Message from the Technical Regulator:

Welcome to the 40th edition of Regulation Roundup.

Once again we have tried our best to fill this edition with a range of topical articles that will be of interest to the industry. I always find it informative and I trust it is of benefit to the industry as a whole.

The OTR still believes there is benefit in working with industry to try to prevent safety issues rather than our focus being on dealing with issues after the event.

The OTR has almost completed our annual series of Roadshows. At this year’s Roadshows we provided information regarding the new electronic systems being implemented by the OTR, primarily the Electronic Certificate of Compliance (eCoC).

We are steadily seeing an increasing use of the system and we encourage all to sign up early and utilise the system.

In this way we will have the opportunity to iron out any issues with the system prior to switching away from the paper based version from July 2018.

I once again encourage you to have a read of Regulation Roundup and welcome your views on how we could improve the publication for future editions.

Robert Faunt, Technical Regulator

Electronic Certificates of Compliance Update

In January 2017 the OTR launched the Electronic Certificate of Compliance or eCoC system. The system is now being used by thousands of workers and contractors to complete their compliance requirements. The eCoC system is open for registration to all current PGE licence holders, and holders of BLD licences who can contract in the Plumbing, Electrical or Gas industries. Registration and use of the eCoC system is free.

Head to sa.gov.au/otr/ecoc to register.

The eCoC System has been well received by industry, and the OTR has received feedback that it has helped businesses to manage their work, and that the electronic documents are more readily received by customers.

The eCoC System is fully accessible on a tablet or smartphone, and has benefits for your business, your customers and the OTR as the Regulator.

Improvements to the eCoC System

The OTR aims to enhance the eCoC System over time with additional features and other improvements. For example - the licence verification component of eCoC has recently been rebuilt and this reduces the licence verification time from 30-60 seconds down to a fraction of a second. This significantly reduces the time needed to sign every eCoC. Similarly the initial registration process will be improved with an update in the near future.

Plumbbooking Upgrade

The OTR will also shortly upgrade the Plumbbooking site with new features. This site is used by plumbers to book OTR inspections and users will find that they can now access Plumbbooking using their eCoC System login information. The OTR encourages all users of Plumbbooking to register for the eCoC System, however existing Plumbbooking users will find they can also use their existing Plumbbooking login information to access the new site.

FOR TECHNICAL ENQUIRIES:

Electrical
P: (08) 8226 5518 | (8:30am - 4:30pm)
F: (08) 8226 5529

Gas
P: (08) 8226 5722 | (8:00am - 5:00pm)
F: (08) 8226 5866

Plumbing
P: 1300 760 311 | (8:30am – 4:30pm)


IMPORTANT INFORMATION - Have You Changed Your Address?

Contact Consumer and Business Services (CBS) for any change of address or licence details: Level 3, 91-97 Grenfell Street, Adelaide 5000
Phone: 131 882
Email: occupational@sa.gov.au

Only contact the Office of the Technical Regulator for change of address notification if you do not hold a trade licence but wish to continue to receive Regulation Roundup.
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Contact List

The integration with the eCoC System brings some advantages such as automatic entry of the address of the site, and contact details. The OTR has also enabled Location SA address verification which should minimise errors in addresses. Plumbers should note that a COC or eCOC number is required to book a job. eCOC numbers are provided after the details of the owner and site address are entered and you have progressed to the second page.

Paper forms to be discontinued by 1 July 2018
To allow industry to adjust their business processes to accommodate electronic compliance certificates, there is an 18 month transitional period away from the existing paper certificates of compliance. During this period – which ends 30 June 2018 – you may use the existing paper forms or the new eCoC system at your option. From 1 July 2018 onwards the eCoC system must be used.

For further information go to sa.gov.au/otr/ecoc or contact the OTR at otr.ecoc@sa.gov.au

Register Online
You can register online to receive Regulation Roundup electronically by going to www.sa.gov.au/otr and clicking on the link in the Top 5 box on the left side of the page. Requests for electronic versions of Regulation Roundup can also be emailed to dsd.otr@sa.gov.au. Include your name, licence number (if you hold a trade licence) and a contact phone number in case there are any difficulties with emailing. You will also see in this box a link where you can register your Electrical and Gas Certificate of Compliance books. Remember to contact us if you change your email address!

Registration of Gas and Electrical CoC books
You can register your CoC books online by going to www.sa.gov.au/otr and clicking on the link in the Top 5 box on the left side of the page.

Please note: the paper CoC’s are currently being phased out and will no longer be accepted as of 1 July 2018. From this date forward, CoC’s will need to be completed, signed and submitted via the eCoC system.

Residual current operated circuit-breaker with integral overcurrent protection (RCBOs)

Some RCBOs (also known as an RCD by industry) are polarity sensitive, where the incoming active and neutral supply to the RCBO can only be connected to one side of the RCBO as shown in the diagram below:

![Diagram of RCBO connection](image)

There are numerous brands and types of RCBOs in the market place. Electrical contractors are reminded to ensure they connect these devices correctly when installing. Ensure a visual inspection and electrical tests are carried out to ensure correct circuit connections are made to the RCBO, in accordance with manufacturer’s instructions.

If the RCBO is wired incorrectly, pushing the test button can internally damage and render the RCBO inoperative unknowingly; this increases the risk of electric shock or electrocution in the event of a fault condition on the downstream circuit.

Some RCBOs such as in the diagram above, do not switch the neutral pole. Some electrical installations require the use of an RCD that disconnects all live conductors ie both active and neutral conductors, such as:

- RCDs used as leakage protection devices in medical treatment areas in accordance with AS/NZS 3003 Electrical installations – Patient areas
- RCDs incorporated into a socket-outlet or located adjacent to a socket-outlet and specifically intended for the protection of that socket-outlet; Refer to AS/NZS 3000 Wiring Rules
- An RCD dedicated for an inverter energy system (IES) may be used to meet the mechanical cable protection requirements and isolation requirements of AS/NZS 3000 for the cable from the switchboard to the IES; Refer to AS/NZS 4777.1:2016 Grid connection of energy systems via Inverters Part 1: Installation requirements

Let’s raise the stakes!

The OTR has had a rise in issues found with the depth of earth electrodes. In some cases, electricians are driving their electrodes too far into the ground therefore the connections, and sometimes entire electrode, are being covered by a concrete path or pavers. Refer to photo below.

But from one extreme to another, electricians are considering the future path, and are not driving their electrodes deep enough. Refer to photo below.

AS/NZS 3000:2007 Clause 5.3.6.3 states that an electrode shall be driven to a minimum depth of 1.2 m. The path should never be above the damp course, so this should be used as a guide when driving your electrode into the earth.

Smoke alarm and lighting requirements to assist evacuation in Class 1b buildings

The OTR has been advised by the South Australian Metropolitan Fire Service (MFS), that some premises owners and electrical contractors may not be aware of the requirements of the National Construction Code (NCC) with respect to smoke alarm and evacuation lighting requirements for Class 1b buildings.

The following requirements apply to Class 1b buildings often used for short-term holiday accommodation which include cabins in caravan parks, tourist parks, farm stay, holiday resorts and similar tourist accommodation. This accommodation itself is typically rented out on a commercial basis for short periods and generally does not require the signing of a lease agreement. Short-term accommodation can also be provided in a boarding house, guest house, hostel, bed and breakfast accommodation or the like.

The MFS is particularly concerned about homes where children are in foster care, often as wards of the state, and being cared for by a range of staff members who may not be aware of the requirements of the National Construction Code.

Part extract from NCC 2016 Volume 2:

3.7.2.5 Location — Class 1b buildings

In a Class 1b building, smoke alarms must be installed on or near the ceiling—

(a) in every bedroom; and
(b) in every corridor or hallway associated with a bedroom, or if there is no corridor or hallway, in an area between the bedrooms and the remainder of the building; and
(c) on each other storey.

3.7.2.5 Lighting to assist evacuation — Class 1b buildings

In a Class 1b building, a system of lighting must be installed to assist evacuation of occupants in the event of a fire, and—

(a) be activated by the smoke alarm required by 3.7.2.4(b); and
(b) consist of—
   (i) a light incorporated within the smoke alarm; or
   (ii) the lighting located in the corridor, hallway or area served by the smoke alarm.

Explanatory information:

The lighting required by 3.7.2.5 may consist of the artificial lighting which may already be installed in a corridor, hallway or area, provided that lighting is activated by the smoke alarm.

For further information regarding NCC requirements, contact the local council or a building professional; the OTR does not administer these requirements.
The modern bathroom

New bathroom concepts seen on the internet and TV renovation programs have sparked a range of unusual enquiries to the OTR recently. From permanently mounted TVs to electric toilet seats or the sparky’s worst nightmare, a chandelier over a bath tub! Throw in the waterfall spout, the omission of a shower screen and a bath in the middle of the room, it can create quite a headache selecting the right accessories and layout.

Most of these unusual requests can be accommodated if consideration is given to the designated zone and required protection rating of the equipment to be installed.

Table 6.1 of AS/NZS 3000:2007 Guidance on the selection and installation of Electrical equipment for baths, showers and other fixed water containers clearly outlines what equipment is allowed in each zone, and if allowed, what the minimum IP rating must be.

Some key points to remember when designing an electrical installation in a bathroom:

- Unless otherwise stated, extra low voltage equipment is not exempt from the required IP rating in table 6.1. This is particularly important when selecting pendant lights to hang over baths.
- The restricted zones shown in AS/NZS3000:2007 Figure 6.1 – 6.11 do not apply where the body is not expected to become immersed or wet in normal service such as around toilets or plumbing valves.
- Electrical equipment recessed into a ceiling such that all live parts are above the lower surface of the ceiling, is considered to be outside any zone immediately below the ceiling.

Remember, the CoC is signed by the electrician, not the bathroom stylist.

Selection of MCB’s in switchboards

There has been an alarming increase in the fitting of different brands of DIN mounted miniature circuit breakers (MCB’s) and RCBO’s onto 3-phase propriety busbar chassis in switchboards for commercial and industrial installations.

Physical Characteristics

MCB/RCBO’s are not all the same. There are variations in the height of the line and load terminals. If mounting on a single row load centre, these variations may not be critical, but when fitted on a 3-phase busbar assembly, the varying terminal heights may not align with the busbar fingers. This can result in failure of the electrical connection, particularly if the fingers have to be bent to fit.

Most MCB/RCBO manufacturers provide a 3-phase DIN busbar assembly that supports their brand. It is the electrician’s responsibility to ensure all switchgear matches the specific busbar chassis installed.

Electrical Characteristics

In addition to selecting the correct current rating of an MCB/RCBO, the electrician must also consider the fault current rating as described in Clause 2.5.4.5 of AS/NZS 3000.

To assist with the selection of upstream/downstream switchgear, technical data is available from switchgear manufacturer’s handbooks. Advice is also available from the switchboard manufacturer. Generally, no data is available when mixing brands for upstream and downstream circuit breakers.

Conclusion

3-phase chassis are provided to ensure safe and convenient connection of sub-mains and sub-circuit MCB/RCBO’s. To ensure an installation is properly engineered, manufacturers go to great lengths to achieve certified testing accreditation between their DIN mounted MCB/RCBO’s, chassis and upstream circuit breakers and fuse-links. Before fitting any DIN mounted switchgear to a commercial or industrial switchboard, be aware that not all MCB’s are alike. Fitting an incorrect brand of MCB/RCBO to a 3-phase busbar chassis may compromise the integrity of the switchboard, the safety of the operator and the reliability of the installation.

Thanks to the SA branch of the National Electrical Switchboard Manufacturers Association for contributing this article.

Standards update

AS/NZS 3000: The new edition is currently being edited and should be published later this year.

AS/NZS 3003: The new edition is currently being edited and should be published later this year.

AS/NZS 3010: The new edition was published in May this year.

AS/NZS 3012: Is about to go out for public comment. This is a new edition, with editorial changes to align with the new versions of AS/NZS 3000 and 3010, and deletion of references to AS 2790. There is also the recognition of temporary protected lights that will not be classified as festoon lighting.

AS/NZS 5139: New battery installation standard is being developed and is expected to be published next year.
## Electric Shock Report Incidents

<table>
<thead>
<tr>
<th>Shock Source</th>
<th>Cause</th>
<th>Contributing Factors</th>
<th>Injuries</th>
<th>Action to make safe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock stimulator device.</td>
<td>Abattoir worker fell and contacted live animal stimulator bar.</td>
<td>Operator was trying to clear product jam on production line.</td>
<td>Operator received electric shock.</td>
<td>Correct workplace procedures to be re-addressed.</td>
</tr>
<tr>
<td>Cable supplying valve actuator.</td>
<td>Worker cut through cable attached to valve mechanism.</td>
<td>Worker assumed electrician working onsite had isolated all cables.</td>
<td>Worker received electric shock to hands.</td>
<td>Electrical contractor isolated cables and workplace procedures reviewed.</td>
</tr>
<tr>
<td>Jackhammer.</td>
<td>Worker dropped jackhammer into water.</td>
<td>Worker using jackhammer was also standing in water at the same time.</td>
<td>Worker received electric shock between hand and foot.</td>
<td>Restrict repair work to times no water is present in overflow drain.</td>
</tr>
<tr>
<td>Light switch surrounds.</td>
<td>Environment.</td>
<td>High level of moisture and grime had built up on the light switch.</td>
<td>Worker received electric shock to hand.</td>
<td>Light switch replaced and workplace procedures reviewed.</td>
</tr>
<tr>
<td>Electric air mattress.</td>
<td>Flexible cord.</td>
<td>Nurse went to unplug air mattress and contacted exposed live conductors where the supply cord was damaged.</td>
<td>Nurse received electric shock to left hand.</td>
<td>Air mattress replaced and staff retrained in electrical awareness.</td>
</tr>
<tr>
<td>Socket outlet on bench top.</td>
<td>Leaking roof.</td>
<td>Worker at fast food outlet went to plug appliance into socket outlet that had water damage.</td>
<td>Worker received electric shock to hand.</td>
<td>Roof leak repaired and socket outlet replaced.</td>
</tr>
<tr>
<td>Revenue metering equipment.</td>
<td>Faulty meter.</td>
<td>Worker installing new meter discovered modem was live due to faulty meter.</td>
<td>Worker received electric shock to right hand.</td>
<td>Revenue metering equipment replaced.</td>
</tr>
<tr>
<td>Paint stirrer start button.</td>
<td>Cable insulation damaged.</td>
<td>Painter went to turn on paint stirrer which had a short between one of the phases and earth.</td>
<td>Painter received electric shock to hand.</td>
<td>Paint stirrer removed from service and maintenance procedures reviewed.</td>
</tr>
<tr>
<td>High voltage overhead powerline.</td>
<td>Aluminium ladder.</td>
<td>Worker was attempting to lift aluminium ladder over scaffolding.</td>
<td>Worker received burns to hand and foot.</td>
<td>High voltage powerline de-energised until scaffolding removed.</td>
</tr>
<tr>
<td>Boom gate controller.</td>
<td>Low voltage supply.</td>
<td>Technician diagnosing fault in boom gate mistakenly accessed low voltage supply terminals.</td>
<td>Worker received electric shock to left hand.</td>
<td>Low voltage terminals shrouded to prevent any future contact.</td>
</tr>
<tr>
<td>Crane control pendant.</td>
<td>Extra low voltage supply.</td>
<td>Crane operator with wet hands and gloves handled pendant with damage to the supply cable caused by a screw piercing the cable.</td>
<td>Worker received electric shock to hand.</td>
<td>Crane isolated until repairs to control pendant completed.</td>
</tr>
<tr>
<td>Lift door operator controls.</td>
<td>Motor terminals.</td>
<td>Lift mechanic was performing annual maintenance when his hand contacted a live terminal.</td>
<td>Worker received electric shock to hand.</td>
<td>Shroud missing from original lift install now correctly fitted to protect live terminals.</td>
</tr>
<tr>
<td>Portable TIG welder.</td>
<td>Mounting screws for bottom tray.</td>
<td>Operator went to lift welder and contacted a screw head that was in contact with internal printed circuit board.</td>
<td>Worker received electric shock to hand.</td>
<td>Welding unit returned to manufacturer where the mounting screw involved was bonded to earth.</td>
</tr>
<tr>
<td>Split system air conditioner.</td>
<td>Contact made with live terminals.</td>
<td>Worker repairing air conditioner contacted capacitor terminals.</td>
<td>Worker received electric shock to hand.</td>
<td>Unit isolated and capacitor discharged then terminals insulated. Workplace procedures reviewed.</td>
</tr>
<tr>
<td>Socket outlet.</td>
<td>Lighting circuit supplying socket outlet.</td>
<td>Electrician repairing vermin damaged wiring continued on to check other socket outlets in building. Socket outlet isolated correctly but this one was on light circuit and not tested.</td>
<td>Worker received electric shock to hand.</td>
<td>Workplace procedures reviewed. Testing required to be performed on all terminals accessed.</td>
</tr>
</tbody>
</table>
Gas Bulletin

PE and composite pipes
When placing PE (Tiger Pipe) and multilayer (composite) pipe in an open cut trench you are required to use a marker tape above the pipes, or trace wire, or both. Detectable marker tape is preferred on large installations eg schools, factory complexes, etc. The tape or wire on the pipe must terminate above ground at each riser and the tape be placed between 150 mm and 300 mm below the finished ground level, refer to Clause 5.4.6.

Termination of pipes using meter bars
When connecting to APA meter bars used for freestanding meters, you must connect to the “10 light” fitting on the right hand side (20 mm ¾” BSP male thread). Do not leave just a standpipe or the meter will not be connected. For more information contact the APA Group on 1300 001 001.

Commercial appliance flexible connection
There is increased complacency (regarding the use and installation) as to how flexible hoses are used and installed in commercial applications. The Standard clearly states that hoses are not to be subjected to:

- temperatures greater than they are rated for: Class A up to 65°C, Class B up to 125°C.
- strain, abrasion, kinking or permanent deformation.
- damage by vermin.

Here are three examples that show flexible hoses inappropriately installed (photos 1, 2, 3). The final photo (4) shows an acceptable installation using high level vertical connections and restraining chains. The additional use of stoppers prevents the appliances from being pushed up against gas components and hoses.

Air conditioner near exchange LPG cylinders on caravans
The OTR receives many enquiries about the clearances from air conditioning condensers and LPG cylinders on caravans and motorhomes. There seems to be some confusion amongst owners of caravans as is evident on social media sites. The condenser on a split cycle A/C unit is a source of ignition as are power points, pumps, inverters, battery chargers, motors for automatic levelling legs, and the like.

The minimum clearance from the centre of the cylinder is 1500 mm horizontally from the base, 500 mm vertically up, and 500 mm horizontally out from the cylinder valve. Refer to the diagram on the right.

There is an ignition exclusion zone around gas cylinders when used as a fixed installation. Note that certified portable barbecues with attached cylinders are individually tested for temperature hazards and are therefore exempt from this requirement as stated in AS/NZS 1596.

### Table: Ignition source not to be within the encompassed area

<table>
<thead>
<tr>
<th>Radius</th>
<th>Exchange cylinder mm</th>
<th>In-situ fill cylinder mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>500</td>
<td>1500</td>
</tr>
<tr>
<td>B</td>
<td>1500</td>
<td>3500</td>
</tr>
</tbody>
</table>
Malcolm Hill retirees

Malcolm ‘Rambo’ Hill recently retired from the OTR. Malcolm commenced in the gas industry around 40 years ago with the South Australian Gas Company (SAGASCO) and has provided over ten years of service as a Gas Installation and Appliance Inspector with the OTR.

He contributed an extensive pool of knowledge in the areas of gas installations and maintenance, domestic and commercial appliances, and Type A and Type B appliance certification requirements. Effect fires and space heaters were a specialty for Malcolm.

He will be missed by many in industry and his peers at the OTR.

We wish Malcolm and his family all the best for his retirement and expect that he will spend many hours fishing and hunting.

Cooker flame safeguard – NEW requirements

In February 2016 the Australian Standard AS4551 for Domestic Cooking Appliances was replaced with a new Standard AS/NZS5263.1.1:2016. The new Standard requires that all burners on domestic cooking appliances must be fitted with a flame safeguard system. This requirement came into effect on 1 July 2017 to give manufacturers time to adapt their appliances to the new requirement.

All domestic cookers manufactured after 1 July 2017 must have a flame safeguard fitted on all burners.

Cookers not fitted with a flame safeguard on all burners by 1 July 2017 must be suspended or cancelled.

The new flame safeguard requirements are not being applied retrospectively so certified domestic cookers manufactured prior to 1 July 2017, and are compliant with AS4551:2008, may continue to be sold and installed until this stock is exhausted.

Gas appliances under covered areas and water heaters located on balconies

Outdoor model gas appliances are required to be located outdoors in a well ventilated area. When an appliance is located under a covered area, at least two sides (50%) must be permanently open to atmosphere. This means pull-down blinds, shadecloth etc, cannot be installed on these openings as it will make the area an enclosure. If a customer wants to keep the pull-down blinds, the appliance will need to be relocated outdoors or an internal model be installed and flued to atmosphere.

When a fan assisted water heater is installed on a balcony enclosed on three sides the flue terminal must be within 500 mm of the opening and positioned so that products of combustion are vented directly towards the opening. Some manufacturers supply an approved right-angle flue diverter accessory which can be attached on the flue terminal to direct the products of combustion in a 90-degree angle towards an opening.

The photo below (right) shows a non-compliant water heater located on a balcony. The heater is incorrectly located so the flue terminal is not positioned correctly, that is, facing in the wrong direction towards a sliding door, and more than 500 mm from an opening. As installed, the heater flue is within 300 mm of the return wall.

The diagram below shows the correct installation of a fan assisted water heater within 500 mm of an opening with an approved flue diverter fitted. (Reference Figure 6.2 and Clauses 6.9.3 and 6.9.4 from the AS/NZS5601.1 2013 amendment 2).

Outdoor cooking

With summer approaching it is more likely that we will take this opportunity to cook outdoors.

When cooking outdoors, it is vital that the cooking equipment is:

- suitable for outdoor use
- in good condition
- used in the manner for which it was intended
- operated in a well ventilated area
- certified for use to the appropriate Standard

This ‘outdoor’ kitchen installation (shown left) was spotted by a keen-eyed gasfitter who took the appropriate steps to isolate and make safe due to a number of safety concerns.
Flue fire incident

The OTR recently investigated a domestic single storey house fire at the request of the Fire Department. On investigation, it was found that the wall furnace flue installation did not meet the clearances required for metal single skin flueing as listed in Table 6.6 of AS/NZS 5601.1.

You can see the results of the fire in the five photos below.

The wall furnace was relocated some years ago by an unlicensed person using a prohibited Kinko nut and rubber washers to extend the copper branch line. This method of connection has been banned for 30+ years. The single skin metal flue was found to be too close to timber studs and frame.

The cause of the fire was identified as Pyrolysis which is the thermal decomposition of combustible materials exposed to heat. In this case, the drying and charring of the pine timber studs and frame in the internal wall were in contact with the single skin metal flue. Over time the ignition temperature of the timber studs reduced until the material spontaneously ignited.

The fire then caused the Kinko rubber to fail, allowing gas to escape and ignite, thus adding to the intensity of the fire.

When installing, relocating or even servicing appliances, the installation must comply with the installation Standard. If you are called to service or repair an appliance then you are advised to inspect all accessible portions of the installation to see that they are compliant and do not pose a risk to persons or property.

Clause 6.8.10 allows a clearance of 10 mm for certified twin wall flues where the flue is used within a cavity wall in domestic applications where the appliance rating is under 50 MJ/h and the flue gas temperature is less than 300°C.

For clearances from combustible surfaces to single skin metal flue systems refer to Table 6.6 in the Standard.

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### 6.8.10 Application of twin wall flues

**Twin wall flue** shall only be used as follows:

(a) Where a twin wall flue is used within a cavity wall in a domestic location, the appliance gas consumption shall not exceed 50 MJ/h (14 kW).

(b) For appliances having a flue gas temperature of not more than 300°C. 

**NOTE:** Certified appliances with a draught diverter will meet the maximum flue gas temperature requirement.

(c) The clearance between a twin wall flue and a combustible surface shall be at least 10 mm.

**NOTE:** The clearance is measured from the outer surface of the flue, (i.e., not measured from any spacers, which may touch the combustible surface).

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### TABLE 6.6

**REQUIRED CLEARANCE BETWEEN A SINGLE WALL FLUE AND A COMBUSTIBLE SURFACE**

<table>
<thead>
<tr>
<th>Application</th>
<th>Clearance minimum, mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unprotected combustible surface</td>
</tr>
<tr>
<td>Water heater, space heater or inbuilt oven with:</td>
<td></td>
</tr>
<tr>
<td>— Flues not exceeding 150 mm ID</td>
<td>25</td>
</tr>
<tr>
<td>— Flues exceeding 150 mm ID</td>
<td>75</td>
</tr>
<tr>
<td>— Flues 250 mm x 50 mm installed on an outside wall</td>
<td>25</td>
</tr>
<tr>
<td>Other rectangular flues</td>
<td>75</td>
</tr>
<tr>
<td>Incinerator—Not sanitary</td>
<td>450</td>
</tr>
<tr>
<td>Incinerator—Sanitary</td>
<td>75</td>
</tr>
<tr>
<td>Pottery kiln</td>
<td>600</td>
</tr>
<tr>
<td>Any other application</td>
<td>The clearance shall be sufficient to ensure the temperature limitation of 50°C above ambient is not exceeded</td>
</tr>
</tbody>
</table>
Plumbing Bulletin

Inspection/testing openings in multi-storey sanitary plumbing systems

Plumbing Advisory Note –
Issued June 2017

To allow sanitary plumbing systems to be cleaned, tested and maintained, stacks and common discharge pipes must have accessible inspection openings.

Location of inspection/testing openings

AS/NZS 3500.2:2015 requires that accessible inspection openings are installed in the following locations:

- in any common discharge pipe, where necessary for inspection and testing
- at the base of every stack
- at every level of a stack, where necessary for inspection and testing
- at intervals no greater than every 30 metres in a common discharge pipe
- at every junction fitting that connects a common discharge pipe to a stack, or in the upstream section of the common discharge pipe
- on each graded section of elevated pipework, using drainage principles.

Legislative requirements

The National Construction Code Series Volume 3 – Plumbing Code of Australia (PCA), Part C1 specifies the requirements for designing, constructing, installing, replacing, repairing, altering and maintaining any part of a sanitary plumbing system. AS/NZS 3500.0 glossary of terms defines:

- an inspection opening is ‘an opening in a pipe or pipe fitting, arranged to facilitate inspection testing or the clearing of obstructions, and fitted with a threaded cap or plug or an access cover’
- a testing opening is ‘an opening with a removable cover in the body of a fitting and of sufficient size to permit the installation of a plug for use in the hydrostatic testing of a pipeline’
- accessible is ‘capable of being reached for the purposes of Inspection, cleaning or maintenance, repair, or replacement, but first may require removal of an access panel, cover, door or similar obstruction’.

Access to inspection openings

All required inspection openings must be accessible, as noted in AS/NZS 3500.0 glossary of terms, via an access panel, cover, door, or similar protection.

Class 1 residential buildings

Inspection openings must be installed and must be accessible:

- at the base of each stack and in the upstream section of a common discharge pipe, either raised to surface level or provided with a access to the inspection point in the ceiling below or on the junction fitting that connects a common discharge pipe to a stack.

Commercial, industrial and Class 2-9 residential buildings

Inspection openings must be installed and must be accessible:

- at the base of each stack
- on every second floor of a stack (as a minimum requirement)
- on every floor in the upstream section of a common discharge pipe or on the junction fitting that connects a common discharge pipe to a stack.

Options 1, 2, and 3

Option 1

- Inspection opening in the upstream section of the common discharge pipe raised to the surface level and fitted with an airtight bolted trap screw

Option 2

- Inspection opening in the upstream section of the common discharge pipe must be accessible via an access panel, cover, door, or similar opening

Option 3

- Inspection opening at the base of the stack, fitted with a removable cover in the body of a fitting and of sufficient size to permit the installation of a plug for use in the hydrostatic testing of a pipeline

Notes

- Common discharge pipes connected to sanitary plumbing stacks must have accessible testing/inspection openings, as per the two diagrams above.
- Testing/inspection openings in sanitary plumbing stacks must be installed on each floor level and accessible on every second floor (as a minimum) for inspection and maintenance purposes.
- An accessible testing/inspection opening must be installed at the base of all sanitary plumbing stacks.

Where testing/inspection openings are located within a tenancy that is occupied by a separate party, raising the inspection/testing opening into the tenancy it serves should be considered.

Testing openings

Testing openings must be provided where required for testing of sanitary plumbing systems, in accordance with AS/NZS 3500.2:2015 Section10.
Inspection openings for in-ground sanitary drainage systems

For requirements related to inspection openings in sanitary drainage systems, refer to AS/NZS 3500:2 Section 4.

Release of the Guidelines for Non-Drinking Water in South Australia

The Office of the Technical Regulator (OTR), along with many other regulators, has a key role in ensuring the protection of South Australia’s drinking water. The OTR is vigilant in regulating this area through current methods of audits of on-site plumbing, and approval of Safety, Reliability, Maintenance and Technical Management Plans.

However, the OTR is reliant on the plumbing and water industry to be aware of their responsibilities in this area and it was proposed that the development of guidelines for non-drinking water installations was necessary to ensure regulatory obligations were being met and to provide clarity to key stakeholders on associated requirements and responsibilities.

The Guidelines for Non-Drinking Water provide advice and assistance to the plumbing and water industry for the correct installation and ongoing operation of non-drinking water systems that are acceptable to the Technical Regulator and deemed to comply with the Water Industry Act 2012, Water Industry Regulations 2012, and technical standards, i.e. NCC, Volume Three.


The Guidelines are provided to improve awareness, understanding and installation requirements of non-drinking water systems and associated regulatory responsibilities within the plumbing and water industries.

The Guidelines contain both legislative and informative information for use. They present the current requirements for the technically safe and reliable installation and operation of non-drinking water systems in South Australia, and do not introduce any additional legislative requirements to current prerequisites. The Guidelines apply to new installations as well as alterations, additions and repairs to existing installations.

The Guidelines have been developed for water industry entities’ personnel, plumbing contractors, irrigation contractors, engineers, planners, consultants, developers, local government and State government agencies. Sections of the Guidelines are also relevant to individual landowners and community groups.
Change to plumbing licence names and terms

To help consumers understand what services a plumber is licensed to perform, Consumer and Business Services (CBS) has worked closely with the plumbing industry to review and simplify plumbing licence names.

The revised licence names won’t change the scope of work that the plumber could perform prior to the changes.

The new plumbing worker registrations include:
- **Advanced plumber** – can perform any plumbing work.
- **Restricted advanced plumber** – can perform plumbing work as per their plumbing specialty.

*Plumber* – must work under the direction of an Advanced Plumber or Restricted Advanced Plumber per their plumbing specialty.

*Restricted plumber* – must work under supervision eg an apprentice or an overseas trained plumber undertaking Australian context gap training.

For example:

<table>
<thead>
<tr>
<th>Current licence</th>
<th>New licence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plumbing Workers Registration</td>
<td>Plumbing Worker Registration</td>
</tr>
<tr>
<td>Can provide technical direction and able to certify OR</td>
<td><strong>Advanced Plumber</strong></td>
</tr>
<tr>
<td>Can perform any plumbing work</td>
<td>Can perform any plumbing work</td>
</tr>
<tr>
<td>Restricted Plumbing Workers Registration – Water Plumbing Work</td>
<td>Restricted Plumbing Worker Registration <strong>Restricted Advanced Plumber</strong></td>
</tr>
<tr>
<td>Can perform water plumbing work</td>
<td>Can perform water plumbing work</td>
</tr>
<tr>
<td>Restricted Plumbing Workers Registration–Sanitary Plumbing–Under technical direction</td>
<td>Restricted Plumbing Worker Registration <strong>Plumber</strong></td>
</tr>
<tr>
<td>Can perform sanitary plumbing work under the direction of an appropriately registered plumbing worker</td>
<td>Can perform sanitary plumbing work under the direction of an appropriately registered plumbing worker</td>
</tr>
<tr>
<td>Restricted Plumbing Workers Registration–While employed under a contract of training, ltd to any plumbing work under the supervision of an appropriately registered plumbing worker. Does not include the installation, alteration, repair or maintenance of fire sprinklers.</td>
<td>Restricted Plumbing Worker Registration <strong>Restricted Plumber</strong></td>
</tr>
<tr>
<td></td>
<td>While employed under a contract of training, ltd to any plumbing work under the supervision of an appropriately registered plumbing worker. Does not include the installation, alteration, repair or maintenance of fire sprinklers.</td>
</tr>
</tbody>
</table>

**Clarification Of Plumbing Terms (no change to scopes of work)**

<table>
<thead>
<tr>
<th>Plumbing Work</th>
<th>Plumbing work means sanitary plumbing work or draining work or water plumbing work or the installation or testing of backflow prevention devices.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitary Plumbing Work</td>
<td>Sanitary plumbing work means the installation, alteration, repair, maintenance or disconnection of pipes or equipment to receive and convey wastewater to sanitary drains (including associated plumbing ventilation equipment and pipework), and includes work of a class prescribed by regulation.</td>
</tr>
<tr>
<td>Draining Work</td>
<td>Draining work means the installation, alteration, repair, maintenance or disconnection of sanitary drains or stormwater drains, and includes work of a class prescribed by regulation. <strong>Sanitary drain</strong> means pipes and equipment to collect and convey wastewater from a sanitary plumbing installation to an on-site wastewater treatment facility or a public sewerage or effluent disposal system; and <strong>Stormwater drain</strong> means pipes and equipment to collect and convey stormwater to a public stormwater disposal system.</td>
</tr>
<tr>
<td>Water Plumbing Work</td>
<td>Water plumbing work means the installation, alteration, repair, maintenance or disconnection of water pipes or equipment (including water heaters) to be connected directly or indirectly to a public water supply system, and includes work of a class prescribed by regulation (includes the installation and commissioning of fire hydrant and hose reel systems).</td>
</tr>
<tr>
<td>Backflow Prevention Work</td>
<td>Backflow prevention work consists of the installation, alteration, repair, maintenance or disconnection of testable backflow prevention devices.</td>
</tr>
<tr>
<td>Fire Protection</td>
<td>Fire protection work means the installation, alteration, repair, maintenance or disconnection/reconnection of fire protection pipes or fire protection equipment to be connected directly or indirectly to a public water supply system.</td>
</tr>
<tr>
<td>Irrigation work</td>
<td>Irrigation work means the installation, alteration, repair, maintenance or disconnection/reconnection of dedicated non-pressurised irrigation pipe work and equipment connected downstream of a backflow prevention device, master valve or solenoid valve.</td>
</tr>
</tbody>
</table>

For more information or clarification please contact Consumer and Business Services.
Contact list

Electrical Technical Advice
Office of the Technical Regulator
Level 8, 11 Waymouth Street, Adelaide
Phone: (08) 8226 5518 (8:30am-4:30pm)
Fax: (08) 8226 5529
Email: otrmail@sa.gov.au

Electrical Certificates of Compliance
Available in person from the following agencies:
Office of the Technical Regulator
Level 8, 11 Waymouth Street, Adelaide
NECA
213 Greenhill Road, Eastwood
Phone: (08) 8272 2966
Lawrence & Hanson
All stores
MM Electrical
All stores
Middendorp
All Stores
Relex Australia Ltd
All stores
P & R Electrical Wholesalers
All stores
CNW Wholesalers
All stores
Service SA Outlets
EDS Centre, 108 North Terrace, Adelaide and Regional Areas

Gas Technical Advice
Office of the Technical Regulator
Level 8, 11 Waymouth Street, Adelaide
Phone: (08) 8226 5722 (8:00am–5:00pm)
Fax: (08) 8226 5866
Email: otr@sa.gov.au

Gas Certificates of Compliance
Personal collection available from:
SA Water
250 Victoria Square, Adelaide
Gas Works
All stores
Gas Appliances Plus
Unley
Norm’s Plumbing Supplies
John Street, Mt Gambier
Samios Plumbing Supplies
All stores
Scott’s Plumbing
66 O.G. Road, Klemzig
Northern’s Plumbing Supplies
All Stores
Tradelink
All stores
Reece Plumbing
All stores

Training
Gas
Master Plumbers Association (formerly PIA)
1 South Road, Thebarton
Phone: (08) 8292 4000
Fax: (08) 8292 4040
Technical Advisory Centre P/L
4/543 Churchill Road, Kilburn
Phone: (08) 8162 5640
Fax: (08) 8162 5638
www.techad.com.au

Electrical and Gas
TAFE info (for all training enquiries)
Phone: 1800 882 661
Peer Veet
Rescue and Resuscitation, First Aid & other Industry related courses:
1042 Port Road, Albert Park
Phone: (08) 8348 1200
www.peer.com.au

Electrical
ATEC (Adelaide Training and Employment Centre)
Electrical Rescue & Resuscitation Certificate
Phone: (08) 8240 1233
www.atec.asn.au

Power Lines/Cables
Clearance Zones
Between vegetation and power lines or building/structures and power lines contact the
Office of the Technical Regulator
Phone: (08) 8226 5667
SA Power Networks (SAPN)
Phone: 13 12 61

General Information
Licence and Address Change
Consumer & Business Services
Phone: 131 882
Email: occupational@sa.gov.au

Appointments and Information
SA Power Networks Builders & Contractors Line
Phone: 1300 6500 14
Fax: 1300 6500 16

Australian Standards
Standards Australia
www.standards.com.au
AGA
Phone: (03) 9580 4500
www.gas.asn.au

For locations of Gas, Electricity or Telecommunications
“Dial Before You Dig”
This service is still available when doing emergency excavations at short notice.
Phone: 1100
www.dialbeforeyoudig.com.au

For after hours locations or gas emergency (including LPG)
Origin Energy LPG: 1800 808 526
Kleenheat: 1800 093 336
Elgas: 1800 819 783
APA Group Gas leaks: 1800 427 532
(1800 GAS LEAK)
For gas or electrical major incident reporting 24 hours / 7 days
(South Australia only)
Office of the Technical Regulator
Phone: 1800 558 811
This number also appears in the 24 hour emergency numbers section at the front of the South Australian White Pages

Gas Trade contact
APA Group system operator
Phone: 1300 001 001

Additional websites for further information
South Australian Parliament for Acts and Regulations
www.l awislation.sa.gov.au
SafeWork SA
www.sa.gov.au/safework
Australian Liquefied Petroleum Gas Association (ALPGA)
www.alpga.asn.au
Australian Competition and Consumer Commission (ACCC)
www.accc.gov.au

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Email: otrplumbing@sa.gov.au

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