

Product Standards

Social Housing Dwellings

Minimum standards for building products, fixtures, fittings and other items typically required in dwellings.

June 2016 (midpoint review)

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Introduction

This document outlines the State's standards for many building products, fixtures, fittings and other items required in social housing dwellings.

These standards apply in relation to both State-owned properties and housing provider-owned social housing properties, managed either by the State or by housing providers.

Individual standards may be applicable for maintenance, upgrade and modification work, and/or new construction. The relevant application of each standard is referenced throughout the document.

Based on the State's experience in constructing and maintaining housing, some product features are considered mandatory, whilst others are important or desirable, in order to achieve functional, safe, and cost effective dwellings for the delivery of housing. The relative importance of respective features is detailed throughout the document.

For maintenance and upgrade works, there may be circumstances whereby the required standard for particular products might not be appropriate (for example, maintenance or upgrades on a dwelling that is scheduled for future demolition or sale). In these instances, the expected life of products selected should be consistent with the expected remaining useful life of the building as social housing. However, any required standards that contribute to the safety of occupants (such as door locks, slip resistance of flooring) must be met, regardless of circumstance.

The standards must be referred to in conjunction with the following Housing Services standards and procedural information:

- For new construction:
 - ***Design Standards for New construction: Social Housing: Houses and Apartments***; or
 - ***Design and Construction Standards for Remote Housing***
- For maintenance and upgrades:
 - ***Property Portfolio Procedures Manual (P-Manual)***

All products, materials and building work must comply with the criteria outlined in this document and:

- The National Construction Code (Incorporates Building Code of Australia (BCA) and Australian Plumbing Code);
- Relevant Australian Standards;
- Project documentation;
- Queensland Development Code (where applicable);
- Local Council Requirements (where applicable);
- All relevant Department of Housing and Public Works policies and standards; and
- Occupational therapist or other expert recommendations (where applicable).

Should there be an inconsistency between this Product Standard and any of the above listed documents or the Design Standards, the above listed documents or the Design Standards (as the case may be) shall apply to the extent of the inconsistency.

Products should be selected with consideration of the manufacturers' and/or suppliers' capacity to provide appropriate warranties, parts, ongoing service and support, to the extent that it is relevant or necessary for a particular product or application.

Selection of products should aim to minimise ongoing operating costs for tenants.

Livable Housing Design Guidelines

Features for enhanced mobility are an important component of housing. The State identifies three levels of mobility features, categorised as:

1. General Level (non-remote housing: no accessibility features)
2. Livable Housing Design Guidelines (LHDG) **Gold Level** (described as "semi-adaptable" prior to 2014)
3. Livable Housing Design Guidelines (LHDG) **Platinum Level** (described as "adaptable" prior to 2014)

The Livable Housing Design Guidelines are developed by Livable Housing Australia and provided on their website (<http://livablehousingaustralia.org.au>) The State may prescribe additional requirements to those in the Livable Housing Design Guidelines.

Universal Design

The selection and application of products must be informed by the principles of universal design. The seven principles were developed by a multi-disciplinary team at the North Carolina State University, and are described as:

1. *Equitable use.* The design is useful and marketable to people with diverse abilities.
2. *Flexibility in use.* The design accommodates a wide range of individual preferences and abilities.
3. *Simple and intuitive use.* Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills or current concentration level.
4. *Perceptible information.* The design communicates necessary information effectively to the user, regardless of ambient conditions or the users' sensory abilities.
5. *Tolerance for error.* The design minimises hazards and the adverse consequences of accidental or unintended actions.
6. *Low physical effort.* The design can be used efficiently and comfortably and with a minimum of fatigue.
7. *Size and space for approach and use.* Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

Expert advice

Where it is identified either by the State, or by the State to a Provider, or by a Provider that the application of product standards contained in this document does not safely meet the specific

needs and abilities of the occupants of a dwelling, expert advice, such as from an occupational therapist, is required to inform the selection, design and use of products.

Expert advice is likely to be required when modifying or constructing a dwelling to meet the needs of a person with a disability, such as, but not limited to:

- Bathroom and kitchen design, including the height of benches and selection of fixtures;
- Door hardware and requirement for door closers;
- Floor coverings;
- Threshold ramps (modifications only); and
- Hot water tempering.

Aluminium framed windows and sliding doors

(Applicable to new construction, maintenance and upgrades/modifications)

Aluminium framed windows and sliding doors are required in all new construction and upgrade replacement work. Other materials are only acceptable in exceptional circumstances (e.g. to match existing windows or doors) and are subject to State approval.

Aluminium framed windows and doors must promote energy efficiency and sound reduction, whilst providing privacy, security and protection from the elements.

Performance Criteria

- Frames must be finished in a clear anodised or powder coated finish from the manufacturer's standard colour range;
- The frames must have provision for security screens to all operable windows and doors (security screens required on openable windows and doors, unless precluded by the NCC);
- Sliding windows and doors used must include appropriate buffers/bumpers to the sections of frame that the window/door opens onto and shuts against.
- Handles and latches must be easy to use for older people and people with disabilities;
- Door hardware is to be at 900mm to 1100mm above floor level and must not interfere with the operation of security door hardware installed in the same height range;
- Remote operators in the form of winders or sliders are required for hard to reach windows or outward opening windows with internal security or insect screens;
- Appropriate low sill profiles are required for doors in Platinum Level housing.
- Locking:
 - Locking snibs are to be a large lever type. All snibs and locks are to be positioned so as to allow adequate clearance from the door jamb.
 - Entrance doors: Doors must be snib lockable from the inside and key lockable from the outside.
 - Doors to balconies and outdoor areas must be snib lockable from the inside only.
 - All locks must be keyed alike.
- Specific Window Types:
 - Sliding windows must be fitted with rubber window stops;
 - Casements, awnings and hoppers to be outward opening windows with friction stays. Outward opening windows must not open over pathways, outdoor living, yard spaces or the like, within 2000mm from the ground, path or floor level below the outside face of the window.
 - Double hung windows are not preferred; however if they are required to replace existing, they are to be easy sliding with friction or counter balance systems (not suited to LHDG Platinum Level housing given the operation requirements);
 - Louvres to be a proprietary system with a handle type that is robust and easy to operate. Plastic handles are not acceptable.

Automated door operators

(Applicable to new construction and home modifications, in response to identified, specific client requirements)

Note: This standard **does not** apply to automatic openers for garage doors.

Automated door operators are only to be provided in response to identified client need (see “Expert Advice”), in order to provide safe and effective means of opening doors and/or allowing easy access through doorways for people with limited mobility.

There are two types of automated door operators that are suitable for use:

- **Automatic door opening device:** An electric door opening device that enables the door to be opened and closed automatically. These devices may be operated by a switch (internal), radio (remote) control, sensor pad or similar mechanism.
- **Door release mechanism:** An electric door release, releases the door from the door catch to enable a client or visitor to manually open the door. These devices may be operated by a switch (internal), radio (remote) control, sensor pad, security code pad or similar mechanism.

Intercom systems (audio and visual) can be used with certain types of automatic door operators to allow a client with severely limited movement to be alerted to a visitor at the front door.

Automated doors and door operating systems must comply with applicable requirements described in *AS5007 – 2007. Powered doors for pedestrian access and egress*.

Power supply

- Must be hardwired
- In the event of power failure, the entrance door must automatically close and lock with access gained via keyed lever entry lockset, and egress gained via either free internal lever handle (hinged doors) or standard lock fitting (sliding doors).
- A secondary uninterrupted power supply unit (UPS) shall be installed. Minimum back up operation time for door release and/or driver mechanism shall be 12 hours.

Functionality

- Automatic or programmable closing speed, allowing time for a person with limited mobility to pass through.
- The door will have an automated sensor to reverse the opening in an emergency.
- Internal opening device shall be either or a combination of any two: key/snib mechanism (sliding doors), automated switch mounted on wall within standard reach of client.
- Automated systems must be able to be overridden by manual operation.
- All client and visitor activated controls shall be mounted in accordance with the clients’ identified requirements.

Balustrades and handrails

(Applicable to new construction, maintenance replacements and upgrades/modifications)

The Building Code of Australia specifies mandatory requirements for balustrades. The State has additional requirements for balustrades and handrails as follows:

Design Considerations:

- Barrier protection from falls of less than one metre must be provided where there is a risk of a fall, particularly where sharp level changes occur at the edge of pathways or outdoor spaces that may be occupied by people.
- Where a balustrade is required under the NCC (i.e. trafficable area is one metre or more above the surface beneath):
 - It must align with applicable NCC requirements, and
 - Any horizontal elements within the balustrade or other barrier between 150mm and 760mm above the floor must not facilitate climbing.
- Balcony top-rails must be designed so that they do not encourage loose objects (such as pot plants) to be placed on top.
- Balustrades (including lightweight balustrades) must provide screening for occupants' privacy and to conceal belongings on patios, particularly where upper floor apartments face a street or public space.
- Bottom rail: A maximum of 50mm nominal clearance above finished floor level. (A maximum of 50mm has been chosen as this will reduce the chance of objects from fitting under the rail and potentially falling off the balcony.)

Other Requirements

- Balustrades and hand rails must be free of sharp edges and rough welds.
- Aluminium handrails and balustrades: May be a proprietary system or custom design of welded or screwed and riveted construction.
- Steel balustrades and handrails must be fully welded and hot dip galvanised. Use site bolting to connect large sections. On-site welding of galvanised sections is not permitted. Avoid paint finishes over galvanising.
- Consideration must be given to heat retaining properties of materials where rails will be positioned in unshaded areas. Rails must not become too hot to use.
- Materials and finishes: To be low-maintenance and appropriate to the location and situation.
 - Posts: must be bolted to slab or attached to bolted post foot.
 - Solid infill: Designed to meet relevant Standards, e.g. Glazing Standards.
 - Submissions: Certified calculations for building approval, in compliance with the Building Code of Australia. Design details to indicate materials, sizes and construction.

Bathroom sanitary fixtures

(Applicable to new construction, maintenance replacements and upgrades/modifications)

Bathroom sanitary fixtures must have a minimum of 12 months manufacturer's warranty.

Vanity basins (drop in and semi-recessed)

Vanity basins must be:

- Remote housing:
 - Gold level: Vanity top and basin to be integral, one piece polymer
 - Platinum Level: Semi recessed
- Non remote housing:
 - Gold Level and Platinum Level: Semi recessed
- One hole for a basin mixer, unless specified otherwise
- Nominal overall width: 500mm.
- Nominal overall horizontal depth: 390 mm.
- Minimum capacity: 7 litres

Basin - wall mounted

Wall mounted basins must be:

- General purpose vitreous china wall or corner basin with one or three tap holes
- Size: Nominal overall width: 500 mm or 6 litre capacity. Smaller basins may be used in confined spaces (minimum 3 litre capacity)

Double flap toilet seats

Requirements for home modifications

Double flap toilet seats for LHDG Platinum Level dwellings or home modifications (in response to identified need) must include:

- Closed front heavy duty moulded plastic seat with top flap (removable when specified for tenants with a disability)
- Buffers to be installed
- Hinges: chromed metal or stainless steel.
- Other features in response to specific identified client requirements (refer Introduction 'Expert advice').

Toilet cisterns

Toilet cisterns must comply with the following criteria:

- Low mounted wall cisterns of 4.5/3 litre capacity, dual flush
- In a modified dwelling (in response to specific identified requirements, refer Introduction 'Expert advice') or LHDG Platinum Level dwelling, toilet cisterns must meet AS 1428.1-2009: Design for Access and Mobility - General Requirements for Access - New Building Work

Toilet pans

Toilet pans must comply with the following criteria:

- White vitreous china, floor mounted general purpose pan.
- Secure floor mounting achieved, preferably through four stainless steel screws.
- Designed for 4.5/3 litre capacity, dual flush.
- In a modified dwelling (in response to specific identified requirements, (refer Introduction 'Expert advice') or LHDG Platinum Level dwelling, toilet pans must meet AS 1428.1-2009: Design for Access and Mobility - General Requirements for Access - New Building Work.

Baths and shower baths

- May be acrylic or pressed steel vitreous enamel
- Must be in accordance with the AS2023-1995: Baths for Ablutionary Purposes, in particular, Section 1 and:
 - Section 3 (pressed steel vitreous enamelled baths) or
 - Section 6 (plastic and composite materials baths)
- White in colour
- Size: to suit application. Generally 1500 mm to 1700mm nominal length x 750mm nominal width x 300mm to 400mm depth, (or for home modifications, as required for specific tenant needs, refer Introduction 'Expert advice').
- Slip-resistant base must be provided for baths that have a shower over.
- Acrylic baths must be 4mm sanitary grade acrylic, suitably reinforced.
- Baths must have integrated rim reinforcement.

Shower trays

- Must be in accordance with AS 3588-1996: Shower Bases and Shower Modules
- White in colour

Carports and garages

(applicable to new construction and upgrades/modifications)

Carports must provide an economical but attractive product of domestic appearance and low-maintenance. Carports and garages:

- For detached dwellings, single carports only are to be provided, regardless of the dwelling size
- May be either custom built or proprietary items
- Structural posts must be hot dipped galvanised steel
- Prefinished, metal roofing is preferred and must comply with:
 - AS1562.1-1992 Design and installation of sheet roof and wall cladding
 - AS/NZS 2728-2013: Prefinished/prepainted sheet metal products for interior/exterior building applications.
- Garage doors (preferably not one-piece tilt up doors or panel doors) are required to garages, and must be provided for car ports when:
 - Open carports (with no garage door) are not typical in the street or neighbourhood; and/or
 - Access to the backyard or under the house is through the carport
- Screening must be considered for the sides of carports (on houses) that are open to the front yard.
- Carports must be installed on a self-draining concrete slab.

Design Considerations

- Refer to the *Design Standards for Dwellings: Houses and Apartments* for preferred locations of carports for houses and apartments.
- The requirements of the Queensland Development Code must be considered in the positioning and screening of carports and garages.
- The carport or garage must complement the existing house or apartment building.

Clothes lines

(applicable to new construction, maintenance replacements and upgrades/modifications)

Clotheslines are required in all properties. Requirements for clothes lines are outlined below.

General requirements

Clotheslines must be

- Non-removable
- Fabricated from galvanised steel and/or aluminium.

Minimum line requirements

- **Studio apartment:** 7.5 lineal metres
- **1 & 2 Bed:** 15 lineal metres
- **3 Bed:** 30-40 lineal metres
- **4 and 5 bedroom:** 40 lineal metres

Communal lighting

(applicable to new construction, maintenance and upgrades/modifications)

Communal lighting is required on multi-unit sites to car parking areas, pedestrian pathways, building entrances, communal spaces (including outdoor communal landscaped areas) shared stairways and access balconies.

Requirements for communal lighting include:

- Photoelectric sensors are required in order to turn lights on at sunset. High level (bright) lighting (e.g. near car ports) should include a timer to turn lights off at midnight. Low level lighting that is contained so as not to 'spill' into dwellings (including neighbours' dwellings), or is located close the ground (such as bollard lighting along pathways) should be capable of being left on until dawn.
- Lights to individual landings outside entry doors to apartments must be individually switched with time delay function. These lights are not considered communal lighting. If communal lighting is required near apartments for safety, then this should be provided.
- Must be separately metered at the main switchboard and have a connection to the electrical distributor metering equipment.
- For testing purposes, all communal lighting and power is to be controlled by a single switch that can override the time switch and PE switch.
- Non glare light fittings or an appropriate glare shield must be used when residents in the unit complex or neighbouring properties are inconvenienced by glare.
- Fittings must be cost effective, durable and support readily available, cost effective, energy efficient globes.
- Each lighting and power circuit must be protected by a separate, combined residual current device (RCD).
- Photoelectric sensors should not be mounted on top of meter boxes, and should be mounted in a position that discourages tampering with the sensors.

Requirements for communal lighting placement include:

- Must be sufficient to illuminate paths of travel and landscaping areas immediately adjacent to paths.
- Must facilitate safe cleaning, maintenance and globe replacement.
- Must be fitted over landings and never over stairs, whether wall or ceiling mounted.
- Ceiling lights must be not more than 2700mm above the level of the landing.
- Wall lights must not be more than 2100mm above the level of the landing.

Curtains, curtain rods and curtain brackets

(applicable to new construction, and home modifications in response to identified specific client requirements)

Requirements for **curtain rods** include

- Provide metal curtain rods (minimum 25mm diameter) with plain finials and 75mm curtain rod brackets. Bracket spacing not to exceed 1.35m.

Requirements for **curtains** include:

- Must be fire retardant (inherent to fabric, not a chemical treatment); and
- Must be washable (does not reduce fire retardant properties and does not have shrinkage of greater than 3%).
- Curtains style must be suitable for use on metal rods (e.g. pinch pleat curtains on rings, eyelet curtains).
- Fabric width must be at least 1.5 times the width of the window or door

Curtains to windows:

- Curtain must finish below sill height, by approximately 100mm.
- Curtains must be mounted on metal rings.
- Curtains on windows over 600mm must be split in half with drop on each side of window (600mm or under to be a single drop)
- Curtains are to be installed to all windows in bedrooms, living/dining rooms, multi-purpose spaces, entries where applicable (not wet areas – i.e. kitchen, bathroom, laundry, toilet)

Curtains to sliding glass doors:

- Curtains to be provided to all glass sliding doors. Curtain drop to be 50mm above finished floor level.
- Where a middle bracket is required, curtain to be split in half with a drop on each side of the door.
- Where only end brackets are required, curtain to be continuous.
- Metal flick sticks to be included on each curtain drop for LHDG Platinum Level dwellings only.

75mm **curtain rod brackets** (but not curtains or rods) should be installed to vacant properties intended for reletting, including all window openings and sliding glass doors (bracket spacing not to exceed 1.35m)

Door hardware

(applicable to new construction, maintenance replacements and upgrades/modifications)

External hinged door hardware

Requirements for external hinged door hardware include:

- Must be satin chrome or stainless steel finish, or to match existing for upgrade work.
- Must include a deadbolt with external key entry that can be locked manually from the inside with a large snib.(i.e. without the key)
- Must include an external quality lever passage set. Lever handles must have a minimum length of 95mm. Handles that return to the door face (D-shaped) are required in LHDG Platinum Level housing or in response to identified specific client requirements.
- Must be able to be held in the closed position without locking the door, so that doors do not accidentally lock when occupant is outside.
- Must be keyed alike with all external doors (including glazed and security) for the same premises
- Alternative door hardware is acceptable in response to identified specific client requirements (refer Introduction 'Expert advice').

Internal door hardware

Hinged Doors

Door hardware for hinged doors must:

- Be satin chrome or stainless steel finish, or to match existing for upgrade work;
- Have lever handles with a minimum length of 95mm, or to match existing handles. Handles that return to the door face (D-shaped) are required in LHDG Platinum Level housing or in response to identified specific client requirements (refer introduction 'Expert advice').
- Have a metal latch tongue
- Passage sets are required on all internal hinged doors, except bathrooms and separate toilet rooms.
- Privacy sets are required on hinged doors to bathrooms and toilets, or to replace existing privacy sets. Privacy sets must
 - Have a snib or push button privacy lock. A large internal snib may be required in response to identified specific client requirements.
 - Have an emergency release on the outside which is coin or snib operated. (pin hole release not acceptable)

Sliding doors

Privacy sets for internal sliding doors (generally bathroom doors or some bedroom doors in LHDG Platinum Level housing) require the following:

- non-indicator, brass mortised privacy latch;

- Coin-operated emergency release on the outside with a turn snib on the inside. A large internal snib may be required in response to identified specific client requirements.
- Design: easy grip, free from sharp points and edges. Levers to return to the door face where available;

Note: Lightweight domestic latch with small recessed components are not acceptable.

Other door hardware

Door closers (fire rated)

If door closers are required, they must meet the following requirements:

- Satin-chrome or stainless steel finish; and
- Minimum operating pressure required.

Door seals

A weatherproof door-seal must be fitted to the base of all external hinged doors. Requirements for door seals include:

- Any fixed sill sections must have a slip resistant finish;
- The seal must be likely to last the life of the door.
- Any complementary sill section is to be low profile (maximum 10mm in height)

Door stops and retainers

Door stops are required on all doors. Retainers are required on all doors except fire doors. Stops and retainers must be either:

- 'Bumper' type used in conjunction with a hook and eye retainer, or equal; or
- A 'bumper' type with an integral retainer.

Door stops must be of sufficient length to stop the door handle causing damage to the wall behind. Light nylon or plastic clip type retainers are not acceptable.

Electric & gas cooking appliances

(Applicable to new construction, maintenance replacements and upgrades/modifications)

Cooking appliances should be of a durable finish (either white enamel or stainless steel).

Ovens (wall ovens, under bench ovens, ovens in upright and elevated ranges)

- Nominal 600mm wide
- Wall ovens for LHDG Platinum Level must have vertically hinged door (i.e. side opening). The opening side of the oven must be on the bench side, with the middle oven shelf at the height of the benchtop.
- Oven door must have robust hinges and strong latching mechanisms
- Oven light required
- Timer required.
- Minimum 2 adjustable oven shelves
- Direct front access to oven shell for gasket replacement
- Wiring protection where necessary, to protect wiring and oven controls above oven door.
- **Electric ovens:** must be fan assisted
- **Gas ovens:**
 - Flame failure feature required.
 - Remote Indigenous dwellings: Gas ovens are acceptable for new construction and replacements, to be determined in consultation with Councils.
 - Non-remote areas: Gas ovens are not preferred for new construction, but may be an option in areas with reticulated gas, provided that gas supply to the oven location is easily achievable.

Cooktops (separate cooktops, and cooktops in upright and elevated ranges)

- Four burners/cooking zones (two burners/cooking zones acceptable for studio/'bedsit' dwellings)
- Nominal 600mm wide (except for 2 burner cooktops)
- Location of controls must be easy to access, without limiting access to cooking elements.
- Layout and markings must ensure ease of identifying the corresponding element.
- Residual heat indicators if available.

Acceptable cooktop types		
Type		Required features
Electric	Standard hotplates	<ul style="list-style-type: none"> - Solid hotplates preferred (coils are an option) - Corrosion resistant - Tops must hold spillages of up to one litre
	Ceramic glass radiant cooktop	<ul style="list-style-type: none"> - Enamel or stainless steel trim to edge of glass preferred - Knob controls preferable (touch controls with child safety features only in response to identified need)

Acceptable cooktop types	
	<p>Ceramic glass induction cooktop (only in response to specific client need, as specific cookware required)</p> <ul style="list-style-type: none"> - Touch controls with child safety features
Gas	<ul style="list-style-type: none"> - Flame failure feature - Flat, enamel trivets, and one piece burners. Electric or piezo ignition. - Holds spillages of up to one litre

Upright ranges – additional requirements

- Effective vermin proofing to underside and rear of range. Preferably, limited holes and protection around holes, to discourage vermin.
- Effective insulation to ensure that the sides of the oven are not hot to touch.
- Anti-tilt brackets that enable the range to be disengaged without unbolting or unscrewing, installed as per manufacturer's specifications.
- Lift-off oven door with clear glass panel.
- Rear splash back panel
- Nominal dimensions 900mm H (to hob) x 540mm W x 595mm D
- Rear panel controls (front controls in response to identified need)
- Gas ranges may have plug in or hard wired ignition
- Hinged or easily removable top cover to ensure easy repair of cook top elements

Standard and Acceptable Cooking Appliance Types by Dwelling Type				
Dwelling Type	Wall Ovens	Under Bench Ovens	Cook Tops	Upright Range
LHDG Platinum Level LHDG Gold Level	required	n/a	required	n/a (acceptable only for Gold Level dwellings in remote housing)
Seniors' dwellings	Preferred	Acceptable (replacements)	Preferred	Acceptable (replacements)
General Level	Acceptable	Acceptable	Acceptable	Acceptable

Exhaust fans and exhaust fan control switches

(Applicable to new construction, maintenance replacement and upgrades/modifications)

In kitchens, natural ventilation is preferred over mechanical ventilation and range hoods are not preferred if there is a viable alternative.

In bathrooms, natural ventilation is also preferred. In new construction, this is supplemented by mechanical ventilation in order to provide appropriate airflow.

Exhaust Fans

- For bathrooms, exhaust fans must provide a minimum of 15 air changes per hour.
- Must have a minimum International Protection rating of IP54
- Wall or ceiling mounted type
- Must be provided with wall ducting kit which includes a weatherproof fly-screened exterior wall grille

Exhaust Fan Control Switches

- Light and exhaust fan must be separately switched
- Should be designed so that the exhaust fan will continue to operate for an extended period after the switch has been turned to the off position. An adjustable electronic time delay should ensure the operation of the exhaust fan for a minimum period of up to 10 minutes

Fencing

(Applicable to new construction, maintenance replacements and upgrades/modifications)

Fencing assists in creating privacy for neighbours and tenants.

The principles of the following documents should be applied to fencing replacements and upgrades for apartments, houses, duplexes and dual occupancy dwellings (as applicable) to the maximum extent possible:

- *Design Standards for New Construction: Social Housing, Houses and Apartments*
- *Design and Construction Standards for Remote Housing.*

The following guidelines also apply for fencing:

- Generally, fencing must be provided on all side and rear boundaries, with side return fencing to the dwelling.
- Economical options must be selected for new and replacement fencing, considering whole of life costs
- New and replacement dividing fences must be a “sufficient dividing fence” as defined by the *Neighbourhood Disputes (Dividing Fences and Trees) Act 2011*
- Other replacement, dividing fences should generally be high, private fencing, such as 1800mm high timber paling fencing.
- Considerations when choosing fencing types include:
 - Treated pine should not be used in dry, arid areas (zone 3 as referenced in BCA Vol 2 Fig. 1.1.4. Climate Zones for Thermal Design). Colorbond or hardwood timber may be acceptable alternatives. Australian Building Codes Board. See BCA Climate Zones for thermal design: <http://www.abcb.gov.au/work-program/energy-efficiency/climate-zone-maps.aspx>
 - Maintainability. In remote locations, or sites at high risk of damage or vandalism, Colorbond fencing is not preferred.
- All other legal, regulatory and covenant requirements for fencing must be met.
- Front fences:
 - Generally not provided to detached houses, except to corner or cul-de-sac sites.
 - If front fencing is required, solid or semi-transparent materials must be limited to a maximum of 50 percent of the frontage width.
- Corner sites: Fencing may be provided on all boundaries, with consideration of road visibility at intersection.
- Fencing to detached and attached housing, duplexes and dual occupancies must provide a secure playing space for children, with access to at least one doorway of the dwelling.
- Facilities such as letterboxes and rubbish bin enclosures must be compatible with the overall fence design and must be incorporated into the fencing design where possible.

- The installation of fencing must not result in any breach of termite barriers on/to the building.
- Appropriate pedestrian gates, matching the fence, must be provided on the return portion of fence (Gates must not be provided in side or rear fencing). If possible, provide gates allowing access down both sides of the property – either two pedestrian gates or, if space allows, one pedestrian gate and one vehicle access gate.
- Side fences must extend the length of the boundary, finishing at a height of between 900mm and 1200mm at the front.
- Fencing must not be attached to exterior walls or components of the building. A 75mm clearance must be achieved to prevent any breach of termite barriers on the building.
- Fencing must finish between 50mm and 100mm above the finished ground level and 75mm above the finished level of concrete mowing strips and retaining walls
- Side, return and back fences in new construction are generally to be 1800mm high timber paling fixed to hardwood rails, with the palings fixed on the side facing the property. Front and return fences must have the paling fixed on the side facing the street.
- Other fencing types may be used taking into account community standards, longevity of the fence and visual privacy for outdoor recreation where appropriate.

Floor coverings

(Applicable to new construction, maintenance replacements and upgrades/modifications)

The floor finishes most commonly used in new construction and refurbishments include floor tiles, sheet vinyl and carpet. Standards for these are outlined below. Other floor finishes present in existing properties may also be acceptable, including polished floorboards and linoleum.

It is important that floor finishes are 'domestic' in appearance, and are of a colour and texture that is easy to maintain.

Floor tiles

Performance Criteria

Slip resistance requirements of floor tiles will vary depending on the application. **Table 2** documents standard and acceptable tile requirements by room. Performance criteria for both slip resistance levels are outlined below.

Tiles (R9 /P2)

Tiles for this application shall:

- Have a slip resistance rating of 'R9' (Oil-wet Inclining Platform Ramp Test Method – AS/NZS 4586: 2013) or P2 (Wet Pendulum Test Method – AS/NZS 4586: 2013)
- Be hardwearing and resistant to surface abrasion: Commercial or heavy domestic quality.
- Be non-porous, with an easily maintained, 'mop over' finish;
- Be domestic in appearance and of a neutral colour and design which will minimise the show of marks and stains. White, very light, or very dark tiles are not acceptable.
- Texture, profile and tile size must be used to achieve effective slip resistance and ease of cleaning.

Tiles (B/P3)

Tiles for this application shall meet the performance requirements listed above (except for slip resistance), along with the following criteria:

- Have a slip resistance rating of:
 - ◊ 'P3' (wet pendulum test method – AS/NZS 4586: 2013) or
 - B (Wet-Barefoot Inclining Platform Test Method – AS/NZS 4586: 2013)
- For bathrooms, floor tiles must be a maximum size of 200 x 200mm, to achieve sufficient falls. Typically, the minimum acceptable size is 50 x 50 mm.
- Hobless shower floor recess shall have a visual separation from the remainder of the bathroom floor area. Typically, a contrasting colour (30% minimum luminance contrast) and smaller tile size may be used (smaller tile in the shower recess may help to achieve tighter falls).

Installation and application

The following is to apply in the installation and finish of internal floor tiles:

- Be fixed to substrate with a manufacturer approved adhesive;
- Be thoroughly and neatly grouted with a manufacturer approved, flexible grout in a natural grey colour;
- Be thoroughly and neatly sealed, if required, with a manufacturer approved sealant;

Ceramic tiles should be installed in accordance with *AS 3958.1—2007. Ceramic Tiles. Part 1: Guide to the Installation of Ceramic Tiles*

Home modifications – Chemical etching

In response to specific client requirements, it may be identified that an existing tiled floor requires additional slip resistance (refer Introduction 'Expert advice'). The options for slip resistant flooring in home modifications are:

- Replacement of the floor tiles with new tiles of increased slip resistance;
- Replacement of the floor tiles with vinyl sheeting of increased slip resistance.
- Application of a suitable, permanent, slip resistant treatment (e.g. chemical etching) by a suitably qualified tradesperson; provided that:
 - An appropriate warranty is provided for the treated tile.
 - The applied treatment provides the appropriate level of slip resistance. The finished floor must be either:
 - Independently tested by an accredited contractor to achieve a ('P3' slip resistance level. Wet Pendulum Test Method – AS/NZS 4663: 2013)
 - If post treatment testing is unable to be completed by an accredited contractor (e.g. due to remote location), written assurance from the contractor must be provided that the etched product has achieved the required rating (or equivalent).
 - The applied slip resistance does not affect the integrity, porosity, or expected life of the tile.
 - The finish does not require onerous cleaning or the use of expensive or difficult to obtain cleaning products. (Cleaning products and requirements must be equivalent to a tile that has achieved an equivalent slip resistance rating without chemical etching treatment)

When considering etching, the term of the tenancy and the benefits of the longer term improvement of the housing stock needs to be considered.

If other property upgrades are imminent, this may create an opportunity to replace the flooring rather than provide chemical etching treatment.

Sheet vinyl

General product requirements include:

- Must be of commercial or heavy domestic quality
- Low maintenance finish that is easily mopped over and is resistant to damage and tearing.
- Preferably, neutral in colour, with a colour and pattern that will minimise the appearance of marks and stains.

- A slightly textured surface with suitably "domestic" pattern, and a non-absorbent surface;
- Product should facilitate easy, smooth operation use of mobility aids, such as walkers or wheelchairs.
- Heavily textured surfaces, raised profiles or densely located small studs are not acceptable.
- Preference is for heavy domestic / commercial quality sheet vinyl with the following features:
 - Polyurethane reinforced.
 - Homogenous (minimum 2mm gauge) or heterogeneous (minimum 2 mm gauge with minimum 0.7mm wear layer)
- Domestic quality vinyl, including loose laid vinyl, may be considered for existing dwellings, if a shorter term solution is appropriate.

Slip resistance requirements of vinyl will vary depending on the application. The below table documents standard and acceptable vinyl requirements by room.

Additional requirements for each slip resistance level are outlined below.

Vinyl (R9/P2)

In addition to general requirements, sheet vinyl for this application shall:

- Have a slip resistance rating of R9' (oil-wet inclining platform ramp test method – AS/NZS 4586: 2013) or P2 (Wet Pendulum Test Method – AS/NZS 4586: 2013)
- Slip resistance must be guaranteed for the life of the product

Vinyl (B/P3)

In addition to the general requirements, sheet vinyl for this application shall be suitable for use in wet areas, and meet the following criteria:

- Have one or more of the following slip resistance ratings:
 - 'P3' (wet pendulum test method – AS/NZS 4586: 2013)
 - B (Wet-Barefoot Inclining Platform Test Method – AS/NZS 4586: 2013)
- Slip resistance must be guaranteed for the life of the product

Installation and application

Vinyl is to be installed in accordance with *AS1884 – 2012. Floor coverings – Resilient sheet and tiles – Installation practices*. The following is also to apply in the installation and finish of sheet vinyl flooring:

- Vinyl must be installed with a manufacturer-approved adhesive.
- Where a finished edge remains uncovered, the junction line shall be scribed to finish flush with abutting surfaces;
- Where changes in floor finishes occur at doorways, locate the junction centrally below the closed door.
- Where part floor covering replacement is required, junctions may occur where an existing floor finish meets the new covering. In this case, the new floor covering may differ in type and colour and can be squared off at a point such as a door way/opening or similar;

- Where junction cover strips are unavoidable, they are to be low-profile and securely fixed with no protrusions or sharp corners;
- Generally, finish external doorway openings with a protecting metal finishing angle and neatly seal between vinyl and edge strip; and edge strip and door sill.
- Where loose-laid sheet vinyl is specified, edges shall be sealed in accordance with manufacturers laying and finishing recommendations;
- Vinyl shall continue underneath fixtures such as laundry tubs, cupboards, benches, cookers and into alcoves such as fridge recess and pantry;

Carpet

The below table documents the standard and acceptable locations for carpet. The performance criteria for carpet are as follows:

Carpet Type:

- Short loop pile polypropylene; or
- Nylon flock filament pile on an impervious vinyl base.

Carpet shall:

- Comply with BCA requirements relating to fire resistance of floor linings and floor coverings.
- Shall be compliant with the following Australian Carpet Classification Scheme (ACCS) classification categories:
 - Residential Guide: Minimum of 5 stars (Extra Heavy Duty - lower to mid-range);
 - Contract Guide: Minimum of 3 stars (heavy duty);
 - Environmental Classification Scheme: Minimum of ECS level 1;
- Be of colours which provide reasonable light reflectance but do not highlight soiling;
- Have subtle colour variation through the carpet. Large, obvious patterns or block colours are not acceptable (block colours are more likely to show marks).
- Enable easy maintenance for domestic users to maintain a healthy environment; and
- Shall facilitate easy, smooth operation use of mobility aids, such as walkers or wheelchairs.

Installation and application

Carpet is to be installed in accordance with AS/NZS 2455.1:2007. Textile Floor Coverings – Installation.

Standard installation method to be direct stick method (no underlay) particularly if required in order to comply with BCA fire resistance requirements, or in LHDG Platinum Level dwellings. (See AS/NZS 2455.1:2007, Section 3.6)

Installation with a foam or rubber underlay may be acceptable if required to match existing, or if there are no fire resistance requirements. (See AS/NZS 2455:2007, Section 3.8)

Adhesive is to be low in volatile organic chemical content.

Standard and Acceptable Floor Finishes by Room			
	Tiles	Vinyl	Carpet
Bedrooms	Acceptable (R9/P2)	Standard (R9/P2) Regional Qld*	Standard Southern Queensland*
Kitchen, Living, Dining, Hall.	Acceptable (R9/P2) (General & Gold Level) (N/A for platinum level)	Standard (R9/P2)	n/a
Wet areas	Standard (B/P3)	Acceptable (B/P3)	n/a

*Note: For the purpose of this standard Southern Queensland is defined as climate zone 5 and the part of climate zone 2 from Fraser Coast and south. Refer BCA Vol 2. Fig. 1.1.4. for a map of Climate Zones. Regional Queensland is the balance of the state. <http://www.abcb.gov.au/work-program/energy-efficiency/climate-zone-maps.aspx>

Clear-coated finishes for timber floors

(applicable to maintenance and upgrades only)

Timber floor finishes shall be free from excessive inconsistencies for example, raised floorboards or nails. Where existing bare timber floors have been coated previously, sanding and recoating may be required to achieve this result. Where it is not cost-effective to maintain the coating, or where no coating has been applied previously, one of the standard floor coverings should be installed.

For additional information, refer to Housing Services' **Floor Coverings/Finishes Policy**

Floor wastes

(Applicable to new construction, maintenance replacements and upgrades/modifications)

General Requirements

- Products must comply with all plumbing and drainage regulations.
- Penetrations must be small, to prevent children's fingers being caught
- Acceptable types:
 - Screw in grate, 100mm diameter. Ceramic tiled floor: waste complete with puddle flange.
 - Channel grate, where configuration and falls allow (e.g. in order to achieve the suggested floor waste design for a hobless shower recess, illustrated in the informative diagram of Livable Housing Australia's Livable Housing Design Guidelines).
- Vinyl sheeted: provided with facility for turning and locking sheeting down into floor waste.
- Location: shower recesses and bathroom floor wastes (where required).

Material:

- Grate: Chrome on brass, or 316 (marine grade) stainless steel
- Top assembly: Brass or chrome plate on brass, or 316 (marine grade) stainless steel
- Bottom assembly: PVC or other approved moulded material.

Folding doors and room dividers

(Applicable to new construction, maintenance replacements and upgrades/modifications)

Folding doors and room dividers provide temporary visual privacy to internal spaces, such as laundry facilities or infrequently used sleeping spaces, generally in one bedroom or studio accommodation.

General Requirements:

- Type: Domestic folding screen suspended on an overhead sliding track and fixed to the wall on one side. Provide operating handles or knobs on each side.
- Various types are available such as:
 - Vinyl or melamine faced MDF panels approximately 125mm wide, joined by flexible PVC strip continuous hinges;
 - Extruded plastic pre-coloured panels no more than 1500mm wide, joined by flexible continuous hinges; or
 - Vinyl fabric curtain on a folding frame.
- In the open position, the screen will be folded compactly occupying no more than 150mm in width. The folded door is to be held or clipped in the opening position.
- Colour: From manufacturer's standard range to match existing colour scheme
- Warranty: 12 months minimum.

Garden sheds

(Applicable to new construction and upgrades/modifications)

General requirements:

- Finish: Long life weather resistant finish to metal frames and wall cladding.
- Cladding material: Colorbond (or equivalent). Pre-painted to *AS/NZS 2728:2013 Prefinished/pre-painted sheet metal products for interior/exterior building applications: Performance requirements*.
- Colours: From manufacturer's standard range.
- Door: Hinged or sliding as specified. Provide barrel bolt or hasp and staple type hardware for locking with padlock.
-
- Sizes:
 - Houses, duplexes and dual occupancy (Non-remote) 3.5m² minimum (or similar) x 1.8m high or as otherwise specified. A selection of dimensions is required to accommodate available sites.
 - Apartments (non-remote): Each ground level apartment: Small garden locker, no greater than 2100mm wide.
 - Remote Housing: minimum area of 9m², including for highset houses.
- Installation: Install on a self-draining concrete slab, with recessed edge to exclude rain and water penetration.
- Provide level or ramped entry for easy movement of wheeled garden machinery (e.g. mowers). A path is not required between the house and the garden shed.
- Garden shed must have an appropriate high strength frame, and be of an appropriate strength for the design and wind classification of the site.

Hot water systems

(applicable to new construction, maintenance replacement and upgrades/modifications)

Note: This standard **does not** apply to dwellings in remote communities.

When selecting an appropriate new or replacement hot water system for an application, the relative operational energy and cost efficiency of suitable systems must be taken into consideration and balanced against the upfront cost supply and installation.

Generally, the replacement of hot water systems is 'like for like' with the exception of:

- Reticulated natural gas areas. In these (typically urban) areas, an unserviceable electric storage or liquid petroleum gas (LPG) hot water system may be replaced with a gas storage or continuous flow gas hot water system.
- Unserviceable heat pumps systems. These may be replaced with electric storage systems.
- A change to the correctly sized system to suit the bedroom count of the dwelling.

General requirements:

- When replacing an externally located hot water system, install the new system in the same location (space permitting)
- When replacing a hot water system that is located inside a laundry (located on the main level of a detached/cluster house, dual occupancy or duplex building) install the new system outside wherever possible. Considerations when positioning include:
 - minimise hot water draw-off losses
 - locate central to the kitchen bathroom and laundry (preferably closest to kitchen)
- Tempering valves are required for new construction and when hot water systems are replaced or relocated, and must supply tempered water to all hot water outlets.

For older dwellings, where the electrical cable size will not sustain the load of the factory fitted element, exchange it for a lesser kW size in preference to renewing/replacing the water heater circuit.

Recommended Hot Water System Sizes New construction and replacements/upgrades

	Electric (for connection to an economy tariff)		Gas (minimum 5 star energy rating)	
	Minimum Storage	Heat Pump	Minimum Storage	Continuous flow
Bedrooms				
1-2	125 litre	270 litre	135 litre	16-18 litres/minute
3	250 litre	270 litre	265 litre	16-18 litres/minute
4	315 litre	340 litre	330 litre	16-18 litres/minute
5	400 litre or larger	340 litre	360 litre	16-18 litres/minute

Note: for details about water tempering devices, refer to Water Tempering product standard.

House numbers and signage

(Applicable to new construction, maintenance replacements and upgrades/modifications)

House numbers and signage must:

- Be clearly visible and provide long lasting identification for houses and units.
- Provide clear directional signage and easily followed numbering in apartment and cluster developments for visitors and emergency vehicles.
- Be black or white to contrast with the background.
- Fixing: To be screw fixed or adhesive and screw fixed.
- Material and finish: Cast or laser cut aluminium or other non-corrosive metal with powder coated finish.
- Reflective numbers are preferred.
- Reflective vinyl, adhesive numbers and signage may be used in "out of reach" locations.
- Publicly visible signage **must not** refer to residents as 'tenants'.

Intercom systems

(Applicable to new construction and home modifications)

This standard refers to intercom systems that are required in response to identified physical client need (see “Expert Advice”). Audio and visual intercoms must be used with certain types of automatic door operators to allow a client with severely limited movement to be alerted to a visitor at the front door

Note: This standard does not refer to intercom systems and associated remote swipe access that may be required:

- In response to an identified need for increased security, due either to the circumstances of a particular tenant, or to the intended service delivery model at the dwelling or complex; or
- For new projects, if specified (e.g. at front gates, lift lobby areas etc.)

Functional requirements:

- Wall mounted, intercom device to alert occupant/s of visitors' arrival
- External device must have audio capacity to enable two way conversation between visitor and occupant/s,
- If specifically required to meet client's physical needs, device may also have video capacity

Internal functional requirements:

- Switch mechanism enabling client to speak to visitor and /or,
- Switch mechanism enabling client to see visitor on video monitor,
- 'Door locked' indicator light.

All switch mechanisms shall be suited to the client's identified abilities and needs.

Kitchen sinks

(Applicable to new construction, maintenance replacements and upgrades/modifications)

General Requirements

Kitchen sinks are to comply with the following criteria:

- Must be manufactured from 304 grade stainless steel, with a minimum thickness of 1.2mm;
- Depth must be approximately 150mm for LHDG Platinum Level dwellings.
- Single hole for mixer tap

For dwelling units of **less than three bedrooms**:

- Single bowl with a single drainer on the left or right side;
- Minimum dimensions: 900mm long

For dwelling units of **three or more bedrooms**:

- Double or 1 $\frac{3}{4}$ bowl with a single drainer on the left or right side (double drainer is also acceptable)
- Minimum dimensions: 1180mm long x 480mm wide.

Under sink protection must be provided in LHDG Platinum Level housing to prevent contact with the hot bowls by the legs of wheelchair users. This may be in the form of an attached insulation membrane supplied by the sink manufacturer or by physical protection built into the kitchen joinery. Sink must have sound deadening material fixed to underside of drain section.

Kitchen upgrade standard

(Applicable to upgrades/modifications)

Note: Microwaves, refrigerators and range hoods are not included in kitchen upgrades. (range hoods may be included in response to identified specific client requirements (refer Introduction: Expert Advice)

Design Considerations

The design and amenity of upgraded kitchens in dwellings must align as closely as possible with features provided in new construction to promote equity within the portfolio. See *Design Standards for New Construction: Social Housing – Houses and Apartments* for more information about kitchen requirements for new construction.

Whilst considering the constraints of the floor plan, attempts must be made, where possible to:

- Provide openings over a counter to the living and/or dining spaces
- Provide a layout which ensures that the kitchen is not a thoroughfare between spaces
- Ensure convenient access from the kitchen to indoor and outdoor living areas.
- Plumbing and gas works must remain in original positions if possible. Where gas upright stoves are being replaced with separate cooktop and oven, the gas cook top must be located as close to the original point of the upright as possible. The electric wall oven can be positioned in the most practical position in the kitchen.

General Requirements

- Cabinets
 - All cupboards (except pantry and under sink) to have one fixed shelf, positioned midway, which is to be the full width and depth of the cupboard.
 - A removable mid shelf may be provided under the sink, but waste pipes must not penetrate the shelf preventing its removal. All shelves to be edge stripped to colour match the interior of the cupboards.
 - Overhead cupboards must be provided where possible (but not above hotplates). There must be at least 600mm clearance between the highest point of a gas burner, and any nearby overhead cupboards.
 - Pantry to have a minimum of four shelves, a minimum of 300mm apart.
 - Pantry and wall oven must be positioned at the ends of bench sections so that they do not interrupt the bench space.
 - Provide a minimum of one bank of drawers. One top drawer is to incorporate a fixed cutlery tray (glue fixed).
 - Vermin proof all penetrations into the carcass of the kitchen.
 - Finishes:
 - Cabinets: Laminated finish, with 2mm PVC edge strips to all visible edges, coloured to match doors and factory applied using purpose made presses.
 - Internal shelves: White melamine with matching edge strips

- All board products: Highly Moisture Resistant (HMR) board
- Kickboards: Laminated finish
- Benchtops: Laminate finish with post formed outer edge and no sharp corners
- Hinges:
 - Concealed and adjustable for height, side and depth location of doors
 - Nominal 170-180 degree opening and hold open function (unless opening against a wall, other cabinets etc.)
 - Durable metal finish
- Runners:
 - Must withstand 20kg loading capacity when in open position
 - Durable metal finish
- Fittings:
 - 'Lazy Susan storage units may be installed in corner base cabinets only (3/4 size, 360° turn).
 - D" type handles to drawers and doors. Knob handles must not be used.
 - All drawers and doors to be fitted with bump pads.
 - A 450mm long, towel rail in a durable finish (not plastic) to be installed enabling convenient access from the sink.
- Splashbacks:
 - Must extend at least 300mm above kitchen bench top (or to underside of overhead cupboards)
 - Must be suitable for use behind cooktop/range (heat/fire/shatter retardant)
 - Must be easy to clean
 - If tiles are used, minimum size is 150mm x 150mm
- Cooking:
 - If upright range installed, must have 100mm gap between joinery and sides of range, to facilitate cleaning with bench overhanging to provide a 10mm gap each side of the range.
 - Hotplates or upright ranges must not be installed:
 - Under windows
 - on benches that are not against a wall, unless a suitable up stand is provided at the back of the bench;
 - at the end of a cupboard, adjacent to doors, windows, areas of heavy traffic, internal corners, or against side walls of a pantry. Note that at least 300mm bench either side of a cook top/range must be provided.
- Electrical / Socket outlets:
 - 1 x isolating switch for cooktops/stoves.(max 100mm above bench top, not behind hotplates, located at least 600mm from corners, preferably to right-hand side of hotplates)
 - 1 x isolating switch for wall oven or under bench oven (if applicable)

- Minimum of two double SOs, conveniently located Must be located at least 600mm from internal corners
 - A separate SO adjacent to, or below the microwave space. A 50mm diameter microwave cord hole (complete with grommet) to be provided as necessary.
 - Single SO, 1800mm above floor, remotely switched (switch, with neon or LED indicator lamp, to be located preferably on return wall of fridge recess or on adjacent wall, maximum 1100mm off floor. refer to AS 4299-1995, Clause 4.5.11) If switch is located above a bench, locate within 300 mm of the front edge of the bench).
- Provide space for:
 - Refrigerator (may be a space or built into cabinetry, providing cupboards above)
 - Rubbish bin (under sink acceptable)
 - Microwave. Top of wall oven cabinet acceptable. If necessary, recess in pantry space also acceptable (creating two small pantries –one above and one below microwave shelf)

Ideally, hot water systems must not be located in kitchen cupboards. If this is the only available solution, a separate ventilated space (cupboard has air vents to allow hot air to escape) for the HWU is to be provided inside the kitchen cupboards, allowing for easy access for maintenance and/or replacement.

Critical cabinet dimensions for kitchen upgrades		
Item	Dimensions	
	Livable housing design guidelines (LHDG) Gold Level dwellings & General Level Dwellings	Livable Housing Design Guidelines (LHDG) Platinum Level dwellings
Bench Height above finished floor level	900mm	850mm
Bench Depth	600mm	
Minimum bench clearance space between hotplates and other appliances, obstructions and windows	300mm	
Overhead cupboards (if installed)	600mm H x 300mm D, 500 mm off bench top	600mm H x 300mm D, 550 mm off bench top
Microwave storage space	900mm - 1400mm off floor	850mm - 1200mm off floor
Unobstructed refrigerator space	850mm W x 700mm D x 1900mm H (studios, 1,2 bed dwellings) 900mm W x 700mm D x 1900mm H.(3,4,5 bedroom dwellings)	

Critical cabinet dimensions for kitchen upgrades		
Item	Dimensions	
	Livable housing design guidelines (LHDG) Gold Level dwellings & General Level Dwellings	Livable Housing Design Guidelines (LHDG) Platinum Level dwellings
	(minimum 1800 mm from back of wall to any cupboard/ wall/servery in front. 1600mm may be acceptable in some older style units if there is no other possible configuration)	
Pantry (Studio, 1 bed, 2 bed dwellings – 1 door only)	600mm W x 600mm D x 2000mm H	
Pantry (3-5 bedrooms - 2 door)	Up to 1200mm W x 600mm D x 2000mm H	
Pantry Shelves	Top shelf 1650mm off floor. Other 3 shelves evenly placed.	
Under bench cupboard doors – maximum single door width	500 mm	
Minimum clear width between benches (or to dining table in a combined kitchen/dining area as per figure 3)	1200 mm (Studio, 1 bed, ,2 bed) 1350mm (3,4,5 bedroom)	1550 mm
Minimum bench space between the cook top and oven or refrigerator	800mm	
Width required for wall oven or upright stove	600mm	
Top of cabinet around a wall oven (May serve as microwave shelf)	1150mm to 1200mm	
Minimum distance between wall oven and internal corner of the front edge of a bench	600mm	
Minimum width of removable cabinets under or partly under sink	n/a	820mm W

Critical cabinet dimensions for kitchen upgrades		
Item	Dimensions	
	Livable housing design guidelines (LHDG) Gold Level dwellings & General Level Dwellings	Livable Housing Design Guidelines (LHDG) Platinum Level dwellings
Minimum width of removable cabinets under hotplates	n/a	820mm W

Home Modifications

Kitchen upgrades requiring accessible features must be designed following a clinical assessment of the tenant's physical requirements (refer Introduction 'Expert advice').

The *Design Standards for New Construction: Social Housing: Houses and Apartments* may be referenced when modifying kitchens for tenants with impaired mobility. This document outlines requirements for kitchens in new construction, including LHDG Gold Level and LHDG Platinum Level (with additional features required by the department).

Related Product Standards

- Kitchen Sinks
- Electric and Gas Cooking Appliances
- Tap ware

Reference documents:

- Colour Schemes for Kitchen Upgrades and New Construction (guideline document only)
- Design Standards for New Construction: Social Housing: Houses and Apartments.

Laundry tubs

(Applicable to new construction, maintenance replacements and upgrades/modifications)

Requirements for laundry tubs include:

- Must be stainless steel construction.
- Cabinets must be corrosion resistant steel finished in white enamel. Provide front door and rubber tipped adjustable feet. Alternatively, white polymer cabinet is acceptable provided door/s open at least 125°.
- Tub to be installed in compact configuration (narrow side against rear wall).
- The tub must provide a suds bypass option on either side.
- Where multiple tubs are provided (e.g. boarding houses or hostels), 45L tubs shall be provided
- For all other housing types refer to table below.

Acceptable laundry tub sizes, by dwelling size.	
Dwelling Type	Tub Size
Studio apartments	35L
One bedroom	35L
Two and three bedrooms	45L
Four or more bedrooms	70L

Under bowl protection may be required in LHDG Platinum Level housing to prevent contact with the tubs by the legs of wheelchair users. This may be in the form of an attached insulation membrane supplied by the sink manufacturer or by physical protection built into the laundry joinery.

Lifts

(Applicable for new construction and upgrades/modifications)

This standard applies to vertical elevator lifts only, intended for the communal use of tenants on the upper floors of apartment complexes. It does not outline requirements for other lift types (e.g. stair lifts and low rise platform lifts) which may be required for particular tenants, in response to identified need.

Requirements for lifts in new construction are outlined in the *Design Standards for New Construction, Social Housing: Houses and Apartments*.

Additional design requirements for lifts include:

- Crime prevention through environmental design (CPTED) principles
- Return to ground feature is required
- Stretcher capacity is not required
- The location of the site must be within a regular lift service area, to ensure reasonable access to maintenance and emergency call out services.
- The installation and aesthetic treatment of a lift must avoid stigmatising the complex/dwelling.
- More than one lift to be considered, depending on the lift capacity and the size and design of the complex.

Installation of lifts in existing dwellings

The general criteria for lift installations in existing dwellings (retrofits) include:

- The lift must be necessary to improve the quality of life, sustainability of tenancy, and safety and accessibility of tenants in that complex.
- The remaining useful life of the building must be compatible with the expected useful life of the lift (around 20 years).
- The lift installation must provide a cost effective solution, commensurate with the number of tenancies in the complex requiring the lift. Total costs must be considered, including demolition, modifications, capital, operating and maintenance costs over the life of the lift. These costs must be considered against other options such as relocation, or non-mechanical access alternatives.
- In retrofitting lifts, resulting (foot) traffic patterns require consideration to ensure that new paths of travel do not cause nuisance to tenants.
- Installation of lifts must allow continued access for tenants and emergency services to all individual, occupied dwellings during the construction and installation process.

Applicable Australian Standard:

AS 1735.12 – 1999: *Lifts, Elevators, Moving Walks. Part 12: Facilities for persons with disabilities.*

(Note: Section 2: Lift car size, nominates minimum lift car internal dimensions of 1100mm x 1400mm. This may be acceptable for retrofit applications; however wherever possible, lift car size should be consistent with size requirements for new construction (1400mm wide x 1600mm deep)

Manholes, pits, covers and grates

(Applicable for new construction, maintenance replacement and upgrades/modifications)

Pits and manholes must:

- be designed to enable crossing by pedestrians, bicycles, wheelchairs, cars, furniture vans, trade vehicles and garbage trucks, to AS 3996-2006 Access covers and grates
- Assist with controlled site drainage
- Be concrete or PVC. Where PVC pits and surface drainage is used, cast in concrete in trafficable areas or install a 20MPa concrete collar surround.

Manhole covers must:

- Be installed with a matching steel frame. Covers are to have a slip-resistant, patterned finish.

Requirements for surface grates in pedestrian areas:

- Grate spacing and direction are to be designed to prevent the catching the wheels of wheelchairs, bicycles and prams in accordance with AS 1428.1-2001 Design for Access and Mobility Part 1: General Requirement for Access - New Building Work, Clause 12.
- Grates in paved areas to have a slip-resistant, charcoal finish.
- Grates in garden and lawn areas to be hot dip galvanised.

Mechanical cooling

(Applicable to new construction, maintenance replacements and upgrades/modifications)

Note: Standard **Not** applicable to remote housing. Refer to *Design and Construction Standard for Remote Housing* for details about ceiling fan requirements and provision for air conditioners.

Dwellings must seek to deliver energy-efficiency and climatic appropriateness. Mechanical cooling is required in parts of Queensland, as described in the below table.

Mechanical cooling zones	
Climate zone (refer BCA Vol 2. Fig. 1.1.4. Climate Zones for Thermal Design)	Mechanical cooling Type
Zone 3	Evaporative or refrigerated; and Ceiling fans (and increased ceiling heights)
Zone 1 Zone 2*(Bundaberg LGA and north)	Ceiling fans (and increased ceiling heights)

*Note: Ceiling fans and increased ceiling heights may also be provided in Zone 2 south of Bundaberg LGA where necessary to meet the energy requirements of the BCA.

Australian Building Codes Board: BCA Climate Zones for thermal design:

<http://www.abcb.gov.au/work-program/energy-efficiency/climate-zone-maps.aspx>

Ceiling fans

Ceiling fans are to be provided to all bedrooms and living/dining areas. The minimum ceiling height in habitable rooms with ceiling fans to be 2700mm, or 2600mm for dwellings constructed in concrete masonry. When provided, minimum requirements for ceiling fans include:

- a minimum diameter of 1200mm
- Heavy duty sealed bearings
- Aluminium or stainless steel blades
- A reversible motor
- Capacity to have a light installed
- A minimum of a three-speed controller
- A finish of either durable white enamel, or brushed chrome.
- J hook mounting method of installation

As outlined in *AS 4226-2008 Guidelines for Safe Housing Design (Section 12.5.3)*, wherever possible, Unguarded ceiling fans should be installed with the blades at least 2400 mm from the floor.

Evaporative or refrigerated cooling

Where evaporative or refrigerated cooling is required, it is to be provided to all habitable rooms.

Cooling plants/condensers:

- To be mounted on or near the ground (condensers may also be mounted on an upper floor balcony) or in another appropriate, non-obtrusive and safe location.
- Must not encroach on the minimum floor area required for covered outdoor spaces.

National Broadband Network (NBN) Equipment

(Applicable as appropriate for new construction and existing dwellings)

NBN Co. (www.nbnco.com.au) was established in 2009, to design, build and operate Australia's new broadband network. It is a wholly-owned Commonwealth company (i.e. a Government Business Enterprise) and is represented by Shareholder Ministers.

Provision for NBN equipment is required for new construction projects, in accordance with the NBN Co. guideline documents:

- **Residential Preparation and Installation Guide: SDUs and MDUs**; or
- **Preparing for your NBN Sky Muster Service** (for regional and remote areas, not planned for NBN fibre optic cable infrastructure. NBN Co. can advise these locations)

Housing Services requirements for NBN equipment

Equipment and installation requirements (non remote):

Section 4 of the *Residential Preparation Guide: SDUs and MDUs*, outlines space and locational requirements for the installation of NBN equipment inside dwellings. Mounting locations (Section 4.4) may include:

- An *Open Enclosure* (refer to section 4.4.3 for design requirements), OR
- A *Home Distributor* (Refer 4.4.4 for design requirements, and Appendix C for ventilation requirements)

Note that *Open Wall Locations* (as described in Section 4.4.2) are not acceptable.

In addition to NBN Co requirements, the *Open Enclosure* or *Home Distributor* must include a small shelf, suitable for a router, and a double GPO (rather than the single GPO required by NBN Co).

Other requirements:

- For all dwelling types other than one bedroom apartments, NBN equipment must be located in a common space, accessible by all residents (i.e. not in bedrooms or bedroom wardrobes).
- Location must be easily accessible, yet unobtrusive, and must not restrict furniture placement. Suitable locations could include hallway or dining area walls.
- *Home Distributors* (non-remote) should be thoughtfully designed and integrated into the interior space. Provided that other NBN Co. requirements can be met, preference is for *Home Distributors* to be recessed, with a door that is similar in colour the surrounding wall.
- Space occupied by NBN equipment must not encroach on other spaces. Minimum dimension requirements for other spaces (e.g. broom cupboards, linen cupboards, wardrobes) must be met without including the space occupied by the NBN equipment.
- For Platinum Level and Gold level dwellings, the shelf and GPO must be located within 900mm to 1100mm of the finished floor level.

Paint

(Applicable for new construction and upgrades/modifications)

Paint products include:

- Applied paint finishes
- Clear polyurethane timber floor finishes
- Flame retardant paints
- Graffiti remover
- Specialised finishes – textured finish.

Requirements for paint finishes include:

- Paint must be approved and listed under the Australian Paint Approval Scheme, meeting all its specifications.
- Warranty: 12 months minimum.
- Life expectancy of painted surfaces to be 10 years minimum.

Specialised finishes – textured coatings:

A complete proprietary system involving patching where necessary, priming, specified texture coating and sealing with the appropriate coloured acrylic membrane paint.

Clear polyurethane timber floor finish:

Only polyurethanes with low volatile organic compound emissions that are tested and approved in accordance with AS 3730.27-2006 *Guide to the properties of paints for building - clear coatings for interior timber floors* are to be used.

Flame retardant paints:

The product must meet AS 1530.4-2005 *Methods for fire tests on building materials, components and structures – Fire resistance tests of elements of building construction*.

Applicable Australian Standard:

- **HB 73.1 – 2005.** *Handbook of Australian Paint Standards: Part 1: General.* (In particular, Table 5.1 of AS 2311: 2000, which specifies paint types, number of coats required etc. for different applications).

Pressed steel door frames

(As applicable, for new construction and upgrades/modifications)

General requirements for pressed steel door frames include:

- Must be resistant to impact damage from moving wheelchairs, etc.
- A high level of corrosion resistance to external frames in marine and corrosive environments, and to internal frames in wet or steamy bathrooms.
- Material: Coated steel sheet, hot-dipped zinc-coated or aluminium/zinc-coated.
- Type: Pressed zinc coated steel sections including necessary accessories such as buffers, strike plates, spreaders, mortar guards, fixing ties or brackets, and cavity flashing with suitable provision for fixing hardware, pre-finished with protective coatings, built in or fixed to prepared openings.
- Door clear opening widths (clear of the door leaf, with door open) as per Livable Housing Design Guidelines:
 - General Level: 820mm
 - Gold Level: 850mm
 - Platinum Level: 900mm

External door frames:

- Minimum steel thickness: 1.4mm.
- Design: Where external security screens are required to external doors, frames are to be provided with double rebates to suit 40mm door (opening in) and 20mm nominal security door (opening out). Doors to finish flush with the face of the frame when in the closed position.

Internal door frames:

- Minimum steel thickness: 1.1mm and dimensioned to suit wall construction.
- Rebated for internal hinged door where required.
- Sliding door frames may also be specified.

Ramp systems

(Applicable to new construction and home modifications)

Ramp systems must only be installed in response to identified client need (see “Expert Advice”), to improve access for a resident with mobility issues, including those who cannot use stairs, utilise wheeled equipment, or who mobilise in a wheelchair.

Refer to AS 1428.1-2009 Design for access and mobility – General requirements for access – New building work as a guide when designing a ramp for a new property, or as a home modification.

External Ramps:

- Modular ramps can be used as a short term interim measure (up to three months) whilst a client awaits construction of a permanent ramp; however due to the cost of hiring ramps, this should only be considered where there are excessive costs or waiting times for building services.
- Permanent concrete or timber ramps are considered appropriate long term solutions and offer an opportunity to landscape around the ramp.
- Location: Ramps can be stigmatising to a property, so careful consideration must be taken with the location. The ramp must also be constructed so as to not create a trip hazard or obstruct access for other people accessing the property.
- Materials: Consideration must be given to the longevity, potential glare problems, heat retention of the ramp and handrail materials, and noise (both in material heat contraction and expansion and walking).
- The materials and colour of ramp and handrails must complement the external materials and colours of the house.

Threshold ramps:

- Threshold ramps should only be used where there is a maximum rise of 35mm, should have a maximum length of 280mm and maximum gradient of 1:8 (as per AS1428.1 (2009) 10.5).
- Where a change in level exceeds 35mm, a step ramp should be provided instead (refer to AS 1428.1 (2009) 10.6).

General considerations:

- Ramp edges, which can be thin, must not crumble or deteriorate quickly.
- The risk of tripping on the edge of the threshold ramp must be minimised
- Slip resistant materials must be used.
- Recommended for use only where it is difficult or impractical to raise the external pavement to within 10mm below the inside floor level.
- External threshold ramps must be made of aluminium. Rubber or rubber composite is to be used only if deemed appropriate for the client’s specific needs. Timber is not recommended.
- The finished surface of threshold ramps must be slip-resistant.
- Width of travel: Minimum width as necessary to 450mm maximum. It is preferred to restrict the width of travel to a minimum so the threshold ramp does not intrude unnecessarily into a cross path of travel.

Roof Vents (Vented soffits and gable vents)

(Applicable for new construction, maintenance replacements and upgrades/modifications)

Roof vents must:

- maintain weather proofing
- maintain vermin control
- ensure bird proofing, in particular to avoid lice infestations.

Requirements for **soffit linings** include:

- Proprietary or manufactured linings, with controlled and simple patterned vent penetrations which are to be distributed evenly around the roof perimeter.
- Finish: 6mm perforated FC lining ready for painting, or prefinished, low maintenance lining.

Gable vents may be custom manufactured or off-the-shelf items and must be:

- Of total accumulative clear area per roof to match soffit lining ventilation unless supplementary roof mounted vents are used in conjunction;
- Weather proof against rain penetration;
- UV resistant;
- Low maintenance; and
- Bird proof and vermin proof

Low maintenance materials can include powder coated aluminium or UV resistant moulded plastic.

Roofing

(Applicable for new construction and upgrades/modifications)

Design Guidelines:

- Simple roof shapes are preferred. Avoid short ridges, ‘bastard’ hips, and complicated roof plumbing.
- Box gutters and concealed guttering are not acceptable
- Avoid large skillion roofs.
- Maximum roof pitch 26 degrees
- The roof design and installation must prevent birds/possums/vermin from entering the roof/ceiling space.

Requirements for roofing include:

- Contractors are required to submit any installation certification required under the *Building Act 1975*, where roof cladding type is changed (e.g. tiles to metal sheet)
- Provide passive roof vents
- Corrugated pre-coated metal roofing (e.g. Colorbond or equivalent) complying with *AS/NZS 2728:2013 Prefinished/pre-painted sheet metal products for interior/exterior building applications: Performance requirements*.
- Colour range from manufacturer's standard light reflective colour range;
- Steel roofing for dwellings within 200 metres of breaking surf must be deemed by the manufacturer as suitable for use within the intended coastal location.
- 150 mm quad gutters, front lower than back to allow front overflow (Slotted overflows are unacceptable), or 150 mm square gutter with provision for overflow (e.g. Colorbond or equivalent).
- Full gutter leaf guard to be fitted only if required due to high volume of tree debris is evident. Nylon leaf guards are not to be used.
- Roof plumbing and accessories:
 - Generally should be pre-coated metal roofing Colorbond (or equivalent) pre coated finish.
 - Materials must be compatible to avoid deterioration or corrosion between reactive materials.
 - Avoid rainwater running from inert finishes (including Zinalume or equivalent) on to galvanised surfaces.
 - Gutters, downpipes and accessories to complete the waterproofing system.

Rubbish bins

(Applicable for apartments - new construction and upgrades)

Rates of provision

- Councils' rates of refuse and recycling bins may differ between Councils
- The State's rates for the provision of on-site storage of waste and recycling are largely consistent with most councils' requirements for apartments, which is adjusted to meet the known average household sizes of apartment types.
- Councils may also have other requirements in relation to bins, such as a limit on the number of bins which may be collected at the curb side, the use of bulk bins and the availability of collection within the complex. Where the department's rate of provision exceeds the Council's requirements for kerbside collection of wheelie bins, bulk bins (or alternative collection arrangements) must be considered.

Preference – bin type

- Provide wheelie bins if required by Council
- Provide bulk bins if wheelie bins are not supported by Council. Every reasonable attempt must be made to incorporate bins with lids in the 900mm to 1100mm zone.
- If there is a choice, preference is for bulk bins, subject to:
 - Availability of a suitable collection service
 - Availability of bins that have easily operable lids in the 900mm to 1100mm height zone.

Considerations for bulk bin provision

Multiple weekly collections are preferred to multiple or oversized bins. For example, having a bulk bin collected twice a week halves the size of bin required, and also limits the time for odours to develop which can assist in alleviating neighbourhood concerns.

The below table outlines the on-site provision for refuse and recycling in apartment buildings, and must be used to calculate the number and size of wheelie bins and bulk bins required in apartment complexes.

Rates of provision for refuse and recycling: (Wheelie Bins and Bulk Bins)		
Apartments		
Apartment Size	Refuse	Recycling
Studio	70 litres per unit per week	35 litres per unit per week
One Bedroom	80 litres per unit per week	40 litres per unit per week
Two Bedroom	120 litres per unit per week	60 litres per unit per week

Note: most wheelie bins are 240 litre capacity. In cases in which the number of wheelie bins required by calculation is a fractional number, round-up to the next whole number.

Green bins

Some local councils offer an optional green waste bin which is available for an additional charge, included in the property rates. This bin is provided for green waste only (lawn clippings, branches etc.) and is usually collected fortnightly.

Green waste bins are not to be provided (except in exceptional circumstances) due to the additional rates charge. The waste and recycling bin provisions described, in addition to periodic local council kerb side pick-ups, are considered to provide adequate waste disposal for tenants.

Green bins may be considered in exceptional circumstances. Alternatively, excess vegetation on a site may be managed by arranging for additional landscape maintenance.

Design considerations

The following points must be considered when planning for bin storage areas at apartment complexes:

- Provide clearly defined and appropriately constructed areas for the storage and collection of rubbish for all dwellings in accordance with local government requirements.
- If required by council, provide a 'wash down bay'. This includes a hose and hardstand area, suitably drained to an approved sewerage connection; and/or a roofed structure over the bin storage area. This area must be in keeping with the design of the building and other structures on site (e.g. carports);
- Position for easy accessibility from the dwellings and the street, whilst avoiding immediate proximity to dwelling entrances or windows.
- Location must not be visible from the street. This may be achieved through screening. Bin areas must also be screened from pedestrian entries to the site and from entries to dwellings.
- Locate on a hard-standing area and connected to an accessible pathway to LHDG Platinum Level dwellings and the front alignment where bins are collected.
- Where vehicles are required to collect waste bins on the property, ensure that the roadway and footpath is sufficient to carry a heavy vehicle and that turning circles and manoeuvring requirements are met.
- For wheelie bins, or bulk bins which need to be manually moved, ensure enough clearance in the bin storage area in order to manoeuvre and turn the bins.

Scooter Storage

(Applicable for new construction and upgrades/modifications)

Dedicated scooter storage is not a requirement for new construction or existing social housing; however it may be considered as an additional feature, on a case by case basis, for particular new projects or upgrades.

A new scooter storage facility must meet the following requirements:

- A roofed, well ventilated structure offering weather protection for the scooters;
- Charging points to be situated to easily charge each scooter without requiring extension cords;
- The installation of photovoltaic cells to provide power to the charging points may be considered. If this feature is adopted, appropriate back-up power must still be made available.

Security and insect screens for doors and windows

(Applicable for new construction, maintenance replacements and upgrades/modifications)

Security screens must be installed to operable sections of external doors and windows for all existing and new dwellings, including all floor levels for multi-level dwellings, except to doorways that are required by the National Construction Code or other legislation to have a fire door with self-closing or automatically closing mechanism.

General requirements for security screens include:

- When installed to windows in habitable rooms (i.e. living areas and bedrooms), egress from the room in the event of a fire must be considered.
- Must be keyed alike for an individual property.
- Security bars are not acceptable.

Security screens to **doors** must:

- have a door seal / bug strip at the bottom of the door;
- have a triple lock;
- not have door closers, unless required due to a tenant's identified specific needs;
- If in an area where a hinged security door would present a safety hazard (e.g. onto a narrow landing) a solid core entrance door with an operable panel for ventilation must be considered.
- Powder coated aluminium jamb adaptors, to be used to strengthen door jambs less than 30mm thick when 30mm screws to hinges and striker plates do not penetrate studs or equivalent full height reinforcing

Security screens to **windows** must:

- Typically be fixed.
- Houses only: provide a means of escape from bedrooms in the case of a fire. Acceptable methods of escape through a window could include:
 - Breaking a fixed glass panel, provided that:
 - The glass is breakable (i.e. not polycarbonate or other non-breakable glass) and/or;
 - The fixed panel is not covered by fixed security screens or bars.
- Or
 - Through an operable security screen, consistent with the requirements for the protection of openable windows in accordance with the National Construction Code. Where bedrooms are grouped together provide one operable security screen, preferably in a bedroom furthest from the living areas.
- If an external window hood or fixed shade screen is installed, it must not restrict the opening of the screen.
- For operable screens, have a locking mechanism. Ensure the latches and locks are visible in poor light conditions.

- Use concealed, tamper resistant fixings. Pop riveting is not acceptable

There are two different security screen types which may be acceptable, depending on the application. Features and performance criteria requirements for each type are outlined below.

Stainless steel security mesh screens

Requirements for stainless steel security mesh screens include:

- Must be constructed of stainless steel security mesh secured in an aluminium frame.
- Must require only normal cleaning with readily available cleaning products, in order to maintain the manufacturer's warranty.
- Frame to be an anodised or powder coated finish as specified, in a plain colour (not wood grain finish). Stainless steel mesh to be powder coated black. Stainless steel mesh must be secured to the frame in such a way that the powder coated finish is not compromised.
- Hinged security screen doors must include a lock with external key entry that can be locked manually from the inside with a large snib (i.e. without the key). Snib must lock the entire lock system.

Aluminium diamond grille screens

Security screens of this type must:

- Have an expanded aluminium (diamond) grille, preventing a probe of 50mm x 25mm x 15mm from passing through.
- Be an anodised or powder coated finish as specified. For retrofit applications, screens to be powder coated to match existing, unless specified otherwise. Grille may be black for mechanically fixed grilles;
- Have replaceable, integral, black fibreglass or aluminium insect mesh. Small mesh is acceptable for areas that are affected by midges or sand flies; however small mesh will reduce ventilation;
- Have a polycarbonate lock guard on the inside of the door;
- Hinged security screen doors must include a lock with external key entry that can be locked manually from the inside with a large snib (i.e. without the key). Snib must lock the entire lock system.

Security screens		
Application of acceptable security screen types		
Application	Security screen type	
	Stainless steel security mesh	Aluminium diamond grille
New multi-unit construction	Required	n/a
New or existing detached houses and duplexes	Acceptable	Acceptable
Replacement of existing expanded aluminium grille screens	Acceptable	Acceptable
Replacement of existing stainless steel security mesh	Acceptable	n/a

For further information, refer to Housing Services' **Security and Insect Screening Policy**

Sliding wardrobe doors

(Applicable for new construction, maintenance replacements and upgrades/modifications)

General requirements:

- Operation to be smooth and must require minimum effort for use by persons with a disability.
- Handles or pulls to be large enough for easy use by persons with reduced hand power.
- Shelving to be located away from room corner (or position of bed head).

Wardrobe suites – medium density fibreboard (MDF) sliding doors:

- Powder coated aluminium framed doors, pelmet and tracks.
- Colour: White or to match existing.
- Doors fitted with rollers at base on floor track.
- Infill material: 6mm to 7.5mm medium density fibreboard faced with selected vinyl sheeting. Inside face of doors to be similarly finished or painted to seal the inside face.

Wardrobe suites - hollow core doors:

- Tracks and rollers: Powder coated aluminium tracks.
- Proprietary items designed for the applicable door loadings.
- Doors: Standard interior flush panel hollow core doors with hardboard facings
- Finish: Painted.
- Pulls: Full height timber moulds to vertical edges.

Smoke alarms

(Applicable for new construction, maintenance replacements and upgrades/modifications)

Hard wired, auditory smoke alarms are provided to all public housing dwellings in order to comply with legislated requirements. Selection and installation of smoke alarms must be in accordance with all applicable legislated requirements and codes.

Smoke alarms must be hard-wired to the electricity supply, with a rechargeable, non-removable backup battery. The battery must have a ten-year warranty.

Photoelectric smoke alarms should normally be used. However, using a photoelectric alarm may pose a significant risk of false alarms in some locations (e.g. outside a bathroom or laundry entrance where steam is generated). If the only suitable location for the alarm poses such a risk, an ionisation type alarm may be considered for installation.

Warning devices for tenants with impaired hearing

In response to identified need, tenants with impaired hearing may require visual and/or vibrating warning devices to alert them to danger in the event of a fire.

Smoke alarm subsidy scheme

The Smoke Alarm Subsidy Scheme is funded by Queensland Fire and Emergency Services and administered by Deaf Services Queensland. Under the scheme, eligible hearing impaired clients receive a fully wireless smoke alarm, complete with auditory and visual alarm, and vibrating pad, at minimal cost to them.

Public housing tenants are eligible to apply for this scheme. Existing, auditory smoke alarms in the dwelling can remain in place, with the subsidised wireless device/s installed by the tenant as an additional system.

Hard wired visual warning devices

If a tenant with impaired hearing is unable to access the Smoke Alarm Subsidy Scheme, or if additional devices are required, visual warning devices should be installed. Requirements include:

- A minimum 15 Watt (4.2 Joules) white strobe light with a 90 per minute flash rate.
- Hard wired
- A power on indicator
- A test button.
- The ability to be interconnected to existing smoke alarms
- The ability to operate in conjunction with a vibrating pad (to alert tenant to fire when sleeping)
- A rechargeable battery backup system.

Reference documents and websites:

- *AS1603.11-2010: Automatic Fire Detection and Alarm Systems. Part 11: Visual Warning Devices. (Sections 2.5, 2.6.2)*
- *HB123-1999: Guidelines for selection, location and installation of visual warning devices in buildings. (Chapter 2: Strobe- type visual warning devices)*
- Queensland Fire and Emergency Services: (<https://www.qfes.qld.gov.au/>)
- Deaf Services Queensland: (www.deafservicesqld.org.au)

Tap ware

(Applicable for new construction, maintenance replacements and upgrades/modifications)

Tap ware must:

- Be durable and easy to clean
- Be water efficient, with a maximum flow rate of nine litres per minute
- Be free from sharp edges and points
- Be free of gaps and voids (to avoid catching fingers) and be easily gripped
- Solid brass construction, with a chrome or satin chrome finish. Secondary components such as coloured indicators, caps and knobs, may be of plastic or similar.
- Have temperature indicators which are easily visible and universally recognisable.
- In the case of a shower over a bath, have separate shower and bath tap sets. Diverters are not permitted.
- Have ceramic discs, enabling easy use with minimal pressure.

Shower heads

Hand-held shower equipment, and shower heads (including arm and rose) must be water efficient, long-lasting and low maintenance. General requirements include:

- Finish: chrome on metal for body and arm. Secondary components such as coloured indicators, caps and hoses may be either chrome or wear-resistant, long-lasting plastic.
- No loose or easily-removable parts.
- Water saving shower products shall be a complete unit. Retrofitted flow control valves are not acceptable.

LHDG Platinum Level dwellings:

- Shower kit sliding cradle on vertical stainless steel rail or an L-shaped grab rail
- Grab rails to AS 1428.1 (2009) Design for access and mobility requirements.
- Hose: 1500mm long reinforced PVC. Ensure that the shower head does not reach to the rim of the toilet at the full extension of the hose.
- Ancillary components: Chrome on metal.
- Adjustable shower head must
 - Be installed on the shower head holder support rail.
 - Have a sliding handpiece cradle with friction stay.
 - Allow the shower head to be positioned at various angles and heights (between 1000mm and 1800mm above the floor)

Other dwellings:

- Wall-fixed shower rose with a fixed arm.
- May have adjustable swivel head but no adjustable arm.

The following table outlines acceptable tapware types by application.

Acceptable tap ware types by application			
	Application		
	General Level dwellings (no accessibility features). LHDG Gold Level dwellings.	LHDG Platinum Level dwellings. (Must comply with <i>AS1428.1:2009. Section 15 Sanitary Facilities</i>)	Tamper resistant (with minimal ligature risk. To be used only in response to identified need.)
	Tapware requirements		
Basin	Single lever, basin mounted mixer. Optional (for replacements): Basin mounted tap set with fixed spout (separate hot and cold taps)	Single lever, basin mounted mixer with extended, accessible lever.	Basin mounted tap set (separate hot and cold taps) with tamper-resistant slimline handles and water outlet
Shower	Single lever wall mounted mixer with wall mounted shower rose on fixed arm. Optional (for replacements): wall mounted shower set (separate hot and cold taps)	Single lever mixer. Combination grab bar/shower rail with friction fitting for hand held shower. 1500mm flexible hose must not reach the rim of the toilet when fully extended.	Hot and cold tap assembly. (separate hot and cold taps) with tamper resistant slimline handles, and tamper-resistant, anti-ligature shower outlet
Bath	Single lever wall mounted mixer, with fixed bath spout. Optional (replacements): wall mounted bath set with fixed bath spout. (separate hot and cold taps)	n/a	n/a
Kitchen Sink	Single lever, sink mounted kitchen mixer tap with swivel spout	Single lever, sink mounted kitchen mixer tap with extended lever and swivel spout.	Tamper resistant tap set (separate hot and cold taps) or Tamper resistant mixer with swivel spout
Laundry Sink	Single lever mixer tap with swivel spout, mounted on tub or wall.	Single lever mixer tap with swivel spout, mounted on wall	n/a

Television antennas

(Applicable for new construction, maintenance replacements and upgrades/modifications)

Appropriate digital antennas must be provided:

- In all new construction
- To vacant properties intended for reletting, where no antenna exists.

Antennas in either single or multiple dwellings must ensure adequate reception (for the area) of available free to air channels. To the extent possible, antennas must be located out of sight from the street and appropriately fixed for the site's design wind speed.

Where a faulty existing antenna is unserviceable or not cost effective to repair it must be replaced with an appropriate digital antenna. Where necessary, cabling to the internal television socket/s must also be replaced.

Termite barriers and controls

(Applicable for new construction and maintenance)

Acceptable types of termite barriers and controls include:

- Physical barriers: required for all new construction projects. Chemical barriers are not to be provided where there is a viable physical barrier option.
- Physical or chemical barriers are acceptable to be used for retrofit works. Chemical termite barrier systems may be appropriate in circumstances of termite infestation in existing dwellings

Applicable Australian Standards:

- **AS 3660.1 - 2014:** Termite management – New building work
- **AS 3660.2 - 2000:** Termite management – In and around existing buildings and structures – Guidelines.

Termite barriers and controls must comply with the following criteria:

- Provide a safe, low environmental impact product, eliminating the use of chemical treatments wherever possible;
- Provide a continuous physical barrier to subterranean termites and subsequent termite attack on the structure, fit out and contents of the building, for the life of the building.
- Physical barriers and ancillary materials are to provide movement flexibility in the barrier and the jointing systems to maintain the integrity of the barrier.
- Installers must be appropriately trained and licensed to perform termite control systems and provide an appropriate warranty, covering:
 - Reinstallation necessitated by termite attack;
 - Replacement of timber attacked by termites; and/or
 - Removal and reinstatement of building contents, whether built-in or not, as necessary to replace affected timber.

Physical barriers which also contain a chemical impregnation (composite products) may be used for new construction projects providing that the products Material Safety Data Sheet declares that it is not classified as hazardous according to the criteria of Safe Work Australia and not a dangerous good according to the Australian Dangerous Goods code.

Thermal insulation

(Applicable for new construction and upgrades/modifications)

Performance Criteria

- Insulation will be of a batt or blanket material type only
- Loose fill material, temporarily bonded material or foil insulation is not acceptable.

Installation / Application

- The entire ceiling area is to be insulated with the exception of eaves, awnings, ceilings to outbuildings, and open carports.
- Where roofs are stepped on different levels ensure externally exposed walls enclosing roof space are insulated to the same degree as the roof.
- Where insulation is being retrofitted, roofs with a low pitch or raked ceilings may prohibit installation. Where this occurs, the provision of insulation must be deferred until the ceiling/roof is replaced.
- Wall areas are to be insulated only where noted in project documentation.

Time delay switches

(Applicable for new construction, maintenance and upgrades/modifications)

All switches must be robust and tamper resistant.

Photoelectric switch requirements:

- Suitable for connection to single phase supply.
- Inbuilt surge protection from lightning.
- Suitable for installation in locations exposed to the weather.
- Inbuilt time delay operation.
- Constructed of UV stabilized material.

Time delay switch requirements:

- Standard pattern in size.
- Pneumatic push button type operation.
- Minimum adjustable time operation period of up to 10 minutes.
- Minimum International Protection rating of IP23.
- White in colour.

Time switch requirements:

- Analogue/electromechanical type.
- Quartz movement.
- 24-hour program to control communal lighting.
- Weekly program to control evaporative cooling units.
- Programmable by captive segments.
- Internal reserve system providing a minimum supply failure reserve of 150 hours.
- Minimum switching time of 15 minutes for the 24-hour model and 2 hours for the weekly model.
- Manual override.
- Suitable for din rail or surface mounting. (The din rail is a standardised 35mm wide metal rail that is used for mounting electrical equipment)

Vanity units and wall cabinets

(Applicable to new construction, upgrades and home modifications)

Storage is required in the bathroom for personal care equipment and medication. It may be provided by way of storage under the vanity bench, or by a wall hung cabinet. The location of storage must be informed by the abilities of the residents and the risks associated with the storage of medication.

Wall hung vanity units (i.e. not touching the floor) are required for new construction, and are required for upgrades and modifications (provided that plumbing allows), enabling future replacement without affecting floor tiling.

Materials: vanity units

- Acceptable basin types:
 - Remote housing
 - Gold Level (and also additional bathrooms, and bathrooms on the upper level of highset houses): integral with a moulded polymer bench top.
 - Platinum Level : Semi-recessed
 - Non-remote housing
 - General Level: Drop-in, or integral with moulded polymer benchtop
 - Gold Level and Platinum Level: Semi-recessed.
- Basin colour: White
- Carcase: Coloured melamine board, MDF, MR or fully sheeted with high-pressure melamine laminated sheet.
- Handles: Preferably D-pulls with satin chrome finish.
- For wall hung vanity units, provide legs for extra strength.

Platinum level dwellings: Provide a vanity with a bank of drawers and a semi-recessed basin; with adequate circulation space (refer to AS 1428.1-2009, Figure 46). Position the basin to the end of the vanity unit that is away from the corner. Provide clearance under vanity (refer to AS4299-1995, Figure 4.4: washbasin clearances)

Materials: wall cabinets

- Prefabricated proprietary cabinets are preferred for upgrade work.
- Metal construction finish; powder coated or baked enamel white.
- Cabinets may be surface mounted, recessed or semi-recessed.
- Doors may be single or double, swinging or sliding and may be mirrored or solid.

Water tempering

(Applicable for new construction and upgrades/modifications)

The Australian Standard for hot water systems, AS/NZS 3500.4 requires water to be delivered to sanitary fixtures at a maximum temperature of 50 degrees Celsius to minimise the risk of scalding.

Standard industry practice has been to locate the tempering device as close as practical to the hot water storage tank. *AS/NZS 3500.4: Plumbing and drainage, Part 4: Heated water services*, requires that tempering valves shall be 'readily accessible.' The standard does not define readily accessible and as such, there is inconsistency in the location of tempering valves.

Additional requirements to the Australian Standards regarding water tempering, include:

- **Hot water tempering valves** are to be located at the hot water system, regulating temperature to all hot water outlets, including the kitchen and laundry. Hot water tempering valves must be provided:
 - In all new construction
 - When hot water systems are replaced or relocated (except in cases where a continuous flow hot water unit that is factory set to deliver hot water at a maximum temperature of 50 degrees is being installed). If installing upon replacement of a hot water system, ensure that any other tempering devices and thermostatic mixing valves (i.e. to bathrooms), have been removed.
 - When bathrooms or ensuites are upgraded

- **Thermostatic mixing valves:**
 - Are identified by the stop valves located on the cold and hot water inlet pipes. They feature a rapid shutdown capability should the temperature exceed the set temperature.
 - Must only be installed when they are identified as a requirement to meet the physical requirements of persons with a disability (where a tempering valve is not sufficient) as they must be inspected and serviced annually by a licensed plumber with mixing valve accreditation, and have a life expectancy of between five and ten years (depending on water quality)
 - The valve is generally located under a vanity basin or behind a removable panel in the room or close by.

Refer also to Housing Services' **Hot Water Temperature Control Policy**

In response to risks of Legionnaires' Disease, warning stickers must be installed on all gas and electric storage hot water system, providing advice on safe usage. Continuous flow gas hot water systems do not store water and therefore do not concentrate legionella

Further information for tenants is available at:

<http://www.qld.gov.au/housing/public-community-housing/water-supply>

Appendix 1: Version control

Version control	
Standard / section	Notable updates since December 2015 version.
Introduction	<ul style="list-style-type: none"> Referenced changed name of RIH standards, to <i>Design and Construction Standards for Remote Housing</i>. Noted that General Level refers to non-remote housing only, as this is not referenced in the <i>Design and Construction Standards for Remote Housing</i>. Noted that Selection of products should aim to minimise ongoing operating costs for tenants.
Bathroom sanitary fixtures	<ul style="list-style-type: none"> Updated information on vanity basins to reflect different requirements for remote and non-remote housing.
Curtains, curtain rods and curtain brackets	<ul style="list-style-type: none"> Changed product standard name from 'Curtains' Included requirement that curtain style must be suitable for use on metal rods (e.g. pinch pleat curtains on rings, eyelet curtains), and that rods to be minimum 25mm diameter. Included requirements for curtain rods.
Electric and gas cooking appliances	<ul style="list-style-type: none"> Noted that upright ranges are acceptable in Gold Level dwellings (Remote housing only)
Fencing	<ul style="list-style-type: none"> Referenced updated name of <i>Design and Construction Standard for Remote Indigenous Housing</i>.
Garden sheds	<ul style="list-style-type: none"> Noted that the requirement for 9sq.m garden sheds in remote communities includes highset houses Specified that recessed edge is required to self-draining concrete slab Noted that a path is not required between the house and the garden shed Noted that the garden shed must have an appropriate high strength frame, and be of an appropriate strength for the design and wind classification of the site.
Lifts	<ul style="list-style-type: none"> Specified lifts to be 1400mm wide x 1600mm deep (previously just stated 1400mm x 1600mm)
Mechanical cooling	<ul style="list-style-type: none"> Noted that the standard is not applicable to remote housing. Refer to Design and Construction Standard for Remote Housing for details about ceiling fans requirements and provision for air conditioners. Changed wording from 'habitable rooms' to living dining areas and all bedrooms
NBN Equipment	<ul style="list-style-type: none"> Included information about NBN preparation for remote areas (Sky Muster service) Removed <i>requirement</i> for open enclosures to have a door.
Security screens	<ul style="list-style-type: none"> Removed previous note that the standard did not apply to remote housing. Security screen product requirements for remote housing are now aligned with non-remote housing.
Termite barriers and controls	<ul style="list-style-type: none"> Noted that physical barriers are <i>required</i> for all new construction projects (previously stated <i>preferred</i>)
Vanity units and wall cabinets	<ul style="list-style-type: none"> Included details about vanity unit requirements for Gold Level (and also additional bathrooms and bathrooms on the upper level of highset houses) in remote housing.