents, particularly children, and visitors at all times. Provision is to be made for continuous use of the works Site, parking areas and driveways. The Contractor is to organise and conduct the works to minimise inconvenience and nuisance to residents near the Site of the works by the control of noise, vibration, dust, mud, sawdust and any other nuisance. Precautions are to be taken to protect the health and safety of persons on or within the vicinity of the Site from conditions that are or may be dangerous to their health. Erect safety barriers as necessary and provide warning to residents and visitors of hazards such as overhead work and machinery such as mulchers.

The Contractor shall comply with all Work Cover safety requirements and shall supply to workers all necessary safety equipment such as safety harnesses, helmets, etc. The Contractor shall ensure that such safety equipment is properly maintained and used during the course of the work.

2. WORKMANSHIP

TREE PRUNING: All tree pruning must be carried out in strict accordance with the Tree Preservation order and in accordance with AS4373 - 1996 Pruning of amenity trees.

STUMP GRINDING: All stumps are to be ground to a level of 600mm below ground level. Remove from Site all debris from grinding and backfill with soil equal to top dressing grade as per AS4419 : Soils for landscaping and garden use.

SECTION 3.8 – TREE PRUNING / REMOVAL

3. COMPLETION

REMOVE DEBRIS: The Contractor shall remove all pruned matter, wood, branches, leaves and twigs, grindings resulting directly from the work, from all footpaths, road surfaces, lawn areas, rooftops and private yards as work progresses across the Site and on completion.

WOOD CHIPS / GRINDINGS: As an alternative to disposal, where suitable wood chip / grindings (where free from noxious weeds) that are resulting from works, and with prior approval of the Principal's Representative, may be spread on garden beds in a layer of maximum of 100mm thickness. Generally this will be in common areas of larger projects. Otherwise remove all from Site.

END OF SECTION

Section 3.9

WALL AND FLOOR TILING

SECTION 3.9 – WALL AND FLOOR TILING

1. GENERAL

SCOPE: This section deals with the supply and installation of ceramic tiles to flooring, walls, bench tops, for both new work and repairs. The supply and installation of Waterproofing to wet areas.

CROSS REFERENCES: Refer to sections:

- Section 5 - Plumbing Works,
- Section 9 - Timber Schedule and Drawing Details,
- Section 10 – Component Schedule,

and any other Section where appropriate.

The work is to be carried out in accordance with the Legislative and Policy Conditions in particular the following Acts, Codes of Practice, Standards and/or Guidelines as amended:

- ISO 10545: Ceramic Tiles
- AS 3958.1: Guide to installation of ceramic tiles
- AS 3958.2: Guide to the selection of a ceramic tiling system
- AS 2358: Adhesives – For fixing ceramic tiles
- AS 3972: Portland and blended cements
- AS 1672.1: Limes and limestones

and all other relevant standards, Acts, codes of practice and guidelines..

TEMPORARY TOILET FACILITIES: The Contractor is to provide where no alternate facility exists an adequate temporary toilet facility for the occupants.

WATERPROOFING WARRANTIES: Provide a warranty for materials and quality of work undertaken for waterproofing system as required by Section 10, Component Schedule. The warranty shall cover removal of floor and wall tiles, removal of shower screens and associated shower fittings, repairing and replacing of waterproofing system, reinstallation of floor and wall tiles, shower fittings and shower screens, and any making good.

2. MATERIALS

GENERAL: Refer to Section 10 - Component Schedule for requirements.

WALL AND SKIRTING TILES: Use Australian manufactured first quality tiles, of white or approved colour, and fully glazed over the face of the tile but with glazed edges to border tiles as a minimum.

Tiles for repair are to match existing installations. Projects requiring complete retiling of either wall or floor elements, or both, are to be tiled with colours as directed. Tile sizing can be in the range of 100x100 to 250x250 mm. Tiles are to be laid in patterns or styles, and colours to approximate current trends.

Tiles shall have lugs not exceeding 0.5mm high. Tiles must be capable of satisfying the following requirements when tested in accordance with ISO 10545

Warpage - Not exceeding 0.5mm for any tile in the batch.– Crazing resistance - No sign of crazing when steam pressured at 350 kPa at 10 hourly cycles.

Water absorption - Weight of tiles must not increase by more than 18% of dry weight following immersion in water for 24 hours.

SECTION 3.9 – WALL AND FLOOR TILING

Chemical resistance of glazed surface - Resistance to dilute acids and alkalis.

FLOOR TILES: Ceramic tiles to be first quality within the range of 50 x 50mm (made up to modular sizes of approximately 300 x 300mm) up to 300 x 300mm (Generally 100 x 100 or 200 x 200) of approved pattern and non-slip surface glaze.

QUARRY TILES: Quarry tiles and quarry nosing tiles shall be first quality of approved manufacture, complying with the requirements of ISO 10545.

GROUTING: To AS3958.

THIN BED TILE ADHESIVE: Flexible rubber based Type 1 to AS2358

LEAK CONTROL FLANGE: Provide leak control flanges around floor wastes to all wet area floors. Installation to manufacturers written specification.

MOVEMENT JOINT FILLING SEALER: Silicone sealant or equal with mould inhibitor.

3. EXTENT

Unless otherwise indicated, provide tiling in the following locations:

KITCHEN: Provide three (3) courses of tiles (150mm x 150mm minimum), to walls over sink, stove and for full length of all fixed floor cupboards, including returns as applicable, extending behind stove for full width of stove. Extend wall tiles to rear of stove down to floor, remove skirting boards, supply and fix mould or quad to close off any gaps between face of tiles and floor. In addition to the above provide border, frieze or feature tiles to the tiled area in kitchen as per the approved colour scheme.

Where stove abuts a return wall, return tiles on that wall for a distance of 600mm.

Where space does not permit provision of three courses under window, tile to sill nosing (or to sill-returning tiles in reveals) extending to three (3) courses beyond window.

BATHROOM: Tile walls immediately over junctions with side, end/s and/or hobs (excluding bath riser) to a height of 9 courses over bath (Minimum height of 1800mm from floor level and 1350mm from top of the bath). Provide border, frieze or feature tiles to tiled area in bathroom as per the approved colour scheme. A capping strip to prevent water penetration is to be adhered to the wall above the border tile.

Tile riser and hobs to bath, finishing tiles flush with external lip of bath, neatly cut and fitted to bath. Provide two (2) 150 x 75mm matching glazed tile vents to bath riser if the bathtub is renewed.

Where hobs remain, fully tile all exposed surfaces.

Provide skirting tiles to walls to a minimum height of 150mm (or 2 x 100mm tiles) at junction with floor and bath riser if existing bathtub is not renewed.

Provide matching "shell" or "half-shell" soap-holder centrally placed in second or third row of tiles over bath, as directed.

SECTION 3.9 – WALL AND FLOOR TILING

Existing towel rails, shower curtain rails, toilet roll holder or grab rails in the field area of tiling are to be removed and refixed after tiling.

Where edge of bath and bathroom door architrave is less than 300mm, tile to back of architrave.

Where hob at opposite end exceeds 450mm, brick-in end of bath, remove bath plinth concrete where necessary and tile floor. Extend wall tiles in bond from over bath to corner and return wall up to door architrave or as indicated above.

LAUNDRY: Provide two courses of tiles over laundry tub. Where tub is located in corner lay two courses return tiling to full depth of tub to work full tiles.

SEPARATE W.C.: Provide skirting tiles to walls at junction with floor as indicated above.

INDEPENDENT HANDBASIN: Supply and fix wall tiles to full width of hand basin and full width of the tiles.

Area of tiling to independent hand basin is to extend from floor bonding with skirting tiles to a height of 830mm above floor tiles.

Where basin is on wall adjacent to bath, tile that wall complete to height of windowsill.

4. WORKMANSHIP

GENERAL: Set out tiles to give joints of uniform widths. Grade floor from all walls to floor wastes. Suitably prepare the substrates to receive the bedded finish.

PREPARATION:

Prepare area for tiling to tile and adhesive manufacturer requirements.

Provide Waterproofing system to masonry walls where directed, connect waterproofing to floor waterproofing system when required.

FLOOR TILING: to tile and adhesive manufacturers specified requirements.

SHOWER HOBS: Where directed, form new brick / concrete hob one course high to suit tiling.

WATERPROOF SHOWER RECESS: Where a shower recess is found to be leaking, remove floor tiles and wall tiles up to 2 courses high from floor and one tile each side of corners between walls. Waterproof floor and corners between floor and wall using one of the waterproofing systems listed in the Section 10 - Component Schedule. Install a vertical waterproof angle to corners of walls weathered over floor/wall junction flashing. Supply and fix a suitable floor waste to replace existing and provide leak control flange around floor waste. Retile the treated areas to match existing.

WATERPROOF BATHROOM FLOOR: Where a bathroom floor is found to be leaking, remove the floor tiles and skirting or wall tiles up to 2 courses high off floor level. Waterproof the whole of the floor and corners between floor and wall using one of the waterproofing systems listed in Section 10 - Component Schedule. Care is to be taken to ensure that all penetrations are sealed in with the general floor surface; particularly ensuring that water is not

SECTION 3.9 – WALL AND FLOOR TILING

contained by the penetration. Renew floor wastes and provide leak control flange around floor waste. Retile the treated areas to match existing tiling.

WATERPROOFING WALLS: Prior to tiling walls, where directed, provide a waterproofing system to connect with waterproofing floor system when required.

Waterproofing must be carried out by suitably qualified tradespersons.

FIXING OF WALL TILES:

WALL: in accordance with tile and adhesive manufacturers written specification.

FLOOR: Prime, seal or otherwise treat floors as recommended by manufacturer of tile adhesive.

Set floor tiles with a suitable waterproof floor tile adhesive, applied strictly in accordance with manufacturers written specification. Finish tiles flush with top of floor waste and brass angle.

Where new pedestal pan is to be installed, continuously tile under pan position leaving 50 x 50mm key recess in centre.

Clean off after pointing up, leaving joints full and smooth.

Core holes in floor under bath to be sealed to prevent entry of vermin.

Neatly fix tiles to bath flange, basin, or sink as applicable.

All internal wet area floor tiling shall fall directly to floor wastes. Ponding in wet areas will not be accepted.

5. JOINTING AND FINISHING

JOINTS: To be even and not more than 3mm wide to standard wall and floor tiles. Set quarry tiles with 10mm joints.

GROUTING: As specified within Standards

WALL TILES: Grout wall tiles with “white” coloured cement based sanitised grout, leaving joints full and smooth.

FLOOR TILES: Grout up with a suitable grout mix worked well into joints when bed is sufficiently firm to prevent disturbance of the tiles. Clean off surplus grout from face of tiles.

On completion of all work, clean down with 20:1 solution of water: muriatic acid then wash down with copious quantities of clean water to remove all traces of mortar and acid stains.

MOVEMENT JOINTS: Provide movement joints not less than 6mm or more than 10mm wide through the tile and bed to the floor being tiled. Locate joints over structural movement joints, at junctions between different background materials and/or to divide large tiled areas into bays, preferably rectangular, at 3m to 5m joint spacings in both directions, in accordance with AS 3958.1.

SECTION 3.9 – WALL AND FLOOR TILING

FLOOR WASTE: Adjust height of floor waste as necessary to suit new tiling levels. Where necessary provide new suitable floor waste, equal to the diameter of the existing waste (and sealed to the existing drainage with suitable sealant).

DOOR ANGLE: Provide 3mm thick brass or bronze angle or 5mm thick aluminium angle across the bathroom, laundry and/or toilet entry door. Securely fix to concrete floor with suitable 25mm stainless steel screws and suitable plastic plugs.

Angle is to extend a minimum of 25mm under tiles and is to finish flush with the finished surface of tiles.

Where tiles are to be glued, channel floor to ensure internal face of angle finishes flush with existing cement floor.

REMOVE AND REFITTING OF TAPS: Refer to Plumbing, Draining and Gas Fitting Section.

REMOVE AND REFITTING OF FITTINGS: (eg towel rails, toilet roll holder, grab rails etc.) Work to be completed in accordance with General Repairs and Replacement Section.

TRAFFIC: The Contractor shall be responsible for protecting the works and must make or arrange for adequate protection of the works during the initial curing of floors.

FINISH: After washing down with acid solution, allow to dry and then polish with a soft dry cloth to a clean finish. Protect all floor wastes, waste pipes and sumps from excess cement deposits when washing and sponging tiles during grouting, jointing, finishing and cleaning after completion.

6. COMPLETION

Remove all debris and leave the whole area in a clean condition.

END OF SECTION

Section 3.10

PEST CONTROL

SECTION 3.10 – PEST CONTROL

1. GENERAL

SCOPE: This section deals with the control and/or extermination of any or all of the pests described in the Schedule of Pests, in and around the dwelling/s specified in the Work Order.

WORKING PRACTICES: Refer to Legislative and Policy Conditions and the Code of Practice for the safe use of pesticides including herbicides in non-agricultural workplaces.

The work is to be carried out in accordance with the Legislative and Policy Conditions in particular the following Acts, Codes of Practice, Standards and/or Guidelines as amended:

- AS 3660.2: Termite management
- AS 4349.1: Inspection of buildings,
- AS 4349.3 Timber pest inspections
- Occupational Health & Safety Regulations,
- Pesticides Act
- Code of Practice for the safe use of pesticides including herbicides in non-agricultural workplaces.

And, all other relevant standards, Acts, codes of practice and guidelines.

LICENSING OF OPERATORS: All persons, Contractors and/or employees using pesticides for the destruction or control of pests are required to hold a NSW Urban Pest Control (Licensing) Statement of Attainment and a Work Cover Pest Control License. All work must be carried out in accordance with the Occupational Health & Safety Regulations.

COMPLIANCE WITH LEGISLATION: The Contractor and his/her employees or agents shall at all times comply with the requirements of any relevant legislation administered the Department of Environment and Climate Change, and the provisions of the Pesticides Act and the Codes of Practice and/or Guidelines.

PROFESSIONAL INDEMNITY INSURANCE: Contractor's undertaking Pest Control or Property Pest Inspections must provide details of current Professional Indemnity Insurance to the Principal's Representative prior to undertaking any work.

CONTRACTOR: The Contractor MUST give appropriate notice in writing in accordance with Department of Environment and Climate Change (DECC) requirements.

2. MATERIALS

Chemical pesticides shall be industry standards appropriate for the control of rodents and/or insects in domestic environments– and must be registered with the Australian Pesticides & Veterinary Medicine Authority (APVM).

BAIT STATIONS: Tamper resistant type, polypropylene with key. Bait stations should not be placed where they are accessible to children, pets or wildlife.

BIRD PROOFING: Use continuous 12mm mesh bird wire with appropriate fixing. Lap and lace together min. 150mm where required.

SECTION 3.10 – PEST CONTROL

3. SCHEDULE OF PESTS

Category	Type
General Pests:	Cockroaches Ants Spiders Wasps (including European Wasps) Silverfish Carpet beetles Stored product insects
Fleas	Fleas
Rodents:	Mice Rats
Birds:	All
Subterranean termites and/or Borers:	All

4. TREATMENT

GENERAL PESTS: The Contractor is to eliminate all general pests from the following areas of the dwelling: the complete interior, including linen cupboards, built in wardrobes, bath tub recess voids, kitchen cupboards including the void to the rear of kickboards; all cracks and crevices which may harbour insect pests or through which access is gained to the interior of the dwelling; carpets and the edge of the carpets specifically for fleas or carpet beetles; roof voids, wall cavities, accessible sub floors, out buildings and the exterior surrounds of the building where appropriate.

The Contractor shall at all times use techniques for the control of the nominated pests, consistent with good pest control practice.

FLEAS: The Contractor will eliminate all fleas and their eggs from the dwelling and the immediate surrounds, using appropriate techniques, including blanket spraying of all grassed areas around the dwelling and the carpet inside the dwelling for fleas and eggs. All appropriate safety procedures (in accordance with manufacturers written specification) should be implemented when undertaking blanket spraying.

RODENTS: The Contractor will eliminate all rats and mice from the dwelling and the immediate surrounds using appropriate baiting techniques. Rodent baits should only be used in suitably identified containers marked "POISON" and should be placed so as not to allow access to them by children, pets and wildlife.

BIRDS: The Contractor will remove all species of bird nesting in the roof void and/or wall voids of the dwelling and seal all points of entry. All nesting material should be removed and all areas treated to eliminate bird mites in the roof area and interior of dwelling(s).

The Contractor must not use any bird distress poisons (eg. 4-aminopyridine) without the prior approval of the Principal's Representative.

SECTION 3.10 – PEST CONTROL

5. INSPECTIONS AND TREATMENT

SUBTERRANEAN TERMITES AND BORERS: All inspections and works in relation to subterranean termites will be carried out according to AS 3660.2: Termite Management Part 2 in and around building and structures – Guidelines and AS 4349.3: Inspection of buildings Part 3: Timber pest inspections. "

The Contractor will be required to carry out inspections for the presence of subterranean termites and woodborers as directed in the Work Order. The inspection should include the sub-structure and sub-floor space, flooring, skirting boards and architraves at all levels. All accessible roofing timbers should also be inspected, as well as the boundary fence lines and any out buildings.

On completion of the inspection, a written report shall be submitted to the Principal's Representative pursuant to AS 3660.2.

The Certificate MUST be in the format of Section 3.1 and address items (a) to (q) and;

- whether chemical barrier, the areas treated, name of the chemical and active constituent used, the concentration applied, and total volume used,
- whether physical barriers have been installed at all appropriate locations in accordance with AS3600.2.

and, Durable Notice fixed to the premises as detailed in AS3660.2 Appendix D.2

In determining the treatment method to be used the Contractor should be aware of the Principal's preferred options, which are described as follows:

(1) Subterranean Termites:

- Wherever possible initial treatments should be directed towards eradication of the termite colony from which the infestation is originating. This can be achieved by either direct treatment of the workings with any approved chemical application system approved by APVM (Also refer page * of Australian Government, Department of Health & Aging – Office of Chemical Safety – Termite Protection: Available Treatments & Hazard Information – <http://www.tga.gov.au/docs/pdf/termite.pdf>) or where the location is known, direct treatment of the nest either by dusting or emulsions, all in accordance with AS3660-1993, Section 5 and Appendix F.
- Buildings and their contents should be protected by establishing a chemical barrier, in accordance with AS 3660, Section 3 and Appendix F, around all substructure walls, and all piers, stumps, waste pipes and conduits connecting the superstructure with the soil. Horizontal and Vertical barriers are to be at least 300mm and 150mm wide respectively.
- Buildings with concrete slab foundation may require the formation of chemical barriers through sub-slab injection.
- Following each application and on completion of a treatment, a Certificate pursuant to clause 3.7 of AS3660.

(2) Borers:

- Architraves, skirting boards and other moulded timbers should be removed and destroyed. Replacement timber should be painted with a primer or varnish on all surfaces after cutting to fit. (Only a licensed tradesperson may undertake this type of work.)
- Other timber (eg. studs, bearers) should be injected with an approved non staining chemical application system.

SECTION 3.10 – PEST CONTROL

Should the Principal's Representative consider that the proposed remedial treatment quoted above is such that it warrants seeking advice from other Contractors for that specific work, the Principal's Representative shall be free to seek such alternative advice for that work, and may enter into a contract with another Contractor for the purpose of executing that specific remedial work.

6. GENERAL RESPONSIBILITIES

STAINING: The Contractor must accept full responsibility to protect ceilings and walls from permanent stains arising out of liquids or powders used during the progress of the Works, and must at all times protect the property of both the Principal and the tenant. The Principal reserves the right to reject the use of any liquid or powder that it considers may damage its property or that of its tenant.

TENANT'S PROPERTY: The Contractor shall be held fully responsible for the care of the tenant's personal effects against damage of any kind during the execution of the work.

RE-INFESTATION: If re-infestation occurs during the warranty period, the property shall be re-treated at the Contractor's own expense. If in such circumstances, the Contractor fails to fulfil the terms of the warranty, the Principal may have the work carried out by other means and meet the cost out of monies due to the Contractor by the Principal under this or any other contract.

PESTICIDES: It is the responsibility of the Contractor to ensure that any pesticide which has been used or proposed for use is registered for the purpose under the Pesticides Act.

7. PRE-PURCHASE PROPERTY INSPECTION

The Contractor may be required to undertake Pre-Purchase Property Inspections and report on the presence of timber pests and damage, and the presence of rodents and general pests.

All tools and equipment necessary for an inspection must be provided by the Contractor at the Contractor's expense.

INSPECTION REPORT: Must contain all items list in Section 5 above, as well as;

- a list of locations infested by rodents and general pests (refer Schedule of Pests, Section 3 above) and identification of causes for their presence. A site plan and/or building sketch plan to be provided and marked accordingly.
- any eradication, remedial or preventative measures considered necessary.

CONTRACTORS ASSESSMENT: The Report shall detail the Contractor's assessment and any reasons upon which such an assessment is made of:

- (i) the risk of termites gaining access through areas inaccessible to inspection (possible undetected entry),
- (ii) the risk of destructive timber pest activity affecting the property considering location, environment and other factors that may support such activity, and
- (iii) whether access holes should be made to ensure full and thorough inspection of any important areas otherwise inaccessible to inspection.

SECTION 3.10 – PEST CONTROL

8. COMPLETION

Remove all unused baits, containers, signs etc from Site at the completion of the treatment. If required, wash down surfaces to remove any residual chemicals.

END OF SECTION

Section 3.11

TELEVISION ANTENNA

SECTION 3.11 – TELEVISION ANTENNA

1. GENERAL

SCOPE: This section deals with the installation, service, testing and reporting on antenna systems. It applies to multi unit dwellings. It does not cover high rise buildings (high rise are buildings with lifts).

CROSS REFERENCES: Refer to sections:

- Section 4 - Electrical Works,
and any other Section where appropriate.
- Code of Practice 2001- Low voltage electrical work
- Code of Practice 2004 - Safe work on roofs.

The work is to be carried out in accordance with the Legislative and Policy Conditions in particular the following Acts, Codes of Practice, Standards and/or Guidelines as amended and All other relevant standards, Acts, codes of practice and guidelines.

SERVICE: The Contractor shall be fully conversant with present day repair techniques, have a service organisation capable of first class work standard, and be able to provide all necessary testing equipment to ensure adequate signal strength for good reception.

CARE OF TENANT'S PROPERTY: The Contractor will be held fully responsible for the care of the tenant's personal effects against damage of any kind during the execution of the contract. The cost of handling and removal of the tenant's effects necessary for the satisfactory completion of the Works are included in the relevant Schedule Rate.

2. WORKMANSHIP AND MATERIALS

The Contractor shall be fully conversant with the latest Australian Standards at all times, as these standards will apply to all work carried out.

MATERIALS AND SPARE PARTS: All materials utilised for the Works are to be the best of their respective kinds and are to comply with the relevant Standard and are to be of equal dimensions, sizes, weights and quality as the materials used in the original assembly or recommended by the manufacturer of the antenna/amplifier unless otherwise directed.

The material/spare parts used in the performance of the Works are to be purchased direct from the manufacturer of the equipment or the official distributor or from a supplier of replacement parts.

MINIMUM PROCEDURES REQUIRED: The Contractor shall provide, with the Claim for Payment, a drawing/schematic (either by hand or CAD) of the system being serviced/modified both before and after. The drawing is to be of:

- The section of the TV system being serviced in a Multi Dwelling unit of more than four (4) outlets, or
- The whole TV System if four (4) outlets or less.

THE DRAWING/SCHEMATIC SHALL INCLUDE THE FOLLOWING DETAIL:

- The address, if the total number of outlets is four (4) or less;

SECTION 3.11 – TELEVISION ANTENNA

- The address and portion of the premises being serviced if the total number of outlets is more than four (4) eg: 240 Job Street Suburb, Block C, Lower 4 Floors, East side of building and /or, Unit Numbers 8 to 24.
- Description of all components to be replaced, including brand name /model name/number.
- Nature of the fault for each component to be replaced and signal levels/ quality at component Input and Output
- Brand and model name/number of new replacement components, plus new component signal readings (as above).
- Show units of measurement used on all signal readings, ie dBuV / dBmV

THE ACCOMPANYING DOCUMENTATION SHALL INCLUDE THE FOLLOWING DETAIL:

- Address/Portion of premises to be serviced
- Name of contact on Site
- Signature of Contact person on Site to indicate their satisfaction with the service

The Principal's Representative may, audit the Work for compliance with the requirements of the Contract. All relevant documentation and parts will be inspected at the Contractors office.

The Contractor is required to have a technically qualified person available to answer questions on the contractor's behalf relating to the Work being audited at no additional expense to the Principal.

The Contractor is required to clearly label and store for a period of up to one year, all removed materials/components These materials/components to be handed to Principal's Representative on request (NOT INCLUDING CABLES).

3. COMPLETION:

All debris and surplus material associated with the work is to be removed from the property. The Contractor is to wait on all trades and make good thereafter. Where the work is arranged as a separate job, ie not on a Work Order, the Contractor shall notify the Principal's Representative, in writing, when the job is completed and ready for final inspection. Report any roof damage to the Principal's Representative.

END OF SECTION

Section 4

ELECTRICAL WORKS

SECTION 4 – ELECTRICAL WORKS

1. GENERAL

SCOPE: This section deals with the all electrical work including electrical cabling, fittings and equipment to buildings and common areas.

Carry out all electrical work in accordance with the requirements of AS 3000, Electrical installations: Buildings, structures and premises (SAA Wiring Rules), and meet the local supply authority requirements.

If the requirements in this Section 4, Electrical Works, are incompatible with the relevant electricity distributor's distribution system design standards, the electricity distributor's standards and requirements will apply.

During the course of work, notify the Principal's Representative if any defective items are found which are outside the scope of works, and where any part of the installation does not comply with the SAA Wiring Rules or the local supply authority requirements.

STANDARDS: Carry out all work in accordance with the relevant regulatory authorities' requirements applicable to the type of work involved, and particularly with the following: -

- AS 3000 and AS/NZS 3018 (Electrical Installations).
- AS 3786, AS 1670.6 (Smoke Alarms).
- AS 2053.1-8, AS/NZS 3008.1, AS 3013, AS 4296, AS 5000.1 (Electrical cabling).
- AS 3439, AS 3947.3 (Switchboard).
- AS 2293.1, AS 293.3, AS 60598.1 (Luminaries).
- AS 14443.1-4 (Proximity Cards).
- AS 60335.2 (various sub sections) (Domestic Electrical Appliance Safety).
- AS1158 Lighting for Roads and Public Spaces
- All other relevant standards, Acts, codes of practice and guidelines.

REGULATORY AUTHORITIES: Applicable regulatory authorities include (but are not limited to) the following: -

- Energy Australia
- Integral Energy
- Australian Gas Light Co.
- Local Government authorities
- Local electricity providers.

All electrical work involving power supply and electrical fittings must be carried out by suitably qualified tradespeople or competent person under the direct supervision of an appropriately qualified and licensed person.

WORK STANDARDS AND MATERIALS: All materials used must be of first quality, free from defects or blemishes. Carry out the whole of the work in accordance with good general trade practice and to match the existing in all details, where applicable. Make all materials to be used available for inspection by the Principal's Representative. Provide all necessary materials, finishes, equipment etc., even where not specially mentioned, but necessary for the satisfactory completion of the work.

COMPLETION OF WORK: Remove all debris and surplus materials associated with the work from the site and disposed of appropriately. Make good any damage caused while undertaking the work.

The Principal will provide a schedule of items (sub-components) to the Contractor that will be required to be bagged and tagged by the Contractor after replacement, and retained until the Principal gives approval to dispose of them following a Quality Audit.

SECTION 4 – ELECTRICAL WORKS

2. MATERIALS

MATERIALS: Comply with Section 10, Component Schedule. Where there is no listing notify the Principal's Representative.

Colour / Finish of all internal power outlets, light fittings and switches. Provide polycarbonate, in white or a colour to match the existing fittings.

SOCKET OUTLETS: A reference to "socket outlets" is a reference to general purpose outlets (GPO's).

WIRING: Ensure replacement wiring is PVC/TPS insulated.

3. EQUIPOTENTIAL BONDING AND EARTHING ARRANGEMENTS

Prior to carrying out any other work ensure that all "sink benches, metal water pipes, metal shower trays etc." are properly secured and bonded.

4. TESTING AND COMMISSIONING

TESTING: Test all systems and equipment after installation for correct and reliable operation. Where requested by the Principal's Representative, demonstrate the operation of the system or equipment repaired.

COMMISSIONING: Clear away rubbish, clean and make good any soiled or damaged surfaces, replace faulty lamps and other components, and hand over the completed installation in good working order.

5. DESCRIPTION OF WORK

GENERAL

ELECTRICAL WORK: On completion, self test all work and complete a Certificate of Electrical Work as appropriate.

ELECTRICAL REWIRING: refer to Electrical Re-wire sub-section .

EARTHING: Prior to carrying out any work, test the circuits on which work is to be undertaken in accordance with the latest edition of the SAA Wiring Rules to ensure that the earth system is satisfactory.

EARTHING ELECTRODE: Earthing electrode and lead shall comply fully with the requirements of the SAA Wiring Rules.

REPLACEMENTS: Install all electrical appliances in accordance with manufactures' specifications and the supply authority's requirements. Test all systems and appliances after installation for correct and reliable operation.

Unless otherwise noted, install the following minimum number of outlets in each dwelling:

SECTION 4 – ELECTRICAL WORKS

	<u>Lighting</u>	<u>Power Points</u>
Living area/room	1	2 x double
Dining area/room	1	1 x double
Kitchen/cook area	1	1 x single (refrigerator) 1 x single (range hood, if installed) 1 x single (microwave shelf, if installed) 2 x double (above bench)
Stairway	1	
Each bedroom	1	1 x double
Bathroom	1	1 x single
Enclosed hallway	1	
Laundry	1	1 x double
Attached carport	1	
Exterior doorway	1	each
Separate toilet	1	
Garage (attached or under)	2	1 x double

REPAIRS: Carry out all repair work in accordance with manufactures' recommendations.

TENANTS LIGHT FITTINGS: Re-install any tenants' light fittings removed to allow rewiring or other work.

LIGHTING

LAMPS: Lamp replacements generally are not required, but replace any existing lamps broken or damaged whilst work is being carried out.

LIGHT OUTLETS: Provide new light outlets to all entries as required, separately switched internally.

LIGHT SWITCHES: Control lighting outlets by 10 amp flush switches mounted under moulded flush plates cut flush into architraves or walls in existing positions. Mount new switches, 1000mm above floors or where directed by the Principal's Representative.

When replacing switches check and make good wiring to the switch. Provide single, double triple or 4 gang light switches (architrave or wall mounted), ceiling switches, combination light/fan dimmer switches, weatherproof light switches and cover plate to light switches as required.

ROCKER SWITCHES: Check and make good wiring to the switch, supply and install a new large rocker switch, including earth, and sleeve where required. Provide these in disabled person and pensioner modified dwellings ONLY or as directed by the Principal.

BATTEN HOLDERS: Unless otherwise specified provide "Electric white", heat resistant type batten holders with polyester skirts, with which the body cannot be extracted without first removing the base securing screws. Where mounted under junction boxes, provide an enlarged base but firmly secure all others on wooden battens fixed to ceiling joists or roof trusses or a similar frame component.

SLOPING CEILINGS AND SOFFITS: Provide adjustable type white heat resistant batten holders where the height is 2400mm or less. Where the height exceeds 2400mm a flexible drop in lieu of batten holders.

SECTION 4 – ELECTRICAL WORKS

LIGHT FITTINGS: Check and make good wiring to the fitting, supply and install light fitting and accessories, including Ceiling Rose, Mounting Base, Flex Pendant & Lamp Holder (heat resistant), Batten Holder (white heat resistant or colour to match), Mounting Flange and Adjustable Batten Holder as required.

SKIRTING SHIELD: Supply and fix a new shield to the batten holder (skirt), which is heat resistant and matches the existing.

NEW LIGHT AND DIFFUSERS: Supply and install new internal or external lights complete, to suit location and environment. Provide heat resistant batten holders fixed to eaves or walls, with concealed wiring to the existing circuit, and separately switched.

NEW LIGHT CIRCUIT: Supply and install additional light circuits, including circuit breakers (up to 20amp) and wiring from meter board to fitting.

LIGHT FITTING COMPONENT: Supply and fix a new component to the light fitting. A component may be:- 100W Incandescent globe; energy saving long life globe; fluorescent tube and starter (18W for length up to 600mm; 36W for length up to 1200mm) with diffuser where specified (all above excluding lights mounted on posts); Sodium vapour lamp; and 50W or 80W mercury vapour globe (all types).

Install new fluorescent fitting including diffuser, tube(s) and starter (generally in bathroom), and remove the existing fitting and make good. Use masonry anchors or screws to materials. Use a 18W or 36W tube, in a single or twin fitting as specified. Supply and install earthing to the fluorescent fitting where no earth wire exists.

BALLAST FITTING: Supply and fix a new ballast [all sizes] up to 40W to suit the fluorescent fitting, or 80W to suit a mercury vapour fitting.

MAKE GOOD: Check and make good wiring to existing light switches, light fittings, GPO's (both elements) and smoke alarms.

SENSOR SWITCH: Day/night sensor switch complete to suit the incandescent and fluorescent load, including brackets, masonry fixing to wall as required and testing.

TIME DELAY SWITCH: Check and make good wiring to the switch, and supply and fix a new time delay switch, including mounting block as necessary (Button type), equal to "Clipsal 319".

COMMON AREA TIME CLOCK: Check and make good wiring to the fitting, and supply and fix a new approved type of common area time clock to the meter board.

OVERRIDE SWITCH: Supply and install an override switch to the meter board for common area lighting, as required.

COMMON AREA LIGHTING

COMMON AREA LIGHT SHADE FITTING (Wall Mounted/Post Top/Bollard): to comply with Category 'P' AS1158, , including checking and making good the wiring at the fitting. To match the existing or otherwise as directed (Note to suit different levels of potential vandalism).

POST TOP: Galvanised steel posts to suit the new common area light shade fitting, from 2m, up to 4.5m mounting height, and minimum 3.6mm thick x 75mm diameter, minimum 60 micron hot dipped galvanised M.S. post.

SECTION 4 – ELECTRICAL WORKS

VANDALITE: Wall or eaves mounted, including checking and making good wiring to the fitting.

ELECTRICAL CABLING: Supply and install heavy-duty underground conduit complete with electrical cabling connected to supply, including all excavation and backfilling.

Supply and install electrical cabling within wall and roof spaces, where possible, connected to common area supply.

Supply and install heavy duty ducting with cabling securely fixed to walls, eaves etc.

EMERGENCY LIGHTING – Install energy efficient exit signs.

INTERCOM SYSTEMS

QUICK MODULE READER: Remove and dispose of existing and supply and install a new entry quick module weatherproof reader (all approved types) installed to manufacturers written specification.

PROXIMITY CARD: Supply one only proximity card programmed (all approved types) to suit the building and unit dwelling.

DOOR STATION: Supply and install a 4, 6, or 8 button door station (as directed), all mounted or recessed type, weather proof, and installed to manufacturers written specification.

BUZZER BUTTON: Supply and install a new buzzer button (all approved types) for the intercom system, in accordance with the manufacturers written specification.

POWER SUPPLY: Supply and install a new 12 volt D.C. power supply (all approved types) for intercom system, in accordance with the manufacturers written specification. All types.

REED SWITCH: Supply and install a new reed switch (all approved types) for the intercom system, in accordance with the manufacturers written specification.

ELECTRIC DOOR STRIKER: Supply and install a new electric door striker/lock (all approved types), including checking and making good wiring to the fitting, in accordance with the manufacturers written specification.

Wiring from the door striker to the entry quick module, including all weatherproof components to secure entry to the dwelling, all in accordance with the manufacturers written specification.

HAND SET: Supply and install wall or desk mounted handset and base (all approved types) for the intercom system, including checking and making good wiring to the unit, all in accordance with the manufacturers written specification.

ENTRY LOCK CYLINDER: Supply and install a new tradesman entry lock cylinder, HCE entry type.

DOOR ALARM: Supply and install a new door alarm light and fitting for the intercom system, and check and make good wiring to the alarm light unit, all in accordance with the manufacturers written specification.

POWER OUTLETS

POWER OUTLETS: Where power outlets are being replaced or altered, sleeve any bare earth wires with green PVC sleeving.

SECTION 4 – ELECTRICAL WORKS

POWER OUTLETS: Install power outlets comprising of combination flush switch socket outlets of the rating specified with red dot to indicate "ON" position and with moulded flush plates, mounted flush in wall linings of timber framed walls or in metal wall boxes chased flush into brickwork 1000mm above the floor, except in kitchens, bathrooms, and laundries where all outlets and switches shall be positioned in accordance with SAA Wiring Rules.

On completion all moulded flush plates on switches and power outlets must be electric white when on painted surfaces and walnut when on stained woodwork.

LOCATION: Where existing power outlets are renewed, re-install in the existing position.

REPLACE OUTLET AND SWITCH: Check and make good wiring to the GPO, supply and fix a new switch, including an earth wire sleeve where required. Provide suitable GPO outlet combination switch, one way key operated switch, double GPO outlet combination switch or combination light switch and power outlet single or double.

WET AREAS: Supply and install a new double waterproof power outlet, including an earth wire, sleeve where directed, in disabled person and pensioner modified dwellings .

COMMON AREAS: Supply and fix a complete surface mounted protected switch plug combination [Lockable], equal to "Wilco" W.I.C.M. 415 H.C.

WIRING

INSPECTION: When requested Inspect and supply a written report on the condition of the existing wiring at a dwelling. Check the earthing and repair the earthing system to suit supply authority requirements.

MAINS CONNECTION BOX: Remove and dispose of existing and supply and fix a mains connection box, including repairing the circuit as necessary. Pay any fee to disconnect/reconnect supply, and liaise with supply authority as needed for the work.

MAINS: Remove and dispose of existing and supply and fix either: single phase consumer mains T.P.S. or multi phase consumer mains, installed in the roof space with no mains connection box. Provide not less than 16 mm² wiring, maximum length 18m. Pay any fee to disconnect / reconnect and liaise with the supply authority as needed for the work.

Fix a main earth in conjunction with the mains, and liaise with the supply authority as needed.

Supply and install consumers neutral link to the switchboard, to suit supply authority requirements.

FUSE UNITS: Replace switch fuse units that are beyond repair with circuit breakers. Where fuses cannot be replaced with Circuit Breakers see direction from the Principal..

CIRCUIT BREAKER: Supply and install/fix a circuit breaker, single phase or multi phase miniature De-ion 8-55 amp – 3KA, equal to Email Scanlec, with a Traffolyte type label. Where the circuit breaker replaces a fuse wedge, remove and dispose of the existing unit.

RESIDUAL CURRENT DEVICE: Supply and install either a combined residual current device circuit breaker or a residual current device to protect lighting/power circuit – 20amp-3kA. Label circuits "Protected" with a Traffolyte type label – Remove and dispose of existing.

SECTION 4 – ELECTRICAL WORKS

LOCAL ISOLATION SWITCH: Supply and install an isolation switch for cooking appliances and hot water heaters, complying with supply authority requirements and SAA Wiring Rules. For Class 9 Properties (Group Homes) Isolation Switch are to be key locked to prevent unsupervised operation of cooking appliances.

DEDICATED POWER CIRCUIT: Provide a permanently connected, dedicated power circuits for cooking appliances and hot water heaters, to suit the specification and rating of the proposed appliance and complying with supply authority requirements and SAA Wiring Rules. If a new appliance is specified, allow to relocate the power connection to suit the new position.

Supply and install wiring to range with circuit breaker, – with a maximum run of 18m, including circuit breaker and flexible connection.

Supply and install wiring to hot water unit with circuit breaker, with a maximum run of 18m, including circuit breaker and isolating switch.

OTHER ITEMS:

Replace a meter box in the existing position, including reconnection of the existing wiring and supply and install a new meter board, circuit breakers & earth leakage device, in accordance with the supply authority requirements.

Remove and dispose of existing and supply and fix/install a galvanised metal raiser bracket to the point of attachment.

ELECTRIC FAN/PANEL HEATERS

REPLACE HEATER COMPONENTS: Remove existing and supply and fit the new component, in accordance with the manufacturers written specification.

WALL MOUNTED/RECESSED FAN/PANEL HEATER: Provide as specified wall mounted/recessed fan/Panel heater to suit the room size and average minimum winter temperature, complying with Section 10, Component Schedule.

Remove existing heatbank, re-use wiring, fittings, etc where possible and use new wiring, fittings, etc where necessary.

COMBINATION LIGHT/FAN HEATER: Supply and install a combination light fan and heater only as directed by the Principal.

EXHAUST FANS/RANGE HOODS

ELECTRIC EXHAUST (VENTILATOR, RANGE HOODS) FANS: Fit fans in accordance with the manufacture's recommendations, with ducting where appropriate, of fire and heat resistant material.

WIRING TO FAN: Supply and fix wiring to a fan installed by others, and make ready for operation. Connect into a light circuit and terminate in a 3 pin plug base adjacent to the fan. Supply and install a switch marked "FAN" in the position directed.

SECTION 4 – ELECTRICAL WORKS

EXHAUST FAN INSTALLATION: Supply and fix 250mm exhaust fan to double brick or brick veneer wall/timber wall/ceiling with no ducting/window as specified, equal to Mistral or Airflow wired into a convenient circuit with a switch marked "FAN" in the position directed. Provide all wiring, parts and materials, with wiring concealed in a cavity. Remove and dispose of the existing.

Where required install ONLY a new 250mm exhaust fans as above.

EXHAUST FAN/RANGE HOOD WITH DUCTING: Supply and install a new fully ducted exhaust fan/range hood as directed. Ducting to be enclosed behind bulkhead matching to kitchen laminates and to match exhaust fan/range hood. Thickness of the ducting to be minimum of 0.5mm (galvanised steel ducting). Penetrate the roof covering, flash with material compatible with the existing roof cladding, and supply and fix a cowl. Make good, waterproof and bird proof ducting. Provide all new wiring and switches. Remove and dispose of the existing exhaust fan/range hood, and reuse existing wiring where possible.

ROOM VENTILATOR EXHAUST FAN: Supply and install and fix a new room (wall mount) ventilator exhaust fan (continuous flow), (see Section 10 – Component Schedule) in the position directed. Fit in accordance with the manufacturers written specification. Remove and dispose of existing. Reuse existing switches and wiring. Fit to masonry / timber walls, and provide an external cover plate, ducting, all wiring and switches as required.

CEILING FAN: Check and make good wiring to fitting, and supply and install a 3 blade ceiling fan in accordance with the manufacturers written specification.

WASHING MACHINE/DRYER

WASHING MACHINE REPAIR

COMPONENT REPAIR: Remove and retain when directed sub-components that are beyond economic repair and supply and fix the sub-component of the washing machine, with the parts and installation in accordance with the manufactures' specifications.

CLOTHES DRYER REPAIR

COMPONENT REPAIR: Remove and retain when directed sub-components that are beyond economic repair, and supply and fix sub-component to the clothes dryer, with the parts and installation in accordance with the manufacturers written specification. Remove and refit to the wall where required.

REPLACEMENT OF WASHING MACHINE/CLOTHES DRYER

WASHING MACHINE: To be installed where directed a new front loading washing machine for pensioner housing; for common areas, general housing and Group Homes), including fitting hoses and waste, and disposal of the replaced item, in accordance with the Component Schedule.

CLOTHES DRYER: To be installed where directed (3.5 kg or 5kg capacity) and dispose of the replaced item, Section 10, Component Schedule.

ELECTRIC RANGE

STOVES: Prior to carrying out any work on a stove, i.e. replacement of elements or controls, test the insulation resistance with a 500v megger. If an unacceptable test is observed, contact the Principal's Representative for direction.

SECTION 4 – ELECTRICAL WORKS

FIXED COOKING APPLIANCES FUNCTIONAL (ISOLATING) SWITCHES: Install functional switches (emergency cut-off) to fixed and stationary electric cooking appliances, including stoves, ovens, hot plates etc. Mount switches in an accessible position, within 2 metres of the appliance. Switches to have neon indicator and engraved. Isolation switches in BCA Class 9 dwellings (Group Homes) should be able of emergency cut off and be able to be key locked to prevent cooking appliances from being turned on without supervision

ELEMENT: Remove and retain the replaced element and supply and fix a new element, as specified, in accordance with the manufacturers written specification.

Remove and retain replaced parts, as specified, and supply and fix the component, in accordance with the manufacture's specification.

NEW EQUIPMENT: Disconnect and remove existing, and supply and install either a new range, electric cook top or electrical wall oven, as specified, including fixing down with approved clip, and disposal of the replaced item. Provide the type of range directed and comply with Section 10, Component Schedule.

Where directed for properties scoped by Occupational Therapist supply and install either a new range or elevated oven and cook top with side hinged door, as specified, fix down with an approved clip. Provide the type of range directed and comply with Section 10, Component Schedule.

HOT PLATE COOKING TOP: Supply and install a hot plate cooking top including all wiring, circuit breakers and cutting of a hole in the bench top to accommodate the hot plate cooking top. New stovetops are not to be radiant type elements.

WALL OVEN: Supply and install a wall oven, including all wiring and circuit breakers. – Supply and install 240V single phase electric supply to wall cupboard where new wall oven to be housed. Refer to Drawing KD11 for cupboard layout.

SMOKE ALARMS

GENERAL: This clause deals with the installation, replacement and servicing of smoke alarms. Comply with Section 10, Component Schedule and AS 3786, and for installation with AS 1670.6 and AS 3000.

Remove and dispose of existing smoke alarms as directed. If hard wired, terminate the ends safely and out of sight in accordance with the SAA Wiring Rules.

Remove and replace faulty alarms still under warranty and return the faulty alarm to the manufacturer for disposal at no expense to the Principal.

Where smoke alarms are owned by the tenant, return them to the tenant after removal.

Make good any areas damaged by the installation and removal work and holes resulting from the work. Paint areas that have been made good or marked during the work to match the existing.

Run all surface wiring in white low profile conduit installed in accordance with the manufacturers written specification. Do not install wiring in eaves or the cavity of full brick or brick-veneer walls.

GENERAL MAINTENANCE AND TESTING: For each individual smoke alarm and associated piece of equipment:-

- Check and ensure that the 240 Volt mains power indicator is ON.

SECTION 4 – ELECTRICAL WORKS

- Switch off the 240 Volt mains circuit to the smoke alarm(s).
- Where possible, remove the smoke alarm from its mounting base. For those models with fixed wire connections that cannot be unplugged, carry out the remainder of this procedure with the smoke alarm in-situ.
- Where possible, inspect the smoke alarm mounting hardware inspect attached strobe lights/isolation switch, and ensure it is secure and it will reliably mount the smoke alarm. If the mounting or ceiling is damaged to the point where the smoke alarm cannot be securely and reliably fixed, reinstall the mounting hardware.
- Visually inspect the smoke alarm for any obvious damage, signs of wear or reason to indicate potential failure, if any are present replace the smoke alarm.
- Clean the external surfaces of the smoke alarm with a damp soapy cloth, then wipe dry. Do not open the smoke alarm, as to expose its components, in attempting to clean in this area may result in damage to the smoke alarm.
- With a soft brush attachment, vacuum the smoke alarm to remove dust and other contaminants. Take particular care to remove such things as spiders' webs and lint.
- Where the smoke alarm is removed, and where in-situ and with the 240 Volt circuit OFF, press the test button to ensure the back-up battery is capable of operating the smoke alarm.
- With the smoke alarm removed, and where in-situ, with the smoke alarm temporarily covered, spray the surface surrounding the smoke alarm with a (6) six months surface insect spray. Prevent surface spray from entering the sensing chamber.
- Re-install the smoke alarm and restore the 240 Volt circuit.
- Check and ensure the mains supply indicator is ON.
- Press the test button to ensure the smoke alarm operates correctly.
- Record all details of work performed and forward a report to the Principal's Representative in the format directed or prescribed. Note where a new unit has been installed it is included as a "new installation" for future maintenance and testing.

Affix the appropriate label inside the 240 Volt mains distribution switchboard detailing the "Last Date Tested" along with the company logo, name and signature of the person who carried out the procedure.

Return defective alarms, with location and reason for testing, to the manufacturer for retesting (all cost borne by the Contractor including retesting). Provide a monthly spread sheet to Housing NSW verifying smoke alarms retested and the reasons why.

NEW SMOKE ALARM: Replace ionisation/photoelectric/ Visalert strobe light smoke alarms where found to be vandalised/unserviceable, including disposal of the replaced item.

Supply and install either a new ionisation smoke alarm, photoelectric smoke alarm or strobe light smoke alarm, as specified, including all wiring ducting etc.

HUSH BUTTON: Supply and install a hush button (fixed to wall) for smoke alarms as directed, including all wiring, ducting, etc.

ELECTRICAL RE-WIRE

COMPLETE REWIRE: Supply and install all necessary materials and labour for the renewal of all electrical wiring to completely rewire a dwelling including all electric and gas/electric services as specified. Generally all work must be in accordance with the current SAA Wiring Rules, AS 3000. Supply and install all necessary equipment materials. Remove and dispose of existing, and supply and fix all new electrical wiring from the point of attachment (including consumer/service mains, meter-box, switchboard and metering equipment). Remove and dispose of

SECTION 4 – ELECTRICAL WORKS

existing, and supply and fix all new sub-circuits, residual current protection devices to both light circuits and power circuits (including fridges), toggle type circuit breakers, isolation switches to cooking appliances, all existing light fittings (excluding tenant's fittings), switches and power outlets, the provision of additional power circuits and outlets and associated work for buildings. Pay all fees, charges, levies and deposits to allow to disconnect/reconnect supply, and liaison with supply authority. Renewal of meter box is required as part of these works unless the box is metal and good condition and contains no Asbestos cement.

METER BOX: Remove existing and relocate and fix a new meter box to the position directed (in conjunction with re-wire above if required).

Supply and install energy authority padlock for meter boxes and switch room door, as directed.

TELEPHONE CABLING

Contractors are to arrange or provide wiring, repairs and cabling as required for telephone services to the main distribution frame or first telephone socket including pit conduits and draw wires as required.

6. MATERIALS

MATERIALS AND SAMPLES:

Unless otherwise specified, all cables must be copper conductors insulated with V. 75 Grade PVC to suit AS 3147 and AS 3008.1.

Cables must be of Australian manufacture, approved for use by the relevant supply authority.

Where directed submit for approval, prior to commencing installation, samples of electrical accessories, fittings and equipment proposed for use in the Works. The Contractor may only install items that have been approved. Failure to comply with this provision may result in the rejection of such items.

Remove any rejected materials, accessories and equipment from the site within 24 hours of such a rejection.

CONDUITS: Use rigid PVC conduits Cat. A U/G to AS 2053 (set) where plastic conduits are required, except where flexible types are specified.

CONSUMER MAINS: Except where otherwise directed by the relevant supply authority use the existing points of attachment. Install consumer mains to local supply authority requirements from the point of attachment to the main switchboard using tough plastic insulated and sheathed conductors installed in the roof spaces in the manner specified in the clause, Wiring.

Provide a minimum number of phases and increase the size of conductors where required by the relevant supply authority.

Mains connection boxes are not required. Where installed in other than roof spaces protect mains by means of plastic conduits.

CONSUMER METER AND SWITCHBOARD: Where metal meter boxes do not exist or insufficient space is available at existing positions, supply and install in the position approved by the supply authority an approved meter box, capable of housing a combined meter and switchboard, complying with supply authority's requirements.

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METERBOX: Provide a recess type meter box, of galvanised steel construction, with a top hinged cover complete with stay and catch, and a weather-strip (25 x 25 x 1.2mm galvanised iron) rivet fixed and welded to the sides and top, and rivet fixed to the bottom. Keep the weather-strip 70mm from the back of the meter box in timber framed walls, and 115mm in full brick or brick-veneer walls. Over flash at the top.

Where meter boxes are renewed, ensure all affected surfaces are made good to match the existing on completion.

SWITCHBOARD: Supply and install in the meter box an approved type self-contained switchboard with switches and circuit breakers for the circuit controls.

MAIN SWITCH: Provide an approved type switch to local Supply Authority Requirements with a current rating 50% greater than the maximum demand of the whole installation connected.

LABELLING: Label each item of equipment on switchboards using of engraved laminated plastic labels with three layers, white/black/white, equal to Traffolyte, with lettering not less than 4mm high and fixed by self tapped stainless steel screws.

Local metering situation the circuit breakers specified are to be used as main switches but separate from the other circuit breakers and labelled accordingly.

CIRCUIT BREAKERS: Protect sub-circuits by thermal/magnetic type circuit breakers to current Wiring Rules and to capacity requirements of property with fault current capacity not less than 3kA. Label all SP-CB/RCD Power circuits "Protected". Provide current ratings as follows:-

RESIDUAL CURRENT DEVICE (RCD) (SAFETY SWITCHES): Provide RCD protection to all final sub-circuits containing socket outlets and lighting, including refrigerators/freezers. Provide a combination of RCD/circuit breaker where individual RCD for all Lighting Circuits and RCD for all power circuits are not possible. Install RCD's in the meter box for detached dwellings, and in a sub-board within the unit whenever possible, for multi unit dwellings.

Fix directions on how to use and test RCDs in a visible location within the meter box or sub-board explained to the tenants where possible.

Where there are 2 or 3 phases provide appropriate switches and circuit breakers, and where required by the supply authority increase the rating of switches, and wiring on the above to comply with requirements.

Confirm with the supply authority before finalising details of the requirements for consumer mains and switchboards.

ELECTRICAL INSTALLATION: Where site inspection reveals that power points and light outlets have been either renewed or installed in recent times, using wiring as specified in this specification, and the installation complies strictly with this specification, do not replace such wiring.

Re-install lighting outlets, power outlets and appliances in the existing positions, new and position outlets as directed. Provide additional light and power outlets and power circuits to meet the requirements of this specification.

Re-install tenant's light fittings in existing positions.

SECTION 4 – ELECTRICAL WORKS

7. WIRING

Install single insulated cables where sub-circuit or sub-main wiring is enclosed in conduit. Elsewhere install concealed thermoplastic sheathed (TPS) cables.

Run all cabling in roof spaces where possible with loose drops to outlets and switches.

Do not install cabling below the ground floor unless written consent is first obtained. Where wiring is permitted below the ground floor level protect the conductors in Cat. 'A'. PVC conduit.

Do not install cabling in eaves or the cavity of full brick or brick-veneer walls.

Except where otherwise specified, hereinafter, carry out all wiring using TPS conductors. Neatly clip wiring to the sides of ceiling members at maximum 600mm spacings or to the side of 38mm x 23mm battens provided across the top of ceiling joists.

Carry out wiring using the "loop-in" system. Do not join conductors between terminal connections.

Do not fix conductors to the side of wall plates or other ceiling members where they are vulnerable to damage by the fixing of cornices, wall boards, etc. Use loose drops to power outlets and light switches, and loose conductors capable of easy replacement without removal of wall linings or any structural work.

Conceal conduits throughout and, where run on brickwork, chase in to permit a minimum 10mm covering of rendering. Where a conduit is embedded in concrete, use C.A.T. "B" U/G 20mm minimum conduit.

Carry out final connections of permanently connected equipment by installing a standard wall box where a rigid conduit terminates, or a wall bracket in timber-framed structures, with terminators and a blank plate. Enclose cable in a flexible PVC conduit. Take care when locating wall boxes to avoid excessive lengths of flexible conduit.

Ensure conduit enters and is securely attached to all wall boxes and the terminal enclosures of all appliances. Terminate PVC conduit to ranges and water heaters in flush mounted boxes complete with take off angle adaptors and approximately 900mm of flexible plastic conduit.

Ensure earthing complies with the system of the local supply authority, and earthing in roof spaces and wall framing so it emerges adjacent to the connection to water pipes or copper clad electrodes securely fixed to building structures.

In areas where earthing to copper water pipe is required, make the connection with suitable copper or brass clips in the position required by the supply authority.

SPECIAL NOTE

(1) Give tenants at least forty eight (48) hours notice of any proposed interruption to the electricity supply, which is not to be interrupted during non-daylight hours or for a period of more than six (6) hours during any one day.

(2) Install all wiring in such a manner as to give the rating of circuits specified and increase the size of wiring where necessary for long runs to comply with SAA Wiring Rules, Clause 2.2.3 'Voltage Drop'.

END OF SECTION

Section 5

PLUMBING WORKS

SECTION 5 – PLUMBING WORKS

1. GENERAL

SCOPE: This section deals with roof plumbing, storm water, general plumbing, sanitary fixtures, plumbing fixtures, sewer, hot water (electric), hot water (gas), gas and gas appliances.

STANDARDS: Carry out all work in accordance with the relevant regulatory authorities requirements applicable to the type of work involved, and particularly with (but not limited to) the following: -

- AS 3500 (all parts as nominated by the regulatory authority)
- NSW Code of Practice for Plumbing and Drainage (current edition)
- AS 1056, AS 1361, AS 3142 & AS 3498 (hot water)
- AS 1639, AS 2180, AS 1562, AS 2179 AS 2180 & AS 2424 (roofing, gutters and down pipes)
- AG501 and AG 601 (Gas Codes)
- Regulatory Impact Statement, Protection of the Environment Operations (Waste) Regulation 2005
- All other relevant standards, Acts, codes of practice and guidelines.

REGULATORY AUTHORITIES: Applicable regulatory authorities include (but are not limited to) the following: -

- Sydney Water Corporation
- Australian Gas Light Co.
- Local Government authorities
- Local electricity providers
- Local water supply authority
- Local gas supply authority

All work involving waste disposal, water supply and plumbing fittings must be carried out by suitably qualified trades people or competent persons, under the direct supervision of an appropriately qualified and licensed person.

WORK STANDARDS AND MATERIALS: All materials used must be of first quality, free from defects or blemishes. Carry out the whole of the work in accordance with good general trade practice and to match the existing in all details, where applicable. Make all materials to be used available for inspection by the Principal's Representative. Provide all necessary materials, finishes, equipment etc., even where not specifically mentioned, but necessary for the satisfactory completion of the work, are to be included into the Works and form part of the Contract.

COMPLETION OF WORK: Remove all debris and surplus materials associated with the work from the Site and dispose of it appropriately progressively and on completion. Make good any damage caused while undertaking the work.

PIPE WORK: The Principal requires all Pipe Work in all dwellings to be metal. Contractors must seek approval from the Principal to use alternative Piping material in Class 1 dwellings, subject to theft etc. Pipe work in Class 2, 3 & 9 Dwellings should be metal in accordance with the Principal's Fire Safety Program. Note: Do not replace metal pipe with UPVC/poly butylenes or other material in any dwelling unless approval is sought prior.

LEAD: Where lead waste pipes are found, remove and replace with an approved piping material suitable for the purpose/building.

EARTHING AND BONDING: Comply with Section 4 Electrical Works.

CERTIFICATES AND TEST REPORTS: Where a license is required to carry out any work under the Contract (water, sewerage, gas, LPG etc) or accreditation (thermostatic mixing valves, backflow prevention device etc),

SECTION 5 – PLUMBING WORKS

provide evidence of compliance before the work commences where relevant and a Certificate of Compliance, Inspection and Maintenance Report, Commissioning and Test Report and the like, within 7 days of completion of the work.

PENETRATIONS: All penetrations are to comply with relevant Standards and are to comply with the Principal's Fire Safety Program.

2. ROOF PLUMBING

NEW GUTTERING:

Removal of Existing Guttering: Strip the whole of the existing eave gutters on all elevations of the specified dwellings. Take care during the removal of guttering to ensure that a minimum of disturbance is caused to existing fascias and roof coverings. Dispose of waste materials off the Site.

Generally: Provide factory pre-painted type guttering materials

Components:

Size and Profile	Generally 115mm Quadrant type
Thickness	0.6mm gauge
Brackets	Concealed type at 900mm maximum spacings fixed using galvanised helical nails or proprietary clips
Joins	No joins are permitted in guttering under 10.0 metres in a single straight line. Silicone seal and pop-rivet fitted joints
Angles	Factory pressed sheet metal or die-cast
Expansion Joints	Provide in single straight lines of guttering over 30.0 metres long
Nozzles	Factory pressed sheet metal, die-cast or PVC
Colour	To match the existing or, if no match exists, a near match as accepted or directed by the Principal's Representative

Installation: Grade guttering to outlets so that all roof water will completely drain off to each discharge point and keep it high enough to hide the ends of roof tiles. Water flood test all gutters at the completion of installation and provide written certification to the Principal's Representative that no ponding occurred during the gutter test.

Relay roof tiles (or metal sheeting) removed for the renewing of gutters neatly and truly when gutter work is completed. Replace any missing or broken tiles to match the existing and re-bed capping, including over-flashing of fascias under hip starter tiles using 0.7 mm thick zinc, and point up where disturbed.

Take care to ensure that gutter beads on all elevations are straight and true when completed.

VALLEYS:

Material	0.6 mm thick zincalume steel
Profile	450 mm wide with edges turned over
Joins	Lapped 150 mm at joints close riveted and set in sealant
Fixing	At <i>top</i> , galvanised nail or screw to prevent valley gutter creeping downwards; At <i>sides</i> , galvanised nails bent over edges

REPAIRS TO EXISTING GUTTERING

SECTION 5 – PLUMBING WORKS

Note: Do not use lead flashing in conjunction with pre-painted guttering. Use minimum 0.7mm thick zinc or another material by the Principal in lieu of lead.

Generally: Provide the same profile and finish as the existing guttering for repairs. For replacement guttering use Zincalume material painted externally the same colour as the existing. Use silicone sealed pop-riveted joins.

CLEAN OUT EXISTING GUTTERING:

When cleaning downpipes, the downpipe must be removed from the shoe to prevent the obstruction being flushed down into the stormwater. After removal of the obstruction re-attach the downpipe to the stormwater.

GUTTER GUARD:

Refer to other Section 3.4

NEW DOWNPIPES:

Removal of Existing Downpipes: Strip the existing downpipes on all elevations of the specified dwellings. Take care during the removal of downpipes to ensure that a minimum of disturbance is caused to existing guttering and stormwater connections. Dispose of removed materials off the Site.

Generally: Provide factory pre-painted type downpipe materials, except for downpipe bases where required.

Components:

Size and Profile: Generally 100mm x 50mm or alternatively other profiles to suit the same as the existing.

Thickness: 0.6mm gauge

Brackets: Purpose made factory pressed astragals spaced at maximum 1800mm intervals

Joins: Where joins are fitted, lap them in the direction of flow and pop-riveted them.

Angles: Rectangular, with offsets formed with lip outside the joint, double pop riveted into position and sealed with silicone. Round downpipes factory pressed sheet metal or die-cast

Connections: Into gutter nozzle at top, into earthenware or PVC stormwater at the base

Colour: To match the existing or, if no match exists, a near match as accepted or directed by the Principal's Representative

Downpipe Bases (where required): Provide cast iron 1800mm high (with ears), 100mm x 75mm or 100mm round bases, fixed to the wall at the top with suitable fixings and secured at the base into the stormwater drainage pipework or, if no pipework exists, securely fixed to adjoining structure.

Installation: Supply and install new downpipes where they were originally fitted or are directed. Connect them at the heads with eave gutters and terminate the base into the stormwater drainage system. Seal downpipe bases into stormwater with either cement mortar (earthenware S/W) or PVC adaptors to suit (PVC S/W). Secure them to wall or other vertical surfaces with astragals fixing using galvanised screws and washers. Pack out 25 mm from the surface to clear stringer courses and plinth moulds (where necessary).

REPAIRS TO EXISTING DOWNPIPES

Generally: Provide the same profile and finish as the existing downpipes for repairs. For replacement downpipe use Zincalume material painted the same colour as the existing. Where joins are fitted, they are to be lapped in direction of the flow and pop-riveted.

COLOURS: Generally to match the existing or the approved colour scheme by the Principal's Representative.

SECTION 5 – PLUMBING WORKS

3. SEWERAGE AND STORMWATER DRAINS

GENERAL:

Unless otherwise directed or specified, fill all trenches in immediately pipe laying is completed.

EXCAVATION IN ROCK: Rates for excavation in rock must be as agreed or determined by the Principal's Representative prior to any excavation. The measurement of excavated rock will be limited to the amount of rock determined by the Principal's Representative as necessary to adequately perform the required works.

REACTIVE SOIL: All sewer, stormwater and subsoil piping is to be PVC. The Contractor may use alternative materials only with the prior approval of the Principal's Representative and at no additional cost to the Principal.

Make appropriate provision for reactive soils and subsidence in mining areas where they occur on the Site.

MATERIALS:

- (A) Sewerage drains: Use 100/150mm UPVC to AS 1260 (DWV) and solvent cement fittings to AS 1260, all stamped and branded as conforming to Australian Standards.
- (B) Sullage/Stormwater drains: Generally UPVC to AS 1260 (DWV ^{sewer} grade) and solvent cement fittings to AS 1254. For sullage drains between gullies and waste connections UPVC sewer grade pipes and fittings as for sewerage drains.
- (C) Stormwater drains (across driveways and footpaths): Use either cast iron, ductile iron or galvanised steel in accordance with AS 3500.3.
- (D) Sullage pits: Use 1500mm x 1500mm x 450mm deep pits with two absorption trenches 2400mm x 450mm x 450 deep with the trench drain manufactured from recycled plastic in U shaped sections 1500mm long x 350mm high.

ALTERNATIVE MATERIALS:

Use the following alternatives only where permitted by the relevant authorities and only with the approval of the Principal's Representative.

Use approved UPVC pipes and fittings, Type SWV for sanitary plumbing, Class "SH" to AS 1260 for sewerage and sullage drainage lines other than across footpath and in driveways, subject to the following additional requirements:

- (A) Indelibly marked approved UPVC. pipes every 450mm with the name of the material and with the manufacturers Trade Name.
- (B) Suitably marked approved UPVC fittings with the name of the material and with the manufacturers Trade Name.

WORKMANSHIP:

Sewer drains: To AS 3500.2

Stormwater drains: To AS 3500.3

Sullage pits/drains: Use construction methods adopted from and in compliance with AS 1547, Appendices 4.5A.

SECTION 5 – PLUMBING WORKS

Metal for filter trenches must be clean 20mm blue metal (or a suitable approved equivalent in areas where blue metal is not available).

Where so directed, notify the Principal's Representative prior to the commencement of work on pipelines and trenches, and leave excavations open for inspection. Backfill all excavations immediately after inspection unless otherwise directed. Compact backfill to allow for settlement to ensure that filled excavations remain level with level with the adjacent ground level.

PIPELINES: Excavate for, provide and construct, pipelines as specified in the Extent of Works and any sketch or drawing.

LINES – Vitrified Clay:

- a) Install Vitrified Clay generally in accordance with the requirements of the relevant authority.
- b) Lay all pipelines in straight runs from each change of direction with uniform falls, solidly bedded on barrels in accordance with lines and levels, as specified on the Work Order or otherwise specified, with joints closely butted with inverts flush and each length swabbed where necessary. Provide cleaning eyes at each change of direction and at not more than 9 metre intervals in straight runs.
- c) Make joints with rubber compression rings or cement mortar composed of two (2) parts clean sharp sand and one (1) part of cement, with each joint neatly splayed off.
- d) Take care to observe all given and required dimensions, grades, and the like, and fill any excess excavations in trenches with suitable material at no additional expense to the Principal.
- e) Ensure the minimum grades of such lines, and for agricultural pipes are laid in accordance with the Plumbing Codes and local Supply Authority requirements.

LINES UPVC:

- a) Install UPVC generally in accordance with AS 2032, with joints solvent welded to suit manufacturers written specification.
- b) Provide for the whole length of the drain line, suitable compressive supports at 1500mm maximum centres. Where the excavation is in sand or loam free of hard objects, lay the pipes directly onto the suitably graded trench base.
- c) Locate pipe at the centre of trench, to correct grade and alignment with true invert, with spigot ends pointing in the direction of flow. Provide suitable access or inspection openings at maximum centres and positions required by the relevant authority.
- d) Provide minimum regulation cover as required and where such cover cannot be obtained refer to the Principal's Representative for direction.
- e) Fill in over the full width of trench and to a depth of 300mm over the pipes with selected soil, sand, loam or fine aggregate free of rock or other hard particle over 10mm. Excavated material complying with above may be used as fill material. Use the excavated material otherwise for the final backfill.
- f) UPVC Connection To Vitrified Clay:

SECTION 5 – PLUMBING WORKS

- (i) UPVC to Vitrified Clay Socket: Use suitable adaptor to suit the compression required of a Vitrified Clay rubber ring. Do not use mortar joints.
- (ii) Vitrified Clay Spigot to UPVC: Use suitable adaptor as above and connect to vitrified clay spigot through a Vitrified Clay double socket and rubber rings.

4. FITTINGS

TAPS: Comply with Section 10, Component Schedule.

Where directed to replace existing tap ware, fit new chrome plated, satin chrome or powder coated brass Bib taps, Pillar taps, Washing Machine taps, Stop taps, Cistern taps, Shower Sets, Basin Sets, Bath Sets, Kitchen Hob and Wall Sets as required. Fit matching tap handles complete with "H" and "C" or colour coded (red-hot, green or blue-cold) buttons as applicable.

5. MAINTENANCE OF GAS

MATERIALS AND SPARE PARTS: Comply with Section 10 Component Schedule.

Ensure all materials for the Works are the best of their respective kinds and comply with the relevant standard and are of equal dimensions, sizes, weights and quality to the materials used in the original construction, or are as recommended by the relevant manufacturers unless otherwise directed.

6. SERVICE

Ensure relevant personnel are fully conversant with all relevant present day repair techniques, provide a service organisation capable of a first class work standard and are able to provide all necessary testing equipment. The repairs required are not limited to equipment only, repairs may be required to services associated with equipment/appliances (water pipes, gas pipes, taps, valves, fittings, flues and flashings etc).

Carry out equipment/appliance services in accordance with the manufacturers written specification and the relevant regulations.

Provide a written report detailing why any equipment/appliance is condemned for replacement.

7. INSTALLATION OF GAS & ELECTRICAL HOT WATER HEATER, GAS STOVES AND ROOM HEATERS

GENERAL: Comply with Section 10, Component with hot water heaters, gas stoves and room heaters.

HOT WATER SERVICE: Install water heaters and hot water services in accordance with manufacturers written specification and as specified hereunder. The use of flexible connectors to connect Hot Water Services is NOT permitted either internally or externally.

SECTION 5 – PLUMBING WORKS

NOTE: Instantaneous gas HWS cannot be installed in bathrooms, toilets, bedrooms, combined living sleeping rooms or any other unventilated room. Internal gas instantaneous HWS should be replaced with electric Instantaneous or with external gas HWS.

Make minor adjustments to factory set appliances such as gas stoves and room heaters to ensure their suitable operation.

TEMPERATURE LIMITING VALVES: Tempering Valves (temperature limiting valves) are to be used in all BCA Class 1, 2 and 3 buildings. Thermostatic Mixing Valves (TMV's) are to be used in BCA Class 9 Dwellings ONLY or as directed by the Principal's Representative..

GAS STOVES AND ROOM HEATERS: Install gas stoves and room heaters in accordance with manufacturers written specification and the gas supply requirements.

WATER HEATER (GENERALLY): Use new copper pipe and suitable fittings for the various outlets.

Thoroughly remove all internal rough edges from pipes after cutting, ensuring the bore is left not less than the nominal size of pipe. Keep all exposed pipework level and plumb, fitted tight to walls and set neatly around obstructions where applicable. Neatly secure pipes to walling at not more than 1350mm centres with suitable type brass or copper saddles (with brass screws) and with suitable plugs. Lay pipe runs outside buildings in the ground to a depth of at least 230mm cover and under buildings secure pipes to floor timbers and concrete floors in a suitable manner using brass or copper clips or brass straps (with brass screws) at 900mm centres. . Ensure that runs of exposed Hot Water Piping is minimised. Insulate (appropriate lagging) and secure pipes to prevent heat loss and water hammer.

Neatly finish off all solder/welds etc, free from lumps and with all surplus flux and cleansing agents thoroughly washed off and exposed pipes left free from marks, stains and lumps. Thoroughly flush out the whole of the new service and leave the pipes, fittings and taps in good working order, free from leaks.

Check all electrical earth clips are connected in accordance with power supply authority requirements.

Ensure that the electricity is turned off at the meter and test that circuits are de-energised before temporarily disconnecting the electrical earth clips.

Advise the tenants prior to the power being turned off and reconnect power without delay in accordance with Section 4, Electrical Works.

Neatly fit tubing where passing through timber, concrete or brickwork, secure and insulate to prevent water hammer, heat loss and damage to pipes.

Entry through ventilators will NOT be permitted.

Neatly reset bricks removed for the installation of pipes in cement mortar and neatly point up holes cut through walls to match existing work and clean down walls on completion.

Remove all disused pipe, fittings, hooks, plugs and the like, (except pipe fittings laid in ground) and cap off all exposed pipe. All disused pipe to be removed from the Site and disposed of in accordance with the Contractors WRAP plan. Make good damaged walls, etc. to suit the existing.

SECTION 5 – PLUMBING WORKS

Restore roof coverings, wall surfaces, roof timbers, mouldings, framings and the like, damaged, disturbed and removed to enable service to be installed, to the original condition, and rectify any material damaged during the progress of the work at the Contractor's expense.

EXTERNAL GROUND MODELS: Install weatherproof heaters externally where directed by the Principal's Representative on concrete bases to meet requirements of AS3500.4.

Connect 13mm OD copper drainpipes to combined temperature/pressure relief valves, to discharge externally clear of wall faces in directed position. Preferable to discharge over yard gully

INTERNAL MODELS: Fit internal models with a safe tray and safe waste drained in accordance with the relevant regulations.

PRESSURE LIMITING VALVE (Mains Pressure Only): Provide and fit to cold water inlet lines, in accessible positions, between heaters and non-return valve/stop tap, a suitable pressure limiting valve set to suit the manufacturers written specification, lower than the setting of the top relief valve.

Extend the 19mm OD main run from the heater with a 19mm OD branch to showers, a 16mm OD branches to other single outlets and a 13mm OD branch to basins.

FITTINGS: Carry out joining of copper tube to required current Australian Standards.

Carry out pipe work in straight runs and minimise the use of elbow fittings. Ensure tees formed in runs do not have any tube protruding into the water flow.

Only bending CP or unplated tube where a suitable mechanical pipe bender is used. Provide all bends by a suitable method of pipe softening and do not provide cold, sharp flattened or crimped bends, or the like, in lieu of gradual sweeps.

COLD WATER CONNECTIONS: No additional payment will be made for the freezing of pipes to make repairs, adjustments or additions to water services.

Connect heaters to the main cold water supply using 19mm OD Type B copper tubing to a wall surface termination, and 13mm OD Type B Chrome Plate tubing (up to 2 metres length) for connection of the heater.

Install a 13mm stop tap for the heater water supply. Provide a suitable non-return valve where required by the relevant supply authority.

Use approved combined stop tap/non-return valve in lieu of separate items where required.

CONCEALING OF PIPES: Unless otherwise specified, conceal all pipe work in walls, cupboards, ceiling areas or under floors, except short sections exposed to view within the dwelling to heaters and hand-wash basins. Provide close fitting CP domed wall flanges where new tubing enters/emerges from wall face.

Chrome plate all new exposed hot and cold water piping and fittings in the dwelling, unless specified otherwise.

Terminate hot and cold connections to heaters at the wall face with a male thread protruding for the separate connection of heaters with CP tubing.

Securely fix all pipe work to prevent movement when taps are used.

SECTION 5 – PLUMBING WORKS

Replace materials damaged during removal with matching new materials including any existing wall tiling.

Carefully remove and restore wall sheeting as necessary to conceal pipe work.

Bore neatly through top and bottom plates, noggings and timber and concrete flooring and neatly cut away small section of noggings, etc., as necessary to conceal pipe work.

SOLAR HOT WATER SYSTEMS: Install only min 300L Solar Hot Water Systems. Install all Solar Hot Water Systems as required by the manufacturer. Solar Hot Water systems must be installed with appropriate Solar panels (collectors) correctly located, solar pump and electric hot water boost.

Solar Hot Water Systems to be installed with Tempering Valve (equal to RMC Orange Cap) and Solar Transfer Valve (equal to RMC) where connected with booster heater.

8. TESTS

Ensure that completed hot water services are capable of withstanding hydrostatic pressure equal to that required by the supply authority for cold water services. Test the pressure where required by the Principal's Representative.

9. ELECTRICAL WORK

NOTICE AND FEES: Make all arrangements with the supply authority for the connection of supply, including the service of all notices and paying all fees and charges required by the authority. Supply all necessary electrical fittings, materials and accessories to complete the work in accordance with this specification.

10. GAS SERVICE

Test the gas service in accordance with the relevant authority requirements.

Extend existing services with pipes and fittings made and assembled in accordance with gas supply authority and manufacturers written specification.

Install all component parts of the extension, such as pipework and fittings, so that they are removable without damage to either piping or the building.

In dwellings with timber ground floors, secure pipe work under floor framing at 1800mm max. centres with screw fixed clips of similar material to the pipe work.

For underground installations, during backfilling of service trenches, lay a warning tape above and for the full length of buried pipes of durable plastic material, minimum 100mm wide, marked continuously with "GAS PIPE UNDER" and colour to AS 1345.

Install brass gas control taps for water heaters.

REPLACEMENT GAS APPLIANCES: Instruct tenants in the use of appliances and ensure manufacturers operating instructions are left with the tenants.

SECTION 5 – PLUMBING WORKS

11. CERTIFICATE OF COMPLIANCE

Provide a Certificate of Compliance to the Principal's Representative along with the Work Order.

12. INSPECTION

Inspect and report to the Principal's Representative on the condition of appliances and flues where any such work is required under the Work Order.

13. REPAIR/REPLACE

Install and repair all gas appliances in accordance with manufacturers written specification and relevant authority requirements. Test all systems and appliances after installation for correct and reliable operation.

Leave all appliances in first class condition and full working order.

Clean all appliances. Remove all rubbish and trade waste from the Site progressively and on completion.

FLEXIBLE CONNECTIONS: Provide 'PLUMQUIK' or equal.

BLOCKED DRAINS: Drains must be cleared to the full diameter of the pipe and for the entire length of the sewer. Clear blocked gully traps for the full diameter of the trap. Ensure that all drains operate properly after unblocking. Provide a detailed report of the cause and location of blockage to the Principal's Representative using the Principal's approved report.

14. MATERIALS

WASTE PIPES: Use PVC pipe, copper, or cast iron.

WATER SERVICE, SINGLE DWELLING: Use 20mm copper pipe.

GAS / WATER PIPE, COPPER: Copper tube.

HOT WATER HEATERS: Comply with Section 10, Component Schedule.

COOKING APPLIANCES AND HEATERS (GAS): Comply with section 10, Component Schedule

ALL VALVES: Provide as recommended by the hot water cylinder manufacturer.

SEALANTS: Provide mould inhibiting silicone sealants.

SECTION 5 – PLUMBING WORKS

15. COMPLETION

Remove all debris and surplus material associated with the work from the dwelling/property. Make good on completion. Where the work is arranged as a separate job, i.e. not on a Work Order, notify the Principal's Representative, in writing, when the job is completed and ready for final inspection.

END OF SECTION

Section 6

PAINTING WORKS

Section 6.1

PREPARATION FOR PAINTING - EXTERIOR / INTERIOR

SECTION 6.1 – PREPARATION FOR PAINTING – EXTERIOR / INTERIOR

1. GENERAL

SCOPE: This section deals with the preparation of unpainted surfaces and the surface preparation of previously painted surfaces ready for the application of coating systems specified in Section 6, Painting Works.

CROSS REFERENCES: Refer particularly to sections:

- Section 2 – Carpentry & Joinery and Minor Work.
- Section 3.2 – Reinstatement of Fire Damaged Property.
- Section 6.2 – Painting – Interior.
- Section 6.3 – Painting – Exterior.

SPECIAL NOTE: The use of mobile scaffolding and or scissor lifts or similar equipment to perform the work must comply with all standards, codes and manufacturers written specifications and recommendations.

ENVIRONMENTAL MANAGEMENT: Refer to Section 1

Carry out the work in accordance with the Legislative and Policy Conditions and particularly the following:-

- AS/NZS 2311: Guide to painting of buildings
- AS 4361.2: Guide to lead paint management Part 2: Residential and commercial buildings.
- all other relevant Acts, codes of practice, standards and guidelines.

2. MANAGEMENT OF LEAD CONTAMINATED PAINTED SURFACES

GENERAL: The Principal has a lead paint management policy that is aimed at minimising health risks to users of heritage and pre-1970 constructed buildings. The policy requires the condition of painted surfaces of such buildings to be assessed for the presence of lead paint before any surface preparation or re-painting commences.

Pursuant to this policy, the Principal may either:

- Conduct its own assessment of the extent of any lead contamination; or
- Direct the Contractor to carry out testing for the presence of lead paint before any surface preparation or re-painting commences.

“LEAD-SAFE” PRACTICE: Where assessment by the Principal or testing by the Contractor has established that the presence of lead exceeds the permissible level, all surface preparation and painting must be carried out in accordance with this clause 2 and the requirements of AS 4361.2, Guide to lead paint management.

TESTING BY THE CONTRACTOR: Testing is to be only carried out where the Principal's Representative, directs the Contractor to carry out testing for the presence of lead paint before any surface preparation or re-painting commences, carry out testing in accordance with AS 4361.2.

Testing may be carried out by the chemical colorimetric test reagent method, portable X-ray fluorescence method or by the collection of samples for laboratory analysis.

Laboratory testing must be carried out by a NATA accredited laboratory.

The minimum number of tests to be carried out on the interior painted surfaces of a room is:

- 1 per wall;
- 1 per ceiling;
- 1 per door;

SECTION 6.1 – PREPARATION FOR PAINTING – EXTERIOR / INTERIOR

- 1 per door frame;
- 2 per window assembly;
- 1 per skirting board; and
- 1 each on other items such as built-in furniture, picture rail and the like.

The minimum number of tests to be carried out on the external painted surfaces of a building is:

- 1 per wall;
- 1 per fascia;
- 1 per door;
- 1 per door frame;
- 1 per window assembly; and
- 1 each per auxiliary structure such as sheds, garages, pergolas and carports.

On completion of testing prepare a written report, setting out the results of all testing, and submit it to the Principal's Representative. The report must be in format approved by the Principal's Representative. The test report must also include details of the condition of the painted surfaces in terms of the criteria descriptions set out in the table below.

The Principal will examine the report and determine if "lead-safe" practices should be followed during re-painting. The Principal will then issue a Work Order for the painting and the Order will cover "lead-safe" practices where necessary.

Condition of Painted Surfaces	
Type of Building Component	Total Area of Deteriorated Paint on Each Component
Exterior components with large surface areas.	More than 1m ² of the surface of the component is blistered, flaked or peeling.
Interior components with large surface areas (walls, ceilings, floors and doors).	More than 0.2m ² is blistered, flaked or peeling.
Interior and exterior components with small surface areas (window sills, baseboards, soffits and trim).	More than 10% of the total surface area of the component is blistered, flaked or peeling.
Note: 'Building component' in this table refers to each individual component or side of a building, not the combined surface area of all similar components in a room (e.g. a wall with more than 0.2m ² of deteriorated paint is a "lead paint risk", even if the other three walls in a room are not a "lead paint risk").	

TRAINING: Ensure all personnel working on "lead paint risk" surfaces have satisfactorily completed a lead paint management training course held by the Master Painters Australia NSW Association or a course of equivalent standard.

PROTECTION OF PERSONNEL: Where working on "lead paint risk" surfaces, ensure that all personnel, the Principal's tenants and the public are protected from exposure to lead hazards in accordance with the requirements of Section 6 of AS 4361.2.

PAINTED SURFACES (INTERNAL or EXTERNAL): Where working on "lead paint risk" surfaces, take all necessary precautions to ensure the containment of all debris, dust and contaminants in accordance with the requirements of AS 4361.2, Section 5. Only remove all blistered, flaked and peeling paint by wet scraping and wet sanding as described in AS 4361.2, Section 3.4.4(a). Allow surfaces to dry. Then fill, sand smooth, dusted off and spot seal voids and imperfections.

SECTION 6.1 – PREPARATION FOR PAINTING – EXTERIOR / INTERIOR

Apply new paint in accordance with AS 2311:2000 and all other relevant requirements of the contract.

Collect up all paint scrapings and residue into sealed bags and properly dispose of it as required by the Environment Protection Authority.

Carry out the above procedures for both internal and external surfaces requiring repainting. Address the main aim in the above process and minimise the dust, fumes and lead contaminated spores entering the surrounding atmosphere, soil and waterways and causing health problems for people or animals.

CLEARANCE TEST: On completion of painting of “lead paint risk” surfaces the Contractor must carry out clearance testing in accordance with AS 4361.2. Prepare a written report, setting out the results of the clearance testing, and submit it to the Principal’s Representative. The report must be in format approved by the Principal’s Representative.

3. MATERIALS

FILLING, STOPPING AND CLEANING MATERIALS: Ensure all paint strippers, abrasive papers and blocks, cleaning agents, etching solution, mould inhibitors, rust inhibitors, size, stopping, knotting, fillers and other commodities are the types recommended by the coating manufacturer for the surfaces being prepared.

4. WORKMANSHIP

SURFACE PREPARATION: Prepare all surfaces to coating manufacturers written specification.

PROTECTION: Protect all building and tenants’ property from damage, including furniture, floor coverings, curtains, gardens, plants, and the like and make good any damage. When working on or about any open windows and doors ensure that any necessary temporary barriers are in position to stop dust and/or debris from entering the premises. Attach dust bags to all tools, in particular electric sanders and planes and ensure the encapsulation of all disturbed debris and dust.

CLEAN INTERIOR / EXTERIOR: Prior to painting, clean interior/exterior surfaces using sugar soap or a similar product to suit the manufacturers written specification to remove all accumulated dirt, chalk and grime.

After washing, rinse the area thoroughly with water and allow to completely dry before painting with undercoat or finish coat.

Dull all glossy paint areas with sandpaper or a fine steel wool before painting over.

DEFECTS: Ensure that all holes, cracks, defective joints and other defects in surfaces to be prepared and coated are made good. Patch with matching lining material, to suit the nearest complete surround of framing, any defect greater than 75mm diameter.

SURFACE TO BE COATED: Do not proceed with preparation if any substrate material or surface is of such a standard that, even with the preparation work called for in this section, it cannot be brought up to a standard that will allow first class painting/clear finishing.

Prior to carrying out any remedial works to the defective area inform the Principal’s Representative of the defective area so that any remedial works can be approved by the Principal’s Representative before being carried out. Post work approval for remedial works will not be granted by the Principal’s Representative.

SECTION 6.1 – PREPARATION FOR PAINTING – EXTERIOR / INTERIOR

DOORS AND WINDOWS: Check all doors and windows to ensure ease of movement and good working order with correct tolerances to allow for painting and reinstate weather grooves when required. Ensure any remedial work required is carried out in accordance with Section 2, Minor Repair Work.

PRE-PRIMED SURFACES: Sand down any breakdown or damage to the primer to a sound surface. Proceed with re-priming immediately.

DRYING OUT: Before paint/coating application allow surfaces to dry thoroughly.

BRUSH DOWN: Brush down all surfaces immediately before application, to remove dust, dirt and loose material.

HARDWARE: Remove all hardware on surfaces prior to commencing surface preparation.

5. UNPAINTED SURFACES - TIMBER PRODUCTS

DRESSED TIMBER: Ensure timber is smooth, free from raised or woolly grain, planing burrs or other machining defects. Slightly round or ease all sharp edges to ensure they can be properly coated. Sand to bring up to a smooth finish along the direction of the grain.

ROUGH SAWN TIMBER: Thoroughly brush along the direction of the grain to remove dust and dirt.

DAMAGE/DEFECTS: Scrape off any loose or soft material, including in all holes, depressions, resin/gum pockets, knotholes, surface splits, checks and any localised decay. After application of a primer/sealer, fill these areas with linseed oil putty or other appropriate external filler.

FIXINGS: Take all timber fixings below the surface to be paint/clear finished, but leave corrosion resistant timber fixings flush with the surface to be paint finished.

CLEANING: Remove all resin, grease and oil by wiping down with mineral turpentine or scraping. Allow to dry and remove all dust.

6. UNPAINTED SURFACES - METAL

STEEL: Remove loose rust and scale by hand-tool or power-tool cleaning. Use chemical pre- treatment to remove the last traces of rust and to inhibit rust formation to suit the manufacturers written specification.

ZINC/ZINC ALLOY COATED STEEL: Remove all grease, oil and other solvent soluble contaminants by wiping/brushing with mineral turpentine or white spirit. Finally wipe clean with clean rags/brushing and clean solvent. Allow to dry and proceed with the next operation immediately.

ALUMINIUM: Remove all grease, oil and dust by wiping/brushing with mineral turpentine or white spirit. Wash thoroughly with clean water. Allow to dry and proceed with the next operation immediately.

SECTION 6.1 – PREPARATION FOR PAINTING – EXTERIOR / INTERIOR

7. UNPAINTED SURFACES - MASONRY

BRICKS: Remove loose dirt, sand, aggregate and mortar by brushing down or blocking-off the surface with a flat stone/hardwood block.

Fill holes with a mortar/Latex (Waterborne) based filler.

Remove efflorescence by dry brushing or by wetting the surface and treating it with 10% commercial hydrochloric acid solution. Allow the surface to react for 5 minutes, scour the surface with a stiff bristle brush, wash off with clean water and allow to dry.

Dust down and wash cleaned surfaces with clean water and allow to dry.

CONCRETE: Remove grease/formwork oil with solvent or water and household detergent. Wash with clean water and allow to dry.

Fill unwanted holes with cement grouting and allow to cure. Remove loose surface material/surface projections with a flat stone.

Roughen slightly dense/glazed surfaces with coarse abrasive stones or by wetting the surface and treating it with 10% commercial hydrochloric acid solution. Allow the surface to react for 5 minutes, scour the surface with a stiff bristle brush, wash off with clean water and allow to dry.

Remove efflorescence by dry brushing or by wetting the surface and treating with 10% commercial hydrochloric solution as above.

Remove all dust and dirt by brushing, air blast, hosing, or scrubbing as may be necessary and allow to dry.

CEMENT PLASTER: Adequately cure and dry surfaces. If mould is evident, treat surfaces with one part sodium hypo-chlorite household bleach/three parts clean water solution or an approved proprietary anti-mould solution and allow to dry. Remove efflorescence by brushing only.

CONCRETE MASONRY: Remove loose dirt, sand aggregate and mortar by brushing down or blocking-off surface with a flat stone/hardwood block.

Fill holes with mortar/Latex (Waterborne) based filler.

If mould is evident, treat surfaces with one part sodium hypo-chlorite household bleach three parts clean water solution or a proprietary anti-mould solution and allow to dry.

Remove efflorescence by dry brushing or by wetting the surface and treating with 10% commercial hydrochloric solution. Allow the surface to react for 5 minutes, scour the surface with stiff bristle brush, wash off with clean water and allow to dry.

Remove all dust and dirt by brushing, air blast, hosing or scrubbing as may be necessary and allow to dry.

SECTION 6.1 – PREPARATION FOR PAINTING – EXTERIOR / INTERIOR

8. UNPAINTED SURFACES - CLADDINGS

FIBROUS PLASTER/PLASTER BOARD: Check for and remove release agents and other contaminants by washing with clean water and solvent as necessary, and allow to dry.

Where jointing compound and cast sheet surface finishes vary in porosity treat to ensure a first class finish.

Fill cracks and surface imperfections with patching plaster and lightly sand smooth. Remove all dust.

Where sheets do not contain asbestos remove completely all mould or growth to give a clean, smooth, sound base ready for recoating.

9. UNPAINTED SURFACES - PLASTICS

POLYESTERS (GRP) /PHENOL FORMALDEHYDES: Wipe all surfaces with methyl ethylketone or other suitable solvent. Lightly abrade with sandpaper, and dust off. Proceed with priming immediately.

UNPLASTICISED POLYVINYL CHLORIDE (UPVC): Wipe all surfaces with mineral turpentine, methylated spirits or white spirit. Lightly abrade with sandpaper and dust off. Proceed with topcoats applicable for walls/timber immediately.

10. PAINTED SURFACES - GENERAL

MOULD: Sterilise surface mould by washing/sponging the whole surface with a one part sodium hypo-chlorite household bleach to three parts clean water solution and then: -

- Allow the bleach to act for 30 minutes and wash off with clean water.
- Wash cloths/sponges regularly in clean water.
- Treat with anti-mould solution to suit the manufacturers written specification.

GAP FILLING: Make good, as far as practicable, all cracks, holes, indentation and damaged surfaces with putty, wood filler or plastic wood as appropriate in accordance with manufacturers written specification and also: -

- Allow to dry or set before sanding back level with the surface.
- Prime coat/seal timber before using putty.
- Wet cement base plasters before applying filler.
- For exterior wet areas, use only Portland cement base type or water-insoluble organic-base gap fillers.
- Cellulose based fillers (e.g. Polyfilla) are prohibited for exterior filling.

11. PAINTED SURFACES - GOOD CONDITION

ALL SURFACES EXCEPT ROOFS: Wash down surfaces with a solution of 5/10mL ordinary household detergent to 1 litre of warm water or a solution of 30gms trisodium phosphate to 1 litre of water.

SECTION 6.1 – PREPARATION FOR PAINTING – EXTERIOR / INTERIOR

Wash down with clean water to clean off and allow to dry. Alternatively, use a proprietary pre-paint cleaner in strict accordance with manufacturers written specification.

For heavy smoke and grease deposits on surfaces wash down with mineral turpentine, a 5% solution of ammonia or a 1:40 solution of sugar soap and water as necessary to remove the deposits.

Finally wipe over with clean absorbent cloths.

Prepare coatings which have chalked by sanding, brushing, water blasting (pressure must not exceed 1500psi except for fences) or other methods as appropriate.

Sand glossy surfaces to ensure good adhesion of the coatings to be applied.

12. PAINTED SURFACES - POOR CONDITION

TIMBER: Completely remove all blistered, flaked, excessively chalked and cracked paint to give a sound base for re-painting.

Scrape out all damaged or decayed timber and where the area is extensive, cut out and replace with treated timber primed (including end grain) before fixing.

Scrape off any loose or soft material, including in all holes and depressions in timber due to damage or defects such as resin/gum pockets, knotholes and surface splits.

Remove and replace sprung or loose corroded nails and screws. Punch corroded nails that cannot be replaced 1 mm below the face and provide additional nailing.

Ensure that nail and screw heads are countersunk sufficiently to hold stopping. Prime prior to stopping.

Where necessary strip paint back to the original timber using the most appropriate of the following methods:

- With all UV damaged timber, i.e. sun bleached grey areas, remove the damaged timber exposing the original coloured timber prior to new paintwork application.
- Use an electrically heated hot air stream to soften paint before scraping off with a broad knife.
- Sand using belt sanders.
- Use paint removers to in accordance with manufacturers written specification.
- Hand scrape.

VARNISHED SURFACES: Wash down with sugar soap or similar product to suit the manufacture's recommendations to remove grease and dirt prior to sanding. Strip all perished, disfigured and marked varnish work with the necessary strippers, neutralisers and sealers to bring the surface to a uniform blemish-free surface. Sand and prepare as specified under Painted Surfaces - Good Condition in this section.

FIBRE CEMENT SHEET: Where sheeting does not contain asbestos remove completely all mould, growth, and flaking or loose paint to give a clean, sound, smooth base ready for re-coating. Feather the edges of remaining paintwork so as not to show through finished work. Fill small cracks shall be filled with an elastomeric sealant.

SECTION 6.1 – PREPARATION FOR PAINTING – EXTERIOR / INTERIOR

CEMENT PLASTER/CONCRETE/MASONRY: Remove the fine white powder of efflorescence by brushing and then wiping with a clean damp cloth. Remove faulty mortar by wire-brushing and make good with fresh mortar to match and also: -

- Treat crumbling lime mortar with a solution of 150ml of concentrated phosphoric acid and clean water to make 1 litre.
- Apply the solution, allow to stand for 10 minutes and wash down with clean water.
- Ensure that the cause of any dampness has been removed and that the substrate is dry before applying any coating.
- Wire brush all moss and lichen affected areas to remove all loose powdery growth and treat affected areas using the solution and method recommended in clause 7.5.4, A.S 2311.
- Remove grease by washing with a 1:40 solution of sugar soap and water until completely removed, then wash with clean water and allow to dry.
- Where necessary strip paint back to the original surface.
- Remove all chalk dust and dirt when dry using a stiff bristle brush.

METALWORK: Remove all corrosion, in whatever form, where it occurs. Sand edges to form a smooth surface unaffected by corrosion. Use chemical pre-treatment to remove any last traces of, and to inhibit future, corrosion. Clean down completely before spot priming to suit the coating system specified.

GALVANISED STEEL (ROOFS): Ensure that the roof and all barges, ridges, valleys and flashings are sound. Replace any sections containing rust, in accordance with Section 3.4, Roofing. Clean gutters inside and out and clean to remove all loose and peeling paint.

Allow to dry thoroughly before painting. Feather back remaining paint with a wire brush. Spot prime exposed areas.

13. COMPLETION

On completion fully prepare all surfaces so they are ready for the application of paint coatings without further work. Immediately after, and as necessary during preparation work, clean up and remove all debris from the Site.

END OF SECTION

Section 6.2

PAINTING - INTERIOR

SECTION 6.2 – PAINTING – INTERIOR

1. GENERAL

SCOPE: This section deals with normal thin film coating and sealing work on prepared surfaces as specified in Section 6.1, Preparation for Painting – Exterior/Interior, with the painting of the interiors only of each building.

CROSS REFERENCES: Refer particularly to sections:-

- Section 2: Carpentry & Joinery and Minor Repair Works
- Section 3.2: Reinstatement of Fire Damaged Property
- Section 6.1: Preparation for Painting – Exterior/Interior
- Section 6.3: Painting – Exterior

SPECIAL NOTE: The use of mobile scaffolding and or scissor lifts or similar equipment to perform the work must comply with all standards, codes and manufacturers written specifications and recommendations.

ENVIRONMENTAL MANAGEMENT: Refer to Section 1

Carry out the work in accordance with the Legislative and Policy Conditions and particularly the following:-

- AS/NZS 2311: Guide to painting of buildings
- All other relevant standards, Acts, codes of practice and guidelines.,

In some circumstances, the specified paint system may be unsuitable for a particular portion of the work. In these situations, an alternative system may be proposed by the Contractor to the Principal's Representative complete with supporting data, technical details and a full quality plan. The Principal's Representative will then review the alternative system and, where appropriate, may accept the Contractor's proposal.

2. MATERIALS

COATING MATERIALS: Comply with Section 10, Components Schedule.

The whole of the paint materials to be used must be Premium Quality, brought on to the Site in the original sealed containers with the manufacturers label, seal intact, applied in accordance with the manufacturers written specification and conforming with the appropriate Australian Paint Approval Scheme (APAS) specification. Where required, make samples available for testing purposes.

PRIMERS AND UNDERCOATS: These must be of the same brand as the finishing coat for all surfaces.

MOULD RESISTANT PAINTS: Use those in all areas prone to mould such as laundries, bathrooms and kitchens.

DELIVERY: All thin film coatings must be delivered in sealed containers, clearly labelled with the following information:

- Type of material
- Brand name
- APAS approval number.

SECTION 6.2 – PAINTING – INTERIOR

3. WORKMANSHIP

SURFACE PREPARATION: comply with Section 6.1, Preparation for Painting Exterior/Interior. Report to the Principal's Representative any surfaces which may not provide the required finish or contain defects that may adversely affect the painting work. Commencement of painting means that the substrate is warranted by the Contractor as satisfactory for first quality work.

COLOUR RANGE: Carry out painting in the selected colours. For touch-up work use a paint colour to match the existing. Generally, paint ceilings and windows white. A colour scheme may be supplied by the Principal's Representative before the commencement of painting.

CLEANLINESS: Keep all brushes, tools and equipment in a clean condition. Keep all surfaces clean and free from dust during coating and drying. Provide a suitable receptacle for liquids, slop washings and the like. Do not use any sanitary fitting of the building for the disposal of waste or for cleaning equipment. Store materials in a dry area protected from extreme temperatures and clear of the floor.

DRY FILM THICKNESS TESTING: The Principal's Representative may direct that a dry film thickness test in accordance with AS/1580 be carried out to establish film thickness. Any damage as a consequence must be made good at the expense of the Contractor.

PAINT DEMARCATION: Paint windows and doors as follows:-

- Butt windows and doors interior paintwork to exterior paintwork.
- Extend windows and doors interior paintwork to the outside corner of the head / stile of doorjamb and paint the outside corner of heads / sills / stiles / reveals / sashes and the like (including areas hidden by sash in closed position).

4. PREPARATION OF MATERIALS

GENERAL: Prepare coating materials as recommended by the manufacturer. Strain through fine gauze any coating material showing small particles in application. Do not intermix different coating materials. Stir coating materials to obtain an even consistency before use, unless otherwise recommended by manufacturer. Only add thinners, driers and extenders in accordance with manufacturers written specification.

5. PROTECTION

DAMAGE: Protect freshly applied coating surfaces from damage.

SIGNS: Where necessary, exhibit "Wet Paint" signs and provide protective barriers.

ADJACENT SURFACES: Protect surfaces adjacent to those being coated.

GLAZING: Protect etched, sand blasted and ground glass glazing from attack by oily constituents of coating materials by treating and protecting edges before coating and cleaning surfaces immediately after coating.

FITTINGS, FIXTURES & HARDWARE: Remove these from surfaces to be coated and cleaned and replace them square, plumb and true on completion. Do not paint hinges unless previously painted.

SECTION 6.2 – PAINTING – INTERIOR

6. APPLICATION

GENERAL: Apply coatings as specified and in accordance with the manufacturers written specification and after any previous coats have achieved the necessary drying before re-coating.

UNSUITABLE CONDITIONS: Do not apply coatings:

- To surfaces affected by damp or frost.
- When the surface or ambient temperature inhibits the proper application of the paint, where possible taking all necessary action to minimise delays.
- When heat is likely to cause blistering or wrinkling.

PRIMING (GENERALLY): Apply priming coats by brush unless other methods are specifically permitted. Work primer into surfaces, joints, angles and end grain. Ensure that priming coats are of adequate thickness and suit surface porosity.

Ensure that any primed surfaces which have deteriorated on site or in transit are touched-up or re-primed. Re-prime if more than one month has elapsed since priming before top coating.

PRIMING JOINERY: Where timber has been treated with preservative, check and ensure that coating materials are compatible with the preservative.

PRIMING METAL: Prime metal surfaces on same day as they have been prepared and cleaned.

UNDERCOATS: Apply an even film over all surfaces, to a continuous wet edge, avoiding uneven thickness at edges and angles. Tint undercoats differently relative to the surface colour scheme.

FINISHING COATS: Apply an even film over all surfaces, to a continuous wet edge, avoiding brush marks, sags, runs and other defects. Where two gloss finishing coats are specified, apply the second coat within 48 hours of the first coat.

TIMBER FITTINGS: Apply the finish required to top, bottom, edges and all internal surfaces, including shelves.

TIMBER DOORS: Prime and paint top and bottom edges of new doors before hanging doors with the same number of coats as specified for the exposed surfaces. Paint the inside and outside of doors and frames. Existing internal insitu doors to be prepared and painted front, back and stile sides only.

RUB DOWN: Rub down all priming and undercoats to a smooth surface with fine glass paper and remove all dust before applying the next coat.

GLAZING REBATES AND BEADS: Apply coatings to rebates and beads before glazing.

GLAZING PUTTY: Remove all loose putty, prime rebates, sprig and reputty as required and prime and paint glazing putty and compounds, as recommended by their manufacturer. Clean glass before priming putty faces. Extend paint adjacent to glazing across putty and 2mm on to glass, but not beyond sight lines. Wipe off any over-painting beyond sight line while wet and do not allow it to dry and later cut back.

BRUSH PAINTING: Apply all paints by brush unless otherwise recommended by AS 2311:2000 or as approved by the Principal's Representative. Lay off all areas evenly and ensure that finished surfaces are free from brush marks.

SECTION 6.2 – PAINTING – INTERIOR

SPRAY PAINTING: Unless specifically requested in writing by the Contractor and approved in writing by the Principal's Representative, no spray painting shall be permitted inside or outside a building. Where approval is given then only use airless spray painting. Mask all adjoining surfaces.

7. SCHEDULE OF INTERIOR PAINT FINISHES

KITCHENS / BATHROOMS / LAUNDRIES: Finish the walls of all kitchens, cooking recesses, bathrooms, combined laundry/bathrooms, laundries and W.C. recesses with 100% Acrylic (Waterborne) gloss; and finish woodwork and painted cupboards in alkyd full gloss enamel.

Where the dining room and kitchen or living room and kitchen have common wall surfaces, all such wall surfaces are to be painted as for the kitchen with 100% Acrylic (Waterborne) gloss.

OTHER ROOMS: Finish friezes and walls of other rooms in 100% Acrylic (Waterborne) semi gloss and finish woodwork with varnished\ or paint as specified.

CEILINGS: Finish all ceilings and cornices to all rooms with an appropriate ceiling paint (100% Acrylic Waterborne) matt finish to suit the purpose of the room.

Cover interior sash channels (runners) and parting beads, where stained and varnished, with two (2) coats of Shellac or equal and where painted, with one (1) coat of a suitable undercoating and one coat of full gloss enamel. Allow to dry and harden overnight, then move sashes so that they run freely in the channels (runners).

INTERNAL OF KITCHEN AND LINEN PRESS CUPBOARDS: Apply two (2) coats of 100% Acrylic (Waterborne) full gloss to cupboards. Where previously painted, after preparation, apply one (1) coat of 100% Acrylic (Waterborne) full gloss.

BATHROOM, KITCHEN, DINING ROOM, COMBINED LAUNDRY/BATHROOM, TOILET AND LAUNDRY (WHERE PREVIOUSLY PAINTED): Prepare ceilings, walls and woodwork as specified then, as directed apply EITHER one (1) coat of a suitable oil based undercoating and one (1) coat of 100% Acrylic (Waterborne) full gloss, OR two (2) coats of 100% Acrylic (Waterborne) full gloss. If kalsomined, prepare as specified and then apply one (1) coat of a sealer, prior to painting as above.

PAINTING OF NEW AND OLD CONCRETE FLOORS: Previously Painted: Prepare as specified, spot prime bare prepared areas with paving paint. Allow eight (8) hours to dry and then apply two (2) coats of paving paint, allowing eight (8) hours drying between coats.

ALL NEW SURFACES (NOT PREVIOUSLY PAINTED): Prepare as specified, then apply one (1) coat of sealer prior to being painting.

IN ALL OTHER ROOMS: Prepare ceiling, friezes and walls as specified, then, as directed apply EITHER one (1) coat of oil based undercoating and finish with one (1) coat of 100% Acrylic (Waterborne) semi-gloss, OR apply two (2) coats of 100% Acrylic (Waterborne) semi-gloss, OR ceilings apply two (2) coats of 100% Acrylic (Waterborne) ceiling paint to suit the purpose of the room.

ALL WOODWORK OR HARDBOARD WHERE PREVIOUSLY VARNISHED: Where specified to be varnished, prepare as specified and touch up with stain where necessary to match existing, then apply one (1) or two (2) coats of Satin type polyurethane as directed.

SECTION 6.2 – PAINTING – INTERIOR

ALL (CRAZED) WOODWORK OR HARDBOARD WHERE PREVIOUSLY VARNISHED: Where specified to be varnished but crazed and perished removed all varnish with paint and varnish remover, then thoroughly neutralise as specified. Then stain to the approved colour, putty, colour where necessary, fill with suitable wood filler and apply one (1) coat of Shellac and finish with two (2) coats of Polyurethane Satin clear.

WOODWORK OR HARDBOARD WHERE PREVIOUSLY VARNISHED AND SPECIFIED TO BE PAINTED: remove all varnish with varnish and paint remover, then thoroughly neutralise as specified and apply one (1) coat of primer, stop up and apply one (1) coat of a suitable undercoating and one (1) finishing coat of suitable alkyd full gloss Solvent-bourne paint.

WOODWORK WHERE PREVIOUSLY PAINTED: Prepare as specified then apply one (1) coat of a suitable alkyd full gloss Solvent-bourne paint.

WOODWORK WHERE PREVIOUSLY KALSOMINED OR WATER COLOURED OR UNPAINTED: Clean down to the original surface and apply one (1) coat of primer, stop up and then apply one (1) coat of a suitable undercoating and one (1) coat of a suitable alkyd full gloss Solvent-bourne paint. Include the internal faces of all cupboard doors.

END OF SECTION

Section 6.3

PAINTING - EXTERIOR

SECTION 6.3 – PAINTING – EXTERIOR

1. GENERAL

SCOPE: This section deals with normal thin film coating and sealing work on external prepared surfaces as specified in Section 6.1, Preparation for Painting – Exterior/Interior, with including the painting of the exteriors only of each building. Paint all previously painted surfaces, including eave soffits, feature panels, mail boxes, railings, valley iron, vent pipes, all surfaces of carports / garages etc. and yard storage lockers as standard items. .

CROSS REFERENCES: Refer particularly to sections:

- Section 2: Carpentry & Joinery and Minor Repair Work.
- Section 3.2: Reinstatement of Fire Damaged Property
- Section 6.1: Preparation of Painting – Interior/Exterior
- Section 6.2 – Painting - Interior

SPECIAL NOTE: The use of mobile scaffolding and or scissor lifts or similar equipment to perform the work must comply with all standards, codes and manufacturers written specification and recommendations.

ENVIRONMENTAL MANAGEMENT: Refer to Section 1.

Carry out the work in accordance with the Legislative and Policy Conditions and particularly the following:-

- AS/NZS 2311: Guide to painting of buildings
- All other relevant standards, Acts, codes of practice and guidelines.

In some circumstances, the specified paint system may be unsuitable for a particular portion of the works. In these situations an alternative system may be proposed by the Contractor to the Principal's Representative, complete with supporting data, technical details and a full quality plan. The Principal's Representative will then review the alternative system and, where appropriate, may accept the Contractor's proposal.

PROPERTY IDENTIFICATION, DATE OF COMPLETION OF PAINTING AND BRAND OF PAINT USED:

When the external painting of a building is completed, record the date of completion and types/brands of paint used thereon. Stencil this information and the Lot/Unit number in black, in a space not greater than 375mm x 300mm, onto the painted inside of the electric meter box door, or alternatively in a position directed by the Principal's Representative. Stencil letters must be legible at 10m, in Black on a White background. Supply all stencils.

2. MATERIALS

COATING MATERIALS: Comply with Section 10, components Schedule.

The whole of the paint materials to be used must be premium quality, brought on to the Site in the original sealed containers with the manufacturers label, seal intact, and applied in accordance with the manufacturers written specification and conforming with the appropriate Australian Paint Approval Scheme (APAS) specification. Where required, make samples available for testing purposes.

PRIMERS AND UNDERCOATS: These must be of the same brand as the finishing coat for all surfaces.

DELIVERY: All thin film coatings must be delivered in sealed containers, clearly labelled with the following information:-

- Type of material

SECTION 6.3 – PAINTING – EXTERIOR

- Brand name
- APAS approval number.

3. WORKMANSHIP

SURFACE PREPARATION: comply with Section 6.1, Preparation for Painting – Exterior/Interior. Report to the Principal's Representative any surfaces which may not provide the required finish or contain defects that may adversely affect the painting work. Commencement of painting means that the substrate is warranted by the Contractor as satisfactory for first quality work.

COLOUR RANGE: Carry out painting in the selected colours. A colour scheme may be supplied by the Principal's Representative before the commencement of painting.

CLEANLINESS: Keep all brushes, tools and equipment in a clean condition. Keep all surfaces clean and free from dust during coating and drying. Provide a suitable receptacle for liquids, slop washings and the like. Do not use any sanitary fitting of the building for the disposal of waste or for cleaning equipment. Store materials in a dry area protected from extreme temperatures and clear of the floor.

DRY FILM THICKNESS TESTING: The Principal's Representative may direct that a dry film thickness test in accordance with AS1580 be carried out to establish film thickness. Any damage as a consequence must be made good at the expense of the Contractor.

PAINT DEMARCATION: Paint windows and doors so exterior paintwork butts to interior paintwork, extending to the inside edge of all accessible edges of sashes and doors.

INTERIOR OF GUTTER: Thoroughly clean guttering of leaves and other debris prior to painting the exterior of the gutter.

4. PREPARATION OF MATERIALS

Prepare coating materials as recommended by the manufacturer. Strain through fine gauze any coating material showing small particles in application. Do not intermix different coating materials. Stir coating materials to obtain an even consistency before use, unless otherwise recommended by manufacturer. Only add thinners, dryers and extenders in accordance with manufacturers written specification.

5. PROTECTION

DAMAGE: Protect freshly applied coatings surfaces from damage.

SIGNS: Where necessary, exhibit "Wet Paint" signs and provide protective barriers.

ADJACENT SURFACES: Protect surfaces adjacent to those being coated.

GLAZING: Protect etched, sand blasted and ground glass glazing from attack by oily constituents of coating materials by treating and protecting edges before coating and cleaning surfaces immediately after coating.

SECTION 6.3 – PAINTING – EXTERIOR

FITTINGS, FIXTURES & HARDWARE: Remove these from surfaces to be coated and cleaned, and replace them square, plumb and true on completion. Do not paint hinges unless previously painted.

6. APPLICATION

GENERAL: Apply coatings as specified in accordance with the manufacturers written specification and after any previous coats have achieved the necessary drying before re-coating.

UNSUITABLE CONDITIONS: Do not apply coatings:-

- To surfaces affected by damp or frost.
- When the surface or ambient temperature is below 10 degrees C.
- When heat is likely to cause blistering or wrinkling.

PRIMING (GENERALLY): Apply priming coats by brush unless other methods are specifically permitted. Work primer into surfaces, joints, angles and end grain. Ensure that priming coats are of adequate thickness and suit surface porosity.

Ensure that any primed surfaces which have deteriorated on site or in transit are touched-up or re-primed. Re-prime if more than one month has elapsed since priming before top coating.

PRIMING JOINERY: Where timber has been treated with preservative, check and ensure that coating materials are compatible with the preservative.

PRIMING METAL: Prime metal surfaces on same day as they have been prepared and cleaned.

UNDERCOATS: Apply an even film over all surfaces, to a continuous wet edge, avoiding uneven thickness at edges and angles. Tint undercoats differently relative to the surface colour scheme.

FINISHING COATS: Apply an even film over all surfaces, to a continuous wet edge, avoiding brush marks, sags, runs and other defects. Where two gloss finishing coats are specified, apply the second coat within 48 hours of the first coat.

TIMBER FITTINGS: Apply the finish required to top, bottom, edges and all internal surfaces including shelves.

EXTERIOR TIMBER DOORS: Prime and paint top and bottom edges before hanging doors with the same number of coats as specified for the exposed surfaces. Paint the inside and outside of doors and frames.

RUB DOWN: Rub down all priming and undercoats to a smooth surface with fine glass paper and remove all dust before applying the next coat.

GLAZING REBATES AND BEADS: Apply coatings to rebates and beads before glazing.

GLAZING PUTTY: Remove all loose putty, prime rebates, sprig and re-putty as required and prime and paint glazing putty and compounds, as recommended by their manufacturer. Clean glass before priming putty faces. Extend paint adjacent to glazing across putty and 2mm on to glass, but not beyond sight lines. Wipe off any over-paint beyond sight lines while wet and do not allow it to dry and later cut back.

SECTION 6.3 – PAINTING – EXTERIOR

BRUSH PAINTING: Apply all paints by brush unless otherwise recommended by AS 2311:2000 or approved by the Principal's Representative. Lay off all areas evenly and ensure that finished surfaces are free from brush marks.

SPRAY PAINTING: Unless specifically requested in writing by the Contractor and approved in writing by the Principal's Representative, no spray painting shall be permitted inside or outside a building. Where approval is given then only use airless spray painting. Mask all adjoining surfaces.

7. CLADDING TYPE DESCRIPTIONS

FLAT FIBRE/CEMENT SHEETING: This includes all buildings where majority of external surfaces are clad by Flat Fibre/Asbestos Cement Sheeting.

MOULDED FIBRE/CEMENT WEATHERBOARD, HARDBOARD AND HARDIPLANK: This includes all buildings where the majority of external surfaces are clad with Fibre/Asbestos Cement Weatherboard, Hardboard or Hardiplank Cladding.

CEMENT RENDERED, PAINTED BRICK WALLS OR MONOCRETE: This includes all buildings where the majority of external surfaces are Cement Render and/or Painted Brick Walls.

TIMBER WEATHERBOARDS: This includes all buildings where the majority of external surfaces are clad with Timber Weatherboards.

BRICK AND BRICK VENEER: This includes all buildings where the majority of external surfaces are clad with Brick.

NOTE: In some cases there may be some buildings that will have other cladding features that are to be painted.

8. SCHEDULE OF EXTERIOR PAINT FINISHES

EXTERNAL PAINTED SURFACES/WALLS: Apply to these surfaces, after preparation, two (2) coats of Latex (Waterborne or Solvent borne) Gloss paint. Where existing paintwork is perished OR a change in paint system is approved, seal the areas with one (1) coat of pigmented sealer prior to one (1) coat application of a suitable compatible undercoat then two (2) coats of Latex (Waterborne or Solvent borne) Gloss Paint.

Treat and prime wooden cover moulds as specified below, prior to the application of the finishing coat/s.

UNDERCOATING OF EXTERNAL SURFACES Where existing paintwork is perished OR a change in paint system is approved, seal all worn or perished areas with one (1) coat of pigmented sealer prior to the one coat (1) application of a suitable compatible undercoat.

PAINTING EXTERNAL WOODWORK, PREVIOUSLY PAINTED: Paint all woodwork, which has previously been painted, with one (1) coat of suitable compatible undercoat and EITHER one (1) coat of 100% Acrylic (Waterborne) Gloss or one (1) coat of Solvent-borne Full Gloss paint as directed.

WOODWORK WHERE PREVIOUSLY PAINTED WITH PLASTIC OR NOT APPROVED MATERIALS (ALL PAINTS OTHER THAN 100% ACRYLIC (WATERBORNE) OR ENAMEL): Thoroughly strip the surface, then treat and prim with a suitable primer which must have the relevant APAS approval number, then treat as for woodwork which has previously been painted.

SECTION 6.3 – PAINTING – EXTERIOR

WOODWORK NOT PREVIOUSLY PAINTED OR WHERE PAINT IS PERISHED: Remedy woodwork (other than fences) where paint has completely perished and the original surface is exposed, or which was omitted in the original painting and would normally be painted, by first removing all perished paint by a suitable method. Refer to Section 6.1, Preparation for Painting – Exterior/Interior.

Then apply to all bare surfaces one (1) coat primer (of a suitable pink primer which must conform to the Australian Standard) stop up, fill cracks etc., sand back and then apply one (1) coat of a suitable undercoat and either one (1) coat of 100% Acrylic (Waterborne) Gloss or one (1) coat of Solvent-borne Full Gloss finish as directed. Lightly sand between coats.

TREATED PINE DECKING (NOT PAINTED): Apply to all Treated Pine decking two (2) coats of treated pine finishing Oil.

FENCES (eg PARK RAIL) PREVIOUSLY PAINTED: Apply to all bare surfaces after preparation one (1) coat of a suitable wood primer, stop and putty up and then apply one (1) coat of a suitable undercoating, allowing at least twenty-four (24) hours for coats to dry and harden, and apply one (1) coat of a suitable finishing coat of paint.

WOODWORK (eg. PALING) PREVIOUSLY STAINED OR UNPAINTED: Where directed, apply two (2) coats of 100% Acrylic (Waterborne) wood stain.

STREET NUMBERS: Where previously painted or directed to paint, paint all street numbers wherever located black or the colour directed by the Principal's Representative.

PORCHES, VERANDAHS AND THE LIKE: Paint the interior and exterior of front and rear porches and verandah's painted with the other exterior in accordance with the specification for the appropriate external surface.

Where fully enclosed and permanently locked up for use as a front or back entrance, paint only the external surface areas. Paint concrete porch floors, where directed, with a suitable non-slip finish.

FLYSCREEN DOORS AND WINDOWS - (EXCEPT ALUMINIUM): Paint both sides, including W.I. in-fills as specified according to the condition / material. If removed for painting, allow flyscreens twenty-four (24) hours to dry and harden after the application of each coat, and then re-fix them after the final coat in accordance with general practice.

NOTE: Paint the interior of all porches, verandah's and sleep-outs, where screened originally with wire gauze or blinds etc., with the exterior of each building as specified for such surfaces.

EXTERNAL BALCONY VERANDAH OR TOILET DOORS: Where doors open out paint BOTH SIDES.

LATTICE SCREENS, OR UNPAINTED BATTEN INFILLS: Paint all lattice work which has been previously painted or oil stained as specified. Where the lattice work and batten infills were unpainted, two (2) coats of 100% of Latex (Waterborne) Wood stain or paint as directed.

METAL GUTTER, DOWNPIPES, FLASHINGS, VENT PIPES, ETC: Apply to guttering, downpipes, vent pipes, all service pipes and chain wire on fencing, all flashing and valleys, after preparation, one (1) coat of a suitable undercoating, and either two (2) coats of 100% Acrylic (Waterborne) Gloss or two (2) coats of Solvent-borne Full Gloss paint as directed and ensure adequate coverage.

SECTION 6.3 – PAINTING – EXTERIOR

Seek direction from the Principal (providing details of the painting and preparation to be undertaken) before painting oxidised or damaged powder coated or colorbond painted surfaces.

Thoroughly clean down and completely de-grease by washing with mineral turps, thinner or other suitable solvents all new or unpainted G.I. gutter, downpipes and combined gutter/fascia. Dried to a clean surface and then paint with one coat of suitable galvanised iron primer (water based type is acceptable) and then painted as specified above.

WROUGHT IRON: Spot prime with one (1) coat of a suitable rust inhibiting metal primer (water based is acceptable), then apply one (1) coat of a suitable metal primer undercoating coloured to match the finishing coat, followed by either one (1) coat of 100% Acrylic (Waterborne) Gloss or Solvent-borne Full Gloss paint as directed.

CORRUGATED IRON ROOF: Spot prime with one (1) coat of a suitable rust inhibiting metal primer, (water based is acceptable) then apply one (1) coat of a suitable metal primer undercoating coloured to match the finishing coat, followed by two (2) coats of approved roof paint.

WALLS - EXTERNAL MARKS OR BLEEDING COLOUR, ETC: Effectively seal all bituminous marks, indelible pencil marks or bleeding colours, which become apparent after the application of paint, before proceeding further.

TREATMENT OF BLISTERS OR CRACKED PAINT: Surface to receive one (1) coat of an approved wood primer, stopped and puttied up and then to receive one (1) coat of an approved undercoating, allowing at least twenty-four (24) hours to dry and harden, and finish with two (2) coats of an approved finishing coat of paint.

END OF SECTION

Section 7

CARPET AND RESILIENT FLOORING

SECTION 7 – CARPET AND RESILIENT FLOORING

1. GENERAL

SCOPE: This section deals with the supply of all necessary materials, associated work and labour for the installation of Carpet and Resilient Flooring, and the repair of existing carpets as specified.

CROSS REFERENCES: Refer particularly to Sections;

- Section 2: Carpentry & Joinery and Minor Repair Work
- Section 3.2: Re-instatement of Fire Damaged Property

Carry out the work in accordance with the Legislative and Policy Conditions and particularly the following:-

- AS 1884 Floor Coverings – Resilient Sheet And Tiles – Laying And Maintenance Practices
- AS/NZS 2455/1: Textile floor coverings – Installation practice
- AS/NZS 3733: Textile floor coverings – Cleaning maintenance of residential and commercial carpeting,
- The National Standard for Manual Handling (NOHSC:1001 (1990)
- all other relevant Acts, codes of practice, standards and guidelines.

CONTRACTORS: Contractors are required to hold a NSW Department of TAFE Certificate 111 – floor coverings & finishing or craft certificate – floor coverings & finishing (or equivalent).

The contractor is to ensure that the moisture content of the floor surface is satisfactory for the product being to applied or installed prior to installation.

Any unsatisfactory surface is to be notified to the Principal's Representative prior to work commencing or installation being undertaken.

2. MATERIALS

Comply with Section 10, Component Schedule. Contractors are to submit products to the Principal's Representative for approval.

Samples of all Deliverables for Carpet and Resilient Flooring must be submitted for prior approval before starting any work. All samples are to be submitted separately within seven (10) working days of the date of awarding the contract.

The sample requirements are:

- ❖ One small swatch/sample card of each product and a full colour range (sample boards are acceptable).
- ❖ A sample of Carpet back-printing in accordance with the Components and Products.
- ❖ Samples must be clearly marked with:
 - o Contract Number
 - o Product and Manufacturers Name
 - o Name of Contractor

All costs incurred in relation to the preparation, delivery and subsequent collection of samples shall be borne by the Contractor.

The Principal is committed to Ecological Sustainable Development and products which contain recycled products or which can be recycled (to minimise waste management) will be supported

SECTION 7 – CARPET AND RESILIENT FLOORING

3. QUALITY AND WORK PRACTICES

INSPECTION: Before starting work inspect the base surface of the floor to ensure that it will allow first class workmanship and that all fittings and fixtures, around which the carpet and Resilient Flooring is to be scribed, are in place. Do not start work until these requirements are met.

COMMENCEMENT: Do not begin work before the building is enclosed, all wet work is complete, doors are hung and lockable, finishes and trim complete, all outlets, duct covers and fixtures round which the carpet and Resilient Flooring need to be cut have been fitted and good lighting is available.

Commencement of this work means that the base floor is warranted by the Contractor as satisfactory for first quality work.

PROTECTION: Protect adjoining work surfaces and finishes during installation and make good any damage to them at no expense to the Principal.

TESTING

All carpet, and resilient flooring products submitted for approval must have a current copy of the following tests in accordance with AS2111.

- ❖ Flammability Test
 - o AS 1530 Part 3 Early Fire Hazard Properties, and
 - o AS ISO 9239.1 – 2003(Critical Radiant Flux)

Determination Of Total Pile Mass in accordance with AS 2111

4. PREPARATION

TIMBER FLOOR - EXISTING: Strip off all existing floor coverings where required together with all adhesives and surface contaminants. Sand all floors to a flat finish. Vacuum to remove all dust. Overlay all tongue & groove floors to receive Resilient Flooring or direct stick on carpet \ with 5.5mm hardboard underlay or equivalent with staggered joints. Allow 1mm expansion gaps between sheets and 3mm gaps at the perimeter. Fix with 25 x 2mm flooring staples at 150mm centres throughout sheets and 75mm centres to perimeter of sheets, and a maximum 12mm from sheet edges in accordance with the manufacturers written specification.

CONCRETE FLOOR - EXISTING: Remove all existing coverings completely including adhesives. Where required, patch cracks and depressions with a suitable levelling compound to the manufacturers written specification. Leave the surface level, smooth and clean with all loose material and dust removed. Seal powdery surfaces where required.

HANDLING: Avoid distortion, stretching, marking and damage to edges while shifting, unrolling and handling carpet and Resilient Flooring and accessories. Do not use damaged material.

With handling and working temperatures and conditions for vinyl, follow the manufacturers written specification.

BCA Class 1 and Class 2 Dwellings – Domestic Range Carpet

Level Loop Carpet: Either 100% nylon products with a total pile mass not less than 678 g/m² (20oz) ± 5% to AS 2111, or Nylon Wool blend products (min 50% Nylon) with a total pile mass not less than 1085 g/m² (32oz) ± 5% to AS 2111.

SECTION 7 – CARPET AND RESILIENT FLOORING

Nylon Fibre Quality: Not less than 15 Denier per filament

Tuft Withdrawal Force: Loop pile: 30 Newtons minimum to AS 2111.

Backing:

PRIMARY: The carpet manufacturer must ensure that the Primary backing is suitable for intended use.

SECONDARY: 203 g/m² Woven Jute (minimum). 90 g/m² (minimum) Woven Synthetic Backing (for dual bonding or direct stick applications)

SECONDARY BACK ADHESION: 30 Newtons (minimum) to AS 2111.16 (conventionally laid, Dual bond or direct stick application)

EXTRACTABLE MATTER: Wool blend: 1.5% (maximum) to AS 2001. and Synthetic: 1.0% (maximum) to AS 2001.3.4

COLOUR FASTNESS TO:

- ❖ LIGHT: 5-6 (minimum) to ISO105.B02
- ❖ SHAMPOO: 3-4 (minimum) to AS 2111.19.2
- ❖ RUBBING: 3-4 (minimum) to AS 2111.19.1
- ❖ DRY CLEANING SOLVENTS: 3-4 (minimum) to AS 2001.4.16

STAIN RESISTANCE (NYLON PRODUCTS ONLY)

4 (minimum) to FD + C Food Red 40 – IWS 282 (AWTA T86C)

TWIST SET RETENSION

60% (minimum) to IWS TIL 46

PROOFING TREATMENT

The Wool Pile Fibres shall be treated against moth and beetle attack by applying an approved insecticide to meet the requirements of The Woolmark Company and Fernmark (Wools of NZ).

Pensioner Housing, Modified Housing for the disabled and BCA Class 3 and Common Areas (BCA Class 2 properties), -Commercial Ranges Are Defined As:

Tufted & Carpet Tiles

- Wool or wool blend (minimum 80% wool) products with a total pile mass greater than 1355 g/m² (40oz) ± 5% to AS 2111.11

Wool Fibre Quality

Specialty carpet wools chosen for their Crimp and/or Medullation, averaging not less than 33 microns when measured according to AS 2001.2.1

Tuft Withdrawal Force

Tufted Products

- Loop pile: 30 Newtons minimum to AS 2111.15

Backing

Tufted Products

PRIMARY

- The carpet manufacturer must ensure that the Primary backing is suitable for intended use.

SECONDARY

- 203 g/m² Woven Jute (minimum)

SECTION 7 – CARPET AND RESILIENT FLOORING

- 90 g/m² (minimum) Woven Synthetic Backing (for dual bonding or direct stick applications)

Secondary Back Adhesion

40 Newtons (minimum) to AS 2111.16 (Jute – conventionally laid)

30 Newtons (minimum) to AS2111.16 (Dual bond or direct stick application)

Extractable Matter

Wool or wool blend: 1.5% (maximum) to AS 2001.3.4

Colour Fastness To

LIGHT: 5-6 (minimum) to ISO105.B02

SHAMPOO: 3-4 (minimum) to AS 2111.19.2

RUBBING: 3-4 (minimum) to AS 2111.19.1

DRY CLEANING SOLVENTS: 3-4 (minimum) to AS 2001.4.16

Twist Set Retention

60% (minimum) to IWS TIL 46

Proofing Treatment

The Wool Pile Fibres shall be treated against moth and beetle attack by applying an approved insecticide to meet the requirements of The Woolmark Company and Fernmark (Wools of NZ).

BCA Class 9 dwellings:

Loop pile Solution dyed nylon products greater than 810 g/m² (24oz) ± 5% to AS 2111.11

Solution Dyed Nylon Fibre Quality

Not less than 15 Denier per filament and containing Anti static filaments to reduce electrostatic generation to not more than 3 kilovolts when tested to AATCC 134

Tuft Withdrawal Force

Loop pile: 30 Newtons minimum to AS 2111.15

Backing

PRIMARY:

- The carpet manufacturer must ensure that the Primary backing is suitable for intended use.

SECONDARY:

- 90 g/m² (minimum) Woven Synthetic Backing (for dual bonding or direct stick applications)
or
- The carpet manufacturer must ensure that the Secondary backing (impervious or otherwise) is suitable for intended use.

SECONDARY BACK ADHESION

- 30 Newtons (minimum) to AS2111.16 (Dual bond or direct stick application)

Extractable Matter

Synthetic: 1.0% (maximum) to AS 2001.3.4

Testing

Test certificates will be required for the following nominated tests. Test results submitted must be from a NATA or IANZ approved testing authority.

Colour Fastness to

LIGHT: 5-6 (minimum) to ISO105.B02

SHAMPOO: 3-4 (minimum) to AS 2111.19.2

RUBBING: 3-4 (minimum) to AS 2111.19.1

DRY CLEANING SOLVENTS: 3-4 (minimum) to AS 2001.4.16

Anti Microbial Treatment

SECTION 7 – CARPET AND RESILIENT FLOORING

All products must be tested to assess the survival of organisms to AWTA test procedure HHC – 5 or equivalent. Products that do not attain a pass will not be considered.

Resistance to Water Penetration

Products offered with an Impervious backing system must be tested to AS2001.2.17. Only products with a resistance that exceed 100kPa will be considered.

Drag Resistance

Products will be required to have test results for AWTA HHC-3 test procedure. The results of the test will be used to determine the drag resistance between the carpet offered and an “EVAC-SLIDE SHEET” (420 denier nylon).

Dimensional Stability

All broadloom products must have dimensional stability of 1% or better, when tested according to AWTA test method HHC-7 (or equivalent).

Stain Resistance

4 (minimum) to FD + C Food Red 40 – IWS 282 (AWTA T86C)

4 (minimum) to Bleach – IWS 282 (AWTA T86C)

3 (minimum) to Iodine – IWS 282 (AWTA T86C)

Twist Set Retention

60% (minimum) to IWS TIL 46

5. CARPET LAYING

PLANNING AND GENERAL LAYOUT: Provide the general layout of carpet so that: -

- (a) Seams run in as longer lengths as possible, straight and parallel with the main access of the room.
- (b) Traffic runs along the seams.
- (c) Light from windows is not across the seam.
- (d) Pile faces away from the light source.
- (e) Pile faces towards the main entry to the area of installation.
- (f) On stairs, pile lay runs towards leading stair edge.
- (g) Selvage seams are accurately aligned throughout the entire installation.
- (h) Textile floor coverings start with a full width on the door side.
- (i) Part width fill-outs are placed on the opposite side of the room from the door.
- (j) Floor coverings are accurately and closely fitted to skirting, architraves and other perimeters.
- (k) Where different floor coverings abut at doorways where there is a fitted door, the junctions of the floor coverings are within the thickness of the closed door.
- (l) Fill-outs are not used in doorways where the same textile floor covering is on both sides.
- (m) In circumstances where two fill-outs are used in one room, they do not abut.
- (n) Fill-outs are not positioned between full widths.

SEAMING AND JOINING: For all seams and cross-joins the following applies:

- (a) Seams and joins must not break down when under traffic use or being stretched.
- (b) The pile lay must be in the same direction on either side of a seam or cross-join.
- (c) Pile lay must not be caught down into a seam or cross-join and there must be no gaps in the pile.
- (d) The seams and cross-joins must be straight and aligned and as flat as possible.
- (e) Ensure straight seams with diagonals and designs correctly aligned.
- (f) Backing edges must butt and not overlap or gap.
- (g) Minimise cross-joins in an installation.
- (h) Ensure cross-joins are unobtrusive.
- (i) Ensure cross-joins are not placed in main traffic ways.
- (j) Ensure cross-joins in a filler are not less than 100cm apart.
- (k) The number of cross-joins in a filler is not greater than:

SECTION 7 – CARPET AND RESILIENT FLOORING

- (i) in a half-width, one cross-join;
 - (ii) in a third width, two cross-joins; and
 - (iii) in a quarter width, three cross-joins.
- (l) Where the pattern of a textile floor covering requires cross-joins less than 100cm apart, ensure they are the closest multiple of the pattern to 100cm.

DYE LOT: Contractors must ensure that carpet laid in a single area must be of a single specified type, quality, colour and design comes from one manufacturing batch and dye lot.

CROSS JOINS: Carpet in high traffic areas is to be free of cross joins. The work is to be planned with a minimum of cross joins, without resulting in excess wastage. In the event of cross joins being unavoidable a seaming adhesive must be applied prior to seaming.

HEAT BONDING TAPES: Binding and seaming use the tape type and width recommended by the tape and carpet manufacturers to suit the specified carpet and the standard of performance required. The seams and cross joins of all conventionally laid carpets must have an appropriate seam adhesive applied to both edges prior to heat tape joining.

Conventionally laid carpets are to be joined using low odour and low smoke foil backed heat-bonding tape similar or equal to Roberts Super Tape (50-331) & Polymer 125 Commercial Foil Tape. Tapes of inferior quality to the above are not to be used under any circumstances.

INSTALLATION - CARPET DIRECT-STICK SYSTEM: The installation of carpet using the direct-stick system shall be limited to installing carpet to Pensioner Housing, dwellings modified for disabled, and Class 3 and Class 9 Dwellings.

UNDERLAY SEAMS: Seams of underlay shall not coincide with those of the carpet when laid in the same direction. Seams of underlay shall not shadow through the carpet. Join seams of underlay with tapes at least 50mm wide, with non-staining adhesive.

SMOOTHEDGE (CARPET GRIPPER) All conventionally laid carpet is to be installed on commercial grade architectural type carpet gripper (smooth edge) to the specifications below.

- ❖ Length: >1200 mm
- ❖ Thickness: Minimum - 6.8 mm, Maximum 8.00 mm
- ❖ Width: Minimum - 33 mm
- ❖ Pins: Minimum - 3 rows in width, 98 per unit
- ❖ Plywood: Minimum - 3 ply (must be evenly sized veneers)

Domestic carpet gripper will not be acceptable on any commercial carpet installations under any circumstances. Domestic Carpet Gripper (smooth edge) may only be used on the installation of domestic products in domestic applications.

The gripper is to be fixed as necessary by a combination of: -

- ❖ Nailing with suitable nails
- ❖ Sticking with anchor weld or equivalent adhesive.
- ❖ Drill, plug and screw.

STAIRS: Provide and fit suitable aluminium stair nosing to Common Area stairs fixed in accordance with manufacturers' recommendations. Heavy duty (commercial quality) extruded aluminium stair nosings, naplocs and brass naploc only to all common Areas and Class 3 and Class 9 BCA properties. Domestic naploc or stair nosings will not be accepted in Common Area or in Class 3 and Class 9 installations under any circumstances.

SECTION 7 – CARPET AND RESILIENT FLOORING

TRIMS: Fix binder bars, carpet to carpet bars, and trims to manufacturers' recommendations and to best trade practice.

DOUBLE BONDING: All double bonding must be carried out using a solvent free, low odour adhesive similar or equal to Anchor Weld C A3, Roberts 80 or Polymer 228 the trowel size and coverage rate shall be as listed below. Flooring primer similar or equal to Anchor-Weld PR1. All seams on dual bond carpets must be sealed using a carpet seaming adhesive similar or equal to Anchor-Weld C A6 or Roberts 52– Water based Seam Sealer.

PATTERN OR TEXTURE: To match over whole surface of continuous spaces.

STRETCHING: Install carpet flat and taut so that people/furniture movement over it does not cause rucking. Use a power stretcher to ensure maximum tension between walls with knee kickers only used to assist. Apply force by correct pin adjustment to carpet base only to avoid damage to pile and underlay.

All work is to be carried in accordance with AS 2455, or as directed within this specification. Where there is any conflict between conditions contained in this specification and AS 2455, the conditions in the specification shall take precedence.

The Contractor shall be responsible in ensure that all products and services supplied comply with the specifications. In the event of a dispute arising between the Principal, the Customer and the Contractor regarding the quality of the products or installation, the Contractor shall be responsible for ensuring that all products and services comply with specification.

CUT AWAY: All loose nap ends, remove scrap and vacuum clean.

ADHESIVES:

All adhesives used (for both carpet and resilient flooring) should be non solvent and low odour. In the instance when a solvent based contact adhesive is the only option; no more than 1 x 4 litre container is permitted to be taken onto site (additional contact adhesive must be secured in installer's vehicle until required).

6. RESILIENT FLOOR COVERINGS

RESILIENT FLOORING – installation in dwellings should be used in kitchens, dining areas, hallways and other high traffic areas of a dwelling. Principal's approval should be sought to lay resilient flooring or wall sheeting in wet areas or in Common Areas instead of Ceramic tiles.

PLANNING AND GENERAL LAYOUT: Determine the proposed layout of material, direction of pattern, and set out of Resilient Flooring to provide a uniform appearance.

All adhesives used are to be low or nil solvent and low odour. The only exception is when a contact adhesive must be used (the use of contact adhesives is to be avoided where ever possible). When contact adhesive must be used no more than 1 x 4 litre container is permitted to be taken onto site (additional contact adhesive must be secured in the installers vehicle until required). Material Safety Data Sheets must be supplied for all adhesives the manufacturer has recommended for use with their products.

PRIMER: Prime porous plaster, concrete and timber subs-rate -with primer recommended by the adhesive manufacturer.

SECTION 7 – CARPET AND RESILIENT FLOORING

INSTALLATION: Installation of resilient flooring to be in accordance with the resilient flooring manufacturers' recommendations. Resilient flooring to be accurately cut, scribe and fitted against all walls, pipes and other permanent projections and fixtures.

All installation must be carried out in compliance with AS1884

Hardboard Underlay

Thickness 5.5mm $\pm$ 0.15mm

Sheet Size 1200mm x 900mm $\pm$ 1.0mm

Fibre Cement Underlay

Thickness 5.5mm $\pm$ 0.15mm

Sheet Size 1200mm x 900mm $\pm$ 1.0mm

Fixing Of Hardboard & Fibre Cement Underlay

Hardboard & fibre cement underlay is to be laid ashlar or brick pattern fixed using 25 mm ring grooved nails or 22 mm staples, spaced at 75 mm intervals at perimeters and 150 mm throughout the body of the sheet.

Finishing Strips (TRIMS) and Stair Nosings

Heavy duty (Commercial quality) extruded aluminium stair nosings, naploks and brass naploks only to be fitted to exposed edges and doorways or stairs. Domestic naplok or stair nosings will not be accepted under any circumstances.

Dye Batch:

Contractors must ensure that the Resilient Flooring laid in a single area is of a single specified type, quality, colour and design comes from one manufacturing batch and dye lot.

LAYING RESILIENT FLOORING IN WET AREAS, AND COMMON AREAS

When laying in wet areas or common areas a minimum of an R10 (slip rated) homogeneous sheet resilient flooring product must be used. Products containing abrasive material in order to comply will not be considered

Wherever possible replace existing waste outlets with a three part vinyl clamping outlet or similar.

Against all walls a minimum of 100mm cove edging is required. Use an appropriate adhesive for fixing cove formers to both walls and floors. A capping strip to prevent water penetration is to be adhered to the wall above the cove edging.

Hot weld all forming joints when laying sheet resilient flooring.

7. COMPLETION

ON COMPLETION: Leave all surfaces free of adhesive, dirt and debris. Clean the finished carpet in accordance with the manufacturers specification. Clean Resilient flooring in accordance with manufacturers specification. Remove from the Site all plant, and all rubbish and materials not used, leaving the finished floor clean and without blemish.

SUBSEQUENT DAMAGE: Make good any subsequent damage to the flooring or any disturbance by later work under the Contract at no cost to the Principal.

END OF SECTION

SECTION 8 – LAWNS, GROUNDS, GARDENS AND COMMON AREA CLEANING WORKS
AND MANAGEMENT

Section 8

LAWNS, GROUNDS, GARDENS AND COMMON AREA CLEANING WORKS AND MANAGEMENT

SECTION 8 – LAWNS, GROUNDS, GARDENS AND COMMON AREA CLEANING WORKS AND MANAGEMENT

GENERAL

Introduction

The Contractor shall refer to the Lawns, Grounds, Gardens and Common Area Cleaning Services specification, Exhibit 8 to the Contract Conditions.

END OF SECTION

SECTION 9

TIMBER SCHEDULE AND DRAWING DETAILS

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS

DRAWING SCHEDULE

	Drawing No.	Title
1	TS01	Schedule of Timber Species, Durability Ratings
2	KD01	Kitchen Units Specification Notes
3	KD02	Kitchen Fitments, Floor Units 'E', 'F', 'O'
4	KD03	Kitchen Fitments, Corner Unit 'T'
5	KD04	Kitchen Fitments, Servery Unit
6	KD05	Kitchen Fitments, Wall Unit 'C', 'D', 'S'
7	KD06	Kitchen Fitments, Pantry & Broom Cupboards 'G' & 'H'
8	KD07	Kitchen Fitments, Breakfast Bar Unit 'N'
9	KD08	Kitchen Fitments, Medicine Cabinet Wall Unit Type 'C'
10	KD09	Kitchen Fitments, Microwave Cupboard
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SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS

TS01 - SCHEDULE OF TIMBER SPECIES, DURABILITY RATINGS

Application	Timber species or minimum Durability class (AS5604.2005)	Timber Finish	Relevant Australian Standards	Preservative Treatment rating For softwood where Specified
Structural timbers Exposed to weather	Class 1 or 2 (Where softwoods meet durability class 1 or 2 preservative treatment is not required)	Sawn		H3
Sub-floor framing exposed To ground	Class 3 or better	Sawn		H3
Structural timbers not exposed to weather	Class 4 or better	Sawn		N/A
Fascias, barges	Oregon Ash type eucalypts (Immunised and reconditioned)	Select dressing Select	2858 2796	N/A
Weatherboards	Radiata Pine Cypress Western Red Cedar Hardwood Brush Box	Select " " " "	1495 (1973) 093 - 2796 "	H3
Mouldings (Reveals)	Sitka Spruce Oregon Western Red Cedar Radiata Pine Hoop Pine Slash Pine MDF	Select dressing " Select "	2796 2858 - 1498 (1973)	H1 (int) H3 (ext)
Sills	Tallowwood Blackbutt Red Mahogany Crow's Ash Western Red Cedar	Select " " " "	2796 " " " "	N/A
Window and door Frames	Western Red Cedar Oregon Ash type eucalypts (Immunised and reconditioned)	Select Select dressing Select	- 2858 2796	N/A
Strip flooring	Radiata Pine Mixed Hardwood Cypress Pine Murray Red Gum	Standard " " "	1492 (1973) 2796 1810 2796	H3
Internal joinery, Cupboard framing	Oregon Ash type eucalypts (Immunised and reconditioned) Sitka Spruce Radiata Pine MR Particleboard MR Medium Density Fibreboard	Select dressing Select Select dressing Select	2858 2796 2796 1497 (1973), 1498 (1973)	N/A
Paling fence posts Other fence posts Fence rails and palings	Class 2 or better Class 1 Eastern Australian hardwoods Radiata Pine (treated) Cypress Pine	Struct. Grade 1 Struct. Grade 1 Struct. Grade 3	2082 2082 2082	H4 or H5) See H4 or H5) Note H3

NOTE: Where H4 or H5 is specified as an alternative, the required hazard rating will depend on the specific existing site conditions.

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS

KITCHEN UNITS

Specification Notes

Kitchen Units/cupboards

All units are to be manufactured to AS/NZS 4386.1:1996 and installed in accordance with the appropriate standards, codes and or guidelines ensuring the use of approved components and products.

All High Moisture Resistant (HMR), Medium Density Fibreboard, High Pressure Laminates Decorative (Laminates) and Low Pressure Laminates (Melamine) are to be to industry standards. Details of the manufacturers of these items are to be supplied if requested.

Floor cupboards and benches to be 850mm high for aged housing and 900 mm high for housing units other than aged and for disabled.

- Benchtops are to be continuous over units without joints (except where change of direction in the benchtop is required where a toggle-joint must be used).
- Provide cutouts for sink (1 ½ bowl)
- Benchtop edges - rolled edge unless otherwise specified.

Use either HMR particleboard or MDF for:

- Benchtop min. 32mm thick;
- Carcass, doors and kickboard min 16mm thick and;
- Drawers 13 mm thick.

Provide High pressure decorative laminate finish to all exposed surfaces including door faces, drawer faces and to benchtops:

- Kitchen benchtops - high resistance to surface wear, high resistance to impact and high resistance to scratching (Class HG)
- Kitchen front panels, doors and drawer fronts - medium resistance to surface wear, medium resistance to impact and medium resistance to scratching (Class VG)
- Other locations - low resistance to surface wear and scratching, medium resistance to impact (Class VL)

Provide Melamine finish (white) to all internal surfaces, including edge of frame, carcass and shelves.

Kickboard - 2mm black vinyl finish or high-pressure high resistance to wear, impact and scratching laminate finish (colour to match existing or as directed), including any edges. Finish to be continuous over units without joints.

Draw Units: Provide an integrated drawer slide system comprising a high quality epoxy coated white steel self-closing feature runner 30kg-load capacity. Bottom 16mm HMR white melamine.

- Provide 1 cutlery tray in drawer unit.

One wall cupboard unit (medicine cabinet) must have a childproof door catch.

Provide covering in above kitchen wall units where ceiling is below 2400mm high.

Use concealed side wall-mounted hinges with 170-degree swing.

Details and construction to Drawings KD1 to KD11. Install to manufacturers instruction.

Kitchen assemblies/units to carry a compliance label to current relevant Australian Standards.

The Contractor is to prepare and supply 'Work as Executed Drawings' to the Principal's Representative for all full Kitchen Replacements.

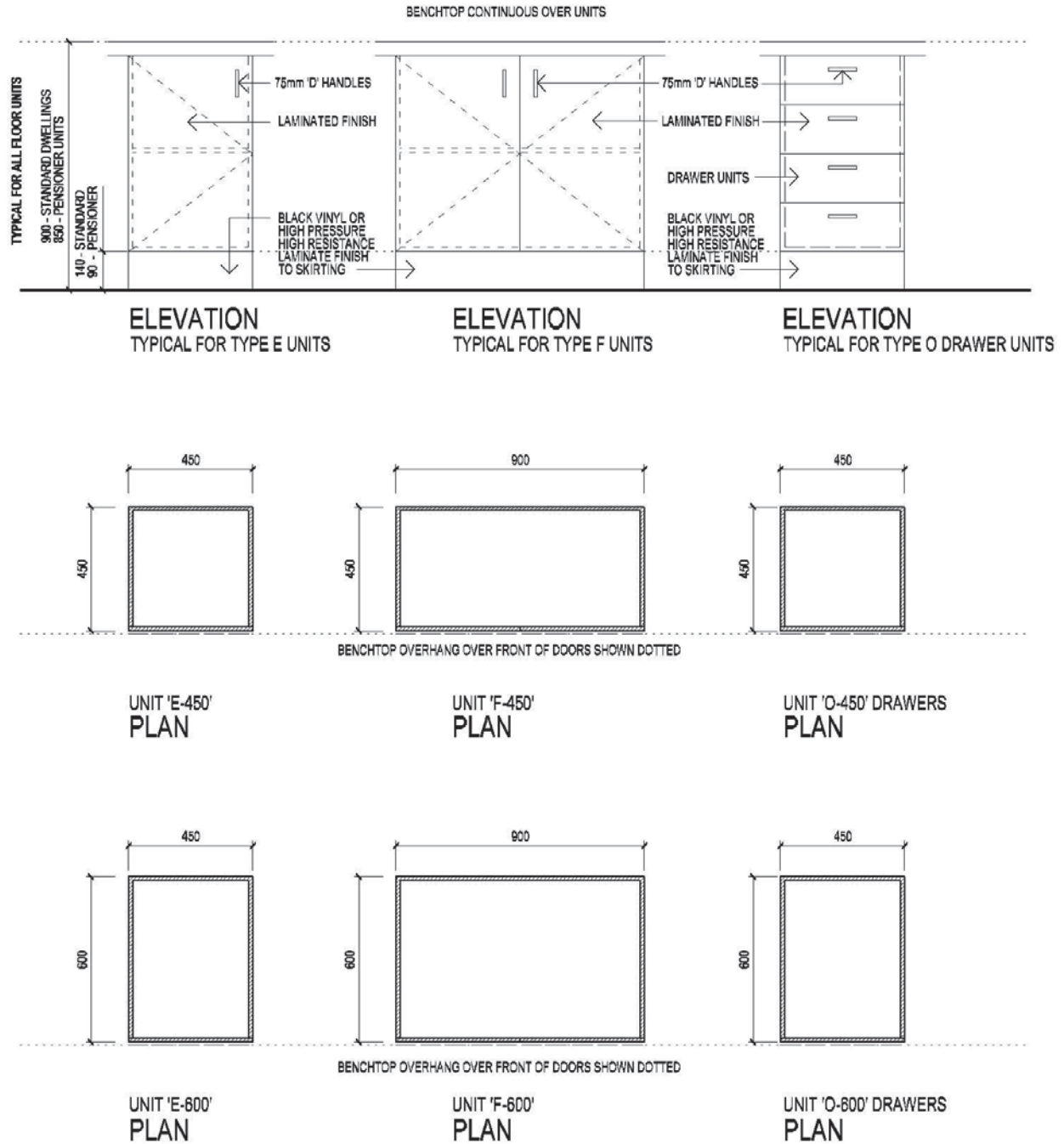
Provide a five (5) year written warranty.

KITCHEN DETAILS : KITCHEN FITMENTS
SPECIFICATION NOTES

KD 01

SCALE: NTS
DATE: 16.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS

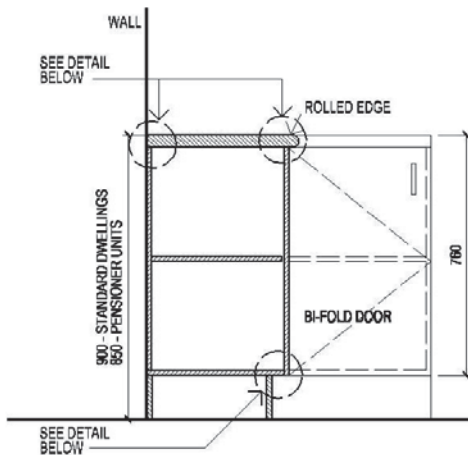


KITCHEN DETAILS : KITCHEN FITMENTS FLOOR UNITS 'E', 'F' & 'O'

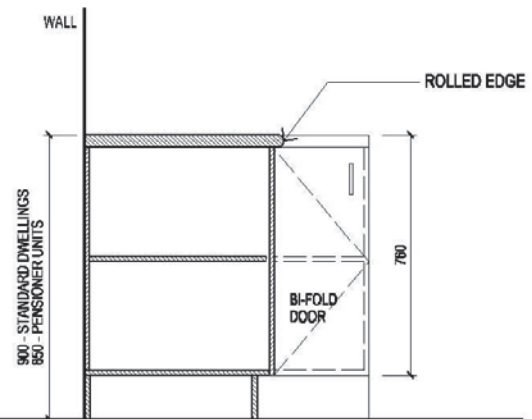
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DATE: 16.11.05

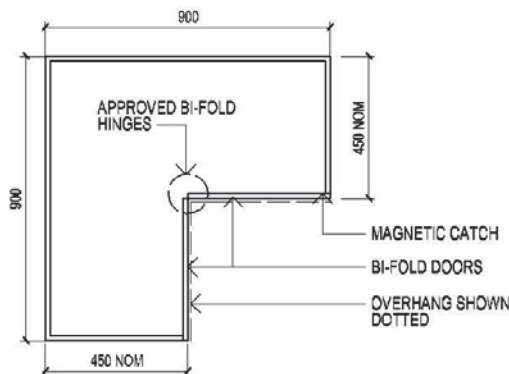
SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS



SECTION CORNER UNIT 'T-450'

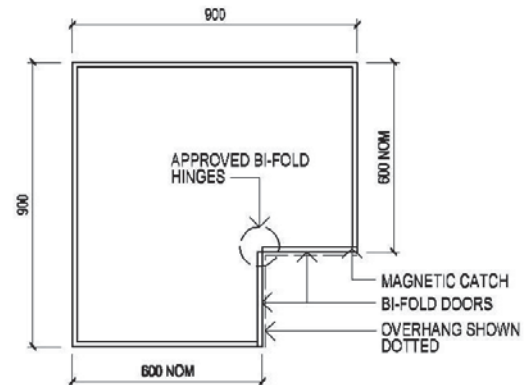


SECTION CORNER UNIT 'T-600'



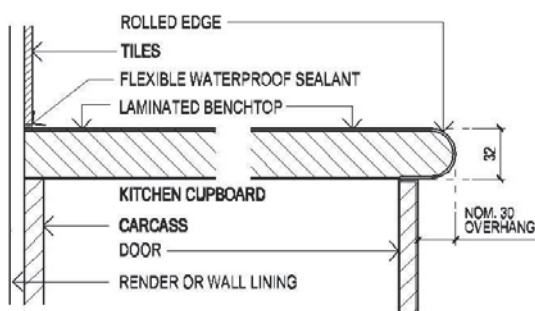
PLAN CORNER UNIT 'T-450'

NOTE: CENTRE LINE MEASUREMENT 1350MM

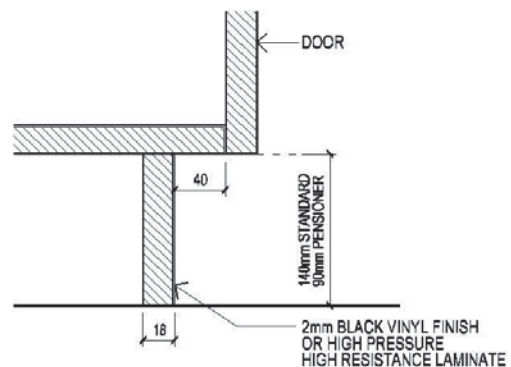


PLAN CORNER UNIT 'T-600'

NOTE: CENTRE LINE MEASUREMENT 1200MM



BENCHTOP DETAIL



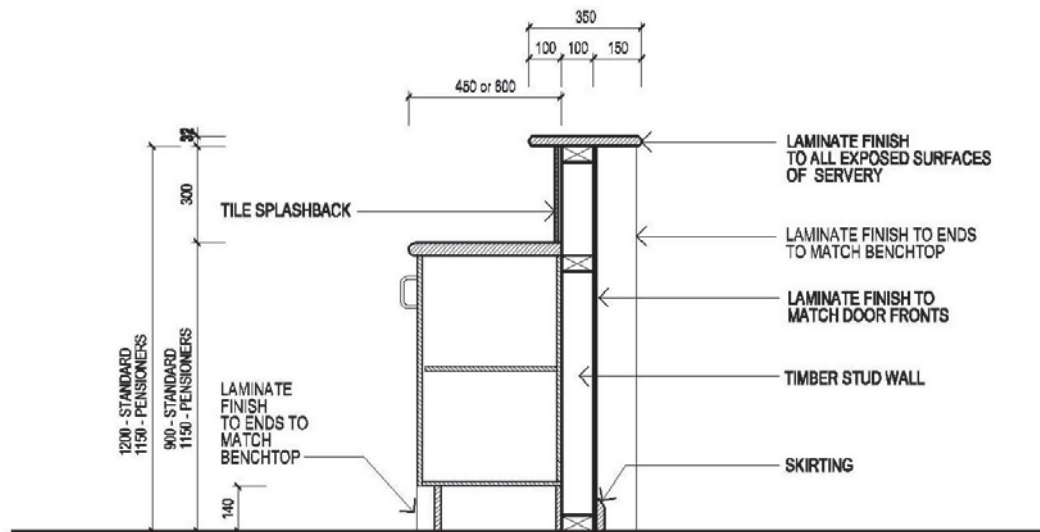
BASE DETAIL

KITCHEN DETAILS : KITCHEN FITMENTS CORNER UNIT 'T'

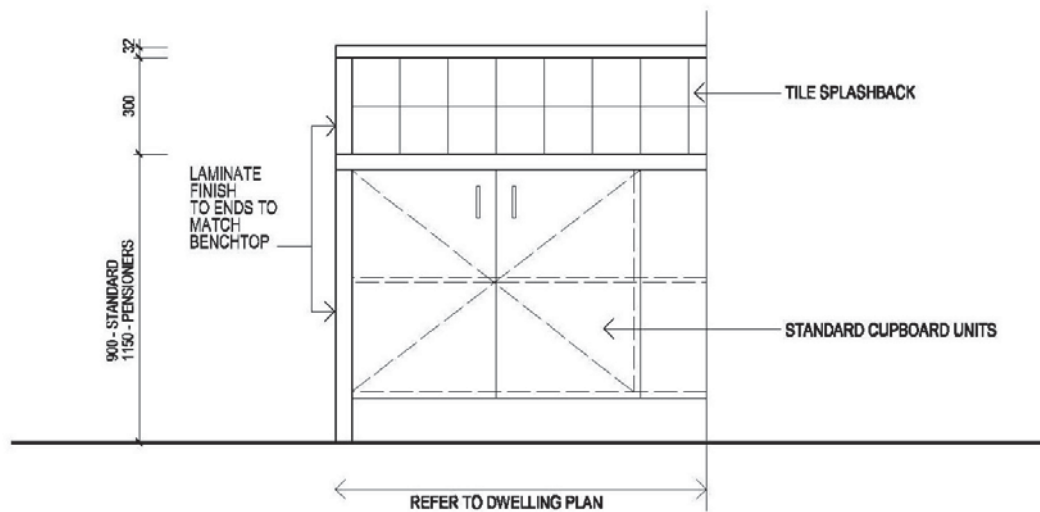
KD 03

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DATE: 16.11.05

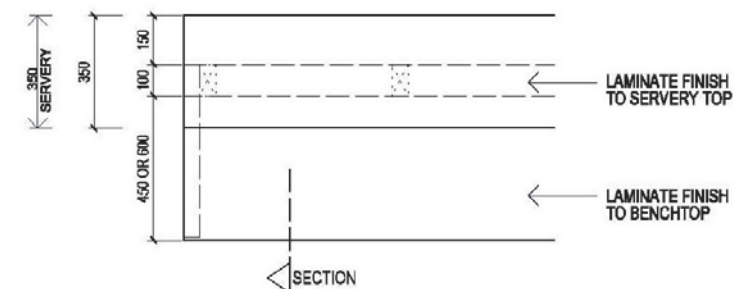
SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS



SECTION



ELEVATION



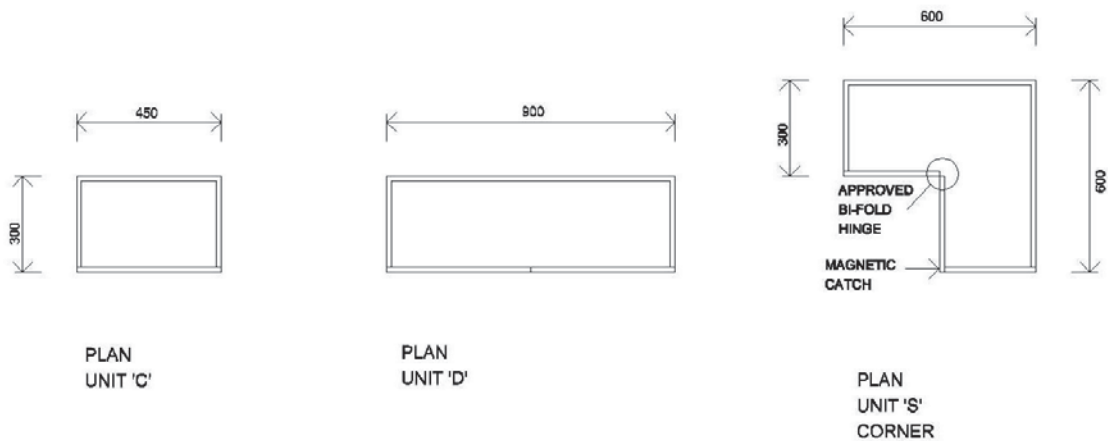
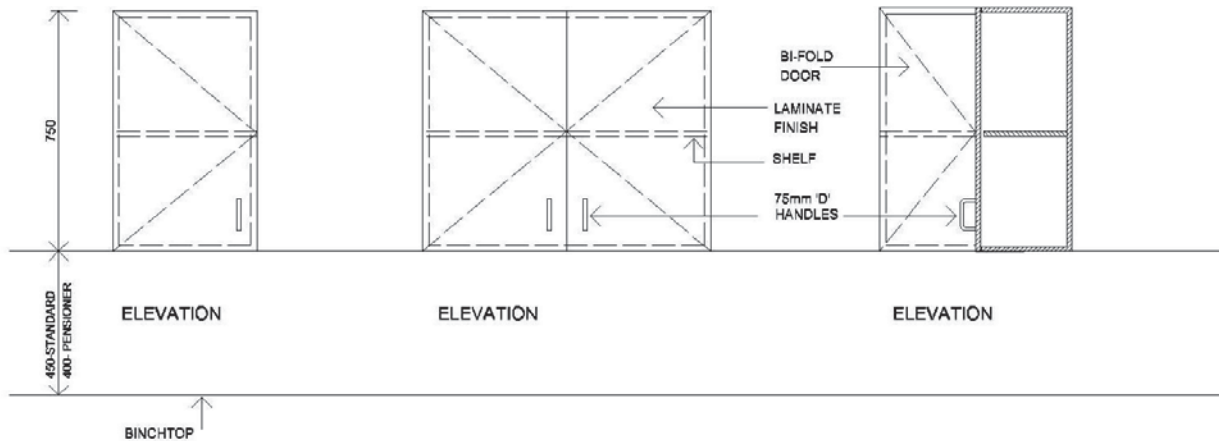
PLAN

KITCHEN DETAILS : KITCHEN FITMENTS SERVERY UNIT

KD 04

SCALE: NTS
DATE: 18.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS



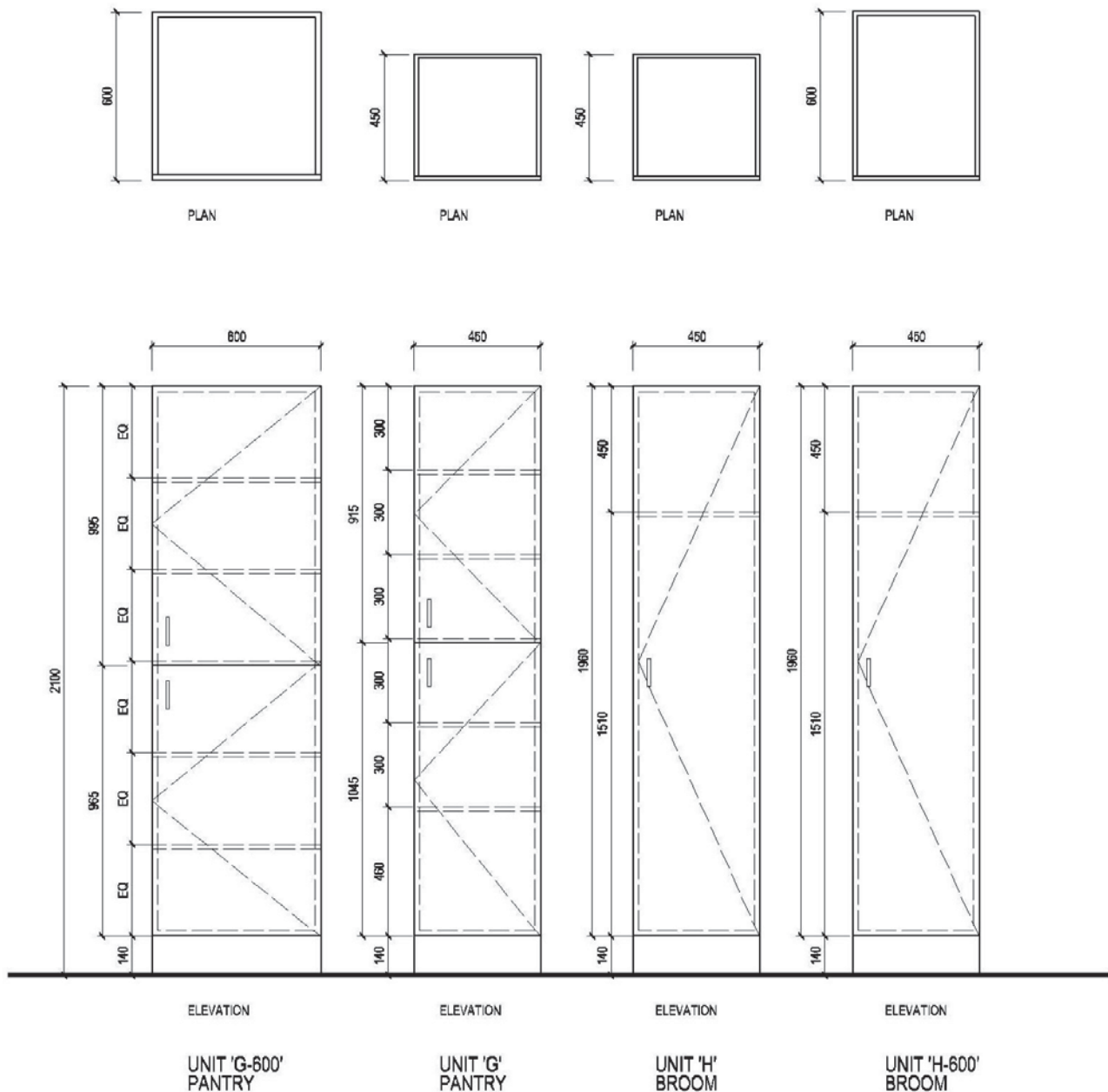
NOTE: CENTRE LINE MEASUREMENT 900MM

KITCHEN DETAILS : KITCHEN FITMENTS WALL UNIT 'C', 'D', 'S'

KD 05

SCALE: NTS
DATE: 16.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS

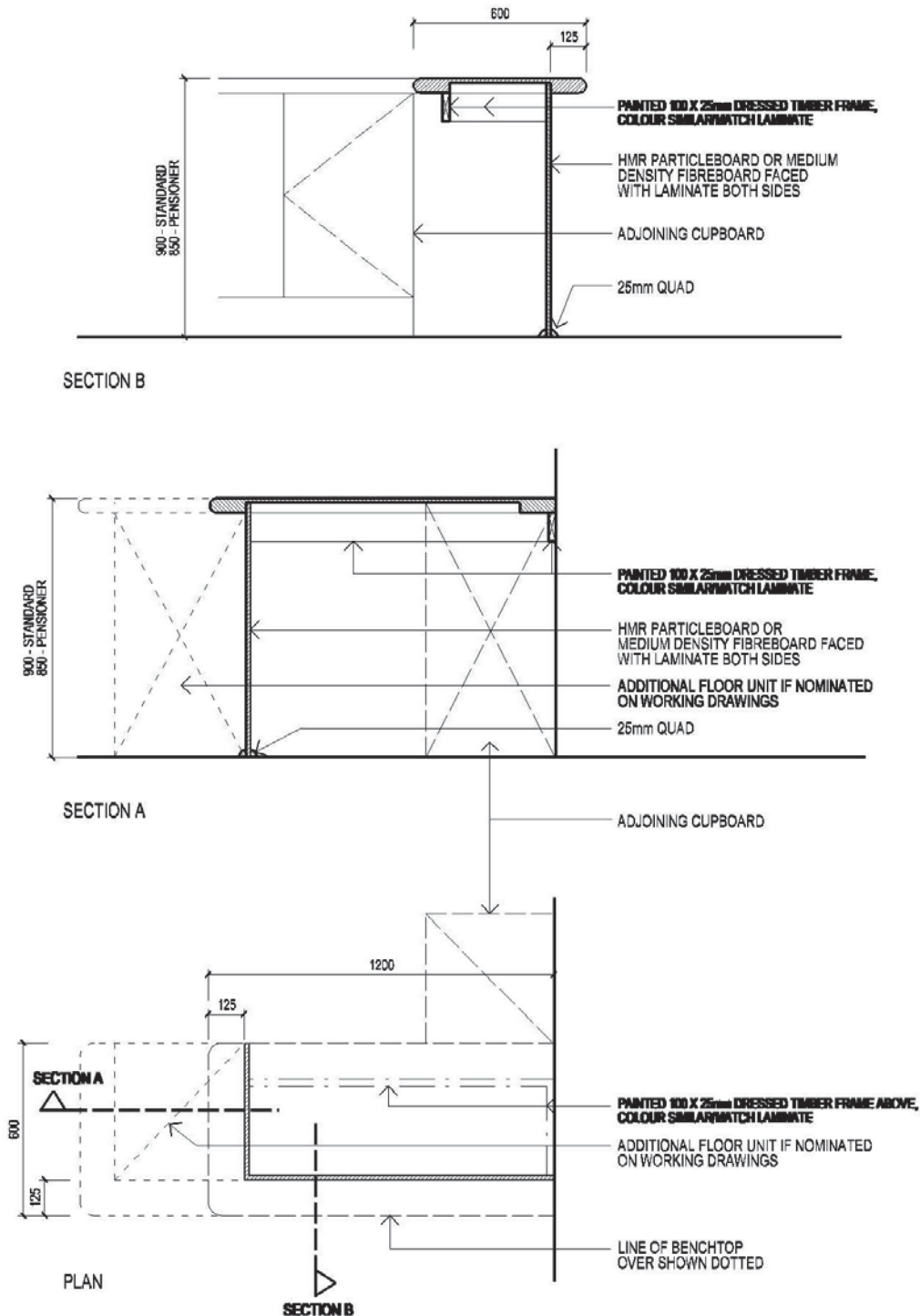


KITCHEN DETAILS : KITCHEN FITMENTS PANTRY & BROOM CUPBOARD 'G' & 'H'

KD 06

SCALE: NTS
DATE: 16.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS

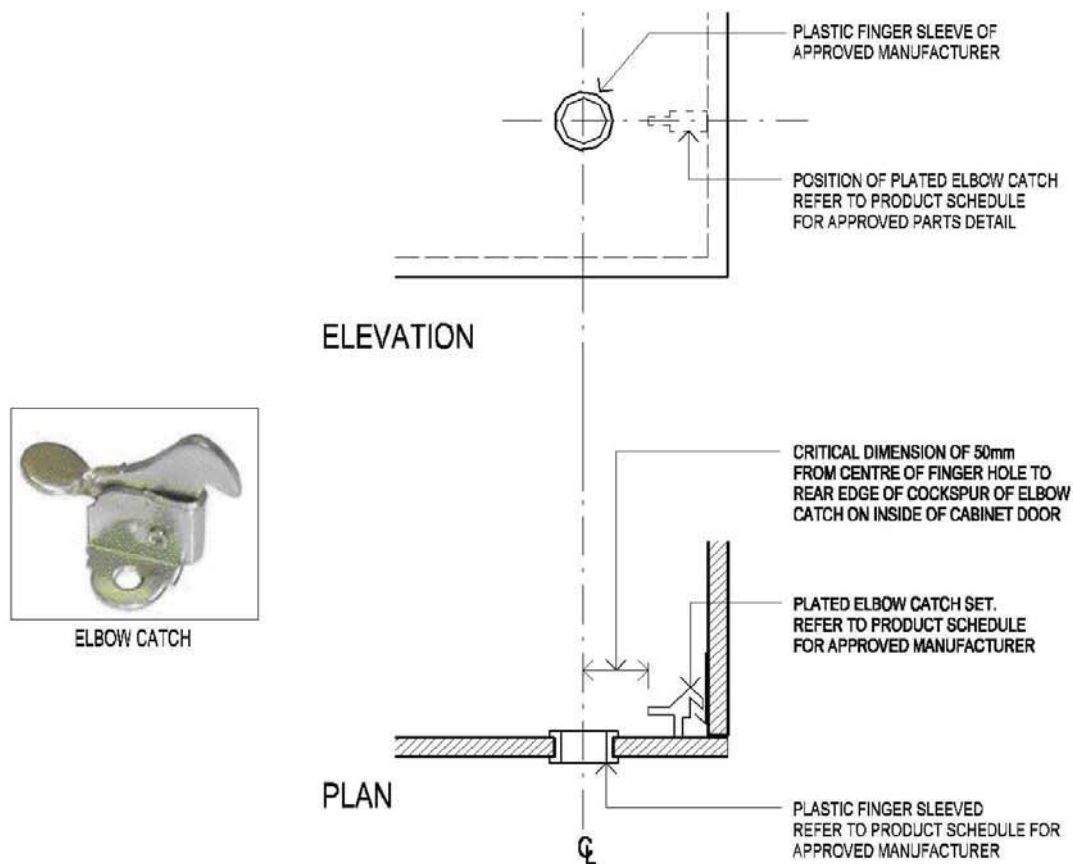


KITCHEN DETAILS : KITCHEN FITMENTS BREAKFAST BAR UNIT 'N'

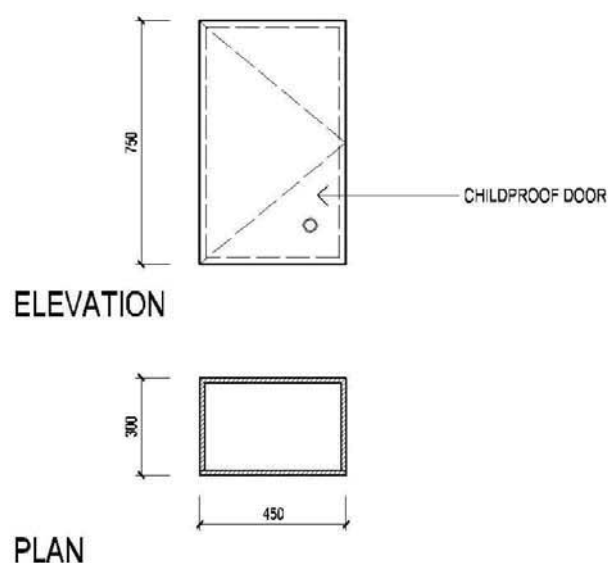
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SCALE: NTS
DATE: 16.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS



DETAIL OF LOCKING SYSTEM TO MEDICINE CABINET

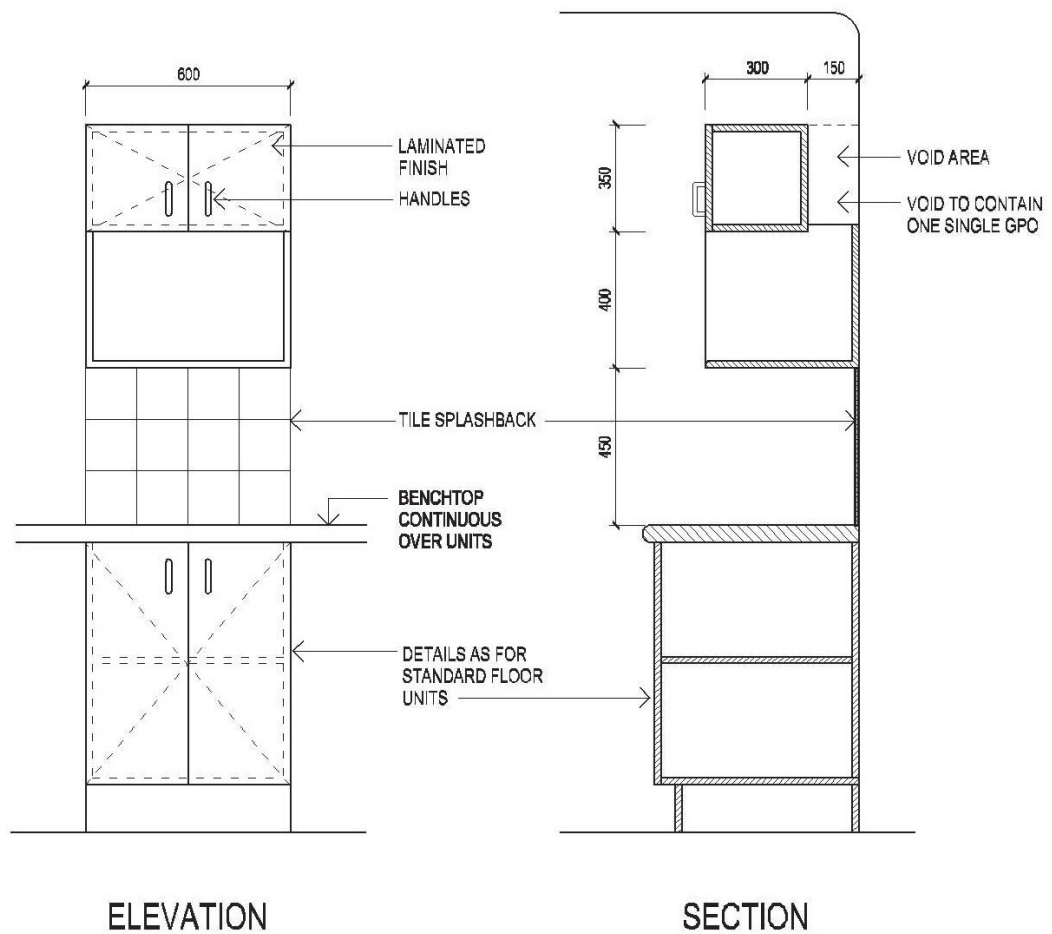


KITCHEN DETAILS : KITCHEN FITMENTS CHILDPROOF MEDICINE CABINET WALL UNIT TYPE 'C'

KD 08

SCALE: NTS
DATE: 16.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS

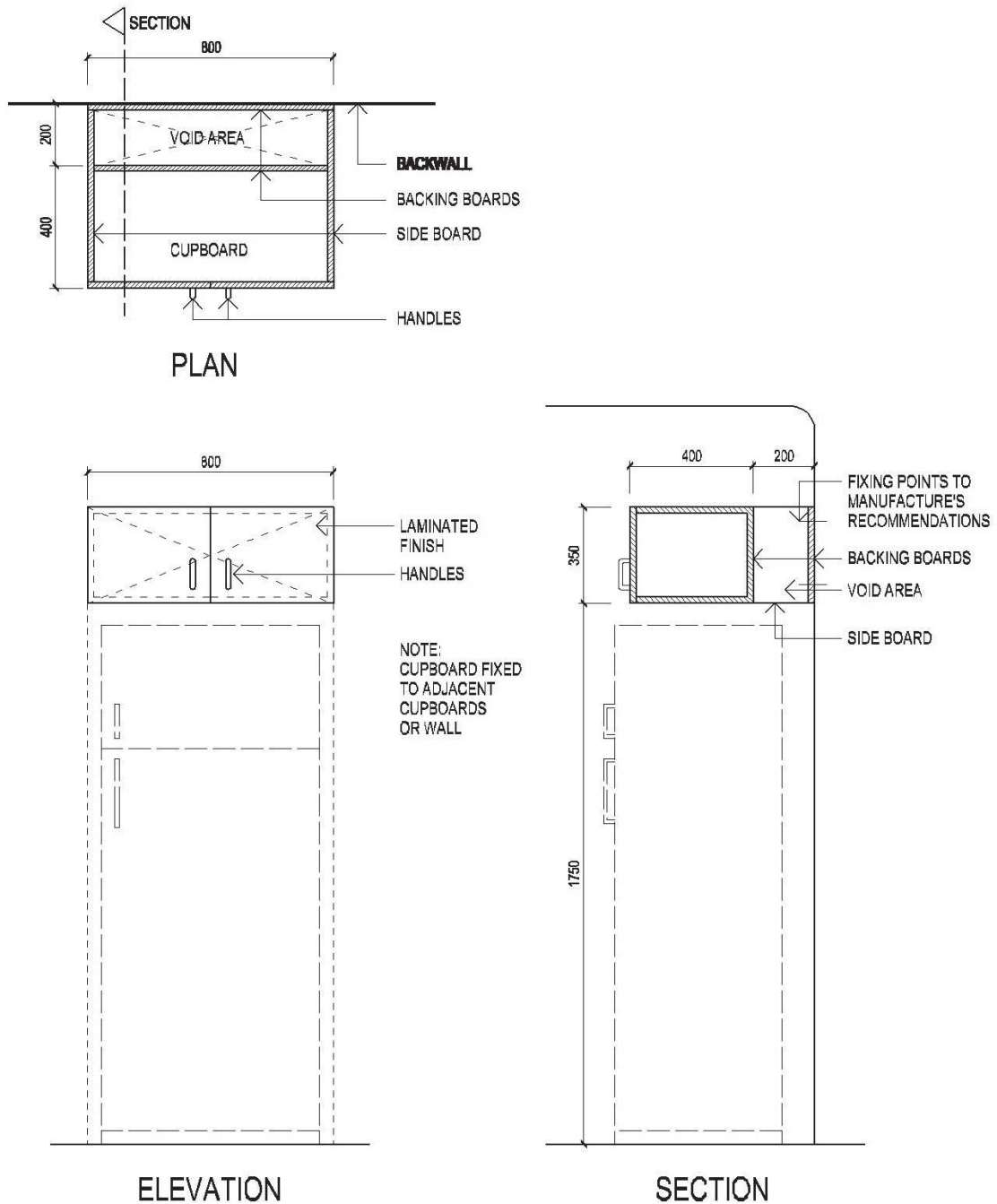


KITCHEN DETAILS : KITCHEN FITMENTS STANDARD FLOOR UNIT & MICROWAVE CUPBOARD

KD 09

SCALE: NTS
DATE: 16.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS

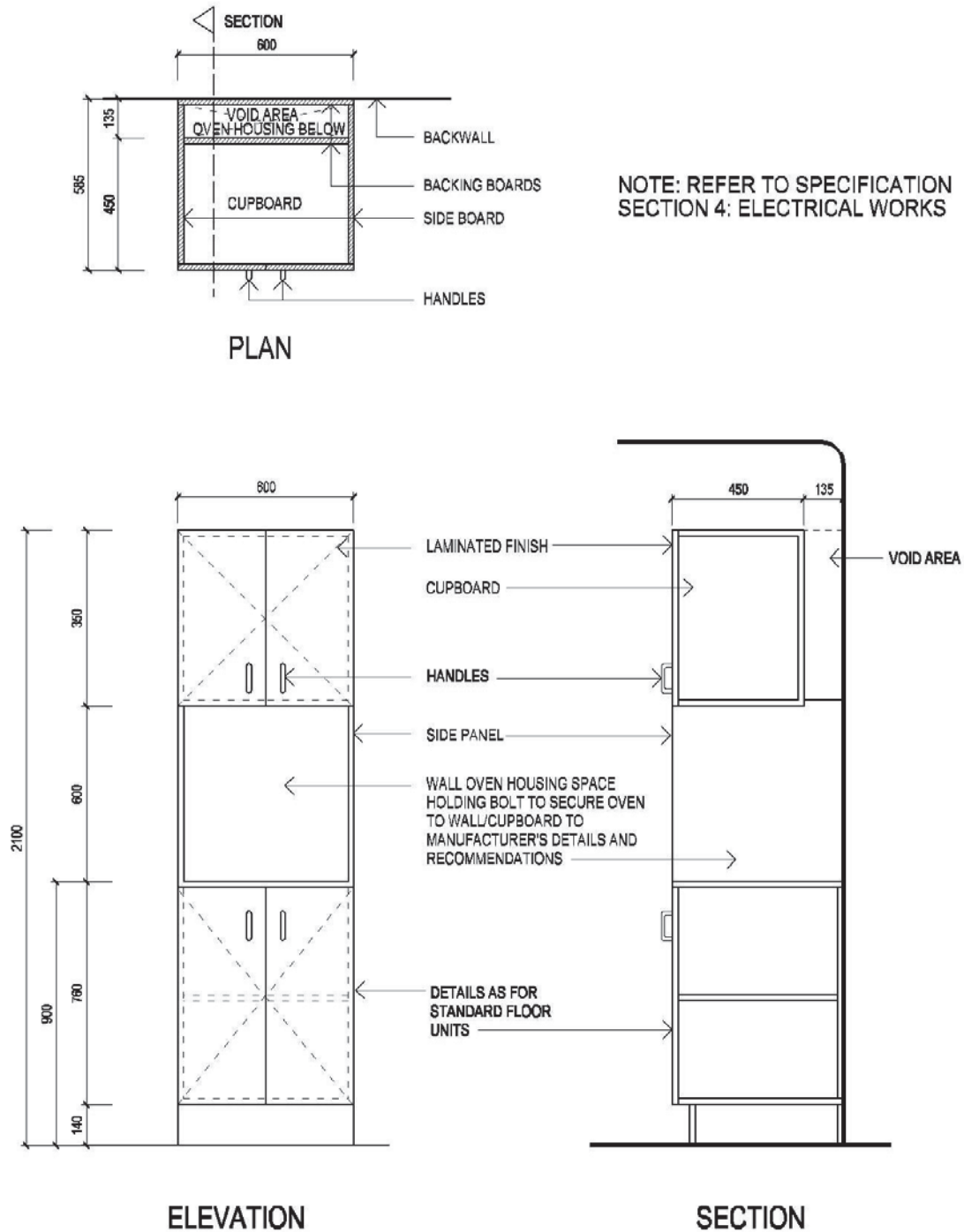


KITCHEN DETAILS : KITCHEN FITMENTS CUPBOARD OVER REFRIGERATOR

KD 10

SCALE: NTS
DATE: MARCH 2004

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS

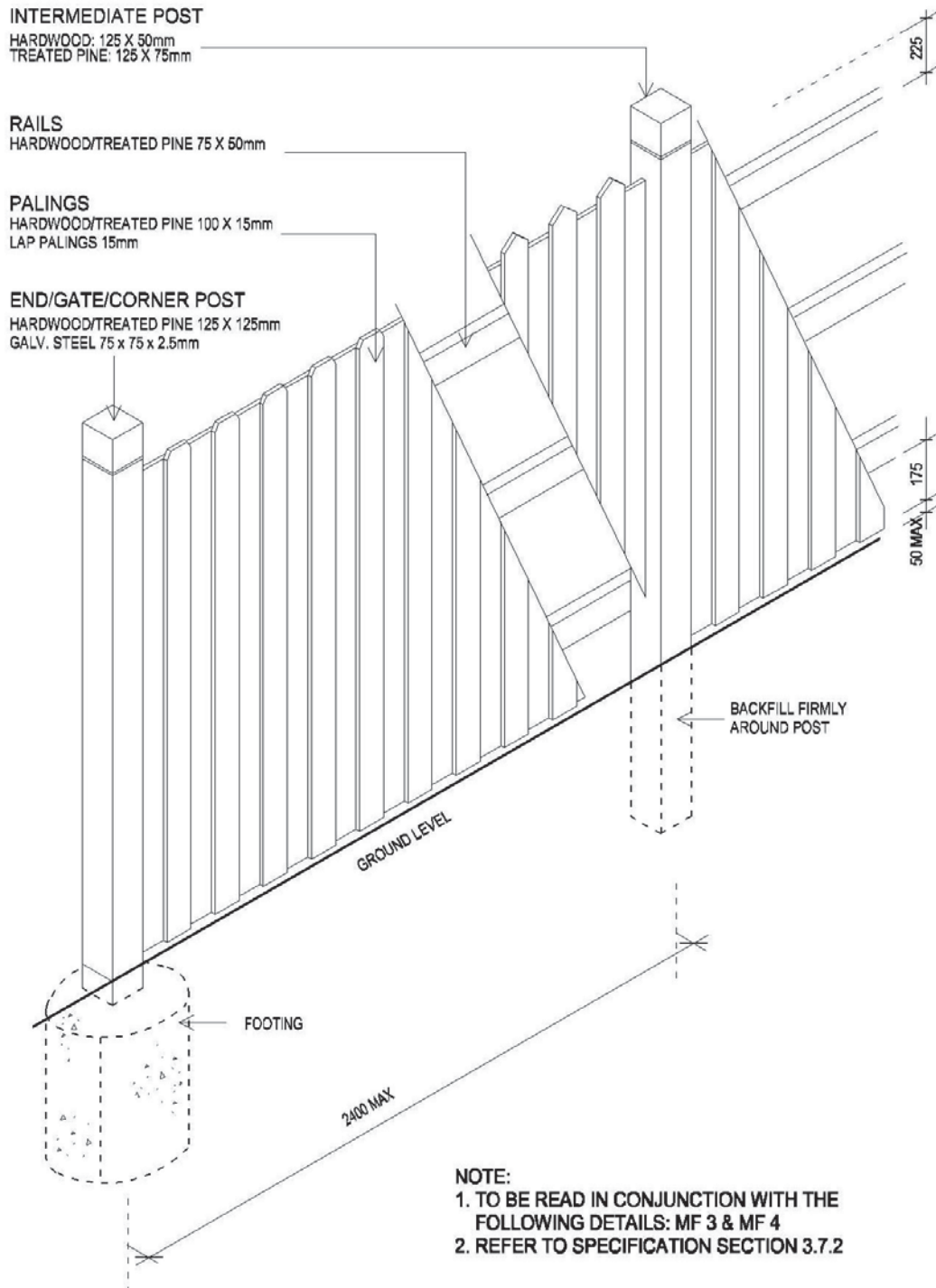


KITCHEN DETAILS : KITCHEN FITMENTS FLOOR UNIT INCLUDING WALL OVEN SHELF

KD 11

SCALE: NTS
DATE: 12.12.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS

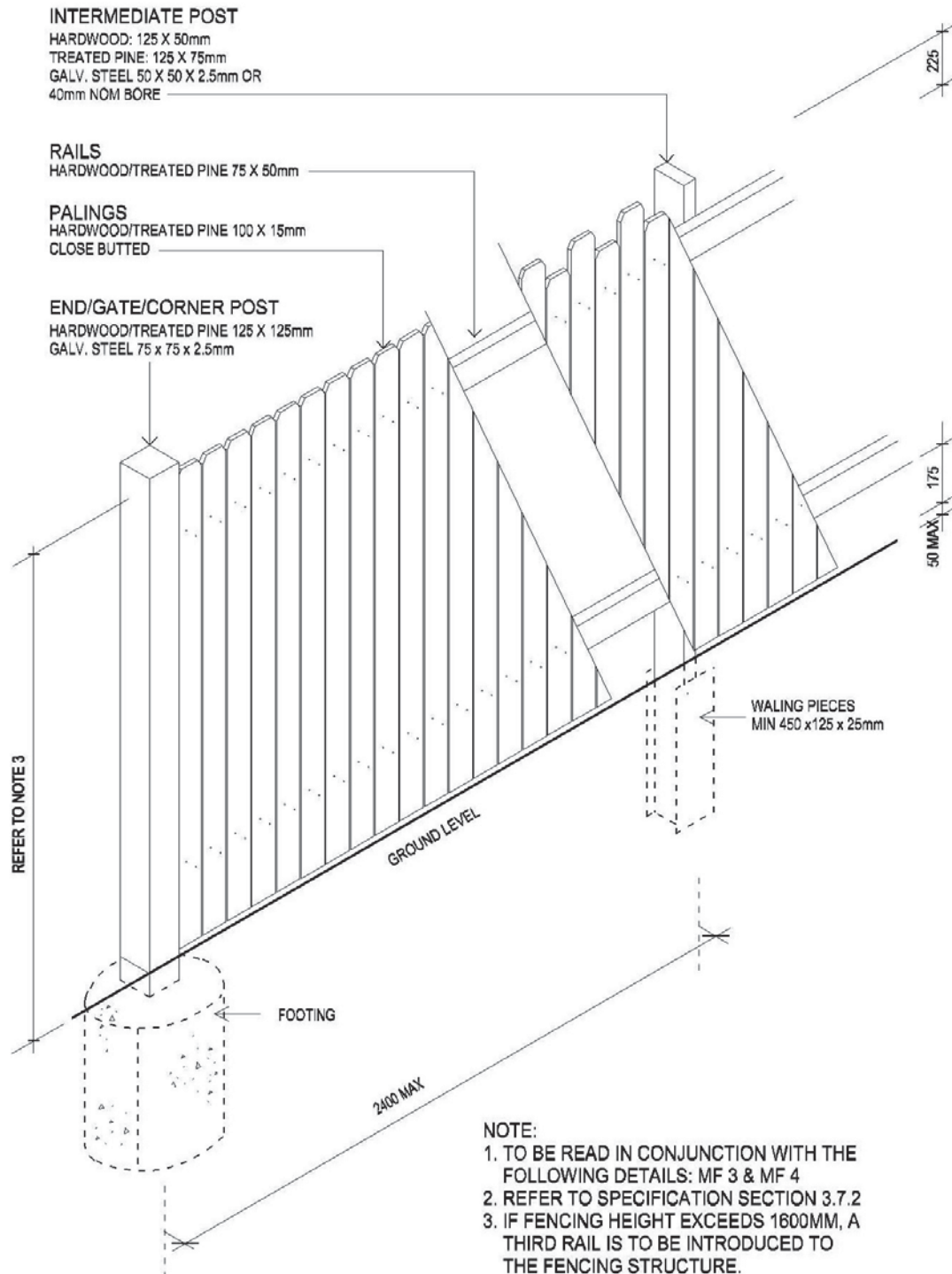


LAPPED PALING FENCE

MF 01

SCALE: NTS
DATE: 18.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS

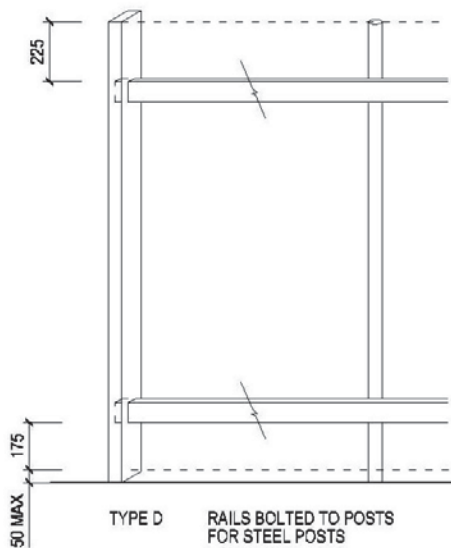
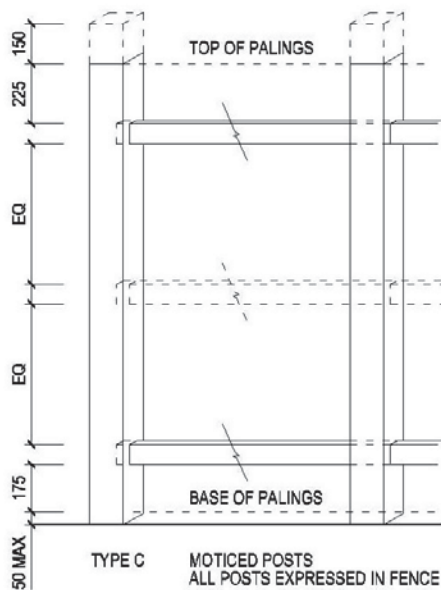
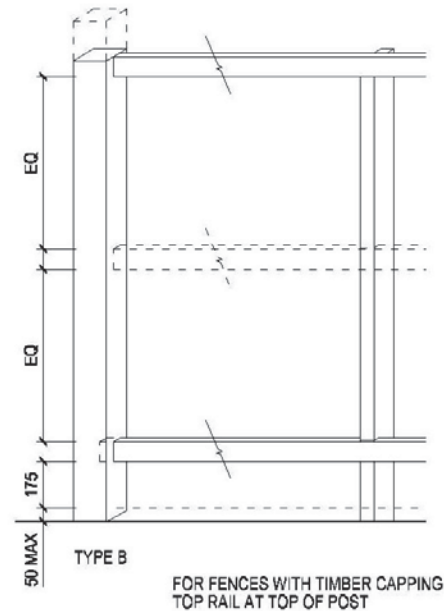
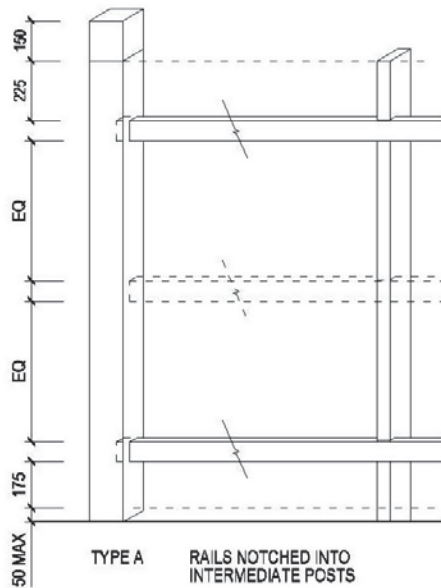


CLOSED PALING ENCE

MF02

SCALE: NTS
DATE: 18.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS



NOTES:

SPACING - 2400mm MAXIMUM BETWEEN POSTS.

POST

- SET VERTICALLY, WEATHERCUT TOPS OF TIMBER POSTS WITHOUT DECORATIVE TOPS.

- INSTALL POSTS AS DETAILED ON FOOTINGS SHEET NO MF 4

- PAINT IN-GROUND HARDWOOD WITH TYPE A CREOSOTE TO A.S. K55 TO 100mm ABOVE GROUND

- CAP GALVANISED STEEL POSTS WITH PURPOSE MADE PUSH ON FRICTION CAPS.

RAILS

- STOP MORTICE RAILS MIN. 38mm INTO TIMBER CORNER, END AND GATE POSTS

- JOIN AT ALTERNATE POSTS. TAPER AND SPLICE TOGETHER AND NAIL IN MORTICES

- FIX TO GALVANISED STEEL POSTS AND NOTCHED TIMBER POSTS USING 10mm DIAM. GALV BOLT & WASHER

- USE THREE RAILS WHERE SPACING BETWEEN RAILS IS GREATER THAN 1100mm AND FOR

ALL LAPPED PALING FENCES

- FOR TIMBER CAPPED FENCES PLACE TOP RAIL AT TOP OF POST

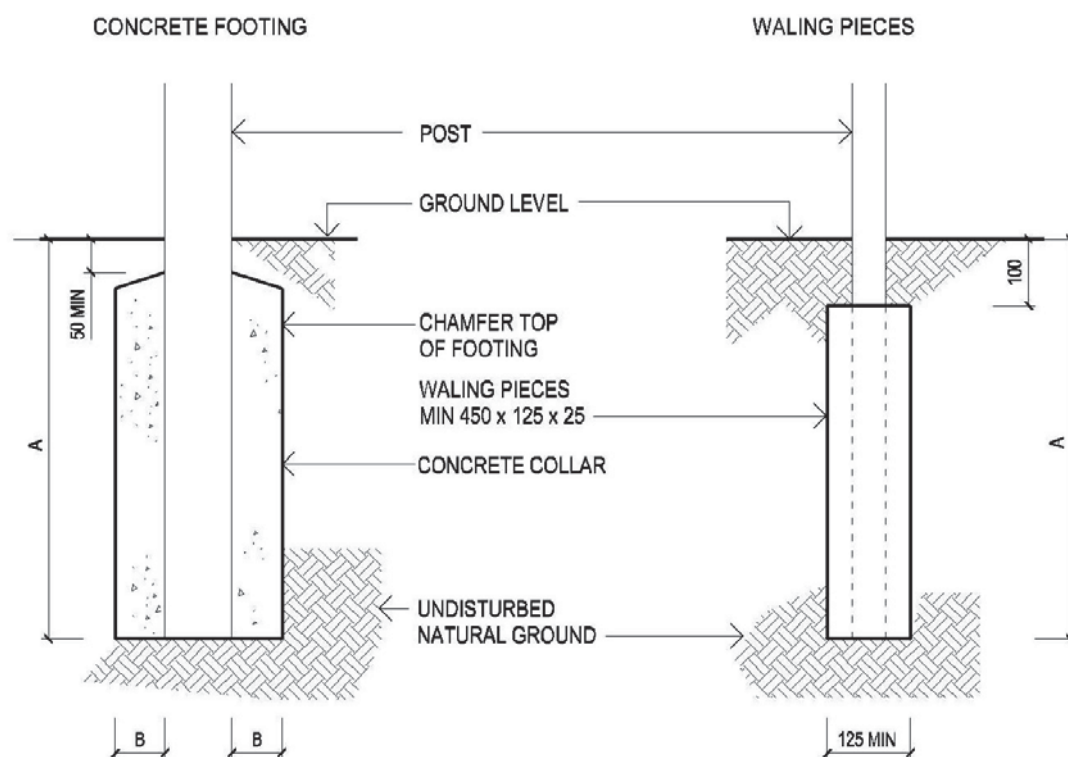
FRAME TYPES

MF03

SCALE: NTS

DATE: 18.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS



SOIL TYPE/FOOTING SIZE	A DEPTH (mm)	B COLLAR WIDTH (mm) ALL ROUND
A. SAND OR HIGH WIND	1000	300 MINIMUM
B. CLAY/LOAM	600	100 MINIMUM
C. ROCK	375	PACK HOLE WITH CONCRETE

NOTES:

CONCRETE FOOTINGS

- REFER TO SPEC SECTION 3.5
- EXCAVATE HOLE TO DIMENSIONS REQUIRED
- SURFACE OF POST IN-GROUND IS TO BE CLEANED TO ENSURE ADEQUATE BONDING WITH CONCRETE
- IN-GROUND SECTION OF ALL POSTS TO BE FULL DEPTH OF FOOTING NOTED IN TABLE
- CONCRETE TO BE 4:2:1 AGGREGATE, SAND, CEMENT MIX OF 15MPa STRENGTH, PACKED INTO HOLE
- CHAMFER TOP OF FOOTING, FINISH MAX. 50mm BELOW GROUND LEVEL
- FOOTINGS TO BE PROVIDED FOR ALL GALVANISED STEEL POSTS
- INSTALL FOOTINGS TO TIMBER CORNER, GATE AND END POSTS
- FOR PICKET, LATTICE AND SHEET STEEL FENCES INSTALL FOOTINGS TO ALL POSTS
- IN SOLID ROCK POST TO BE MIN. 375mm INTO GROUND PACKED AROUND WITH CONCRETE

WALING PIECES

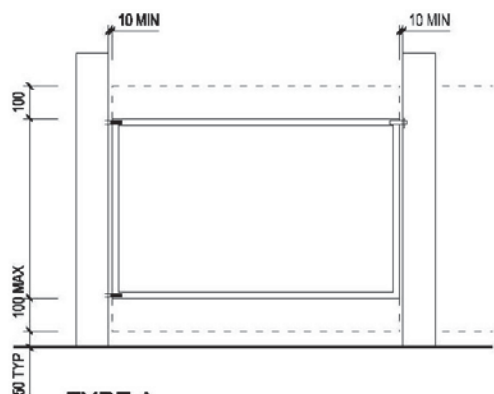
- INSTALL 2 OFF 450(MIN) x 125 x 25mm TIMBER WALING PIECES, ONE TO EITHER SIDE OF 50 x 125mm INTERMEDIATE TIMBER POSTS WITHOUT FOOTING TO FINISH 100mm BELOW GROUND LEVEL.
- DOUBLE NAIL TO POST

FOOTINGS

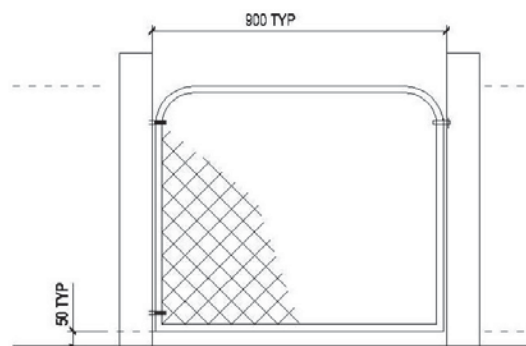
MF04

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DATE: 18.11.05

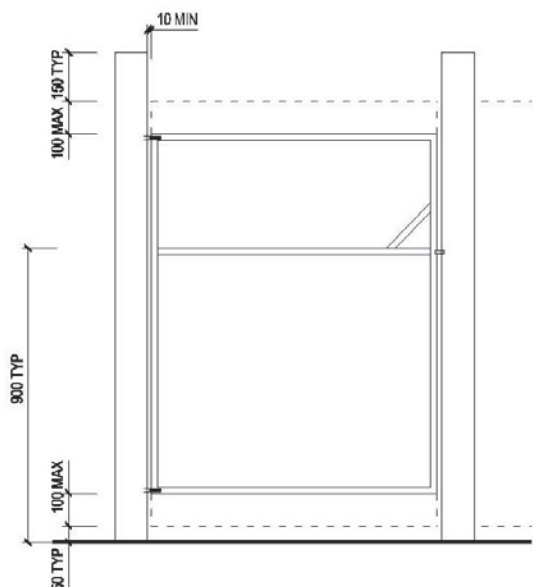
SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS



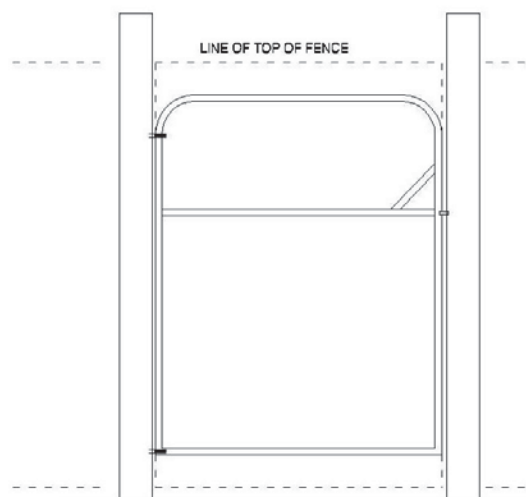
TYPE A
LOW STEEL GATE FRAME
SQUARE SECTION



TYPE B
LOW STEEL GATE FRAME
TUBULAR SECTION



TYPE C
HIGH STEEL GATE FRAME
SQUARE SECTION



TYPE D
HIGH STEEL GATE FRAME
TUBULAR SECTION

NOTES:

LOW GATES 900 - 1200mm

- SQUARE SECTION FRAME 25 x 25mm RHS GALV STEEL WITH WELDED JOINTS
- TUBULAR SECTION FRAME 25mm NOM BORE GALV STEEL WITH WELDED JOINTS
- OR USE STANDARD GALVANISED STEEL GATE FRAME IN COMPLIANCE TO SPECIFICATION.

HIGH GATES 1500 - 1800mm

- SQUARE SECTION FRAME 32 x 32mm RHS GALV STEEL WITH FRAME JOINTS
- TUBULAR SECTION FRAME 32mm NOM BORE GALV STEEL WITH WELDED JOINTS
- OR USE STANDARD GALVANISED STEEL GATE FRAME IN COMPLIANCE TO SPECIFICATION.

FIXING AND HARDWARE

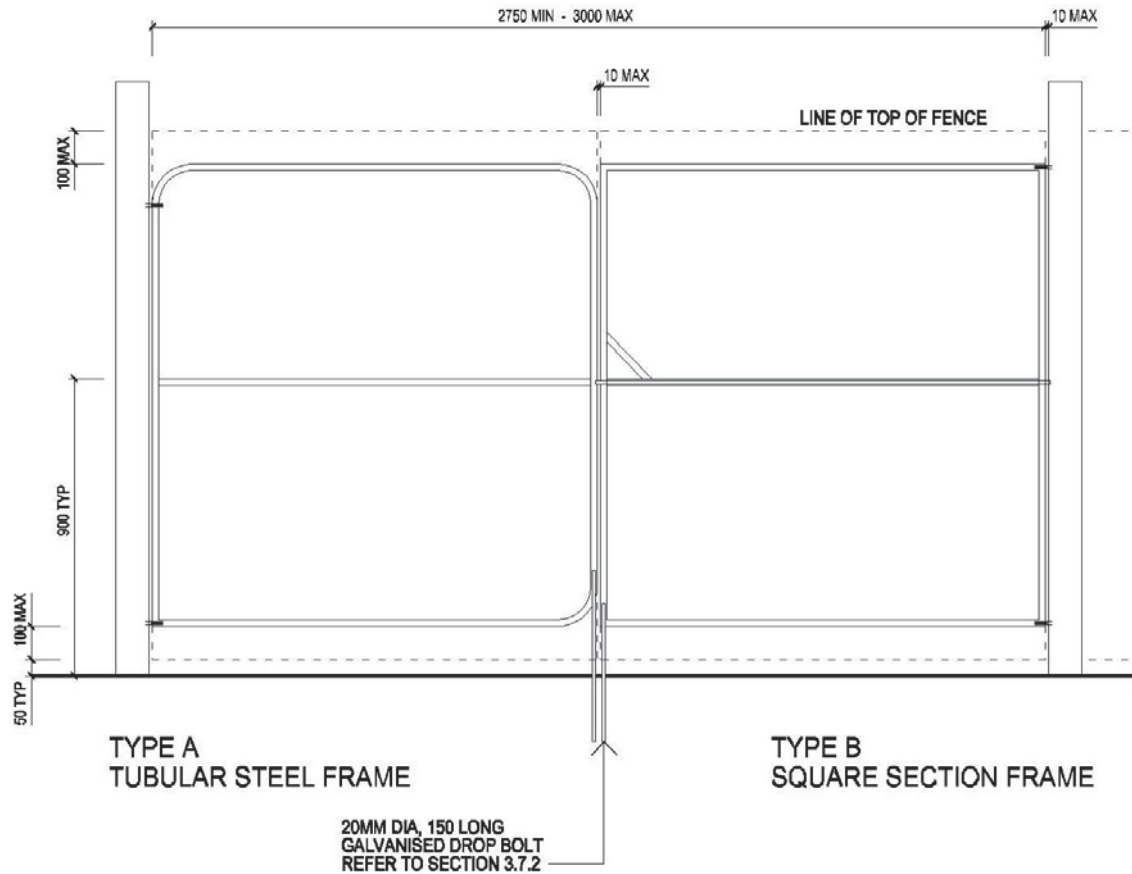
- ALL FIXINGS AND HARDWARE TO BE HOT DIPPED GALVANISED
- SQUARE SECTION, HINGES TO BE 'TUFF' BALL BEARING HINGE OR EQUIVALENT
- TUBULAR SECTION, HINGES TO BE 'DOWNEE' G20 GATE HINGE OR EQUIVALENT
- LATCH TO BE GALV D-TYPE LATCH AND STRIKER
- FIX HINGE TO POSTS USING GALV BOLT, WELD HINGE AND LATCH TO GATE FRAME
- FOR SHEET METAL GATES FRAME TO BE AT EDGE OF GATE WITH CAPPING ALL ROUND

STEEL GATE FRAMES

MF05

SCALE: NTS
DATE: 18.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS



NOTES:

- PROVIDE HOLD-OPEN KEEPERS WHERE REQUIRED (DROP BOLT HOUSING OR PARROT-BEAK HOLD OPEN DEVICE FIXED TO WALL AND/OR NEW/EXISTING POST)
- REFER TO SPECIFICATION SECTION 3.7.2 AND SECTION 3.7.3
- FINISHED HEIGHT OF GATE TO EQUAL HEIGHT OF FENCE
- TUBULAR FRAME TO BE 32mm NOM BORE GALV STEEL WITH WELDED JOINTS
- SQUARE SECTION FRAME USE 32 x 32 x 3.2 RHS GALVANISED STEEL WITH WELDED JOINTS

FIXING AND HARDWARE

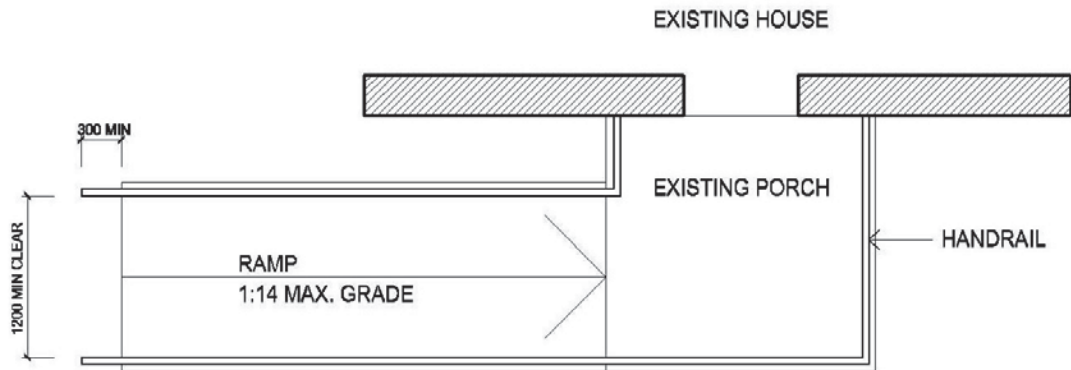
- ALL FIXINGS AND HARDWARE TO BE HOT DIPPED GALVANISED
- TUBULAR SECTION FRAMES, HINGES TO BE IN COMPLIANCE TO SPECIFICATION
- SQUARE SECTION FRAMES, HINGES TO BE IN COMPLIANCE TO SPECIFICATION
- LATCH TO BE GALV D-TYPE LATCH AND STRIKER
- WELD BARREL BOLT TO BASE OF EACH GATE
- WELD HINGES AND LATCH TO GATE FRAME
- FIX HINGE TO POST USING GALV BOLT, SCREW FIX D-LATCH TO OPPOSITE POST

VEHICULAR GATE FRAMES (BACK FENCES)

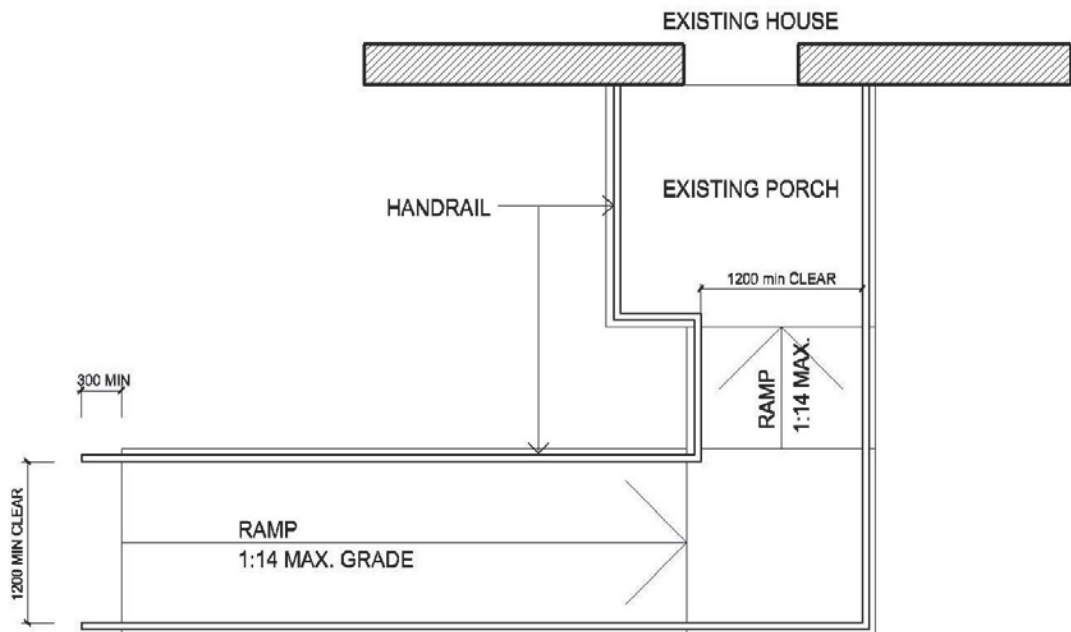
MF06

SCALE: NTS
DATE: 16.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS



PLAN OF STRAIGHT RAMP



PLAN OF 'L' SHAPED RAMP

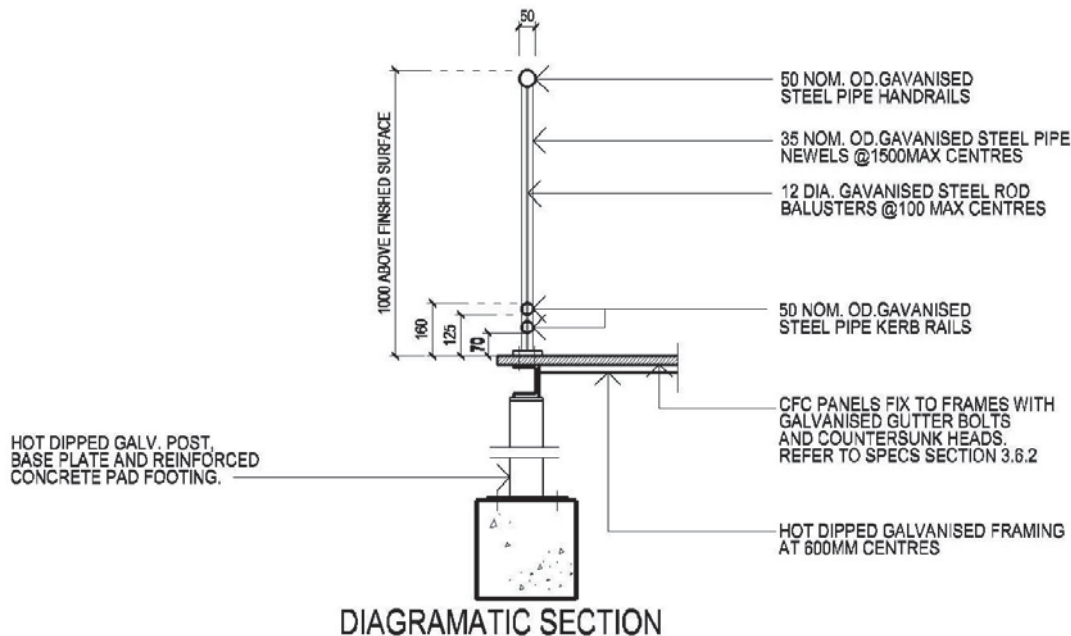
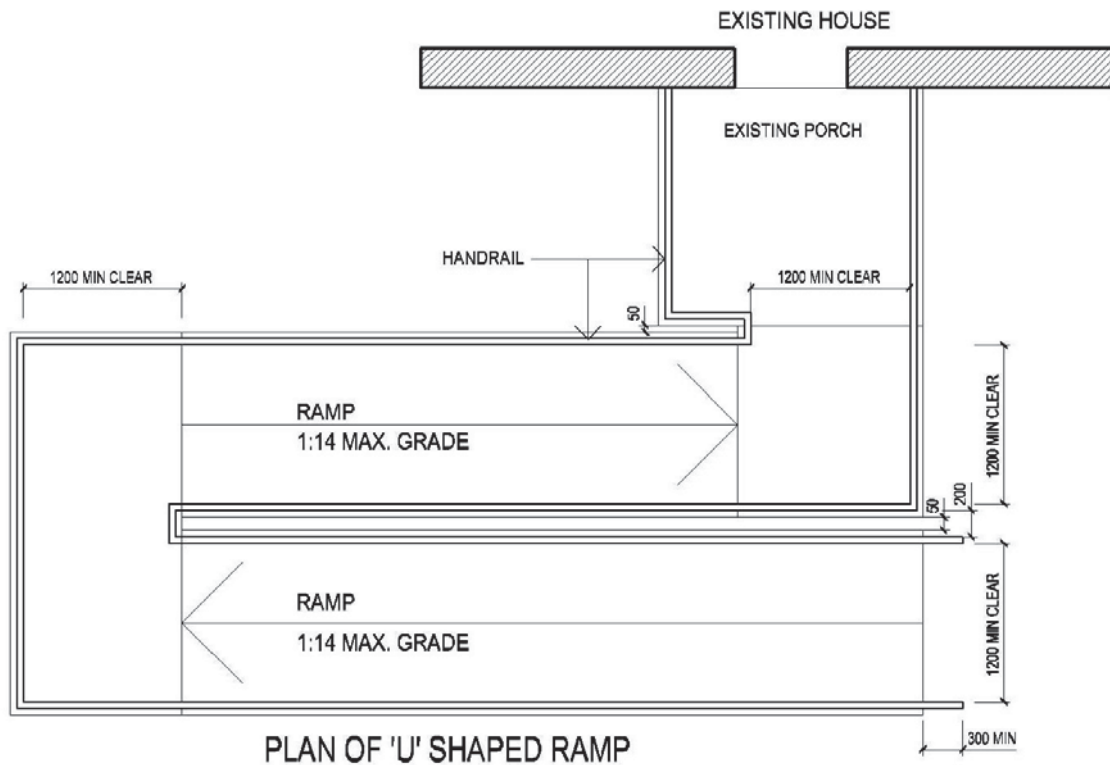
NOTE:
ACCESSIBLE RAMPS ARE TO COMPLY WITH
AS 1428.1 -
'DESIGN FOR ASSESS AND MOBILITY; GENERAL REQUIREMENTS FOR ACCESS - NEW BUILDING WORKS'
UNLESS NOTED OTHERWISE BY PRINCIPAL

RAMP DETAILS - PLANS

MR01

SCALE: NTS
DATE: 16.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS



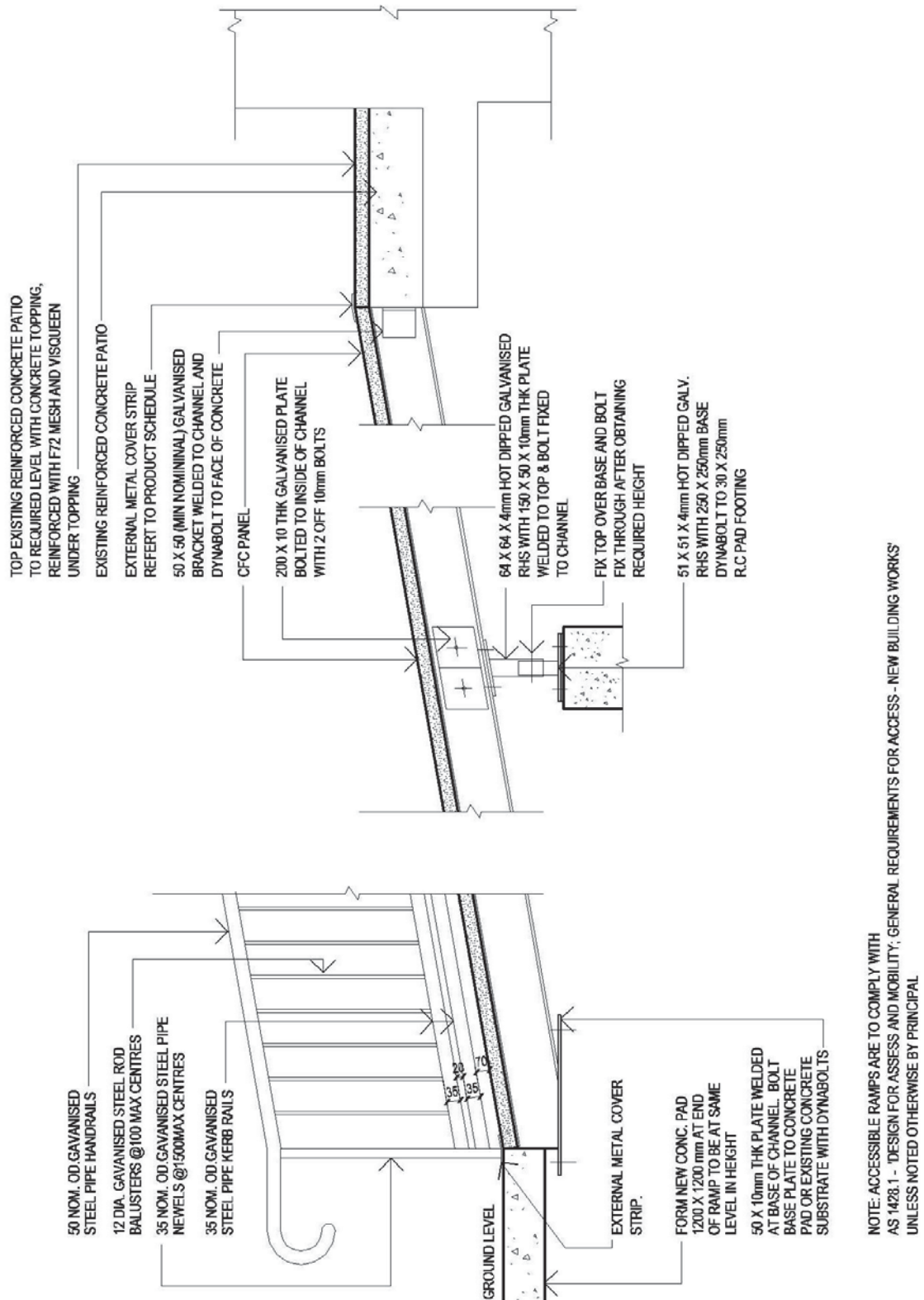
NOTE:
ACCESSIBLE RAMPS ARE TO COMPLY WITH
AS 1428.1 -
'DESIGN FOR ASSESS AND MOBILITY; GENERAL REQUIREMENTS FOR ACCESS - NEW BUILDING WORKS'
UNLESS NOTED OTHERWISE BY PRINCIPAL

RAMP DETAILS - PLAN, TYPICAL SECTION

MR02

SCALE: NTS
DATE: 16.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS

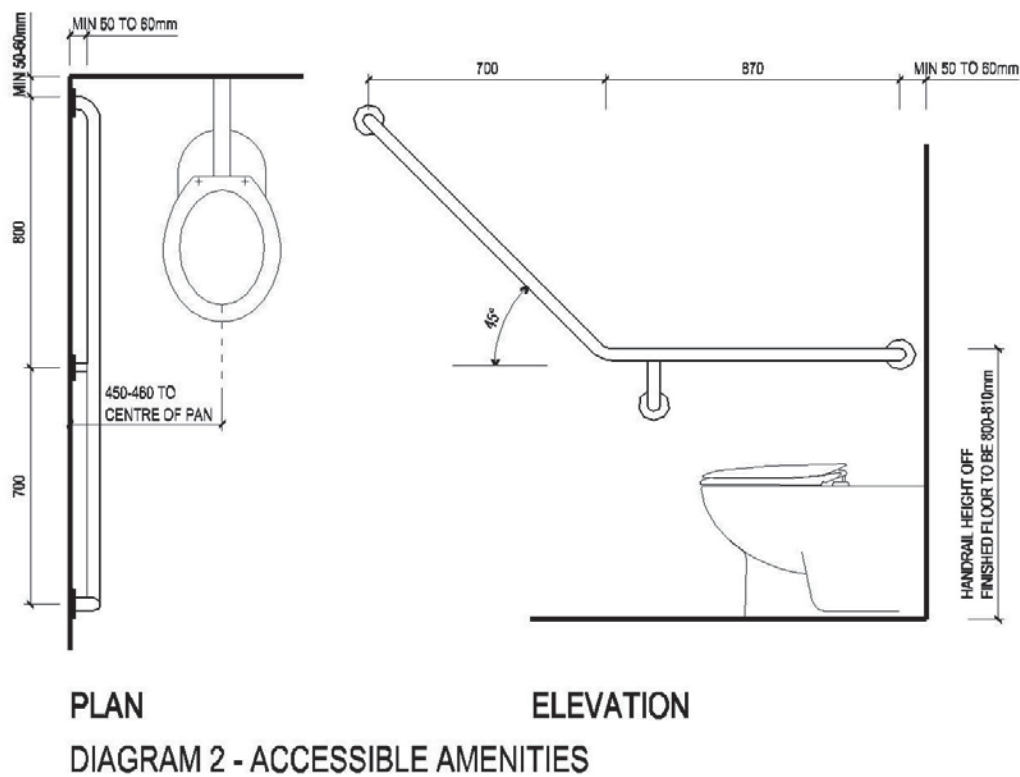
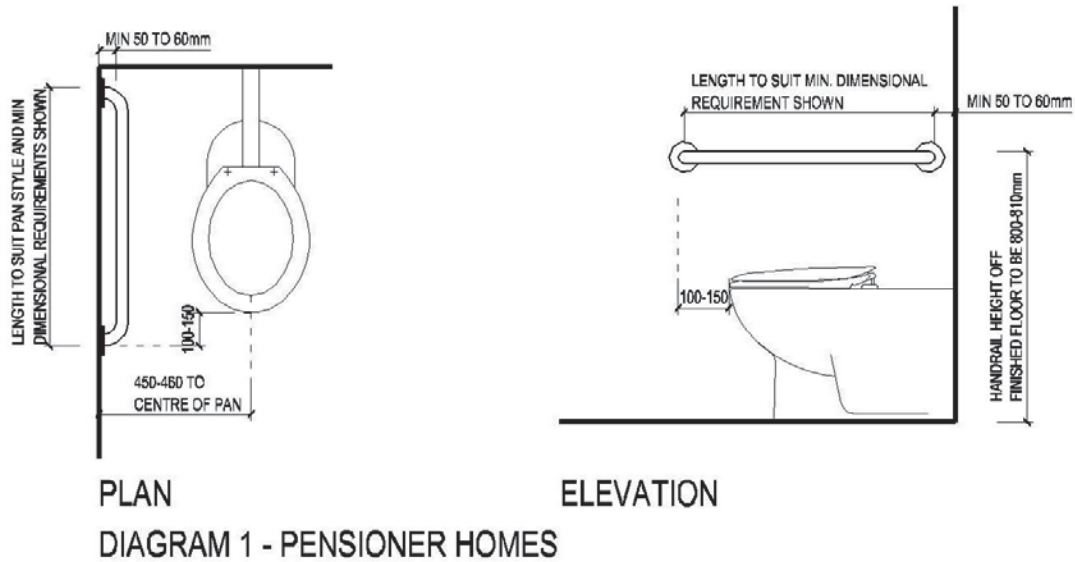


**RAMP DETAILS - PLAN, TYPICAL SECTIONS
INSTALLATION TO EXISTING REINFORCED CONCRETE PATIO**

MR03

SCALE: NTS
DATE: 18.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS

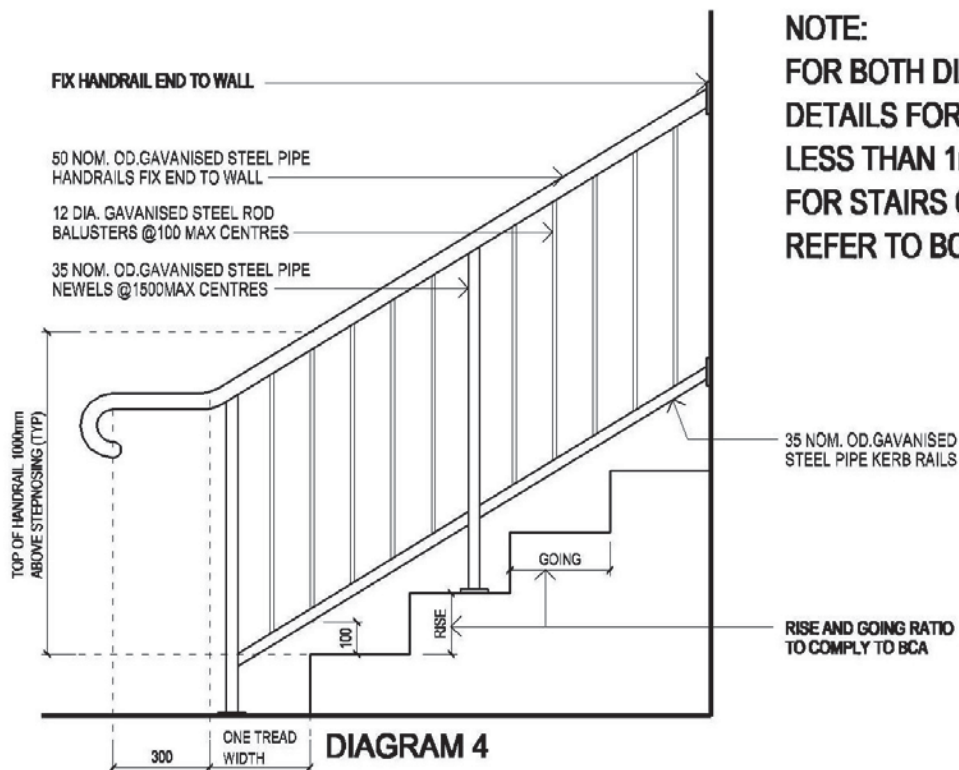
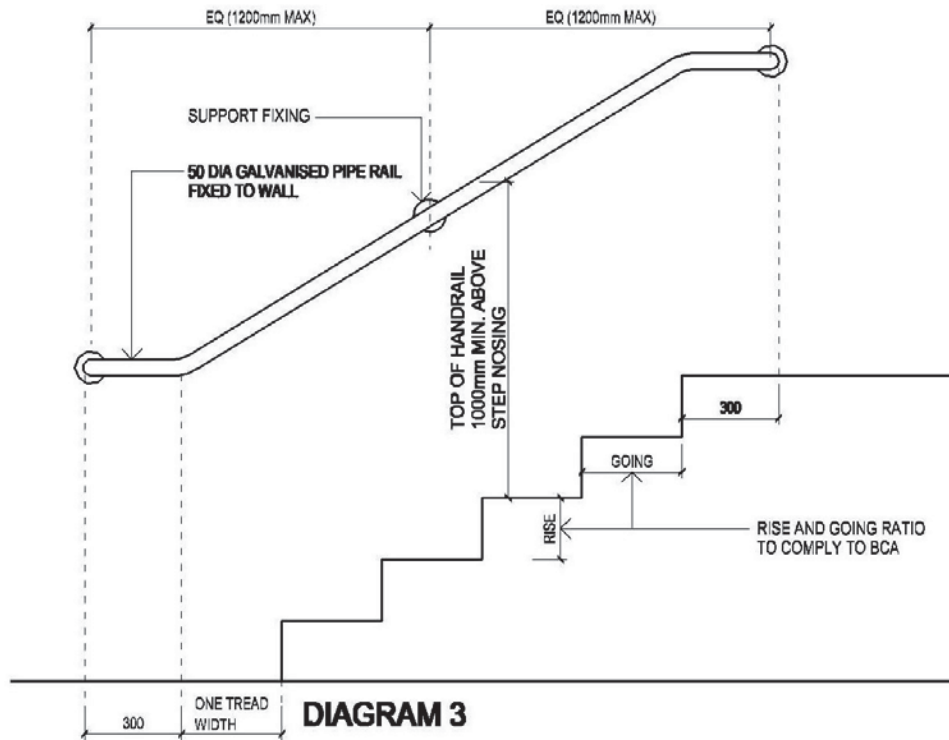


BATHROOM GRABRAIL DETAILS

MW01

SCALE: NTS
DATE: 18.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS



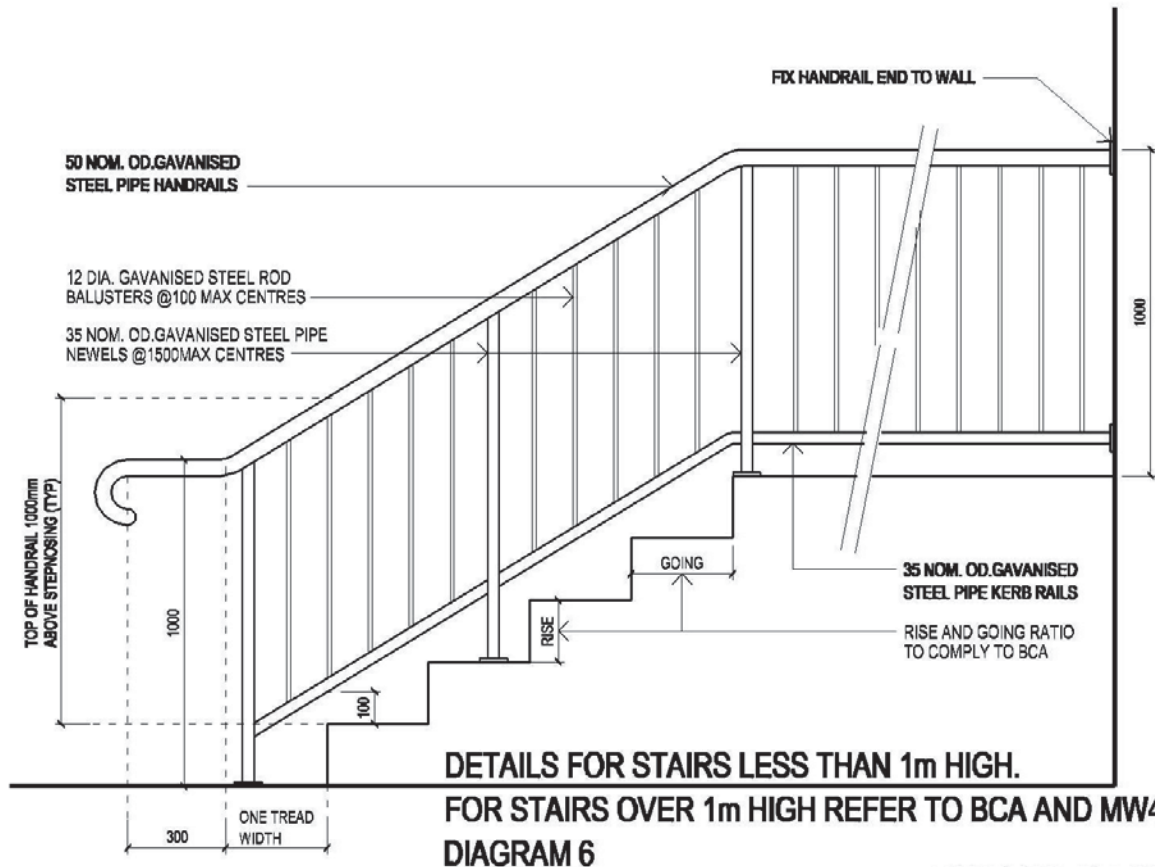
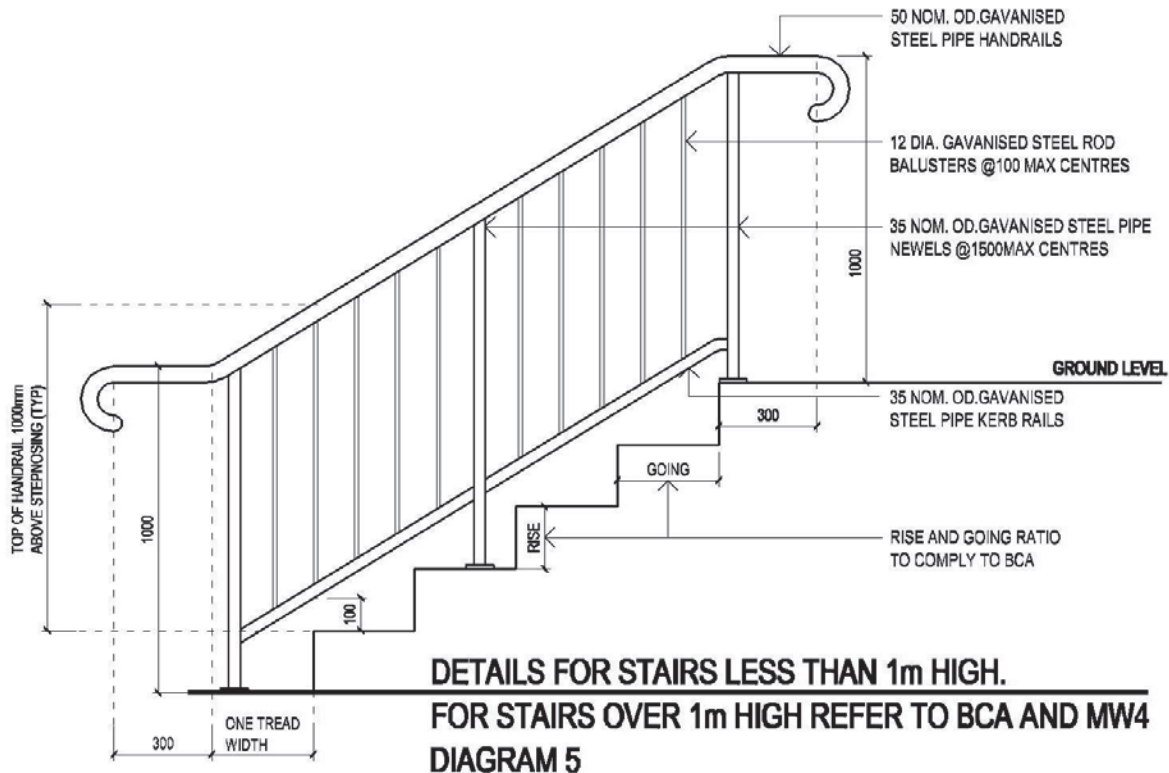
NOTE:
FOR BOTH DIAGRAMS,
DETAILS FOR STAIRS
LESS THAN 1m HIGH.
FOR STAIRS OVER 1m HIGH
REFER TO BCA AND MW4

HANDRAIL DETAILS

MW02

SCALE: NTS
DATE: 18.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS

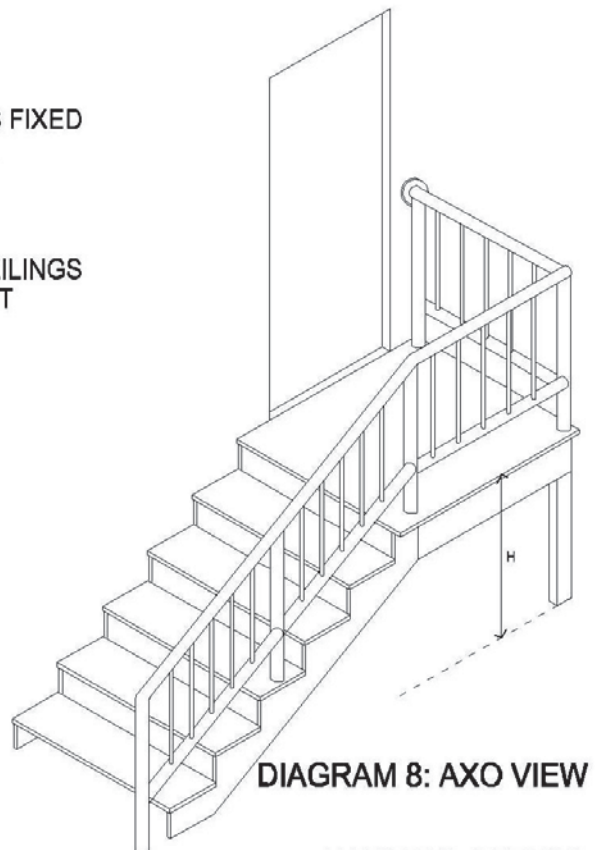
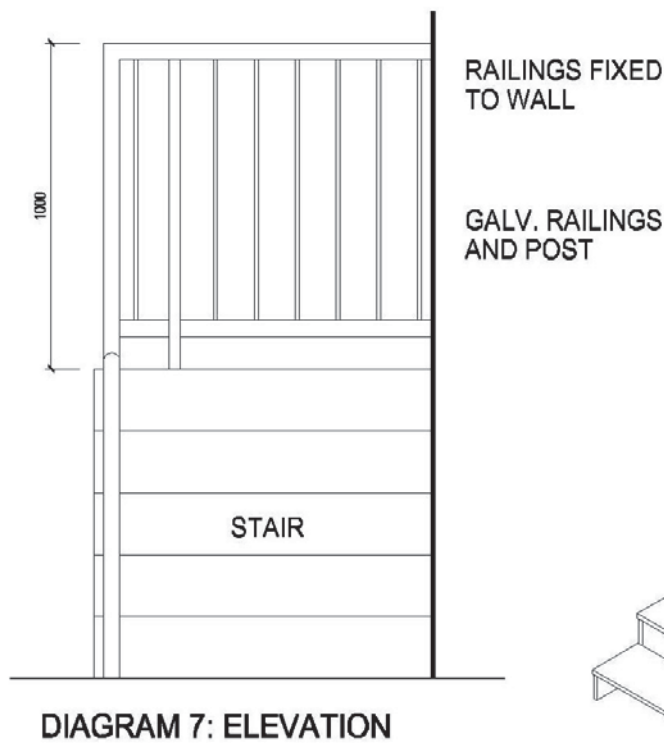
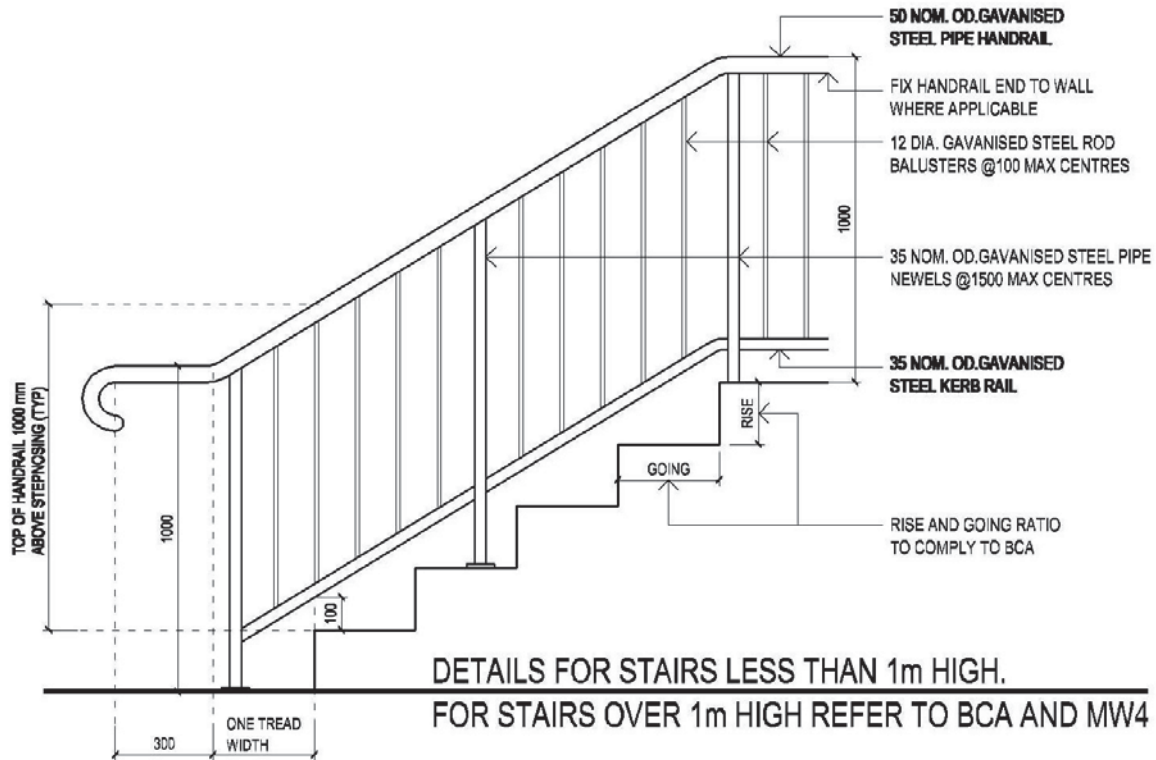


HANDRAIL DETAILS

MW03

SCALE: NTS
 DATE: 16.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS

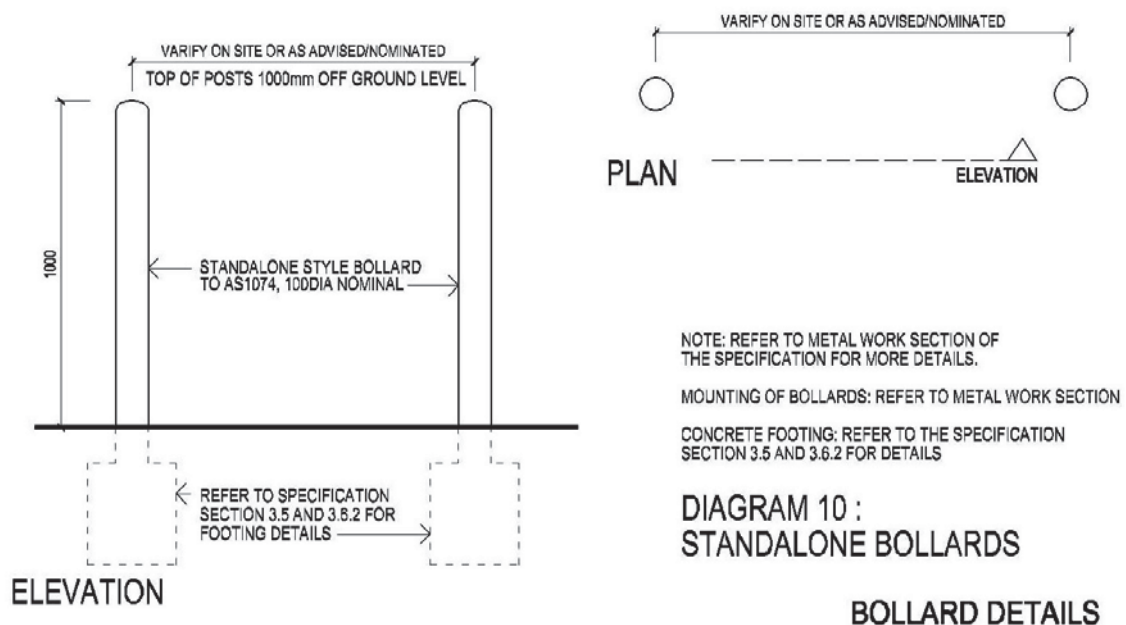
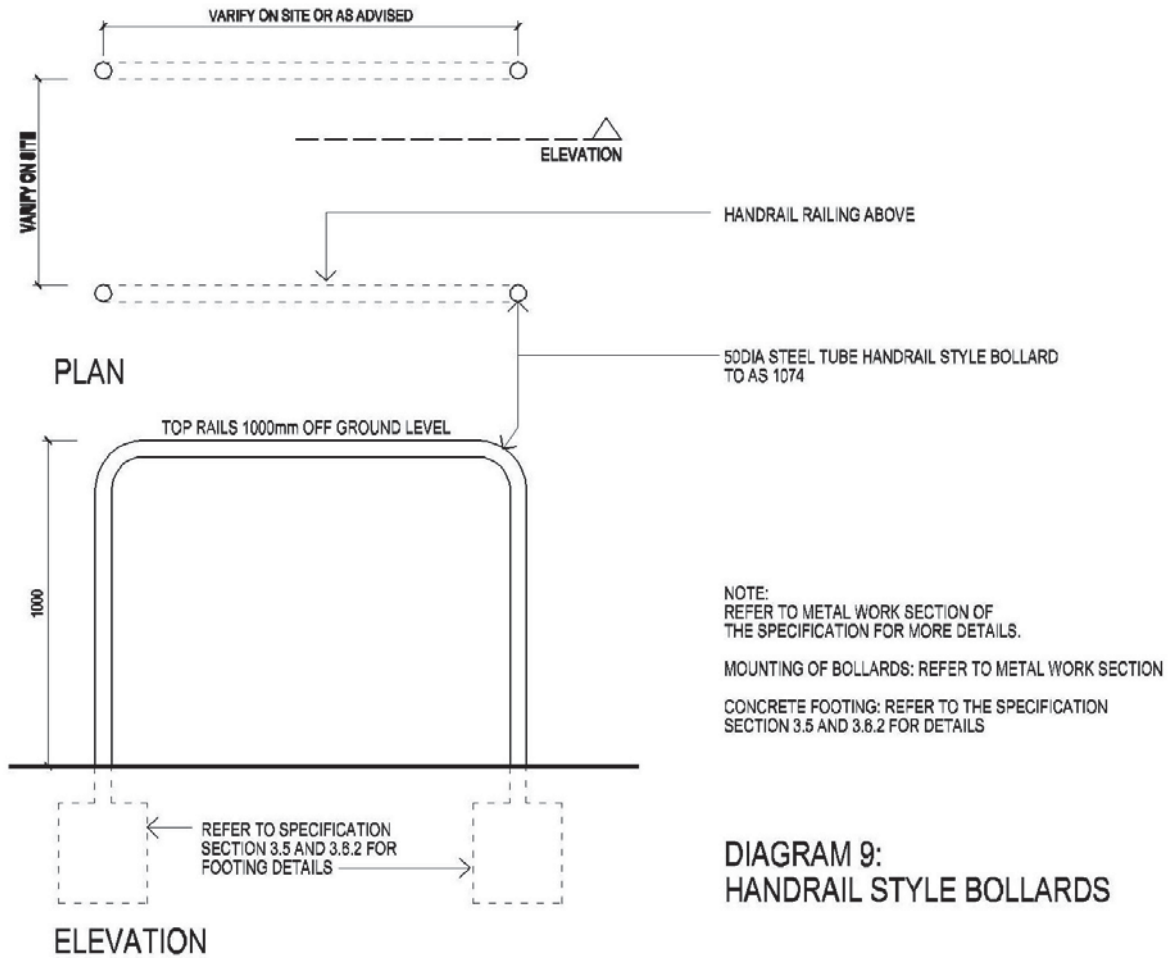


HANDRAIL DETAILS

MW04

SCALE: NTS
DATE: 16.11.05

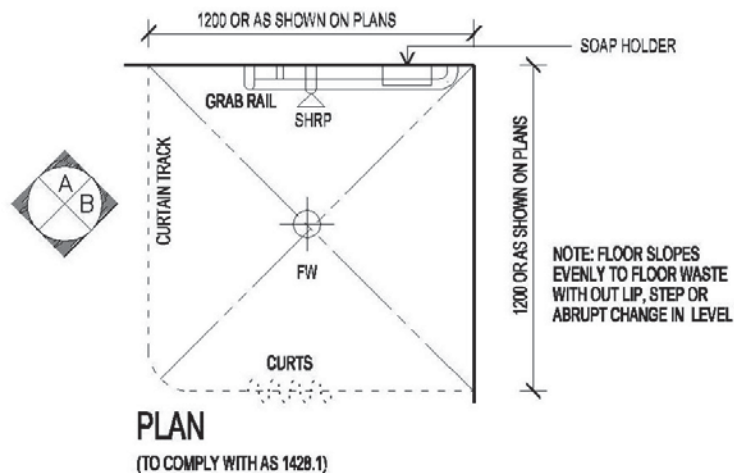
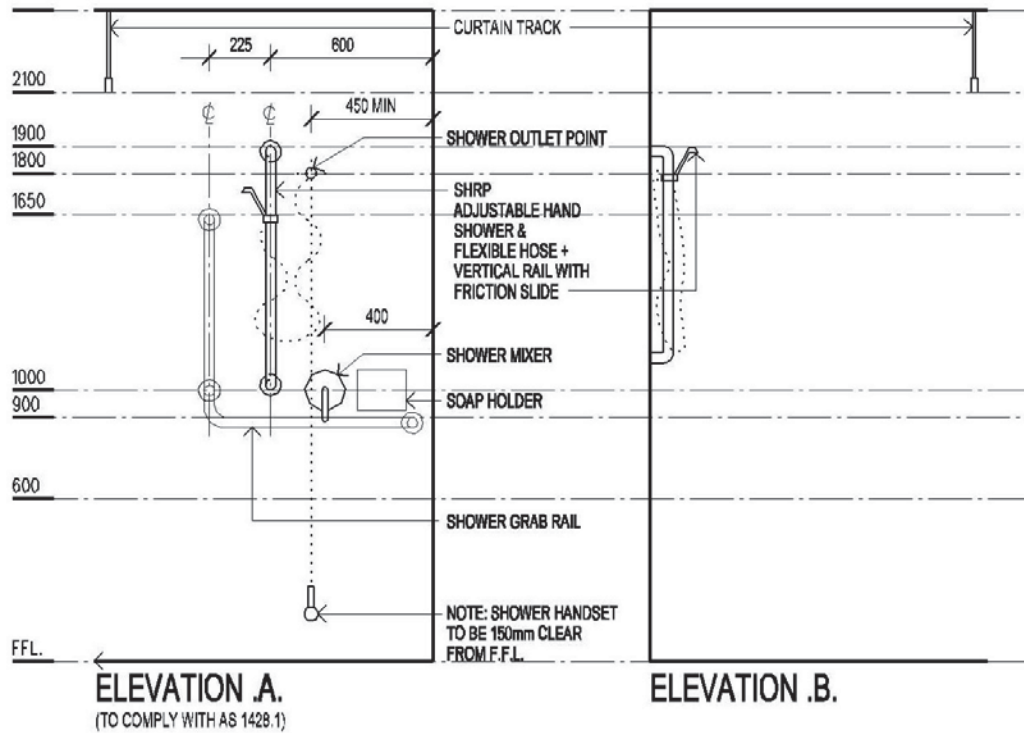
SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS



MW05

SCALE: NTS
DATE: 18.11.05

SECTION 9 – TIMBER SCHEDULE AND DRAWING DETAILS



ACCESSIBLE SHOWER DETAIL

SHR 01
SCALE: NTS
DATE: 07.12.05

NSW Land and Housing Corporation

COMPONENT REQUIREMENTS

March 2018

NSW DEPARTMENT OF FAMILY AND COMMUNITY SERVICES

NSW LAND AND HOUSING CORPORATION

Locked Bag 4001 ASHFIELD BC 1800

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PUBLISHING DETAILS

Version		
December 2001	3	Revised to align with Edition 3 of Asset Standards
March 2004	4	Updated with new product information
January 2006	5	"Products" part of document removed
June 2009	6	Initial draft prepared for NBESP
June 2009	6.5	Revised draft for NBESP, not published.
July 2009	6.5i	Minor formatting amendments for printing
July 2009	6.5ip	Minor editorial amendments
May 2012	v1	New format Updated to align with Maintenance Specifications and Reference Specifications
March 2016	v2	Updated to supplement the Asset Maintenance Services Contract Specifications - Plus – Requirements to supplement the Reference Specification and documentation for special projects.
March 2018	V3	Clarified reference to brand names. Updated components

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Component Requirements

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Preamble

There are over 10 million components in the 130,000 dwellings and buildings owned by NSW Land and Housing Corporation. They include doors, basins, taps, windows, etc. as well as floors, walls and roofs. Components are the discreet items that together comprise a building, and which can normally be replaced as a unit.

A sub-component is a further breakdown of the component into its discreet parts, a handle is part of a door, a window sash is part of a window, a bench top is part of a kitchen cabinet, etc.

The ordering of components and their sub-components in this reference document mirrors the arrangement in the LAHC Maintenance Specifications and the Reference Specifications.

A Different Emphasis

NSW Land and Housing Corporation is not just a purchaser of new dwellings, it is a long term manager of residential property. Life cycle costs are as important as the purchase price and this places a different emphasis when judging the suitability of products to that of the general residential market.

From NSW Land and Housing Corporation long term ownership and management of over 130,000 state wide properties a surfeit of information on the performance and suitability of various materials, construction systems and fixtures for rental property has been compiled.

Deemed to Comply

Particular products that are deemed to comply with these requirements are listed in a schedule available from the Asset Division, NSW Land and Housing Corporation. Because products are varied or withdrawn, and new products become available, the schedule is only relevant at the time of issue. Confirmation should be sought at the time of ordering materials and products to ensure they still meet NSW Land and Housing Corporation Component Requirements. A product not in the schedule can be used in a project but it will have to be certified as complying with the "Components Requirements" and/or the relevant specifications.

Warranties

NSW Land and Housing Corporation is seeking greater value for money for dwelling components. Many are replaced or repaired regularly and this provides an excellent basis for determining the appropriateness of particular components for rental properties.

This document places greater emphasis on warranties as part of the value for money objective. There is also an attempt to limit the number of components listed to those specifically of interest to a social housing provider or owner.

Components

The components listed are those pertinent to NSW Land and Housing Corporation and not scheduled as a provision standard. The schedule is not a comprehensive list of components needed to construct a dwelling.

Components not listed in this document should comply with the relevant specifications (Maintenance and Reference Specifications).

The Basic Provision Standards that form part of the commitment by NSW Land and Housing Corporation to tenants for provision levels in existing dwellings can be found in the **Asset Performance Standards** reference document. Provision levels for new housing can be found in the **Design Standards** document.

Elaboration

This document outlines the performance requirements of selected components with which NSW Land and Housing Corporation has both a direct interest in and experience with. For workmanship and installation requirements, refer to the appropriate contract documents.

Not all materials used in buildings are identified in this document. It is expected that all materials used in work undertaken on behalf of NSW Land and Housing Corporation will be fully compliant with current Australian Standards and service authority requirements as well as any legislation and regulatory requirements.

Components identified by performance criteria only, may require written certification from the manufacturer or supplier. Certification must be provided to NSW Land and Housing Corporation for each project before installation by the Contractor.

Where compliance with relevant standards, codes (including the National Construction Code of Australia and NSW variations), and Australian Standards are listed as performance criteria, use the current editions, including amendments. Applicable Australian Standards and other international and nationally recognised standards are accepted provided the manufacturer/supplier produce proof of equivalence assessed/certified by an accredited independent third party.

Criteria for product selection for use in NSW Land and Housing Corporation's properties include, but are not limited to, the following:-

- proven performance
- proven quality and/or endorsement from reputable organisation(s) in the industry
- "Standards Mark" accreditation (where possible)
- "Code Mark" certification (where possible)
- best value for money
- low maintenance
- assurance of supply
- warranty
- origin of product

NSW Land and Housing Corporation will exercise its right to select particular products that best meet the business needs. This judgment may be based on independent third party assessment or on experience with the products' performance. In all cases NSW Land and Housing Corporation is seeking both value for money and the promotion of better performing products at affordable prices. NSW Land and Housing Corporation also reserves the right to seek supply agreements for the bulk supply of particular products.

NSW Land and Housing Corporation has the right to amend/add performance criteria to this document at its sole discretion.

Document Format

The Component Requirements (2018) consists of two parts:

- Part 1 includes the Component Requirements to supplement the Asset Maintenance Services Contract (AMS) – Section 2 – Part G2 Technical Specification for Maintenance – G2.1 Maintenance Specification clause 22; and to contribute to the preparation of Reference Specification.
- Part 2 includes the additional items used in the Reference Specification, Fire Safety upgrade works and special projects.
 - o These items in the Component Requirements are intended to assist Project Managers and Contractual drafters of new construction works, Fire Safety Upgrade works and other special projects to prepare technical reference specification.
 - o These items will also assist AMS Contractors to understand the performance requirements of specialist equipment often found and installed in new construction.

The components are arranged on the following pages in a table using the following format:

Component	The category of building component, e.g. roof
Sub-component	If required, the component can be broken down into smaller parts e.g. roof covering
Functional Statement	Describes the business interest the item needs to fulfil
Performance Requirement	Sets out the specific criteria for judging acceptability of any particular product – will usually include compliance with current Australian/NZ Standards
Warranty	Any specific warranty requirement

Some of the component descriptions include detailed requirements, but even then, the business need should be understood first as it represents the Principal's primary interest.

Definitions

“Certification” in this Schedule means one or more of the following:

A copy of a certificate of approval by a government authority e.g. Sydney Water, NSW Department of Industry (Office of Resources and Energy), Transport for NSW, Australian Communications and Media Authority, Australia Post, Planning & Environment, Office of Environment and Heritage NSW, Fire & Rescue NSW, NSW Rural Fire Service, NSW Health, Ausgrid, Jemena, etc., and/or

A letter certifying compliance to requirements and testing procedures outlined in specified Australian Standards, and/or

A letter with certification by a practising qualified Engineer, and/or

Test reports/opinions prepared by Commonwealth Scientific and Industrial Research Organisation (CSIRO), National Association of Testing Authorities (NATA), Australian Wool Testing Authority (AWTA), Building Research Association New Zealand (BRANZ), etc; based on Australian Standard Testing Procedures, and/or a print of a drawing with the testing authority's endorsement mark.

PART 1 – ASSET MAINTENANCE AND NEW CONSTRUCTION

1.1 Grounds

1.1.1 Letter Box

Component		LETTER BOX
Sub-component		
Need	To provide tenants with an Australia Post compliant receptacle for mail	
Requirement	General (all types) - Painted zinc/aluminium alloy coated steel or - G2 zinc coated steel (Z450) with minimum 50 micron polyester powder coat finish - Aluminium (minimum 20 micron anodised or 50 micron powder coat) - Weather hood (for weather exposed areas) Freestanding - A4 envelope size minimum 230mm x 330mm and minimum 160mm high - Minimum 25mm high letterbox slot - Elevated between 900mm to 1200mm above ground on a coated steel post - Padlock or key operated camlock Built-in (brickwork or Aluminium Letter box Banks) - Materials as per Section 4 (Carpentry, Joinery and Minor repairs) - Aluminium/G2 zinc coated steel/zinc-aluminium coated steel sleeve - Minimum A4 envelope size, minimum 230mm x 330mm and minimum 160mm high - Minimum 25mm high letterbox slot - Elevated between 500mm to 1500mm above ground - Access door pivot hinged on minimum 5mm diameter galvanised steel/SS rod - Key operated camlock/padlock style lock - Maximum letterbox bank of 75 boxes (15 wide x 5 high)	
Warranty	Minimum 1 year written warranty	

1.1.2 Clothes Lines

Component		CLOTHES LINES
Sub-component		
Need	To provide tenants with an easy way of drying clothes and bedding in the sunlight	
Requirement	General (all types) Test report certifying hoist can withstand a load of 150 kg (minimum 2kg point loads evenly distributed per all lines/ at maximum 300mm centre spacing) without deformation or damage, issued by a registered Testing Laboratory based on current Australian Standards - Anodised aluminium or minimum 1.0mm thick galvanised steel framing to current Australian Standards - Minimum 20 micron anodised or 50 micron polyester powder coat finish to current Australian Standards - Minimum 4 mm diameter galvanised wire or UV stabilised plastic sheathed cord or wire lines - All bolts & fittings zinc plated - Locking mechanism on frame - Installed to manufacturers written specification Retractable - Minimum 4 line (2 BR or less) Maximum line extension 6.5 m - Minimum 5 line Maximum extension 6.5 m Awning - Minimum 14 m line (for 1 BR or less) - Minimum 20 m line (for 2/3 BR Properties) - Minimum 35 m line (for 4/5 BR Properties) - Ground or wall mounted - With tensioning mechanism Fixed Rotary Type Adjustable (wind-up fixed head hoists) - Minimum 39m line/4m diameter (for 2/3 BR Property with ground level Private open space) - Minimum 48m line /5m diameter(for 4/5 BR Property with ground level Private open space)	
Warranty	Minimum 10 year written warranty - frame Minimum 1 year written warranty - line and components	

1.2 Carpentry

1.2.1 Built in Wardrobes

Component		BUILT IN WARDROBES
Sub-component		
Need	To provide adequate storage for tenants' clothes	
Requirement	General To current Australian Standards for HMR, MDF, Laminate, Melamine and Painted finishes Doors - Minimum 16mm thick high moisture resistant (HMR) particleboard or moisture resistant medium density fibreboard (MDF); laminated (both sides) with high pressure decorative laminate having medium resistance to surface wear, impact and scratching or vinyl film applied OR - Painted 35mm flush, hollow or cell cored door 2 mm PVC plastic edge strip to HMR and MDF laminated doors - Aluminium stiles acting as pull grips for sliding doors Carcass - Minimum 16mm thick high moisture resistant (HMR) particleboard with white melamine finish to all internal surfaces, including edge of frame, carcass and shelves - Concealed side wall-mounted hinges with 170° swing or sliding doors - Hanging/shelf unit to be removable/lowerable - Install to manufacturers written specification - All assemblies to carry a compliance label to current Australian Standards	
Warranty	Minimum 5 year written warranty	

1.2.2 Cupboards Kitchen

Component		CUPBOARDS
Sub-component		Kitchen
Need	To provide durable, waterproof, hygienic and cleanable storage and food preparation areas	
Requirement	General To current Australian Standards for kitchen assemblies, HMR, MDF, Laminate and Melamine finishes Benchtops - Minimum 32 mm thick high moisture resistant (HMR) particleboard, laminated with high pressure decorative laminate having characteristics of high resistance to surface wear - High resistance to impact and high resistance to scratching Doors and drawer fronts - Minimum 6mm thick high moisture resistant (HMR) particleboard or high moisture resistant medium density fibreboard (MDF), laminated with high pressure decorative laminate having medium resistance to surface wear, medium resistance to impact and medium resistance to scratching 2 mm PVC plastic edge strip to all doors and drawers - Use concealed side wall-mounted hinges with 170° swing on all doors Drawers 13mm thick (bottom 16mm) of either high moisture resistant (HMR) particleboard or high moisture resistant medium density fibreboard (MDF), finished with white melamine - Completely integrated drawer slide system comprising a high quality epoxy coated white steel self closing feature runner, 30kg load capacity Carcass - Minimum 16mm thick high moisture resistant (HMR) particleboard with white melamine finish to all internal surfaces, including edge of frame, carcass and shelves Kickboard - Minimum 16mm thick high moisture resistant (HMR) particleboard, with 2 mm black vinyl or high pressure high resistance laminate finish, including any edges - Install to manufacturers written specification - Kitchen assemblies to carry a compliance label to current Australian Standards	
Warranty	Minimum 5 year written warranty	

1.2.3 Bathroom Cabinet

Component		BATHROOM ACCESSORIES
Sub-component		Bathroom Cabinets
Need	For storage of personal items used only in the bathroom and to allow personal grooming	
Requirement	General (All types) - To current Australian Standards - Surface mounted or recessed - Cabinet fabricated in 1 mm zinc coated steel (white Acrylic baked Solvent-borne finish) or 16 mm HMR high pressure decorative laminated board or heavy duty plastic (Plastic cabinet body minimal thickness of 5mm) - Adjustable shelving - Silver float mirror glass to current Australian Standards Single Door Cabinet - Minimum 375 mm high x 405 mm wide x 115 mm deep 3 mm mirror fixed to self closing hinged door or sliding door - Minimum 1 shelf Double Door Cabinet - Minimum 415 mm high x 700 mm wide x 130 mm deep 2 x 4 mm sliding mirror doors with finger slots set in recessed safety tracks (extruded PVC or aluminium tracks fitted to HMR laminated board) or 2 x 3 mm mirrors fixed to self closing hinged doors - Minimum 2 shelves Disability Modification - Single door cabinet and mirror (fixed to wall) - Cabinet 975mm high x 300 mm wide x 200 mm deep, with minimum 3 shelves (beside mirror) - Mirror 975 mm high x 500 mm wide (above basin)	
Warranty	Minimum 5 year written warranty	

1.2.4 Bathroom Vanity

Component		BATHROOM ACCESSORIES
Sub-component		Bathroom Vanity
Need	For storage of personal items used only in the bathroom	
Requirement	To current Australian Standards Vanity tops - Minimum 32 mm thick high moisture resistant (HMR) MDF/particleboard, laminated with high pressure decorative laminate having characteristics of high resistance to surface wear, impact and scratching with Vitreous China Bowl (refer Basin) OR - Sanitary grade Acrylic (Waterborne) moulded Doors front - Minimum 16mm thick high moisture resistant (HMR) particleboard or high moisture resistant medium density fibreboard (MDF), laminated with high pressure decorative laminate having medium resistance to surface wear, medium resistance to impact and medium resistance to scratching 2mm PVC plastic edge strip to laminated doors OR - Polyurethane finish Carcass - Minimum 750w x 450d with drawers, floor mounted on 150h tubular legs or with kickboard if floor not tiled underneath vanity - Minimum 16mm thick high moisture resistant (HMR) MDF/particleboard with white melamine finish to all internal surfaces, including edge of frame, carcass and shelves Installation to manufacturers specification	
Warranty	Minimum 5 year written warranty	

1.3 Doors and Windows

1.3.1 Screen Doors

Component		SCREEN DOORS
Sub-component		Heavy Duty Front and Rear
Need	To provide a physical barrier that allows air and vision through the screen	
Requirement	Aluminium Door Framing • Installation to current Australian Standards • Minimum 69mm x 18mm x 1.2mm wall thickness extruded aluminium frame with 10mm wide x 13.5mm deep insert frame for grille • Extruded PVC insert to bed heavy duty grille • Joints to be mitred, staked and riveted • Reinforcing corner stakes fixed to frames with SS 4mm diameter x 9.5mm rivets (minimum 4 per corner) • Door to be permanently branded on top rail with name of manufacturer • Tested to AS5039 for Dynamic Impact, Jemmy, Pull, Probe and Shear Aluminium Heavy Duty Grille • To current Australian Standards for Type 1 doors • Minimum 7.0mm sectional thickness • Grille secured to door by pop rivets (Adequate Pop Rivets to satisfy AS5039 tests) Aluminium Door Framing & Heavy Duty Grille Finish • Clear anodised to current Australian Standards (20 microns thick for all regions) OR • Thermoset powder coatings to current Australian Standards (50 microns thick for standard conditions/ 80 microns thick for severe coastal or industrial regions) Screen Mesh • Powder coated Aluminium woven mesh (standard conditions) • Powder coated Stainless Steel (316 marine grade) woven mesh for coastal and bushfire areas • Mosquito proof mesh - with average aperture 1.5mm x 1.5mm • Wire diameter - minimum 0.23 woven Aluminium and minimum 0.18mm woven stainless steel • Secured to door to prevent easy removal Hardware • Three 75 x 30 mm hinges to current Australian Standards fixed with pop rivets • Locks, refer DOORWAYS "locks & latches" (Non fire-rated heavy duty screen door) • Fully adjustable dampened type door closer	
Warranty	Minimum 10 year written warranty	

1.3.2 Doorways External

Component	DOORWAYS
Sub-component	External
Need	To provide a secure mechanism for controlling access through a doorway that separates the private Property from public and common area
Requirement	General - To current Australian Standards & NCC - Do not use imported rainforest timber veneers - A non standard door size is a door size over 2400mm x 900mm Fire Resistant door sets and door frames - To current Australian Standards – AS 1905.1 -/60/30 FRL rated flush type door (Type D bonded plywood/ hardwood face) - Closer with appropriate FRL Entry doors 40mm thick flush type solid core particleboard or blockboard cored door (type B bonded ply-wood/-hardboard face) - Door closer where nominated Timber door frame and jamb lining (for Maintenance only) - To current Australian Standards Steel door frames - Minimum 18 gauge hot dipped zinc coated steel doorframe with internal architrave Security Viewer - Fire rated security viewer - Viewing greater than 160° Stormproof Door Seal or Smoke Seal - Storm seal screw fixed to base of door leaf - Smoke seals fixed to door frame or base of door leaf as appropriate - Seals to be independently tested with proprietary fire doors and solid core doors - Tested in accordance with AS1530.7 and capable of limiting smoke to 200° Celsius for 30 minutes - Independently tested to demonstrate that the product does not suffer from significant wear and tear for up to and exceeding 10,000 open and close cycles
Warranty	Minimum 5 year written warranty - door Minimum 2 year written warranty - stormproof door seal

1.3.3 Doorways Internal

Component	DOORWAYS	
Sub-component		Internal
Need	To provide a reliable mechanism for closing off rooms	
Requirement	General - To current Australian Standards - Do not use imported rainforest timber veneers - A non standard door size is a door size over 2400mm x 900mm Internal doors 35mm thick flush lightweight Solid block-board pine core door, solid particle-board, MDF core to current Australian Standards - Type B bonded plywood/hardboard face Timber door frame and jamb lining - To current Australian Standards Steel door frames - Minimum 18 gauge hot dipped zinc coated steel doorframe with internal architrave	
Warranty	Minimum 5 year written warranty	

1.3.4 Door Locks and Latches

Component	DOORWAYS
Sub-component	Door Locks and Latches
Need	To provide a reliable, useable and secure device for locking doors
Requirement	General • To current Australian Standards • Quality management to current Australian Standards • For fire resistant door sets doors, lock sets must form part of an approved tested door set assembly • Door locks to be a minimum 5 pin cylinder • Door lock finish: satin chrome/chrome plated/stainless steel • Keyed alike • Locks and Latches to suit semi-commercial applications (Residential care facilities etc) • To all aluminium sliding doors supply and insert aluminium blocks into the upper track of door in closed position leaving clearance for door to slide Front and rear entry doors Cottages, villas & townhouses, units: • Double cylinder automatic dead-latch, and a lever Latch set, plus with colour coded lock alert • Keyless opening from inside unless intentionally dead locked • Automatic release of dead latch when opened with a key from outside Units/apartments (additional) • Door closer (rack and pinion type) • Door closer achieve a -/60/30 FRL when installed on a door set Liveable Housing feature (additional) • Door closer (minimum moment type) (cam operated) • Door closer achieve a -/60/30 FRL when installed on a door set Heavy duty screen doors • Short backset mortice deadlock and lever Common area entrance doors & community rooms • Exterior escape dead latch (keyed lever latch from outside with quick release from the inside) • Door closer (cam operated) • Panic release fitted to all external exit fire doors only Balcony/porch doors swing and sliding • Keyed double deadlocks Internal doors • Lever passage latch set • Privacy latch set to bathroom/WC Lever set <i>Continues</i>

Component	DOORWAYS
	<i>Continues</i> Common Storeroom & toilets - Nightlatch and 'D' handle (Key to master key system) Electric meter cupboard - Nightlatch (fire rated) and 'D' handle (Key to master key system) Electric meter cabinet - Padlock (Key to master key system)
Warranty	Minimum 5 year written warranty - paint & tarnish Minimum 10 year written warranty - mechanical parts

1.3.5 Windows and Sliding Doors

Component	WINDOWS
Sub-component	Windows and Sliding Doors
Need	To provide natural light and controllable ventilation and to protect against the elements
Requirement	- Window and Door Locks refer to Locks and Latches - Window & Door assemblies manufactured to comply with current Australian Standards and to carry testing authorities endorsement mark - All window types & sliding doors tested to AS 2047 for deflection (positive/negative), air infiltration, water penetration, operating force and proof tests by NATA approved laboratory - Window tests to qualify minimum 700 Pa - Achieve required WERS star rating for aggregate solar heat gain for building type and climate - Each window/door branded in an upper channel/stile with a permanent label indicating NATA Testing Certification, structural and water performance and manufacturers name eg. AWA labelling scheme - Installed to current Australian Standards and to manufacturers written specification - Doors toughened/laminated glass to current Australian Standards - Glass type and thickness to current Australian Standards except lower edge of all glass in windows within 500mm from floor to be only 'A' safety grade laminated or toughened glass in accordance with current Australian Standards - Issue window shop drawings with NATA testing authorities endorsement mark to the Principal if manufacturers do not qualify for AWA labelling scheme Acid etch anodising - Minimum 20 micron anodised film, 25 micron for coastal areas - Semi-commercial frame minimum overall frame width of 70mm <i>Continues</i>

Component	WINDOWS
	<i>Continues</i> Flyscreen Mesh • All Flyscreen Mesh to include safety warning message stating that the “Screen will not stop children falling out window” • Powder Coated Stainless Steel (316 marine Grade woven mesh for coastal and bushfire areas minimum wire diameter 0.18 woven stainless steel) • Powder coated Aluminium woven mesh for all other areas (minimum wire diameter - minimum 0.23mm woven Aluminium) • Mosquito proof with average aperture of 1.5mm x 1.5mm Flyscreens with Aluminium Grille (only when Directed) Heavy Duty Grilles (only when directed) • Ground Floor and all accessible windows to include Aluminium Heavy Duty grille (minimum 7.0mm sectional thickness) pop riveted into screen frame with quick release (install to AS5039) • Complies AS5039 for Type 1 Class B Screens
Warranty	Minimum 7 year written warranty

1.3.6 Window Locks

Component	WINDOWS
Sub-component	Window Locks
Need	To provide a means of securing the Property from unauthorised entry through a window
Requirement	Note - All openable windows must be capable of being locked in a partial open (safe ventilation) and closed position General • To current Australian Standards • Fit keyed window locks to all openable windows • All windows must be capable of being locked in a closed position, and provide safe ventilating locking points 50mm and 100mm from closed position • Do NOT install window locks on a consecutive code number basis but for security purposes are to be installed on a random basis, with minimum allowance for repetition of coding 1 per 100 Properties • Locks to be minimum 4 disc cylinder type - all window locks keyed alike for new construction • Fixings appropriate to window and door frame • Comply with AS5203 Fall Prevention Test <i>Continues</i>

Component	WINDOWS
	<i>Continues</i> Window Restrictors (Only where specified) - Window opening restrictor (capable of connection to all opening types) opening at 100mm and also completely opened when restrictor is released - Fixings appropriate to window and door frame - If restrictor involves steel rope or steel chain must have a minimum breaking strength of 3 KN - Approved Child proof locking device or 4 disc cylinder key lockable restrictor - all window locks keyed alike for new construction - Comply with AS5203 Fall Prevention Test
Warranty	Minimum 2 year written warranty

1.3.7 Window Awnings

Component	WINDOWS
Sub-component	Awnings
Need	To protect windows and door openings from sun and rain
Requirement	General - Able to be fixed securely to wall - Provides effective shading - Sheds water away from window/door - Made of non combustible material - Achieve required window star rating for aggregate solar heat gain Radiant Heat Attenuating Screens - Manufactured from stainless steel mesh - Wire diameter for screen not less than 0.8mm - Weave characteristic - Achieves and certified to AS1530.4 Fire Attenuation Test
Warranty	Minimum 5 year written warranty

1.3.8 Garage Doors

Component		GARAGE	
Sub-component		Garage Doors	
Need	To provide a reliable and easily operated means of securing a garage		
Requirement	Roller Doors (Domestic) Single and Double Doors • Design to current Australian Standards for wind loading • Tested to qualify to minimum 1500 cycles of operation per year (where one cycle = closed to open to closed position) • Withstand minimum dynamic pressure of 550N/m2 applied externally/ internally normal to door • Rolled-T/box section/single or double angled bottom rail, steel or aluminium channel guides, interlocking slatted curtain • Counterbalance roller deflection not to exceed 0.3% of span • Galvanised prime painted/polyurethane/Colorbond finish to all metal components • Branded with manufacturers name • Key lockable central door handle Panel Lift Door (Domestic) Single Doors only up to 2400mm Wide • Design to current Australian Standards for wind loading • Tested to qualify to minimum 1500 cycles of operation per year (where one cycle = closed to open to closed position) • Withstand minimum dynamic pressure of 550N/m2 applied externally/ internally normal to door • Galvanised/prime painted/polyurethane/Colorbond finish to all metal components • Branded with manufacturers name and Installation to manufacturers specification • Key lockable central door handle		
Warranty	Minimum 7 year written warranty		

1.3.9 Master Lock and Key Schedule

Component		MASTER KEY SYSTEM
Sub-component		Specialist key systems to secure areas
Need	Secure access to parts of selected buildings to authorised personnel only	
Requirement	- Contractors keying system operates mostly in Newcastle, Greater Sydney and Wollongong Metropolitan areas - Properties within Buildings are not to be master keyed - The system is to simplify the number of keys a Contractor has to carry to access buildings and restricted areas within buildings - Master Lock and Key Schedule to be designed and installed to meet high level of security to protect assets, work-sites, and restrict access only to authorised personnel - Key system to cover the following areas (Front/Rear and garage access (override), Building service riser access, Laundry and garbage room access (plus Tenant access key for these areas), Under stair access, Manhole, Roof access, Plant room access, Lift maintenance room access, Electrical – meter boards and service risers, Service risers general, Access control, CCTV rooms, Void areas, MATV panels, Garage door controls, Intercom panels, Security Guard log boxes, Trade toilet – cleaners store and any other areas requiring security - Capacity to expand system into electronic keying - Copy protection – Anti-duplication restricted keying - Integrated minimum 6 pin cylinder - Modular or universal steel cylinder cores - Bump, Pick penetration and Drill protected cores (where required) - Cylinders and Housings – Satin Chrome plate - To current Australian and International Standards	
Warranty	Minimum 2 years manufacturers written warranty Keying system protected for life of system	

1.4 Roofing

1.4.1 Roof and Eave Ventilation

Component	ROOF
Sub-component	Roof and Eave Ventilation
Need	To prevent the build up of condensation and moisture within the roof space and to promote air circulation within the roof space
Requirement	Note – Installation of roof and eave vents must not compromise the fire safety of the building Under Eave Vents • Curved air inlet holes to restrict insect entry • White Polypropylene or equivalent durable plastic • Minimum size 400 x 200 mm Roof Ventilators • Made from Steel, Aluminium or heavy duty high strength Polymer • Lubricated steel bearings • Reinforced hail resistant dome • Withstand wind velocities in excess of 200 km/hr • Withstand rain penetration • Pre-Painted to match roof colour or clear plastic dome • Fixed using corrosion resistant self drilling screws or fasteners (appropriate to environment) and finished to match roofing materials • Flashed and fitted correctly above and through the roof with two part flashings compatible with roof material
Warranty	Minimum 1 year written warranty - Under Eave Vents Minimum 15 year written warranty - Roof ventilators including bearings

1.4.2 Gutters, Downpipes and Fascias

Component	ROOF
Sub-component	Gutters, Downpipes and Fascias
Need	To effectively shed water from the Property
Requirement	• Designed and installed to meet plumbing code • Gutters are required to comply with requirement relating to overflow • Gutter – 115mm quad or 135mm half round • Fascia system – 185mm compatible with gutter • Downpipes minimum 100mm x 50mm or 75mm round • Gutter / Fascia / Downpipe material – Zincalume or equivalent 0.5mm BMT (G300) or 0.42mm BMT (G550) gauge factory pre painted. • Brackets – concealed type at 900mm maximum spacing fixed using galvanised helical nails or proprietary clips and fixings • Installation to current Australian Standard and manufacturers specification
Warranty	Minimum 20 year written warranty - Gutters, Downpipes and Fascias

1.4.3 Roof Lights and Skylights

Component	ROOF
Sub-component	Tubular Roof Lights/Skylights
Need	To provide natural light to internal areas without windows
Requirement	Skylights Tubular - To current Australian Standards - Achieve a test report certifying assembly can withstand wind forces to AS4055 and resist impact to AS4256 - Roof Flashings an integral part of skylight to AS2904 - Certification of greater than 95% specular reflectance from shaft - Minimum 250mm internal diameter - Achieve a WERS rating better than 5 star for heat and cooling transfer - Diffuser to reduce glare and to throw light over a broad area - Internal Fire Damper with FRL60/60/60 when directed for buildings in Bushfire areas or where required to achieve a 60 minimum fire rating
Warranty	Minimum 7 year written warranty

1.4.4 Ceiling Insulation

Component	ROOF
Sub-component	Ceiling Insulation
Need	To effectively insulate the Property
Requirement	Glass Fibre (batts) - Made of melted glass spun onto a mat of fine fibres - Pre-cut to width of ceiling rafters - Thermal insulation to a Property shall meet BASIX requirements - To current Australian Standards - Sound absorption properties - achieve Noise reduction co- efficient of 0.8 or better - Product to contain at least 70% recycled glass content - To achieve a fire hazard rating (AS 1530.3) of: - Ignitability Index 0 - Spread of Flame 0 - Heat Evolved 0 - Smoke Developed 0 – 1 - Rated Non Combustible on AS1530.1 - Indoor Air Quality - formaldehyde release less than 0.01 mg/ m²/24 hours - Fibreglass batts thermal insulation shall comply with the Building Regulations and relevant Australian Standards, and shall consist of not less than 95% the weight glass wool (inorganic oxides or minerals rock slag or glass) and binders <i>Continues</i>

Component	ROOF
	<i>Continues</i> Glass Fibre (blankets) • Properties same as for Glass fibre batts above • Blanket insulation with Sarking only to be installed with metal roofing and installed in strict accordance with manufacturer's specification (installed between top of the trusses and metal roofing or between raked cathedral ceiling and roofing) • Glass fibre blankets shall not be installed on top of the flat ceiling to cover rafters, joists or services Rockwool (batts) • Made from melted volcanic rock and recycled mineral slag spun into a mat of fine fibres • Pre-cut to width of ceiling rafters • To current Australian Standards • Sound absorption properties achieve a Noise reduction co- efficient of 0.8 or better • Product to contain at least 20% recycled content (mineral slag) • To achieve a fire hazard rating (AS 1530.3) of: - o Ignitability Index 0 - o Spread of Flame 0 - o Heat Evolved 0 - o Smoke Developed 0 – 1 • Rated Non Combustible on AS1530.1 • Low VOC emissions less than 0.01mg/m²/24 hours • Rockwool batts thermal insulation shall comply with the Building Regulations and relevant Australian Standards and shall consist of not less than 95% the weight mineral wool (inorganic oxides or minerals, rock slag or glass) and binders Rockwool (blankets) • Properties same as for Rockwool Batts above • Rockwool blankets cannot be installed on top of the flat ceiling to cover rafters, joists or services Notes • Insulation shall be installed appropriately to avoid interference with electrical and other services and appliance and do not compromise safety • Install Fire rated covers inside ceiling as required or ensure appropriate separation • Bulk insulation that does not achieve a Non Combustible rating as per AS1530.1 is not approved • Insulation cannot be installed to cover rafters or other structural beams in the ceiling
Warranty	For the life of the Property

1.5 Plumbing

1.5.1 Hand Basin

Component	BASIN
Sub-component	
Need	To provide hygienic receptacle for washing hands and face
Requirement	- To current Australian Standards - Standard Mark/Water Mark/Sydney Water certificate of approval - White (minimum bowl capacity 4 litres) Vitreous China 2/3 hole version - Wall mounted on manufacturers metal brackets with ring connector to waste outlet - Installed to manufacturers written specification - All basins to be supplied with plug and waste
Warranty	Minimum 2 year written warranty

1.5.2 Bath

Component	BATH
Sub-component	
Need	To provide a hygienic tub for washing a person
Requirement	General - To current Australian Standards - Standard Mark (optional) /Watermark/ Water Authority certificate of approval - Installed to manufacturers written specification - Indelibly marked with manufacturers name/Trademark (visible in the installed position) - Rectangular - minimum 1500x 715mm wide x 380mm deep - Minimum 10mm high tiling bead to all baths built into adjacent walls - Fitted with plug & waste - Sanitary grade Acrylic (Waterborne) moulded from minimum 3.5mm thick sheet, glass reinforced with 10mm diameter steel rod rim reinforcement OR - Pressed metal manufactured from minimum 1.6mm thick steel drawn seamless from one sheet of metal, grip coated all over and finished internally with white vitreous Solvent-borne (non skid base) Retrofit Existing - Acrylic (Waterborne) bath linings - Sanitary grade Acrylic (Waterborne) moulded from minimum 3.5mm thick sheet reinforced with a fibreglass backing - Dimensions to fit over existing bath size - Grate and adaptor to suit existing waste drain - Fitted with plug and waste
Warranty	Minimum 10 years written warranty

1.5.3 Shower Base

Component	SHOWER
Sub-component	Shower Bases
Need	To provide a sound, waterproof base for the shower that integrates seamlessly with other shower elements
Requirement	General - To current Australian Standards, including installation - Standard Mark/Water Authority certificate of approval and tested to current Australian Standard 900mm x 900mm x 70mm high hob - Pressed metal (vitreous Solvent-borne finish) or moulded plastic (non slip finish) - Installed to manufacturers specification - Indelibly marked with manufacturers name/-trademark Liveable Housing Feature - Hobless shower with stainless steel shower grate and trough designed to ensure efficient draining - Drainer minimum 75mm wide - Install with minimum 2 degree fall - Slip rating of minimum R10 and pendulum test score of 'X' or 'P3'
Warranty	Minimum 10 year written warranty

1.5.4 Shower Roses

Component	SHOWER
Sub-component	Shower Roses
Need	To provide a spray of water sufficient for washing comfortably
Requirement	General - Water saving '3 STAR WELS' rated not more than 9L/minimum - Chrome plated satin chrome or powder coated brass arm and shower rose, with brass ball joint - Tamper proof shower head Disability Modification - Handheld Shower Rose mounted on vertical grab rail - Minimum 600 mm - 32mm stainless steel grade 304 grab rail - Adjustable handheld shower rose cradle - Hygienic seal Flange Covers - Fixings of Grab rail to support appropriate static load - Brass wall flange with dual check non return valve - Shower hose smooth PVC hose with elastic inner strengthened by woven polyester cords - Water saving '3 STAR WELS' rating
Warranty	Minimum 5 year written warranty

1.5.5 Shower Seats

Component	SHOWER
Sub-component	Shower Seat
Need	To provide support for less mobile tenants whilst using the shower
Requirement	Disability Modification - To current Australian Standards - Rounded edged foldable seats (with anti drop tension hinges) - Self draining and non slip - Frame grade 304 stainless steel - Seat high density HDPE (high density polyethylene) - Ensuring stability up to 160 kg - Installer to ensure wall construction and fixings support Shower Seat
Warranty	Minimum 5 year written warranty

1.5.6 Bathroom

Component	BATHROOM ACCESSORIES
Sub-component	Bathroom Fittings
Need	For easy access and manipulation of towels, toilet paper, soap etc
Requirement	Toilet Paper Holder - Chrome plated brass/polished stainless steel frame, minimum 150mm x 150mm with aluminium roller Bath Towel Rail 760mm overall length x 16mm-diameter chrome plated brass or stainless steel tube with stainless steel end brackets, for wall screw fixing Robe Hooks 52mm x 53mm chrome plated brass
Warranty	Minimum 1 year written warranty

1.5.7 Grab Rails

Component	BATHROOM ACCESSORIES
Sub-component	Grab Rails
Need	Reduce risk of falls for our tenants
Requirement	Disability Modification - Only where directed - To current Australian Standards 32mm diameter (or as directed) x 1.2mm thick 304 Stainless Steel or powder coated aluminium x 450mm minimum overall length, secured to wall with round head C.P. brass or stainless steel screws, minimum 50mm long - Hygienic seal Flange Covers - Fixings of Grab rail to support appropriate static load
Warranty	Minimum 1 year written warranty

1.5.8 Toilet

Component	TOILET
Sub-component	Pan and Cistern
Need	To provide hygienic, comfortable toiletry facility
Requirement	General - To current Australian Standards - Standard Mark/Watermark/Water Authority certificate of approval - Pedestal pan to be white vitreous china - Cisterns to be vitreous china or heavy duty grade PVC with internal overflow 4.5/3L dual flush toilet suites (minimum 4 Star WELS rating) - Toilet and Cisterns to be vandal resistant or fitted with a 'Vandal Resistant Conversion kit' - Installation to manufacturers specification Existing Housing (Maintenance only) - Retrofit 6/3 L dual flush cisterns if retaining existing pans (minimum 3 Star WELS rating) - Retrofit 4.5/3 L dual flush toilet suites where replacing pans (minimum 4 Star WELS rating)
Warranty	Minimum 1 year written warranty

1.5.9 Toilet Seat

Component	TOILET
Sub-component	Toilet Seat and Cover
Need	Toilet Seat and Covers to supplement the toilet so a reasonable level of comfort is provided
Requirement	- To current Australian Standards - Constructed of solid plastic – Vandal Resistant with vandal resistant fittings - Installation to manufacturers specification
Warranty	Minimum 1 year written warranty

1.5.10 Tap Ware

Component	TAPS
Sub-component	Bathroom and Laundry
Need	To easily control water flow reliably for efficient water usage
Requirement	Bib tap/Pillar tap/ Hob mounted set General - Materials, dimensions, finishes and performance tests to current Australian Standards - Water supply metal bodied taps to current Australian Standards - Standards Mark/ Water Mark/ Certificate of Approval - Hot and cold water taps to be vandal resistant - Basin taps 4 Star WELS rating, all other taps 3 star WELS rating incorporating an in tap flow regulator valve, equivalent to “Aqualoc” or pressure compensating flow control - Vandal proof aerator - Set complete with outlet, shower rose, spout or arm, and handles. Handles to be easily changed from minimum 65mm lever for separate hot and cold taps to longer levers - Capstan or Lever handles length 65mm to 80mm handles - All components made of brass base material, chrome plated or satin chrome finishes - Dezincification resistant Disability Modification - Long Lever tap handles lever length 90mm to 150 mm (surgeon type) as directed - Quarter turn taps with ceramic discs fitted to baths, shower taps, basins and laundry tubs
Warranty	Minimum 2 year written warranty

Component	TAPS
Sub-component	Kitchen
Need	To easily control water flow reliably for efficient water usage
Requirement	Bib tap/Pillar tap/ Hob mounted sink set/Wall sink set General • Materials, dimensions, finishes and performance tests to current Australian Standards • Water supply metal bodied taps to current Australian Standards • Standards Mark/ Water Mark/ Certificate of Approval • Hot and cold quarter turn taps to be vandal resistant • 4 Star WELS rating incorporating an in tap flow regulator valve equivalent to "Aqualoc" or pressure compensating flow control • Vandal proof aerator • Set complete with outlet, spout or arm, and handles. Handles to be easily changed from minimum 65mm lever for separate hot and cold taps to longer levers • Capstan or Lever handles lever length 65mm to 80mm handles • All components made of brass base material, chrome plated or satin chrome finishes • Dezincification resistant Disability Modification • Long Lever tap handles lever length 90mm to 150 mm (surgeon type) as directed • Quarter turn taps with ceramic disc fitted to kitchen sinks
Warranty	Minimum 2 year written warranty

1.5.11 Sink Unit

Component	SINK UNIT
Sub-component	Kitchen Sink
Need	To provide for washing rinsing and draining of food, and utensils
Requirement	General - To current Australian Standards - Standards Mark/Water Mark/certificate of approval - All kitchen sinks to be supplied with plug and waste - Minimum 302 polish finished stainless steel only - Indelibly marked with manufacturers trade-mark - Sinks to suit 3 tap set configurations (hot tap, cold tap and spout) Disability Modification Bowl depth and dimensions as directed Studio - Single Bowl sink with single drainer. Minimum 880mm length and minimum 13.5L bowl - Sink to suit bench top width – minimum of 450mm 1 to 2 Bedroom Properties - One and a half bowl sink with single drainer, minimum length 1050mm, width to suit bench top width - minimum of 450mm - Main bowl to be minimum 20L 3 or more bedroom - One and a half bowl sink with double drainers. Minimum 1400mm long x 450mm wide - Main bowl to be minimum 20L
Warranty	Minimum 25 year written warranty

1.5.12 Laundry Tub

Component	LAUNDRY TUB	
Sub-component		
Need	To wash and soak clothes and bedding	
Requirement	General - To current Australian Standards - Standards Mark/Watermark/Water Authority certificate of approval - Detachable PVC or polyolefin bypass connected at top to current Australian Standard Tub - Minimum 30 litre capacity (Studio) - Minimum 45 litre capacity (1 to 2 bedroom) - Minimum 68 litre capacity (3 to 6 bedroom – (for maintenance only) - Minimum 302 stainless steel - Indelibly marked with manufacturers name - trademark Cabinet - White enamel/ pre-painted finish to steel cabinet	
Warranty	Minimum 25 year written warranty - stainless steel Minimum 10 year written warranty - the cabinet	

1.5.13 Tap/Valve Tempering and Thermostatic Mixing

Component	TAP/VALVE	
Sub-component	Tempering Valves/Thermostatic Mixing Valve	
Need	To ensure hot water does not scald tenants	
Requirement	- Tempering Valves set to Plumbing Code standards to all NCC Class 1, 2 and 3 properties - Thermostatic Mixing Valve only in NCC Class 9 Properties - To current Australian Standards - Standard Mark/Water Mark/Sydney Water certificate of approval - Installation to manufacturers specification	
Warranty	Minimum 5 year written warranty	

1.5.14 Plumbing System – Potable Water

Component	PLUMBING SYSTEM
Sub-component	Potable Water
Need	To provide safe, clean and healthy drinking water to homes
Requirement	Prior written approval of the Principal is required to use alternate piping material in new construction and in maintenance work unless replacing like with like Alternate piping shall meet the following requirements • To current Australian Standards • Water Mark certificate of approval • Recyclable at end of life • Satisfies tests for contaminants to comply with AS4020 including: • VOC's (Volatile Organic Compounds) • Semi-Volatile Organic Compounds • Regulated heavy metals (Cadmium, lead, arsenic, barium, beryllium, chromium, mercury, selenium, thallium etc • Any other contaminant lifecycle tests • Able to be joined using standard (non-exclusive) connectors which can withstand required pressure levels • Heat Resistance able to withstand temperatures up to 85 degree Celsius without failure • Potable water delivered through the system contains no tainting affecting taste or odour after accelerated tests representing 20 years use – AS/NZS 4020:2005 and AS 2492
Warranty	Minimum 25 year written warranty

1.5.15 Rainwater Tank

Component	WATER SUPPLY
Sub-component	Rainwater Tank
Need	
Requirement	All Rainwater Tanks above and below Ground • To current Australian Standards • All downpipes connected to the rainwater tank must have a screened downpipe rain head • First Flush devices installed to suit system (above or below ground) • Vermin and insect screens provided on all inlets and outlets Aluminium mesh mosquito screen • All rainwater and stormwater pipes installed to eliminate ponding and stagnation of water • In accordance with the Rainwater Tank Design and Installation Handbook HB 230-2008 published by Standards Australia • All pumps, electrical, and plumbing must be located either adjacent to a building or positioned as not to cause trip hazards. Located in a vandal resistant enclosure • Installation to manufacturers specification Above Ground Rainwater tanks • Slimline rain water tanks • Walls minimum G300S, Z450 0.6mm BMT steel • Interior surface factory pre-painted with a food grade approved polymer (200 um thick) to AS2070 • External walls galvanised or factory pre painted • Steel base minimum G300S, Z450 0.6mm BMT, with a food grade approved polymer 200um thick film to inner and outer surfaces • Installed with first flush device, strainer, overflow and hose tap • Tank stands certified by structural engineer Below Ground Rainwater tanks • All below ground tanks installation must have engineering certification for design loadings and hydro-static lift • Below ground tanks cannot be installed underneath or as part of a Properties foundation. Preferred location underneath driveway or lawn • Manufactured using concrete or food grade polymers, and independently certified not to leach chemicals into the water • Monolithically poured or single seam free tanks with no joins of leakage points, reinforced, self supporting and engineered • Inlet covers/lids to eliminate sunlight/algae/mosquitos and marked Rainwater
Warranty	Minimum 20 year written warranty Above Ground Minimum 15 year written warranty Below Ground

1.5.16 Water Heater

Component	WATER HEATERS
Sub-component	Solar Water Heaters
Need	To reliably provide hot water
Requirement	General - To current Australian Standards - Water Mark/Authority Certificate of Approval including all valves - Installation to current Australian Standards and to manufacturers written specification - High energy efficiency – Eligible for Small Scale Technology Certificates - Suitable for all NSW climate zones, except Alpine Region - All Units, Valves and Piping to be frost protected to climate zone - Hard water or mineralised water areas to be glycol based using a heat exchanger (primarily NCC Climate zone 4) - Natural gas or electricity boosted - Solar Panels (hail resistant) appropriate to zone area and size of tank - Solar Panels to be aligned between north east to north west - Tank on ground preferred, unless ground space is limited then close coupled thermo siphon systems are allowed Gas Boost - Minimum 170L with 5 star Gas Boost (all bedroom categories) Electric Boost - Minimum 160L for (1 Bed) – close coupled for new construction - Minimum 250L for (2 Bed) - Minimum 300L for (3 to 4 Bed) - Minimum 400L with 3 panels for households with 5 or more residents - Electric Boost solar capable of off peak electricity supply operation - Capable of recovery of more than 50% of the tank capacity through boost
Warranty	Minimum 10 year written warranty - cylinder panels and heat exchanger

Component	WATER HEATERS
Sub-component	Gas Water Heaters
Need	To reliably provide hot water
Requirement	General - To current Australian Standards - Standards Mark/Water Mark/Water Authority Certificate of Approval - AGA approval - Minimum 5 star energy rating - All Units, Valves and Piping to be frost protected Storage - Mains pressure: Floor Model (outdoor only) 1 bedroom minimum 90L 2 bedroom minimum 110L 3 bedroom and over, minimum 135L Instantaneous (External installation only) - Factory Pre-Set not to exceed 50°C in accordance with AS3498. No further mechanical tempering device required - Electronic ignition - Frost protected - Single or dual heat exchanger 1 bathroom Properties - NCC Climate zone 6 to 8 – 16L to 26L - NCC Climate zone 2 to 5 – 16L to 20L 2 bathroom Properties - NCC Climate zone 6 to 8 – 26L to 32L - NCC Climate zone 2 to 5 – 20L to 26L
Warranty	Storage Minimum 1 year written warranty - parts/labour Minimum 10 year written warranty – cylinder Instantaneous Minimum 3 year written warranty - parts and labour Minimum 10 year written warranty - heat exchanger

Component	WATER HEATERS	
Sub-component	Electric Water Heaters	
Need	To reliably provide hot water	
Requirement	General • To current Australian Standards • Standards Mark/Water Mark/ Water Authority Certificate of Approval • Off-peak mains pressure storage • All Units, Valves and piping must be frost protected Storage • 50 and 80 ltr capacity (for maintenance only) • Mains pressure Floor Model (indoor/outdoor) • (1 bedroom - pensioner - 125L) • (2 bedrooms - 250L) • (3 bedrooms and over - 315L) Instantaneous • Electrical cut-off Manufactured with inbuilt Pressure/Temperature relief valve • Minimum. 4.5 L/ minute	
Warranty	Storage Minimum 1 year written warranty - parts/labour Minimum 10 year written warranty – cylinder Instantaneous Minimum 3 year written warranty - parts/labour	

1.6 Electrical and Gas

1.6.1 Intercom and Access Control

Component	ACCESS CONTROL
Sub-component	Intercom and Door Control
Need	To provide a reliable, useable and secure device for controlling access to buildings
Requirement	• Vandal Resistant Intercoms • Displays self explanatory user information • Minimum 2mm Stainless Steel front with toughened minimum 4mm Polycarbonate Surround • Impact resistant and fixed with anti-vandal fixings • Front plate to allow a minimum of six buttons with audio, expandable modular units for additional features • Optional space for shatterproof camera shielded by minimum 4mm clear polycarbonate • Stainless steel buttons, tamperproof and shaped to prevent foreign bodies being inserted underneath • Linked to door release switch in units and internal intercom Door Release System • Steel reinforced recessed entry panel with buttons flush to outer surface and anti-removal device. Must operate independently and not be reliant on other communication services • Installation to manufacturers specification
Warranty	Minimum 1 year written warranty

1.6.2 Light Points

Component		LIGHT POINTS
Sub-component		Interior Common Area Lights
Need	To illuminate common areas adequately for undertaking normal domestic activities and security, including internal fire stairs, stairwells, lift lobbies, corridors, car parks etc. Includes external areas with roofs/ceilings <3m, such as undercover walkways, car parks, stair wells etc	
Requirement	- To provide Common Area lighting to all common areas egresses and access ways within residential complexes (entranceways, stairways, corridors, common rooms, plant rooms etc) - To current Australian Standards and relevant access standards - To current NCC including independent Certification of compliance to NCC - Installed to manufacturers written specification - Luminaires must be U.V. stabilised and IP65 rated with die cast Aluminium (minimum 20 to 25 Micron Powder coating) or ≥ 3mm polycarbonate housing - Product must have a recognised Australian Certificate of Approval under the Electricity Consumer Safety Act 2004 - All fixtures and components to be vandal proof, hose proof and impact resistant. Security/specialty screws required for all fixings - Energy efficient lamps to be used - Colour temperature: 4000 - 5000K - Colour rendering index: 80+ - Power Factor ≥0.9+ - Light sources / lamp preference based on luminous efficacy i.e. highest lumens per watt to be given preference. Luminous efficiency of light source / lamp must be ≥ 70 Lumens / Watt - Rated lamp life ≥ 20,000 hours - Luminaire light Output Ratio (LOR) ≥ 0.7, evidenced by NATA accredited lab reports - Lumen output of light source / lamps ≥ 70% of original output at end of the rated lifetime, evidenced by NATA accredited lab reports - Luminaires with no hanging points as directed by the Principal to meet building criteria - Luminaires must be securely fixed to the surface - no hanging fittings	

Continues

	<i>Continues</i> LED Lamps/Luminaires • All luminaires must be vandal-resistant LED luminaires with occupancy sensors that maintain a low level of lighting when areas are unoccupied • All luminaire models must have previously been used by an Accredited Certificate Provider to successfully create Energy Savings Certificates under the NSW Energy Savings Scheme • All components of the light fitting including lamps, batteries, covers etc. must be able to be purchased and replaced individually • LED rated lamp life $\geq 50,000$ hours • LED luminous efficacy ≥ 70 Lumens/Watt at full light output • LED colour temperature 4000-5000K • LED colour rendering index $\geq 80+$ • Luminaire power factor $\geq 0.9+$ • Lumen output of LED lamps $\geq 70\%$ of original output at end of the rated lamp life • Luminaire Light Output Ratio (LOR) ≥ 0.7 • All exposed equipment (luminaires, motion sensors, photocells, diffusers etc.) must be vandal resistant, IP65 rated, with $\geq 3\text{mm}$ thick impact-resistant polycarbonate covers or equivalent • All motion sensors or other parts are to be securely contained within the luminaire, or fixed to the ceiling or luminaire using vandal resistant security/specialty screws and contained within IP65 rated $\geq 3\text{mm}$ thick impact-resistant polycarbonate covers or equivalent • No equipment is to have leverage or hanging points • Security/specialty screws are required for all fixings • Luminaires must be fixed to ceilings using a drilling method – no adhesive methods will be accepted • Emergency luminaires must be self-contained with a self static inverter. System including battery and battery charger to be non-corrosive • Emergency luminaire battery to be heavy duty long life type and duration of emergency power ≥ 90 minutes • Any battery compartments must be either inaccessible or accessible only via vandal resistant security/specialty screws
Warranty	Minimum 2 year written warranty Minimum 3 year written warranty - all LED components

Component		LIGHT POINTS
Sub-component		Exterior Light Fittings
Need	To illuminate an area for safe pedestrian movement. For external areas with roofs/ceilings <3.5m, such as undercover walkways, car parks, stair wells etc, component requirements for Interior Common Area Lights apply for LED lamps/luminaires	
Requirement	- Modular carriage tray with electronic starter - Weather proof IP65 rated - Lights to reduce light spill and sited to illuminate pedestrian and mixed traffic areas in common areas, forecourts of cluster housing to improve safety and reduce shadow and potential hiding locations - Meet current Australian Standard 1158 Table 2.1 with selection criteria critically evaluating 'risk of crime' - Performance to type 3 or 4 Luminaire classification to AS1158.3 - Lights mounted high on posts or buildings and sited not to spill into windows or neighbouring buildings. Bollard lighting is not approved - Meet current Australian Standard 1158 and achieve a 'P1' for High levels of vandalism or 'P2' for Medium levels of vandalism in accordance with AS1158.3 All External lighting - Vandal proof moulded base - Impact resistant moulded housing - Vandal proof opalescent cover - U.V. stabilised diffuser - Replaceable carriage tray with electronic starter - No hanging point as directed by the Principal Light to be securely fixed with all cables secure and vandal resistant to prevent access - Energy efficient Tri-phosphor globes and tubes - Installed to manufacturers written specification - Performance to Type 3 or 4 Luminaire classification in accordance with AS1158.3 Building and Car-Park Lighting - Housing casing glass reinforced polyester or Nylon moulded plastic - Vandal resistant moulded Polycarbonate diffuser - Vandal resistant stainless steel clips - Where possible all lights are to be fixed to buildings or other structures at a preferred height of 2m to 3.4m Pole Top Lighting - All Pole top lighting to be 2m to 3.4m around pedestrian paths - All Pole top lighting to be 3.4 to 4.5m around roadways - Poles to suite 76 diameter or 100 diameter spigots - Poles minimum 3.6mm thick x 75mm diameter minimum. 60 micron hot dipped galvanised M.S. post Notes - Bollard and up-lighting types are NOT approved for new installations - Design of lighting to comply with AS 4282 Control of the Obtrusive Effects of Outdoor Lighting	
Warranty	Minimum 2 year written warranty	

1.6.3 Smoke Alarms

Component	SMOKE ALARMS
Sub-component	
Need	To provide early warning of fire to occupants
Requirement	All Properties • To current Australian Standards • Product listed in CSIRO's Activfire Register of Fire Protection Equipment • Ionisation or photo-electric model or Heat Technology • Test button • Alarm pause ('hush') button to silence alarm (ionisation model) • Mains operated (hard-wired) 240 volt unit with fixed rechargeable (Lithium) battery backup (10 years battery life expectancy) – with minimum 2 months battery standby • Inter-linkable features • Low power warning • Installed to manufacturers written specification • Branded with manufacturers trademark to AS 3786 • Energy Efficient smoke alarm • Interlink with Isolators / hush button • Interlink with Strobe lights for hearing impaired
Warranty	Minimum 10 year written warranty including rechargeable battery

1.6.4 Stove

Component	STOVE
Sub-component	
Need	To cook food safely and effectively, allowing frying, grilling and baking
Requirement	Note: In all new construction, separate wall or under bench oven and cooktop only. Upright - (for maintenance only) • To current Australian Standards • Oven gross capacity minimum 75 litre • Combined or separate griller and oven compartments • Fan Forced or conventional oven – Removable oven door with cool to touch window • 4 hot plates or 4 burners : For Electric solid elements or ceramic glass cooktop tested to IEC60335 For Gas - Electric or battery ignition, push to turn safety control, flame failure cut off for emergency • Front control or side control buttons only • Splashback to upright • AGA approval where appropriate <i>Continues</i>

Component	STOVE
	<i>Continues</i> Cook Top - Electric or Gas • To current Australian Standards • Square white enamel painted finish or stainless steel or ceramic glass hob with front or side controls • 4 hot plates or 4 burners; For Electric solid elements or ceramic glass cooktop tested to IEC60335 For Gas - Electric or battery ignition, push to turn safety control, Flame failure cut off for emergency • AGA approval where appropriate Wall Oven - Electric Only • To current Australian Standards • Oven gross capacity minimum 80 litre • Combined or separate griller and oven compartments • Fan Forced or conventional oven – Removable oven door with cool to touch window Liveable Housing feature • Separate Cooktop and wall oven • Oven to have Side hinged or Bottom hinged door Disability Modification • Cooktop and oven as directed
Warranty	Minimum 2 year written warranty

1.6.5 Rangehood

Component	RANGEHOOD
Sub-component	
Need	To remove grease from stove gases
Requirement	General • To current Australian Standards/Australian Gas Association/NSW Office of Energy • Minimum 50 micron powder coating to galvanised steel casing • AS marking, brand name, serial no. date code, rated air delivery, sound power level in dB(A) at rated air delivery and wattage branded on unit • Minimum air flow rate 40L/s at maximum sound power level 55dB(A) to current Australian Standards • Minimum 2 speed convertible fan & automatic thermostat cut-off electricity or impedance protected motor (withstand "locked rotor" conditions for 72 hours without burning out) • Minimum 55 watt motor • Minimum 3 blade plastic/metal propeller • Minimum 10 layer aluminium mesh grease filters • Wiring encased in plastic conduits, within unit • Width to match and align with cooktop or stove • Installation to manufacturers specification Ducting • Exhaust to outside • To be minimum of 0.5mm galvanised steel ducting or 'Flexi-duct' similar fire or heat resistant material)
Warranty	Minimum 2 year written warranty - parts/labour Minimum 2 year written warranty - filters

1.6.6 Heating

Component	HEATING
Sub-component	Electric Space/Electric Panel Heaters
Need	To provide efficient and effective heating of a room
Requirement	- To current Australian Standards - Only space/panel heaters approved under the Certificate of Approval Scheme authorised by the appropriate government agency with authority to test and certify - Installation in accordance with Australia/New Zealand Wiring Rules (Australian Standards AS/NZS 3000) and to local supply authority regulations - Fixed (including wall mounted or recessed or floor mounted) panel or fan assisted heaters - Minimum 2 heat settings, (LO/HI) Thermostat control on high setting - Minimum 2kW (heat up to 55 m³) to Maximum 7kW (heat up to 160 m³) consumption capacity - Minimum efficiency of greater than 95% - Automatic reset thermal cut-out safety feature and fusible link. Branded with manufacturers name to AS60355, supplier licensed under Standards Assoc. Certification Trademark - Child safe to touch cabinet
Warranty	Minimum 2 year written warranty

Component	HEATING
Sub-component	Gas Space Heaters
Need	To provide efficient and effective heating of a room
Requirement	- To current Australian Standards - Natural Gas/Town only - Wall mounted convection heater, Thermostat heat control automatic electronic ignition, timer, regulated gas flow and flued combustion gases - Child safe to touch cabinet - Minimum 4.3 efficiency stars and 6.0 emissions star rating - Double lined flue within ceiling space - Heaters with flues - Gas input - minimum size : 5 MJ/hr - Gas input - maximum size : 23 MJ/hr - Labelling of appliances, specifying minimum allowable room volume and capacity of heater in MJ/hr - Installation to AGA requirements - AGA certificate of approval
Warranty	Minimum 10 years written warranty - burner Minimum 2 year written warranty - fan Minimum 1 year written warranty - other parts

1.6.7 Dryer

Component	DRYERS
Sub-component	
Need	Dry washing efficiently and effectively
Requirement	Common Area Laundries and NCC Class 3 and 9 Properties • To current Australian Standards • Minimum 3.5kg or 5kg capacity • Auto cool down • 2.5 hour timer – 3 heat settings • Easy clean filter • Safety door switch, Safety thermostat reset switch • 2 directional air outlet and optional venting kit • Wall mountable • Minimum 2 star Energy Rating
Warranty	Minimum 2 year written warranty

1.6.8 Washing Machine

Component	WASHING MACHINE
Sub-component	
Need	A means of automatically washing a variety of clothes and bedding types
Requirement	Common Area Laundries and NCC Class 3 and 9 Properties • To current Australian Standards • Standards Mark/ Type Test Mark to NPADPS/ Water Authority certificate of approval • Automatic washing machine, with rotary or push button control • Stainless steel drum NCC Class 3 and Class 9 (minimum 7 kg load capacity) • Front loading • 4 Star WELS rating • 4 Star Energy rating Common Area Laundries (minimum 5.5 kg or 6 kg load capacity) • Top loading • 4 Star WELS rating • 3 Star Energy rating
Warranty	Minimum 2 year written warranty

1.6.9 Reverse Cycle Air Conditioning

Component		AIR CONDITIONER
Sub-component		Reverse Cycle Split System
Need	To provide efficient and effective heating and cooling of a room	
Requirement	NOTE: Installed only in Western areas of NSW where the average summer temperature exceeds 33 degrees, or as directed General • To current Australian Standards • Wall or Floor mounted • Cooling capacity minimum 2.5 kw to maximum ≤ 6 kw • Energy star rating - o 2.5 kw cooling model- minimum 4 star cooling, minimum 4.5 star heating - o 3.5 kw cooling model - minimum 2.5 star cooling, minimum 3.5 star heating - o 5.0 kw cooling model - minimum 2 star cooling, minimum 3.5 star heating - o 6.0 kw cooling model - minimum 2 star cooling, minimum 3.0 star heating • Minimum number of fan speeds 4 • Indoor noise ≤ 50 dBs • Outdoor noise ≤ 60 dBs • Single Phase 240 V • Controller to be hard wired. Remote controls only supplied where directed	
Warranty	Minimum 2 year written warranty	

1.6.10 Solar Photo-Voltaic Panels

Component		SOLAR PHOTO -VOLTAIC -
Sub-component		Panels and Inverter
Need	To provide produce electricity	
Requirement	Photo Voltaic Panels (all models) - Listed on Clean Energy Council (CEC) Approved Modules Database – and to current Australian and International Standards - Efficiency > 15% - Mean measured power per panel > 250w, with Performance Ratio of ≥ 90% and/or Temperature Coefficient of ≤ 0.5% (Life cycle testing to show that performance in not significantly diminished over the power generation life of the panel - Generate Small Scale Technology Certificates (STC's) and be listed on the Clean Energy Council list of approved components - Compliant with IEC 61215, IEC 61730 and UL 70 - Anti-reflective coating - Frame post cut anodized Aluminium screw or weld fixed (tested to withstand cyclonic wind) - Operating temperature from minimum – 25°C to maximum 85°C - IP67 rated junction box on each panel - Roof mounted isolators to be side mounted Solar Inverter (Fixed Voltage Inverter models) - Listed on Clean Energy Council (CEC) Approved Modules Database – and to current Australian and International Standards - Optimal Efficiency > 95% DC/AC Conversion - Suit outdoor or indoor installation - Ambient operating temperature range from minimum – 25°C to > 50°C - Minimum IP65 rating	
Warranty	Minimum 25 year written warranty – power generation Minimum 10 year written warranty - materials	

1.6.11 Ceiling Fan

Component		Ceiling Fan -
Sub-component		
Need	To effectively circulate the air in a room	
Requirement	Ceiling Fans (all models) • To current Australian Standards • Fan with integral light • Minimum 1200mm diameter • Minimum 3 speed fan • Controller to be hard wired. Remote controls only supplied where directed • Provide control switching integrated with light switches • Fan to have reverse function • Unit suitable to fit LED globes • Installed to manufacturers specification and details	
Warranty	Minimum 2 year warranty	

1.7 Wood Space Heater

Component	WOOD SPACE HEATER
Sub-component	Wood Space Heaters
Need	To provide efficient and effective heating of a room
Requirement	Note Not installed in new construction (for maintenance only) General • To current Australian Standards • Test report prepared by registered NATA registered laboratory in compliance to AS 4013. "Domestic Solid Fuel Burning appliances - Method for Determination of Flue gas emission" • Maximum allowable appliance particulate emission factor to AS 4013 (i.e. maximum 5.5g/kg for appliances without catalytic combustors) • Double skin firebox convection heater • Double lined flue within ceiling space • Minimum appliance efficiency rating of 60% • Minimum size: 10kW (30MJ), Maximum size: 22kW (65MJ) • Installed by licensed installer to manufacturers written specification • Branded with manufacturers trademark, type, model and serial number, and emission report number of appliance and Standards Mark
Warranty	Minimum 5 year written warranty

1.8 Flooring

1.8.1 Underlay

Component	FLOORING
Sub-component	Underlay
Need	To provide safe, healthy, hard wearing, underlay to maximize economic life from carpet
Requirement	General - To current Australian Standards - Meets current NCC and AS ISO9239-1 - Recyclable and or made from recycled materials - Minimum grading "Residential" as per AS 4288 Class 2 Properties Synthetic foam - Rebonded polyurethane foam with stabilising laminate on top surface 7 mm minimum thickness 120 kg/m³ minimum foam density or rebounded polyurethane foam Vulcanised rubber - Heavy duty vulcanised rubber, waffle pattern - Reinforcing fabric: either Hessian, spun Nylon, or Polyester - Minimum sheet thickness: 7.5mm (+0.5) 210kg/m² minimum product mass Common Areas (class 2 Properties), class 3 Properties Synthetic foam - Rebonded polyurethane foam with stabilising laminate on top surface 7 mm minimum thickness 120kg/m³ minimum foam density or rebounded polyurethane foam Vulcanised rubber - Heavy duty vulcanised rubber, waffle pattern - Reinforcing fabric: either Hessian, spun Nylon, or Polyester - Minimum sheet thickness: 8mm (+0.5) 300kg/m² minimum product mass
Warranty	Minimum 10 year written warranty

1.8.2 Carpet

Component	FLOORING
Sub-component	Carpet
Need	To provide a safe, healthy and comfortable surface for habitable areas of a Property or common area
Requirement	General • Installation to current Australian Standards • Fire rating to NCC (for all Building Class Types) • Treated with Anti-Bacterial and Anti-Microbial Nylon/Wool Blend • 100% bulked continuous filament (bcf), solution dyed Nylon or Nylon/Wool blend (minimum 50% nylon) • Loop pile tufted carpet • Level pile surface or with slight modulation • 31.5 tufts/10cm (1/8) gauge • Minimum 678 g/m² (20oz/yd²) total pile mass • 5mm maximum pile height • "Actionbac" or Jute backing or minimum 80% recycled stitch bond non woven polyester • A.C.C.S. rating for Residential Extra Heavy Duty (Stairs) • A.C.C.S. Registration number to appear on back at regular intervals • Colour as approved by Principal • Carpet range and quality as approved by Principal Wool Types • 100% wool carpet or wool blend (minimum 80% wool) • Loop pile tufted carpet • Level pile surface or with slight modulation • 31.5 tufts/10cm (1/8) gauge • 1356 g/m² (40oz/yd²) total pile mass • 6mm maximum pile height • "Actionbac" or Jute backing or minimum 80% recycled stitch bond non woven polyester • ACCS (Australian Carpet Classification Scheme) rating for Residential Extra Heavy Duty including stairs • Colour as approved by NSW Land and Housing Corporation • Carpet range and quality as approved by Principal • A.C.C.S. Registration number to appear on back at regular intervals
Warranty	Minimum 10 year written warranty

1.8.3 Resilient Sheet and Tiles

Component	FLOORING
Sub-component	Resilient Sheet and Tiles
Need	To provide safe, healthy, hard wearing, waterproof and cleanable surface
Requirement	Note: These provisions apply to complete new installations Existing spot replacement or repair use Resilient Flooring to match the existing installed product • Manufacture, Installation and Maintenance to current Australian Standards • Use water based adhesives • All sheet, flooring seams shall be welded (either chemical or thermal) to manufacturers specification • Initial care of all installed materials shall be carried out to manufacturers specification • Floor-coverings shall conform to the physical characteristics of approved samples and shall be within the limits of any sample range or variation in colour and pattern • Products containing recycled materials are preferred Class 1 Properties – Vinyl Composition tiles (ISO10595 Kitchens, Dining Rooms and Hallways etc) • (Concrete floors laid on suitable levelling compound; Timber floors laid on Hardboard, FC sheet underlay or other approved underlay) • Thickness: 3mm (EN428) • Wear Resistance: <10mm³ (EN660) • Minimum 3db sound reduction • R9 slip resistance • Fire rating ISO9239.1 >11kW/m² Class 1 Properties – Homogenous Sheet (ISO10581 Kitchens, Dining Areas and Hallways etc) • Thickness: Minimum 2mm – Maximum 3mm sheet vinyl (Concrete floors laid on suitable levelling compound, Timber floors laid on Hardboard, FC sheet underlay or other approved underlay) • Polyurethane Reinforced • Wear Resistance: Group P (EN660-2) • R9 Slip Resistance • Minimum 3db sound reduction • Fire rating ISO9239.1 >9kW/ m² <i>Continues</i>

Component	FLOORING
	<i>Continues</i> Class 1 Properties – Heterogeneous Sheet (ISO10582 Kitchens, Dining Areas and Hallways etc) • Thickness: Minimum 2mm – Maximum 3mm sheet vinyl (Concrete floors laid on suitable levelling compound, Timber floors laid on Hardboard, FC sheet underlay or other approved underlay) • Polyurethane Reinforced • Wear Resistance: Group T (EN660-2) • R9 Slip Resistance • Minimum 3db sound reduction • Fire rating ISO9239.1 >9kW/m² Class 2 and 3 Properties – Cushioned Backed Heterogeneous sheet (EN651) • Thickness: Minimum 3mm sheet vinyl (Concrete floors laid on suitable levelling compound, Timber floors laid on Hardboard, FC sheet underlay or other approved underlay) • Polyurethane Reinforced • R10 slip resistance • Wear Resistance: Group T (EN660-1) • Minimum 14db sound reduction • Easy Clean top layer • Fire rating ISO9239.1 >8kW/m² Wet Area (Floors) – Written approval of Principal is required prior to use • Homogenous Slip Retardant Vinyl sheet (ISO10581) • Thickness: Minimum 2mm sheet vinyl (EN428) • Wear Resistance: Group M (EN660-2) • Fire Rating: (ISO9239.1 > 9kW/m²) • Slip resistance: AS4586 (B Wet/Barefoot and R10 Oil/wet ramp) • Integral 150mm high coved skirting in all wet areas, Cove skirting to be installed with capping strip to prevent water penetration • 32mm diameter cove fillet to be used where vinyl is coved • Products containing abrasive material in order to comply will not be considered • Gatic Floor drain assembly to be used in all wet areas Wet Area (Walls) – Written approval of Principle is required prior to use • Homogenous Vinyl sheet (ISO10581) • Thickness: Minimum 1.25mm (EN428) • Polyurethane Reinforced • Wear Resistance: Group M (EN660-2) • Fire Rating (AS3837) Group 2
Warranty	Minimum 7 year written warranty

1.9 Signage

1.9.1 House and Unit Numbering

Component	SIGNAGE
Sub-component	Numbering (Street/Unit)
Need	To provide legible identification of address
Requirement	- External street numerals and building block numerals to be 150mm minimum high 1.6mm thick plain brass (secured with brass screws) or polished cast aluminium or self-reflective numerals on pre-painted steel base (secured with stainless steel screws) fixed to building/structure - Unit numerals to be 50mm minimum high x 1.6mm thick plain brass or polished cast aluminium or moulded plastic screw fixed to door - Letterbox numerals to be 50mm minimum high x 1.6mm thick brass/aluminium/plastic screw fixed to front of letterbox - Community room WC doors as for unit numerals - Project name and numerals (if required) as for external street numerals
Warranty	Minimum 1 year written warranty

1.9.2 Information, Direction & Prohibition Signage

Component	SIGNAGE
Sub-component	Advisory / Information or Prohibition Signage
Need	To provide legible information and advice for people in or around the area
Requirement	- Prohibition signs (No Smoking, Electrical hazard etc) to comply with current Australian Standards - Either 225x300 mm (approx A4) or 300x450 mm (approx A3) – where viewing is required at a distance of greater than 10m away - Signs and numbers to be non reflective Low Density Polyethylene and/or Polypropylene and/or co- mingled plastic/wood (Recycled product) - UV stabilised – to reduce surface whitening - Fading and crack resistant for indoor and outdoor use - Minimum 90% recycled product - Non-toxic hazard - Minimum thickness 1.5 mm - Rounded corners with four corner mounting holes (screw fixed) Pre Painted Sheet Steel (metal) - Suitable for outdoor use - Minimum BMT 0.5 mm thick; - Rounded corners with four corner mounting holes (screw fixed with vandal resistant screws)
Warranty	Life expectancy 5-8 years

Life Safety Plan			
R	A	C	E
Remove people in immediate danger	Alert others – Raise the Alarm	Close the door	Evacuate to assembly area
			
Evacuation Procedure			
1. Remain calm. Do not Panic. 2. Leave building. Do not use lifts. 3. Proceed to assembly areas. 4. At assembly areas call 000. 5. Remain there until otherwise directed by emergency services. 6. Always keep escape paths free of obstacles.			
IN AN EMERGENCY DIAL 000			
"Evacuation diagram to be inserted here" SAMPLE ONLY			

END OF COMPONENT REQUIREMENTS - PART 1
ASSET MAINTENANCE AND NEW CONSTRUCTION

PART 2 – ITEMS FOR REFERENCE SPECIFICATION, FIRE SAFETY WORKS AND SPECIAL PROJECTS

2.1 External

2.1.1 Fencing and Gates

Component		FENCING AND GATES
Sub-component		Fences and Gates
Need	To demarcate and secure the properties boundaries. Fences and gate must be suitable to maintain privacy, be a safe area for children, and confine domestic animals	
Requirement	- To current Australian Standards Fence heights to meet local Government regulations - Front fencing 900mm to 1200mm - Cut off fencing 1200 to 1800mm - Side and Rear fencing 1800mm - Gates to match fence cladding and height where specified Decorative fencing - Steel or Aluminium Tubular non climbable panels - flat or looped top finish only, NO Spears or protruding rods - Minimum 16mm x 0.9mm tubes - spacings approx 100mm centres - Rails minimum 39 x 25 x 1.2mm rectangular tubing or minimum 25mm round - Posts minimum 50 x 50mm - 450mm round minimum 1.2mm thick - Powder Coating to AS4506 - Safety compliance to AS1926.1 for gates, hinges and locks <i>Continues</i>	

	<i>Continues</i> Metal fencing • Steel pre-rolled sheet - Colorbond or equivalent double sided steel pre-painted steel complying with AS/NZS 2728: Type 3, testing compliance to meet performance requirements within an exposed environment for humidity, scratch resistance, impact, adhesion, cracking and corrosion • Fence panel made from zinc aluminium alloy coated steel complying with AS1397-2011, G550 (550MPa minimum yield stress), AZ150 (150g/m² minimum coating mass) • The fence panel base material thickness is 0.35mm • Posts and rails made from zinc alloy coated steel complying with AS1397-2011, G500 (500MPa minimum yield stress), Z275 (275g/m² minimum coating mass) • Posts - Standard Channel posts 84 x 43mm, Square Corner, junction and single gate posts 60 x 60 x 1.6, Double gate posts 65 x 65 x 2.5 installed with caps • Rails 60 x 53 with base metal thickness of 0.8mm • Installation to manufacturers specification Timber Fencing • End Post/ Gate Post/ Corner Post either Hardwood/ Treated Pine 125x125mm or Galvanised steel 75 x 75 x 2.5mm • Intermediate posts either Hardwood 125 x 50 mm or Treated Pine 125 x 75mm • Rails Hardwood/ Treated Pine 75 x 50 mm • Palings Hardwood/ Treated Pine 100 x 15 either lap palings by 15 mm or close butted. • All timber measurements ± 2mm
Warranty	Minimum 3 years written warranty - decorative fencing Minimum 10 years written warranty - metal fencing

2.1.2 Street Furniture

Component	STREET FURNITURE	
Sub-component	Tables and Seats	
Need	Present an aesthetic image whilst meeting the needs of the tenants	
Requirement	• Vandal proof and durable street furniture and tables for common areas • 98% recycled wood/plastic composite • Recycled co-mingled wood/plastic independently tested not to crack, splinter, rot, rust or warp • CCA and Toxin free • UV stabilised and Non permeable • Fixed with vandal proof galvanised or stainless steel fixings • Frame galvanised steel or other vandal proof material	
Warranty	Minimum 1 year written warranty	

2.2 Roofing

2.2.1 Roof Covering

Component	ROOF	
Sub-component	Roof Covering	
Need	To effectively weatherproof the dwelling, shed water, be durable and robust	
Requirement	Roofing Tiles • Concrete & Terracotta to current Australian Standards • Installation to current Australian Standard and manufacturers written specification Metal Roofing • Manufacture designed and installed to current Australian Standards and to manufacturers written specification • Zinalume or equivalent - minimum AZ150 coating or Colorbond steel or equivalent • Minimum base metal thickness 0.48mm (for standard conditions and straight roof lines) • Product is to be legibly and durably marked on reverse surface with the manufacturer name and/or trademark, unique traceable identifier and date of manufacture • Product to meet tolerance specification of AS/NZS 1365	
Warranty	Minimum 25 year written warranty - Roofing tiles Minimum 15 year written warranty - Metal roofing	

2.2.2 Sarking Vapour Barriers

Component		ROOF
Sub-component		Sarking/Vapour Barrier
Need	To provide vapour barrier to roofs and external walls, to assist in thermal insulation and to eliminate moisture and condensation in buildings	
Requirement	General - Manufactured in accordance with AS 4200.1 and installed to AS4200.2 - Provides required Thermal Performance in accordance with AS4859 and ICANZ - Vapour Barrier - rated Medium to High (<2 ng/Ns) - Water Barrier - rated high AS4200 or better than 0.5 MNs/g - Fall arrest to meet AS4040.4 Tiled Roofs - Low flammability and Heat Factor of 5 or less AS 1530.2 - High Tensile Strength greater than 18 kN/M in both directions - UL2218-1998 (impact resistance) pass Metal Decked Roofs - When bulk insulation is laminated directly to sarking membrane the composite product must achieve a fire hazard rating (AS 1530.3) of - Ignitability Index 0 - Spread of Flame 0 - Heat Evolved 0 - Smoke Developed 0-1 - Tensile strength > 12kN/M in both directions Notes - Foil Laminates and Bubble Foil cannot be laid on top of the ceiling to cover joists, rafters and any services. Can only be installed as sarking on top of the roof trusses underneath the roofing - Sarking is installed in the roof with roofing wire underneath to ensure that sarking remains in place - Check appropriate separation is maintained between electrical services and installed Foil Laminates and Bubble Foil Sarking in roofs and external walls	
Warranty	Minimum 7 year written warranty	

2.3 Internal Linings

2.3.1 Plasterboard

Component	INTERNAL LININGS	
Sub-component		Plasterboard
Need	Internal wall and ceiling lining board that is resistant to impact and moisture and where required achieve a fire rating	
Requirement	Internal Lining • To Australian Standards and installed to manufacturers specification • Minimum 13mm thick sheeting for walls • Paper weight ≥ 220 gsm • Density $\geq 1000\text{kg/m}^3$ • Tested to NCC requirements 'Specification C1.8 Structural Tests for Lightweight Construction' and to achieve the following results: • Resistance to impact NCC test method 5(c) of $\leq 150\text{mm}$ • Resistance to indentation NCC test method 5(d) of $\leq 4.8\text{mm}$ • Achieve 2 hour fire rating where required • 100% recyclable Internal Lining (Insulated Dry Lining Plasterboard) • Internal Lining to AS 2588 and specification above • Minimum 10mm Plaster board • Insulation backing – rigid thermoset insulation – minimum product thickness 35mm (R1.3 Insulation) to 90mm (R4.1 Insulation) • Fibre free insulation core • Group 1 AS3837 Fire Classification – AS1530 FRL 0/0/0 • Resistant to water vapour IS EN 12086 • Zero Ozone Depletion – CFC/HCFC free Fire rated plasterboard – Ceilings • To current Australian Standards • Resistance to incipient spread of fire for a minimum FRL of 60 minutes and enables the ceiling to achieve an FRL of 60/60/60	
Warranty	Minimum 10 year written warranty	

2.4 Fire Safety Maintenance and Upgrade

2.4.1 Fire Stopping Material - Dampers

Component	FIRE STOPPING MATERIAL	
Sub-component		Fire Dampers
Need	To prevent transmission of smoke and fire across fire compartments	
Requirement	- To current Australian Standards - Installed to manufacturers written specification - Incorporate materials including, flanges, casing, blades, springs and linkages of stainless steel or equivalent materials that comply with relevant standards - Achieve an FRL of -/60/60 to comply with relevant standards - Fit required sizes and shapes - Tested and certified by a NATA registered laboratory (specialising in fire testing) to AS1668.1, AS1682.1, AS1682.2, AS1530.4	
Warranty	Minimum 2 year written warranty	

2.4.2 Fire Stopping Material - Sealants

Component	FIRE STOPPING MATERIAL	
Sub-component		Sealants, foam and mastics
Need	To prevent transmission of smoke and fire across fire compartments	
Requirement	- To current Australian Standards - All material must comply with the nominated properties or replicate a system tested in accordance with AS4072.1 and AS1530.1 - Achieve an FRL of not less than that specified in the FRMPIM for the penetrated floor/wall or ceiling assembly - Penetrations protected by a system tested in accordance with AS4072.1 and AS1530.1 - Installation as per manufacturers instructions	
Warranty	Minimum 2 year written warranty	

2.4.3 Fire Stopping Material – Fire Pillows

Component	FIRE STOPPING MATERIAL	
Sub-component		Fire Pillows
Need	To prevent transmission of smoke and fire across fire compartments	
Requirement	- To current Australian Standards - Suitable for sealing larger penetrations and expansion joints - Achieve a FRL up to -/180/180 through concrete and brick walls and floor penetrations - Installation as per manufacturers instructions	
Warranty	Minimum 7 year written warranty	

2.4.4 Fire Collar

Component	FIRE SAFETY MEASURES	
Sub-component		Fire Collar
Need	To prevent transmission of smoke and fire across fire compartments	
Requirement	- To current Australian Standards - To seal all pipe penetrations up to 200mm in diameter through fire rated floor and wall components - Maximum temperature resistance (triggers the fire collar) shall not exceed 120° Celsius - Installation to manufacturers specification	
Warranty	Minimum 2 year written warranty	

2.4.5 Fire Hydrant

Component	FIRE SAFETY MEASURES	
Sub-component		Fire Hydrant
Need	To provide Fire Hydrant System into required common areas	
Requirement	- To current Australian Standards - Installation to manufacturers specification	
Warranty	5 years written warranty on all materials 1 year written warranty on all valves and pumps	

2.4.6 Fire Blanket

Component	FIRE SAFETY MEASURES	
Sub-component		Fire Blanket
Need	To provide Fire Blanket into common area rooms to contain the fire into a vessel	
Requirement	- To current Australian Standards - Fit only where directed by the Principle - Size to be 1.2m x 1.2m for class F fires - Fixed permanently into the common area room kitchen wall only	
Warranty	5 years written warranty	

2.4.7 Fire Extinguisher

Component	FIRE EXTINGUISHER	
Sub-component	Portable fire extinguisher with rechargeable cylinder all types	
Need	To provide portable fire extinguisher for type A fires to control small fires within residential complexes	
Requirement	- To current Australian Standards - Fit only where directed by the Principal - The actual cylinder to be made of a corrosion resistant metal type component, quick pin release, pressure gauge and heavy duty metal brackets - The portable fire extinguishers shall be fitted with anti-discharge device Capacity: - Water Type – 9 litres - Wet Chemical – 2 to 3.5 Litres - Carbon Dioxide – 2 to 3.5 Litres	
Warranty	10 years written warranty on the cylinder 1 year written warranty on the pressure holdings	

2.4.8 Fire Panel

Component	FIRE PANEL	
Sub-component	Fire Control and Indicating Equipment	
Need	Early warning control system to common area residential units	
Requirement	- To current Australian Standards - All installation to comply with the manufacturer's installation manual and specification details - To control minimum limit of 18 alarms and heat detectors per zone - PC Software to create, edit, download, upload and back up. Uses advanced algorithms to reduce nuisance alarms and detect smouldering fires - Capable of connecting to addressable smoke and heat detectors, call points, short circuit isolators, sirens, sounders, I/O units with monitored voltage outputs, power supplies and conventional detectors - Capable of linking with fire door closing system - Lockable door to fire panel - Vandal resistant - Independent zone operation system	
Warranty	5 years written warranty	

2.4.9 Fire Hose Reel

Component	FIRE HOSE REEL	
Sub-component		Fire Hose and Reel
Need	To provide Fire Hose Reel and Fire Hose to common areas to control any fire within residential complexes	
Requirement	- To current Australian Standards - Fire Hose Reel (FHR) type should be fixed permanently to a structure (with or without cabinet) - FHR made of corrosion resistant material and vandal resistant fixings - Centre drum spindle shall not exceed 360mm from the mounting surface Fire Hose - Hose material should be non percolating hose class H (high) - Hose to be minimum 19mm in diameter and maximum 36m length - All fittings to be brass and to comply with the standards and water marked	
Warranty	5 years written warranty on all materials 1 year warranty on all valves	

2.4.10 Fire Sprinkler System

Component	FIRE SPRINKLER SYSTEM	
Sub-component		Fire Sprinkler System
Need	To provide an important level of fire protection to the residential unit occupants and to the building structure	
Requirement	- To current Australian Standards and all other associated standards - All installations to comply with the manufacturer's installation manual and specification details - Fire Sprinkler System material and equipment to meet appropriate performance standards for operation and vandal resistance - Pipe sizes shall be determined by full hydraulic calculation methods - Hydraulic / wet system - Fast and quick response system - High velocity sprayers - Fault monitoring system - Corrosion resistant system	
Warranty	10 years written warranty on all materials	

2.4.11 Exhaust Fans

Component		PLANT ROOM OR SHAFT VENTILATION
Sub-component		Exhaust Fans > 1Kw
Need	To be able to provide adequate ventilation and airflow to an enclosed plant room or shaft	
Requirement	• To current Australian Standards • Installed to manufacturers written specification • Vandal resistant materials and fixings • Ceiling or wall mounted • Non corrosive system • Heavy duty type product including long life ball bearing motor • Airflow > 500m³/hour • Quiet operation • Turbo fans • Duct outlet shall be made of non combustible materials • Removable grill (Vandal Resistant) • Installed with appropriate Dampers	
Warranty	2 years written warranty on all materials	

2.5 MASTER ANTENNA TELEVISION (MATV)

2.5.1 Master Antenna Television System

Component	MASTER ANTENNA TELEVISION SYSTEM	
Sub-component	Antenna	
Need	To provide good quality reception of digital signals	
Requirement	- To current Australian Standards - Standards Mark / Certified Digital Ready - Achieve the following minimum readings at the antenna when installed as part of a MATV system of: - Signal level of between 50db to 80db - Modulated Error Ratio (MER) of 25db or higher - Post Viterbi Bit Error Rate (post Viterbi BER) of less than or equal to 2×10^{-4} - Noise Margin (NM) of greater than 0dB 2 kg loading on boom end (furthest from mount (tested over 100 cycles) - Clam shell insulators and flat sided boom to provide element alignment 12mm extruded aluminium elements to withstand weather and wildlife - Tested to wind speed of 100 km/hr 1 kg loading at unsupported end of any element (tested over 100 cycles) - UV and corrosion resistant tested in coastal area and western NSW 'F' Type connectors - Able to easily connect Quad Shielded cable and/or Mast head amplifier	
Warranty	Minimum 2 year written warranty	

Component	MASTER ANTENNA TELEVISION SYSTEM	
Sub-component	Masts, Stays, Booms	
Need	To secure the antenna safely and securely to the Building	
Requirement	Masts Stays and Booms - To current Australian Standards - All fixings for galvanised steel must be of a similar material or separated to prevent galvanic reaction or corrosion - Galvanised steel - galvanising Galvabond Z275 to at least 19 microns of galvanising (zinc) on these items - Booms should be powder-coated with polyester through an automated electrostatic multistage pre-treatment process - Samples tested and verified by an 800 hour neutral salt spray test - Able to withstand wind of 100km/hr	
Warranty	Minimum 2 year written warranty	

Component		MASTER ANTENNA TELEVISION SYSTEM	
Sub-component		Amplifier	
Need	To enable tenants to receive television signals of adequate quality and strength inside their homes		
Requirement	Mast head Amplifiers, Channelised Amplifiers, Wide Band Amplifiers • To current Australian Standards • Standards Mark / Certified Digital Ready • Achieve the following minimum readings after the amplifier when installed as part of a digital ready MATV system of: • Signal level of between 50db to 80db • Modulated Error Ratio (MER) of 25db or higher • Post Viterbi Bit Error Rate (post Viterbi BER) of less than or equal to 2×10^{-4} • Noise Margin (NM) of greater than 0dB • UV stable, weatherproof housing capable of mast attachment or surface mount • Adjustable gain for VHF and UHF bands • Built in lightning / static protection		
Warranty	Minimum 2 year written warranty		

Component		MASTER ANTENNA TELEVISION SYSTEM	
Sub-component		Cable	
Need	To enable tenants to receive television signals of adequate quality and strength inside their homes		
Requirement	Flexible cables RG6 and RG11 shall have a continuous dielectric such that the centre conductor is in full contact with the dielectric along the entire length of the coaxial cable RG 11 Low Loss Quad Shield Cable • 1.63mm/14 AWG solid copper covered steel conductor • Enclosed in polyethylene insulation • 2 layers of Foil tape • 60% Aluminium braid and 40% Aluminium braid • Black PVC outer casing • DC requirements – current carrying capacity 5A for RG11 RG 6 Quad Shield Cable • 1.02mm/18 AWG solid copper covered steel conductor • Enclosed in polyethylene insulation • 2 layers of Foil tape • 60% Aluminium braid • Black PVC outer casing • DC requirements – current carrying capacity 3A for RG6 • All cable connections to be crimped or compression with appropriate F type connectors • Use RG6 quad core for runs of less than 50m and RG11 quad core for runs more than 50m and for backbone cabling		
Warranty	Minimum 2 year written warranty		

2.6 Tiling and Waterproofing

2.6.1 Wall Tiles

Component	WALLS
Sub-component	Wall Tiles
Need	To provide a hard wearing, cleanable hygienic surface impervious to water/condensation
Requirement	Ceramic Wall Tiles • First-Quality to ISO 13006 • Products in compliance to AS 4586 • Vitrified or Porcelain • Tile Thickness $\geq$ minimum 5.5mm • Full glaze over face ceramic tile • Ceramic biscuit (Bisque) must be engobed • Surface Hardness min MOHS minimum 3 - Test Method EN101 • Extruded PVC or Aluminium tile trims on exposed edges • Silicon seal to cupboard boundaries • Wall tiles to extend to floor behind upright stoves
Warranty	Minimum 10 year written warranty

2.6.2 Floor Tiles

Component	FLOOR FINISHES
Sub-component	Floor Tiles
Need	To provide safe, healthy, hard wearing, waterproof and cleanable surface
Requirement	Ceramic Floor Tiles • First Quality to ISO 13006 • Products in compliance to AS 4586 • Vitrified or Porcelain • Colours as appropriate and directed • Warpage not exceeding 0.5mm for any tile batch • Surface Hardness to MOHS minimum 6 - Test Method EN15771 • Water absorption to ISO10545-3 • Chemical resistance to ISO10545-13 • Slip resistance to current Australian Standards AS4586 • Slip rating of R11 and Pendulum test score of 'W' or 'P4' for external areas • Slip rating of R10 and Pendulum test score of 'X' or 'P3' for internal wet areas and internal common areas • Slip rating of R9 and Pendulum test score of 'Z' or 'P2' for all other areas • Tile thickness $\geq$ 7.0mm • Extruded PVC or Aluminium tile trims on exposed edges

Continues

	<i>Continues</i> Entrance / Exits outdoor terraces and verandas • Unglazed quarry tiles and quarry nosing tiles to be first quality • Comply with the requirements of ISO10545 • Used only at external locations and external doorways above the damp proof course • Installed with an appropriate waterproof membrane
Warranty	Minimum 10 year written warranty

2.6.3 Waterproofing

Component	WATERPROOFING
Sub-component	Internal Floors and Walls
Need	Prevent water penetration into walls and through floors
Requirement	All Housing • Complies with AS3740 Waterproofing of domestic wet areas Tile Junctions • To current Australian Standards for caulked joint sealants Wet Area Floors and Walls • Comply to AS4858 Wet Area membrane Class III for high extensibility • Water based (no solvent release) • Leak Control Flanges to wastes
Warranty	Minimum 10 year written warranty

Component	WATERPROOFING
Sub-component	External Floors and Planter Boxes
Need	To make external dwelling wet areas (balconies, terraces, decking, and planter boxes) impervious to water
Requirement	Waterproofing membrane must be applied in accordance with current Australian Standards • Satisfies tests to class III High Extensibility AS4858:2004. • Installed to manufactures specification • Provide certificate of installation
Warranty	Minimum 10 year written warranty

2.7 Paint

2.7.1 Exterior Paint

Component		FINISHES
Sub-component		Exterior Paint
Need	To protect the underlying cladding and structure from weather and abrasion	
Requirement	Paints and Primers • 100% premium Acrylic (Waterborne or Solvent borne) paint • Workmanship to current Australian Standards • Colours to approved samples to current Australian Standards • Paints and Primers conforming to appropriate APAS (Australian Paint Approval Scheme) • Paint specification number as per APAS Paint Specification • Paint and Primers in sealed containers branded with the manufacturers name, type of content and APAS approval number • Low surface emitting product complying with APAS for low VOC Tinting • Pigments, tints and stains as recommended by the paint manufacturer Anti-Graffiti Treatments • Registered with APAS – Able to cope with Xylene based and solvent based graffiti • Fire rating to AS1530.3 • Tests to ASTM D968-51	
Warranty	Minimum 10 year written warranty	

2.7.2 Interior Paint

Component		FINISHES
Sub-component		Internal Paint
Need	To provide a cleanable surface finish that is durable and attractive	
Requirement	100% premium Acrylic (Waterborne) paint or Alkyd base Solvent-borne or Polyurethane paint - Workmanship to current Australian Standards - Colours to approved samples to current Australian Standards - Paints conforming to appropriate APAS (Australian Paint Approval Scheme) paint specification number as per APAS Paint Specification - Paint in sealed containers branded with the manufacturers name, type of content and APAS approval number - Comply to APAS specification 0215 for low VOC Interior paints - Tinted and untinted undercoats, enamels and topcoats to achieve low surface emitting product complying with APAS for VOC emissions Tinting Pigments, tints and stains as recommended by the paint manufacturer	
Warranty	Minimum 10 year written warranty	

2.7.3 Intumescent Paint

Component		FINISHES
Sub-component		Intumescent Paint
Need	To increase the Fire Resistance of building components	
Requirement	- Fire rated to achieve a FRL of --/60/60 when applied to surfaces in accordance with AS1530.4 - Apply paint in accordance with manufacturers specification and guidelines for temperature and humidity - Intumescent paint to begin to expand at a temperature not exceeding 190° Celsius - Independent test results to be provided that indicates drying time of a single coat of intumescent paint not less than 450 microns (without mechanical aids) does not exceed 4 hours in any season assuming weather conditions are appropriate to apply to the product - Independent test detailing that the product is non toxic - Independent test shall be provided that the product can be applied over existing non fire retardant paint - The product shall not contain a flashpoint	
		<i>Continues</i>

	<i>Continues</i> Internal Intumescent Paint • Use only applicators approved and trained by the manufacturer • Drop all light fittings so that paint is applied continuously, ensure that they are properly refixed • When painting ceiling cornice apply a bead of intumescent mastic to the top and bottom of the cornice where it meets the walls • Provide a semi-gloss over coating in wet areas • Ensure that each coat is completely dry before applying the next • Apply paint at a minimum dry film thickness of 1000 microns for internal applications External Intumescent Paint • Use only applicators approved and trained by the manufacturer • Clean all surfaces so that they are free of dust, dirt, oil, wax, grease, mildew, mould, loose flaking paint or other foreign matter that could impair bonding • Record all wet film thicknesses for each coat, and record on a log sheet • Ensure that each coat is completely dry before applying the next • Apply paint at a minimum dry film thickness of 1500 microns for external applications • Overcoat with weatherproof paint
Warranty	Minimum 10 year written warranty

2.8 Services

2.8.1 Commercial Water Heaters

Component		WATER HEATERS COMMERCIAL
Sub-component		Commercial Electric Water Heaters
Need	To reliably provide hot water	
Requirement	- Installed to match performance of existing - To current Australian Standards - Standards Mark / Water Mark / Water Authority Certificate of Approval - Extra Long Life tank (tank life more than 10 years – High grade Stainless Steel or similar durable material) - Pressurised tank - Dual handed connections - Adjustable thermostat - Automatic Over Temperature Safety Cut off - Provide rust free water - Durable pre-painted steel casing - Commercial mains pressure storage Storage - Mains Pressure, Floor Model (Indoor / Outdoor) (250L to 600L)	
Warranty	Minimum 10 year written warranty (Cylinder)	

Component		WATER HEATERS COMMERCIAL
Sub-component		Commercial Solar Water Heaters
Need	To reliably provide hot water	
Requirement	- Installed to match performance of existing - To current Australian Standards - Standards Mark / Water Mark / Water Authority Certificate of Approval - Installation to current Australian Standards and to manufacturers written specification. Including manufacturers recommended valves, solar control units, sensors and circulating pump - Natural gas or electricity boosted - Frost protected appropriate to climate zone - Solar Panels (hail resistant) appropriate to zone area and size of tank - Extra Long life tank (Tank life more than 10 years – High grade Stainless steel or similar durable material) - Pressurized tank (either On Ground or Close Coupled) - Dual handed connections - Adjustable Thermostat - Automatic Over Temperature Safety Cut Off - Provide rust free water - Durable pre-painted steel casing - Commercial mains pressure storage	
		<i>Continues</i>

	<i>Continues</i> Storage Mains Pressure, Floor or Close Coupled Model (Indoor / Outdoor) (250L to 600L)
Warranty	Minimum 10 year written warranty (Cylinder) and Panels

Component	WATER HEATERS COMMERCIAL
Sub-component	Commercial Gas Water Heaters
Need	To reliably provide hot water
Requirement	- Installed to match performance of existing - To current Australian Standards - Standards Mark / Water Mark / Water Authority Certificate of Approval - AGA Approval - Minimum 5 star energy rating - If internal in a plant room – all gas heaters must be flued to outside with minimum 0.5mm gauge galvanised steel flue - Extra Long life tank (Tank life more than 10 years – High grade Stainless steel or similar durable material) - Pressurized tank (either On Ground or Close Coupled) - Dual handed connections - Adjustable Thermostat - Automatic Over Temperature Safety Cut Off - Provide rust free water - Durable pre-painted steel casing - Commercial mains pressure storage Storage - Mains Pressure, Floor or Close Coupled Model (Indoor / Outdoor) (150L to 300L)
Warranty	Minimum 10 year written warranty (Cylinder)

END OF COMPONENT REQUIREMENTS - PART 2

**ITEMS FOR REFERENCE SPECIFICATION,
FIRE SAFETY WORK AND SPECIAL PROJECTS**

NSW Land and Housing Corporation

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