

REGULATION ROUNDUP

ISSUE 46 | September 2020

A bulletin for electrical, gas and plumbing industry workers brought to you by the Office of the Technical Regulator

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FOR TECHNICAL ENQUIRIES:

Electrical

P: (08) 8226 5518 | (8:00am – 4:30pm)

Gas

P: (08) 8226 5722 | (8:00am – 4:30pm)

Plumbing

P: 1300 760 311 | (8:30am – 4:30pm)



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Message from the Technical Regulator

Welcome to issue 46
of Regulation Roundup.

Welcome to issue 46 of Regulation Roundup. It has been an interesting year, to say the least, we, as we're sure most of you have had to work within the COVID-19 restrictions.

This has seen us deliver audits and industry presentations in a manner that is considered safe. Regulation Roundup continues to be a good vehicle for us to get up to date information out to industry. One of the initiatives that is keeping us very busy at the moment is the Smarter Homes project recently announced by the Government. The OTR has been tasked with producing a number of technical guidelines, compliant inverters list and registered agents list to support

the implementation of the initiative. The initiative will impact on the solar and battery installation industry. If you think you will be affected, I would encourage you to seek information about this program from the website www.energymining.sa.gov.au following the link "Regulatory Changes for smarter homes".

Once again, I encourage you to take the time to read Regulation Roundup.

Robert Faunt, Technical Regulator

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[LOOKING OUT FOR YOUR WORKERS IN STRESSFUL TIMES]



COVID-19 is having an unprecedented impact on people all over the world which is causing stress, anxiety, and uncertainty. It's always important to look out for your workers, but especially so during times like this, and there are a number of things you can do to help.

Take the time to check in on others and have a conversation. It's important for people to know they are not alone and that they still have a social network.

If any of your people work remotely, keep in touch regularly and communicate with video to help bridge the gap.

Share useful and accurate information only. Avoid speculation and gossip as this may add to the anxiety levels of others.

Look for signs that others may be acting differently – it's an indication they may be struggling and need some help.

If you think someone isn't travelling well and are not sure what to do, phone the MATES in Construction 24/7 helpline on 1300 642 111.

MATES in Construction is a suicide awareness and prevention program that is designed specifically for the Australian construction industry and is the only one of its kind in South Australia. They offer an integrated program of training and ongoing support that creates a workplace community of 'mates looking out for mates'. Their program is based on the fact that suicide is everyone's business and it provides ways for the industry to take an active role in improving the mental health and wellbeing of workers.

MATES SA is based locally so the team is available to help whenever you need them, even at short notice. If you experience an incident on site, such as a near miss or fatality, an incident that involves members of the public, or even the loss of a workmate outside of work, the MATES team will be on site to support your team. When greater support

is needed, MATES Case Managers work directly with people at risk and help them to develop an individually tailored support plan, specific to their situation.

"The grief that follows the loss of a workmate, or any incident, can be very deep and complex. This requires support to be available at very short notice and we can do that." Says Bob Clifford, MATES SA Operations Manager. "We are often the first – and sometimes the only – help to arrive and offer support to those affected. And we find many of the people we speak with end up accessing our case management support service."

Through the training they provide and their ongoing local presence, MATES is able to identify and capture people at risk early, before incidents occur. Early intervention can have an extremely positive impact on a person's mental health as it aims to prevent the progression of issues and reduce any impact they may have.

Having delivered suicide awareness training to nearly 25,000 people in South Australia since 2012, MATES in Construction has made an extremely positive impact on the construction and allied industries. As training numbers grow each year, so does the demand for their services and the number of people who turn to them for support. They also offer most of their training and all their support services free of charge.

During the COVID 19 pandemic, MATES SA has continued to operate and be available in person to people in need. While many EAPs and other services ceased face-to-face support, MATES was still there supporting our industry and even expanded their services to include video toolbox meetings to let your workforce know they were there if needed.

If you've not engaged MATES in Construction yet, give them a call. One of their team will make a time to come out and talk you through their program and tell you what we can offer to you and your team. Contact MATES SA on 08 8373 0122 or enquiries@micsa.org.au.



[Alex Coulls, Senior Electrical Technical Standards & Safety Officer and Dave Schrapel, Manager of Electrical Installation's & Product Safety Flying the flag this September in the Electrical Installation's section.]



Electrical Bulletin

The importance of the protective earth neutral (PEN) conductor

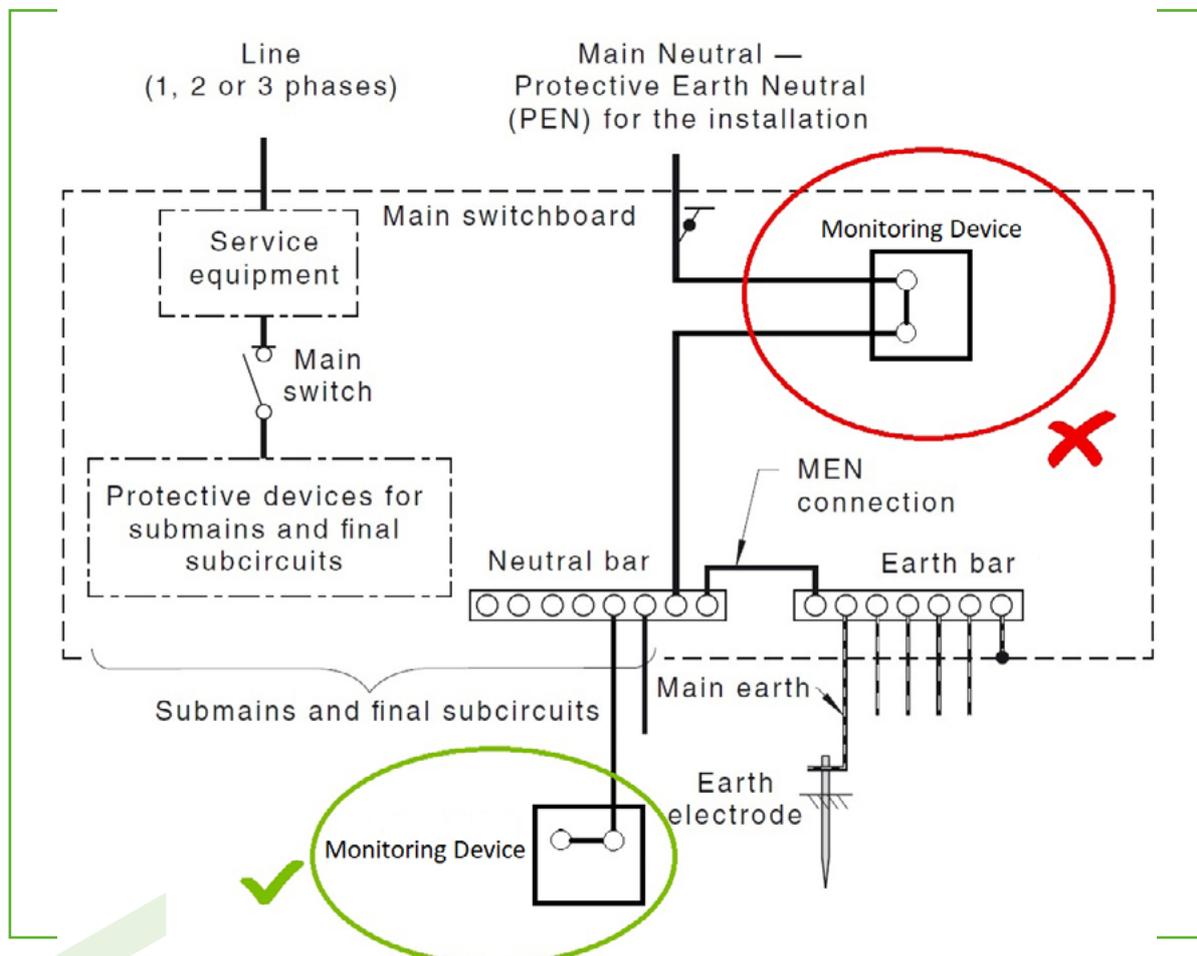
A PEN conductor performs both neutral and protective earth functions combined in a single conductor.

The most common type of PEN conductor you will come across is the main neutral conductor of the consumer mains. This PEN conductor is connected between a main neutral bar in the main switchboard and the neutral conductor of the network distribution system.

The OTR have started to notice a rise in solar/battery related monitoring or control devices being installed, where the continuity of this PEN conductor is dependent upon the terminals of such devices, see figure example below.

If this PEN conductor is inadvertently disconnected due to electrical work or product failure you could live up the entire earthing system! In addition, if you have a 3-phase installation you could put 400 volts across your single-phase appliances which could result in significant damage within the installation.

These monitoring or control devices should be installed after the main neutral bar. Please note that some of these devices may only require a single neutral conductor connection for correct operation, and don't necessarily require the neutral to be looped through the terminals of the device.



[Electric Shock Report Incidents]

Shock Source	Cause	Contributing Factors	Injuries	Action to Make Safe
Switchboard fuse wedge.	Fuse wedge being replaced.	Homeowner replacing fuse wedge contacted live parts.	Electric shock to hands.	Fuse wedge installed correctly by network operator.
Magnetic base drill.	Generator supplying drill.	Prestart up tests had not been conducted so fault with generator had not been identified.	Worker received electric shock to hand.	Electrical Contractor tested all electrical equipment involved.
Lighting circuit switch wire.	Door installer drilling holes.	Drilling holes for a new door hinge the installer damaged the switch wire concealed behind the door frame.	Electric shock received to hands.	Electrical Contractor isolated lighting circuit and repaired damaged cable.
House guttering.	Induced voltage.	Homeowner cleaning gutters received tingles from induced voltage on metallic guttering.	Homeowner received electric shock to hands.	Electrical contractor to bond guttering to earthing system.
Oven door handle.	Cable insulation damage.	Homeowner went to open oven door not realising that due to rodents damaging cables it was live.	Homeowner received electric shock to hands.	Electrical contractor isolated oven.
Sheet metal roof.	Cable insulation damage.	Roofer commenced repairs on roof where damaged lighting circuit cable had livened up metal roof.	Roofer had received electric shock to hands.	Electrical contractor isolated lighting circuit and made repairs.
Conveyor belt isolator.	Water ingress.	Worker went to operate start stop station not knowing the switch was damaged and water had been able to enter it.	Worker received electric shock between hand and shoulder.	Electrical contractor effected repairs.
Pedestal fan.	Supply cord damaged.	Nurse went to relocate pedestal fan not knowing its flexible supply cord was damaged where it entered the fan.	Worker received electric shock to hand.	Electrical worker tested fan and removed the faulty unit from service.
Refrigerator.	Supply cord damaged.	Restaurant worker went to move fridge by holding onto the still plugged in damaged supply cord.	Worker received electric shock to hand.	Electrical Contractor tested and repaired fridge flexible cord.
Bathroom door handle.	Water ingress.	Leaking roof allowed water into wall cavity and electricity tracked from the lighting circuit to the door and floor.	Homeowner received electric shock.	Electrical contractor isolated circuit until roof repaired.
Lighting cable.	Cable was energised.	Plasterer was flushing ceiling when his hand contacted live unterminated cable.	Worker received electric shock to hand.	Electrical Contractor isolated and correctly terminated cable.
Bread toaster.	Flexible cord damaged.	Worker went to use toaster not realising adjacent sandwich press had melted toaster cord exposing bare conductors.	Worker received electric shock to hand.	Electrical worker investigated and remove toaster from service.
Magnetic drill.	Socket outlet.	Worker used magnetic drills base which had a broken socket outlet attached exposing live parts.	Worker receive electric shock to hands.	Electrical worker isolated equipment and effected repairs.
Circuit breaker.	Moisture.	Electrical worker went to turn on circuit breaker at caravan park service pillar, however because of the esplanade location salt residue had built up causing tracking.	Worker received electric shock to hands.	Electrical worker isolated service pillar.
Poly pipe welding machine.	Supply cord for welder.	Open circuit earth connection resulted in voltage being present on the metal frame of welder.	Operator received electric shock to hands.	Electrical worker took machine out of service until repairs completed.
Socket outlet.	Earth termination faulty.	Workers using Bain Marie wouldn't know the earth connection at socket outlet was faulty.	Workers received electric shock to hands.	Electrical worker replaced socket outlet and tested appliance.
Phone charger.	Charger cover broken.	Student went to unplug phone charger with damager cover and contacted exposed contacts.	Student received electric shock to hands.	Phone charger removed from service.
Plug top of flexible cord.	Plug top damaged.	Restaurant worker placed metal basket on top of fridge and contacted exposed parts of the adjacent plug top.	Worker received electric shock to hands.	Electrical worker replaced plug top.

[Welcome New Auditors]

We at the OTR would like to welcome William Britcher and Brett McDowell to the Electrical auditing team.

William had been working for Laser Electrical Magill as an Electrical Supervisor, managing Commercial and Industrial electrical installations. He then worked for McMahon Services Australia as a Senior Electrical Supervisor within the Construction and Demolition industries.

William enjoys motorcycling, camping and all things science related.

William is very excited to be working with and learning from like-minded people in his new role as an Electrical Technical Standards and Safety Officer with the OTR.

Brett began as an apprentice with FR Mayfields and remained there for 16.5 years. He progressed into a supervisor role experiencing many different projects throughout Australia, from car manufacturers, mine sites, water and wastewater projects, defence projects and commercial projects. This included one year as an ISV operator on the Maralinga Rehabilitation project turning radioactive waste / debris into man made rocks.

Brett then moved into a site supervisor/ manager role with Nilsen SA Pty Ltd working on mainly commercial projects from the RAAF base Edinburgh upgrade, SAHMRI, AMNS, NRAH, DSTO Edinburgh explosives facility, Uleybury Solar Farm and many other smaller projects.

This then took Brett to DECON as a site supervisor focussing mainly on HVAC installations.

Together they bring a huge wealth of experience and knowledge from different facets of the electrical industry and are keen to help develop many parts of the industry.

Mechanical Protection

As the popularity of battery installations increases, there becomes a higher demand to install wiring and equipment in areas that require additional mechanical protection to prevent damage from persons or vehicles.

The installer needs to make an assessment to what level of mechanical protection shall be provided.

Is it down the side of a home where nothing will ever hit it?

Is it in a workshop where materials may be swung into it?

Or is it in the back of a carport/garage where a car can directly hit it?

All these scenarios will require a different assessment. Guidance for mechanical protection is given in AS/NZS 3000:2018 Appendix H.

In some cases, where very heavy impact or extremely heavy impact can be expected, and it is not possible to protect the wiring system or equipment by location, an engineered mechanical protection system will be required.

Issues may arise when these methods of mechanical protection are installed incorrectly. For example, if a bollard is installed with fixings that are not capable of withstanding the specified mechanical tests, vehicle impact may result in the mechanical protection system damaging the wiring or equipment.



[This figure shows a bollard that has been pushed into a battery from a vehicle impact. The battery could be pierced, resulting in shock and/or fire.]

AS/NZS 5139:2019 Restricted Locations

AS/NZS 5139:2019 clauses 4.2.2.2 and 5.2.2.2 state that either a 'pre-assembled integrated battery system' or 'pre-assembled battery system' shall not be installed within 600mm of any hot water unit, air conditioning unit or any other appliance not associated with the battery system.

If a solar inverter is located within 600mm of the battery system and delivers charge to the battery, it may be considered associated.

Proposed Standards Update

AS/NZS 3000 Wiring Rules

Amendment two is currently available for public comment (closes on 17/11/20), this is your opportunity to provide feedback on the proposed changes, log on to Standards Australia to download the amendment two draft.

Some of the proposed changes in Amendment Two include::

Clause 8.3.10 Operation of RCD's.

The Australian exception will be removed, therefore in every situation (where an RCD is installed) the RCD will be required to be tested to ensure its correct operation.

Clause 2.6.2.2 Types of RCD.

Type AC RCD's will not be allowed to be installed (phased in over 2 years) we are moving to Type A RCD's – these RCD's ensure tripping for alternating currents **and** pulsating direct currents.

Clause 2.6.3.2.5 Alterations to installations and replacement of switchboards.

"For domestic and residential installations, socket outlets, electrical equipment and luminaires added to an existing final sub circuit shall have RCD protection installed at the switchboard."

This is a significant change, currently you can install additional luminaires to an existing final sub circuit without providing RCD protection. Any additional socket outlets on an existing final sub circuit only require RCD protection from the commencement of the new cable. In both these examples RCD protection will be required to be installed at the switchboard.

Clause 2.6.3.2.6 Repairs

"The installation of an unswitched socket outlet at an existing lighting point, located

in a roof space or at a height greater than 3 metres above the ground, floor or platform and specifically for the connection of a replacement item of electrical equipment such as a luminaire, fan or smoke alarm is deemed a repair and does not necessitate the retro fitting of an RCD on the circuit."

This will allow the installation of a plug base to replace a junction box on an existing lighting circuit to facilitate plugging in a replacement luminaire.

Clause 4.3.1 Connection of electrical equipment

"Electrical accessories complying with AS/NZS 3105, AS/NZS 3122 or AS/NZS 3199 shall not be used to connect equipment wiring to installation wiring where the location is not readily accessible."

The products standards have never allowed the practice of using extension cords and double adaptors to "wire up" luminaires and other electrical equipment in a roof space, this additional clause now prohibits it in the Wiring Rules.

These are the main proposed changes for Amendment Two, download the draft when it is released and have your say.

There are new versions of these standards that are being produced:

AS/NZS 3001.1 Transportable structures and supply arrangements, Part 1: Site supplies for transportable structures and vehicles

AS/NZS 3001.2 Transportable structures and supply arrangements, Part 2: Transportable structures and vehicles

AS/NZS 3002 Shows and carnival events

Public Comment on these three standards have closed, they will be published later this year or early 2021.

Smart Meter Requirements

A smart meter is an advanced, digital meter which records electricity usage every 30 minutes and sends usage information remotely.

It must also meet the minimum services specification, as per the National Electricity Rules (NER).

The minimum services specification sets out a list of services that a meter must be capable of providing, including (but not limited to) the remote de-energisation and re-energisation of the smart meter, rather than focusing on the technical components that must be included (such as the number of elements).

Often, these technical components are left to others to determine, as well as other national standards that industry must comply with (for example, AS/NZS 3000 which details the Wiring Rules).

The installation, maintenance and management of electricity meters was

the responsibility of the Distribution Network Service Provider, SA Power Networks (SAPN) prior to 1 December 2017. The responsibility was then transferred to a new Participant – a Metering Coordinator (MC), as part of the AEMC’s final rule. In addition, retailers are now required to appoint an MC for their customers, unless the customer has appointed an MC themselves.

In South Australia, roughly 4,000 smart meters are installed each month. This can be for a variety of reasons, such as the customer having a new solar photovoltaic (PV) system installed.

Often, a new smart meter is wired in the lowest cost manner and the installation process includes aggregating all distributed solar generation at the site, together with the customer’s general load. Customers with controlled load have this controlled load separated from other essential load, however, in general, load associated with smart appliances is aggregated with essential load.

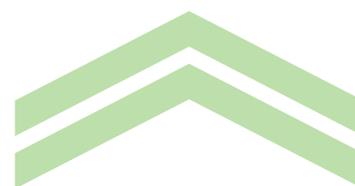
From 28 September 2020, a meter installed at a connection point must be capable of separately measuring and controlling an electricity generating plant and controllable load from the essential load.

Installation requirements

The meter installation is required to comply with the [Technical Regulator Guideline–Smart Meter Minimum Technical Standard and associated Deemed to Comply Wiring Arrangements \(PDF 1.1 MB\)](#).

The guideline specifies the ‘Smart Meter Minimum Technical Standard’ and the ‘Deemed to Comply Wiring Arrangements’, which is applicable to Metering Coordinators, Metering Providers and Electrical Contractors.

For further enquiries, please email otr.smarterhomes@sa.gov.au



OTR electrical expiations issued since the last edition of Regulation Roundup

Person	Non-Compliance	Breach	Expiation Fee + Levy
Contractor	Non-compliant work performed temporarily relocating PV array cables during building modifications	Section 61 (1) (a) Electricity Act 1996	\$375
Contractor	Ongoing repeated non-compliance - installation of new battery installation	Section 61 (1) (a) Electricity Act 1996	\$375
Contractor	No MEN connection in main switchboard after solar system installation	Section 61 (1) (a) Electricity Act 1996	\$375
	Examinations and tests not fully carried out as required	Section 61 (1) (b) Electricity Act 1996	\$375
Unlicensed person	Non-compliant electrical work performed by an unlicensed person on a domestic switchboard	Section 61 (4) Electricity Act 1996	\$375
Contractor	Examinations and tests not fully carried out as required - upgrade of domestic switchboard	Section 61 (1) (b) Electricity Act 1996	\$375
Contractor	Multiple breaches identified including no RCD protection on a power circuit	Section 61 (1) (a) Electricity Act 1996	\$375
Contractor	No MEN connection in main switchboard after upgrade	Section 61 (1) (a) Electricity Act 1996	\$375
Contractor	Unsafe installation of generator into main switchboard	Section 61 (1) (a) Electricity Act 1996	\$375

A total of 10 Owner/Occupiers were expiated for failing to ensure a compliant and safe electrical installation Under Section 60 (1b) of the Electricity Act 1996



[DIY Gas Installation]

Here is an example of DIY installation work on a gas Hot Water Heater (HWH). From the work pictured, no experience or understanding of the Standards is evident. Incorrect materials are often sourced at the local hardware store whilst ignoring those warning signs to have plumbing, gas or electrical work done by appropriately licensed tradespersons..

Appliances are often placed at the most convenient location to allow easy connection of the water and gas services without any understanding of installation and material limitations or technical requirements that impact on safety.

In many DIY installations, appliances end up being installed with incorrect materials, in prohibited or non-compliant locations and not commissioned correctly so warranties and insurance obligations are often invalidated because there is no certificate of compliance from a licensed contractor. In some cases, the installations are dangerous and need to be immediately isolated to make safe.

If you encounter this type of work, it is best to photograph the install and discuss the install with your client, if it is immediately or potentially dangerous then isolate and make safe, don't forget to tag the appliance and complete an immediate dangerous report (IDR).

On occasions there may be a need to temporarily install an appliance while development, (demolition and construction) occurs. This work must be done by an appropriately licensed contractor who must issue an eCoC to cover the work. Be sure to identify the work as temporary installation expected from X period to Y period.

If the appliance is installed temporarily then a risk assessment should be performed where the method of installation deviates from the manufacturer or AS/NZS 5601 gas installation standard. You may need to provide protective measures such as capping or bollards and railing to protect pipes from traffic or exposure to UV as a performance-based measure on temporary services.



Did you know?

Some household soap detergents may contain Ammonia. Using these detergents to make up soapy water to test joints and connections can cause irreversible damage to materials such as Brass and Bronze (both alloys of copper). Brass and Bronze are both porous and the longer they are in contact with and Ammonia solution, the greater the danger of deep

penetration of both water and Ammonia into the body of the material which will cause the fitting to fail. Always make a point of washing the fitting down with clean water after testing with soapy water / detergent solutions. Washing the pipe with water prevents stains which do not look good.



Reaction of Copper and Brass when Ammonia and moisture are present.

3.10 METHODS OF LOCATING GAS LEAKS

A non-corrosive soap and water solution or leakage detection fluid applied externally or other suitable *gas* detecting equipment or means shall be the only methods used to locate a *gas* leak. Matches, candles or any other *ignition source* shall not be used.

CAUTION: THE AMMONIA PRESENT IN SOME SOAPS AND DETERGENTS CAN REACT WITH BRASS FITTINGS AND CAUSE SUCH FITTINGS TO CRACK AFTER A SHORT PERIOD OF TIME. THEREFORE, CAUTION SHOULD BE EXERCISED WHEN USING SOAP SOLUTIONS ON BRASS FITTINGS AND ALL CONNECTIONS SHOULD BE RINSED THOROUGHLY WITH FRESH WATER AS SOON AS POSSIBLE AFTER THE APPLICATION OF THE SOAP SOLUTION.



Manufacturer's instructions

When type A gas appliances are certified by Certification Assessment Bodies (CABs), the operating and installation instructions are assessed as well. Instructions must accompany each certified type A appliance sold and generally they are packaged with the appliance.

Gas appliances in Australia must be installed to the manufacturer written instructions and the requirements of AS/NZS 5601. The manufacturer instructions will generally advise the installer how and where the appliance can be installed and provide any safety warnings.

Manufacturer's instructions generally advise the installer how to commission and test the appliance to ensure safe operation and warranty coverage. You may have installed a particular model of appliance many times and read the instructions the first time you installed that appliance. Contractors are advised to periodically reassess manufacturer instructions as they have been known to change.

Some information contained in manufacturer installation instructions may include:

- Minimum operating pressure required at the appliance inlet (commissioning)
- Burner pressure (commissioning)
- How to adjust by-pass (commissioning)
- Conversion to another gas, which includes re-labelling the appliance for the new gas
- Flueing methods
- Location of flue terminals
- Ventilation requirements
- Distance and clearances to combustible materials
- How to secure the appliance
- Materials the appliance can be supported on
- Method of gas connection, e.g. flexible gas hoses not to be used
- Stillage testing requirements and recommended sample points.

Manufacturer's instructions may differ between different brands, don't assume that all cook tops can be installed using a flexible hose because the last one allowed this, if the appliance wasn't certified for use with a hose, then a hose cannot be used. If you are in doubt if a hose can be used, ring the manufacturer and ask for clarification preferably in writing.

During auditing, the OTR checks to see if appliances are installed to the manufacturer and AS/NZS 5601 standards, i.e. if adequate supporting methods have been used, checking the gas supply and working pressures are satisfactory and that the location of appliance is correct amongst other numerous compliance requirements.

Don't get caught out by familiarity, read the instructions periodically and install the appliance as specified.

All gas appliances must be commissioned to the manufacturer's instructions, the minimum gas pressure at the appliance test point is 1.13 kPa for NG and 2.75 kPa for LPG. The eCoC for this install stated the appliance was commissioned. The commissioning test point is located under the manufacturer red tape seal which was unbroken so how was the appliance pressure taken?



[Does your gas installation comply with Over Pressure Protection (OPP) requirements?]

Are you confident that you have designed gas services to protect gas equipment from being exposed to pressures above their design ratings? There are clauses within AS/NZS 5601 to protect pipework, components and appliances from excessive pressures. Ask yourself, if a pressure control regulator fails, will everything downstream operate safely when subjected to increased fault pressures?

The OTR has investigated an incident where a service regulator designed for second stage operation with a maximum operating pressure (MOP) of 800 Kilopascals (kPa), was incorrectly installed as a first stage pressure regulator drawing vapour from a LP Gas tank. Propane cylinder and tank supply pressures typically range from 450 – 1600 kPa depending on the ambient temperature.

The service regulator operated satisfactorily while ambient temperatures were under 25°C. Once the temperature increased beyond this, the regulator was exposed to cylinder vapour pressures above the MOP of the regulator.

As a result, the regulator failed resulting in significant over pressurisation of the consumer installation. The occupant sustained significant injuries while investigating why their cooker was leaking high pressure gas through the burners and controls when the controls were turned off.

The occupant required hospitalisation for significant burns to their body and lungs when the expanding plume of leaking gas ignited from an adjacent ignition source. The appliances were extensively damaged and written off due to over pressurisation and fire damage.

A chart showing LP Gas cylinder / tank vapour pressures for various ambient temperatures has been included in this article.

To achieve over pressure protection (OPP) in 2 stage LP Gas installations, pipework and components up to and including the first stage regulator should be designed to withstand vapour pressures up to 2600 Kilopascals (kPa). Any component not designed for 2600 kPa is likely to be unsuitable and should be avoided. Refer to AS/NZS 1596 for the requirements for high pressure pigtailed and first stage regulators.

Now that the first stage regulator and high-pressure pigtail connection/s have been selected based on certification, pressure rating, demand, component flow capacity and AS/NZS 5601 requirements, the next step is to select appropriate components for the first stage fitting line and the second stage regulator.

To do this, you will need to know what maximum fault pressure will be delivered to the installation if the first stage pressure regulator were to fail. The regulator manufacturer will be able to provide these details if asked. For first stage pressure regulators with high capacity internal relief as OPP, delivering 70 – 140 kPa normal operating pressure, this fault setting may typically be in the range of 210 – 280 kPa.

In that situation you will need to ensure all pipe work, fittings and the second stage regulator, MOP's are all rated above the maximum potential fault pressure delivered by the first stage regulator, to meet the OPP requirements. If the MOP of components do not exceed the fault pressure, then either source a higher pressure rated component, or you will need to provide additional OPP.

When it comes to connecting gas appliances, you will need to know the Appliance Pressure Rating (APR), because if the second stage regulator fails, the appliances may need additional OPP from the default pressure offered by the second stage regulator where this is higher than the appliance can safely tolerate.

The default fault pressure of a second stage regulator is subject to the regulator design, and supply pressure to that regulator being within specified limits. The manufacturer of the regulator can provide these details upon request. Knowing the APR of gas appliances and the second stage regulator fault pressure, you can determine whether additional OPP is required to protect the appliances.

What OPP should you select? You do have options;

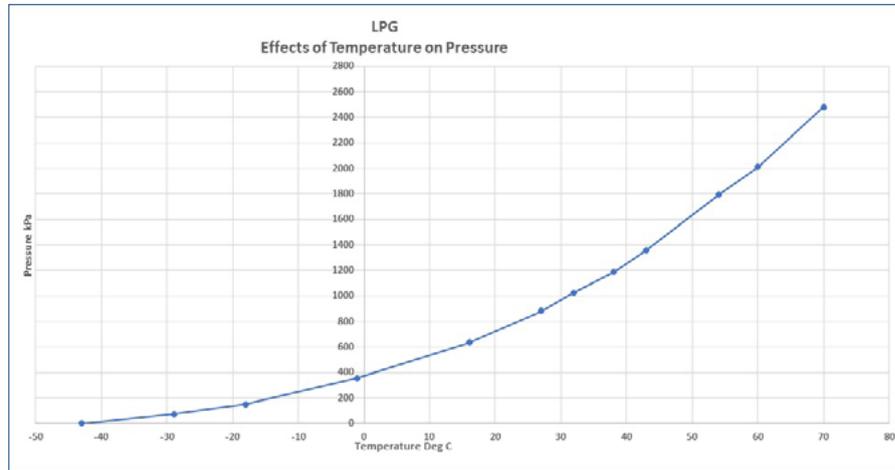
1. Select components and appliances that are rated to the potential fault pressures they may be exposed to, or
2. Add additional regulators into your design to step down the pressures in stages to meet with OPP requirements, or
3. Include an isolation valve, filter and an Over Pressure Shut Off device (OPSO) sometimes referred to a slam shut to isolate the gas supply to downstream equipment when the operating pressure encroaches a set value.

The steps to design a gas installation to ensure adequate OPP are the same for LPG as they are for NG. For NG installations, the network operator, will provide the fault pressures from the meter set, known as the Emergency Over Pressure (EOP).

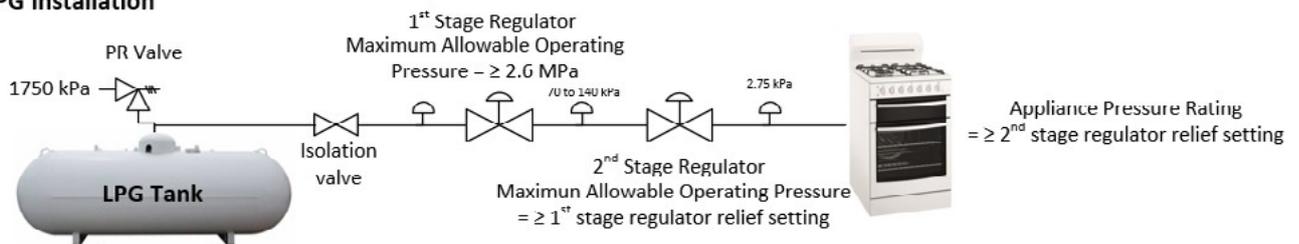
For more information on maximum allowable pressures, over pressure protection, rated working pressures, maximum operating pressure, appliance pressure rating, requirements for regulators refer to AS/NZS 5601.1 clauses; 1.8.72, 1.8.73 1.8.81, 1.8.96, 2.4.9, 5.2.1, 5.2.2, 5.11.1.1, 5.11.2, 5.11.2.2, 5.11.1.5.



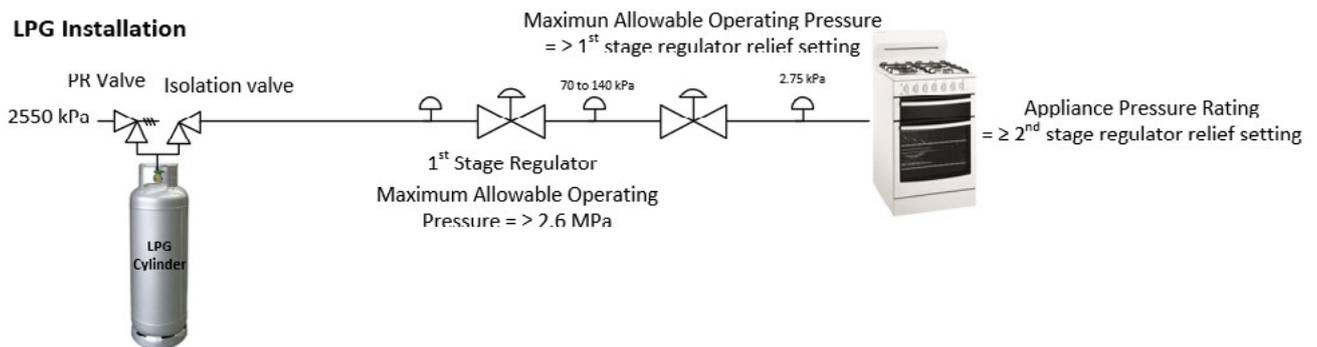
[Does your gas installation comply with Over Pressure Protection (OPP) requirements? ...]



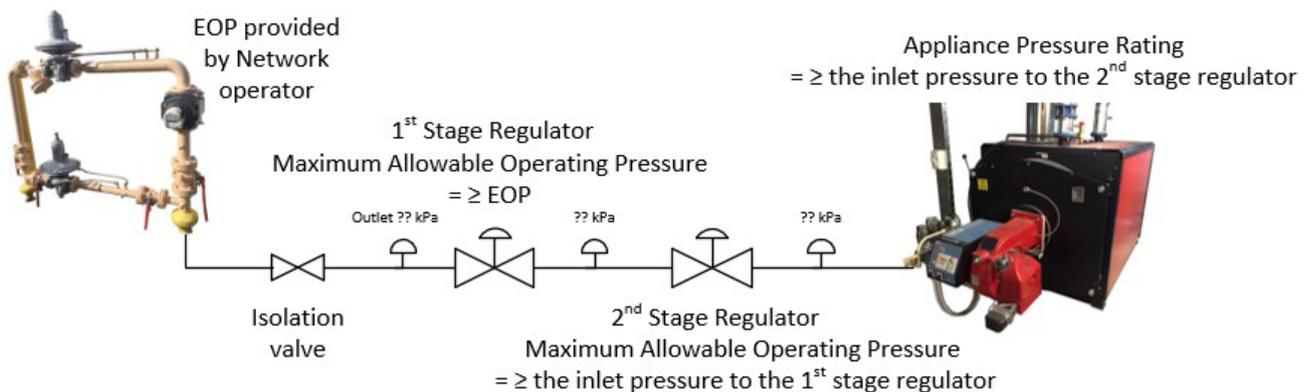
LPG Installation



LPG Installation



NG Meter set



Ventilation and gas consumption requirements for flueless space heaters in residential premises

Safety restrictions apply in AS/NZS 5601 to flueless heaters, they must not be installed in bedrooms, bathrooms, toilets, saunas or spa rooms.

It is mandatory for upper and lower ventilation from outside to be provided into the room heated by flueless heaters. Free area ventilation must be provided at the rate of 1000mm² per hourly megajoule rating (MJ/hr). This means an 18 MJ/hr heater requires 18000mm² of free area ventilation for each of the upper and lower vents. Reference AS/NZS 5601.1 – 2013 gas installation standard (The Standard) Appendix N3.2.1

The minimum dimension of any free ventilation opening slots is 6mm to minimise linting.

The input rating of flueless heaters must be sized according to the room volume they will be used in and capped at a maximum gas consumption of 18 MJ/hr, (25MJ/hr for some exempted LPG models). Details are provided in The Standard clause 6.10.6.3 and Table 6.11.

This clause states thermostatically controlled flueless heaters are allowed up to 0.4 MJ/hr gas consumption per cubic meter of room volume and non-thermostatically controlled heaters are allowed up to 0.2 MJ/hr per cubic meter of room volume.

Flueless Gas Heater Manufacturer's label their appliances to indicate the minimum room volume that the appliance to be installed / operated in. Alternatively, the formula below can be used.

To work out the maximum input rate of a flueless heater for a room, calculate the room volume in m³, i.e. (length x width x height = Room volume in m³) go to Table 6.11 and use the corresponding factor 0.4 for thermostat controlled heaters, or 0.2 for non-thermostat controlled heaters and multiply the factor by the room volume and it will give you the maximum gas consumption allowed for that room (note maximum gas consumption is capped at 18 MJ/hr for natural Gas heaters and up to 25 MJ/h for exempted LPG flueless heaters).

If you install a bayonet point for a future flueless heater and the heater size is unknown, the room must have the maximum upper and lower ventilation openings installed as per Appendix N, N3.2.1. The vents must contain 25000mm² each of free area vent opening to outside. Outside means any one of the following, through an outside wall but offset, into a cavity ventilated to outside, into an underfloor space ventilated to outside or into a roof space ventilated to outside.

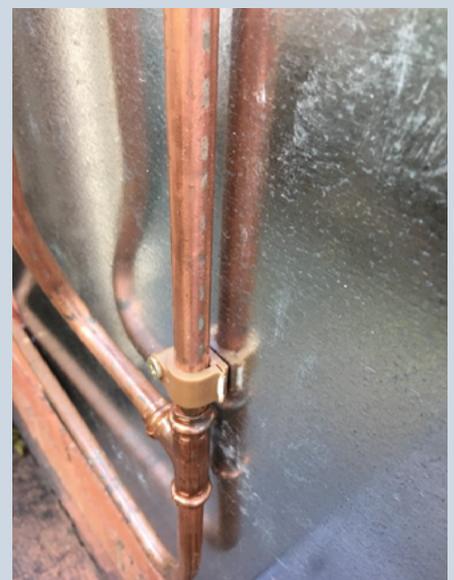
Galvanic corrosion protection

Galvanic corrosion (also known dissimilar metal corrosion) is an electrochemical process in which one metal corrodes preferentially when it is in contact with another. When penetrating or attaching copper tube to galvanised sheet iron please ensure to protect the pipe from potential effects of galvanic corrosion.

For pipe penetrations use silicon seal or a grommet to protect the pipe and when attaching copper to the surface of the sheet iron use suitable plastic clips that separates the pipe from the sheet.



[Non-compliant pipe bracket.]



[Compliant pipe bracket.]

[Composite Capers]

Composite pipe has temperature, pressure and environmental limitations which may restrict the use of this material. Unfortunately, not all gas contractors think about this when they install composite systems.

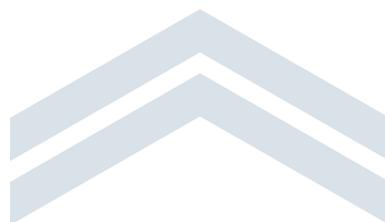
As a result, we see installs with no reversion fittings, inadequate protection for UV or mechanical damage and composite pipe systems have been found in environments exceeding the material temperature limitations at either 60 or 80 degrees Celsius. OTR inspectors have also witnessed mixing of proprietary brand fittings in composite pipe installations because fittings were not available.

Mixing proprietary brands is strictly prohibited as pipes, fittings and jointing specifications / hardware are different and by adding components from other proprietary systems you invalidate warranties offered manufacturers. This means that the installer becomes responsible for material failures because of unauthorized application.

The photos below show an installation where foam insulation was used for sleeving the composite pipe which is totally inadequate. As can be seen the sun's UV breaks foam insulation down causing it to fail and expose the composite pipe.

Composite pipe exposed to sunlight results in UV degradation to the outer Polyethylene (PE) yellow layer which is there to protect the Aluminum layer from corrosion. The yellow PE has faded to white and becomes brittle and cracks, if let long enough the outer layer falls off. Now the gas contractor is responsible to replace the UV because he did not install it correctly in the first place.

It can be argued that foam insulation is not fit for purpose as it breaks down in the sun. Protective sleeving must be fit for purpose and the sleeving should have ID markers to identify gas piping is contained within.



Hot Water Heater Installations

Hot water heaters (HWH) should be a relatively simple appliance to install in a compliant manner. The following examples show that some contractors have great difficulty in reading instructions or following the requirements of AS/NZS 5601. In this article we show some examples of what not to do when installing external water heaters.

Enclosed Areas

Installing a Continuous Flow Hot Water Heater in an enclosed veranda is prohibited and potentially dangerous. If you look hard you will see the plastic café blinds all closed. Combustion products can build up and be recycled back into the appliance causing vitiation as the Oxygen content is reduced.



At Heights

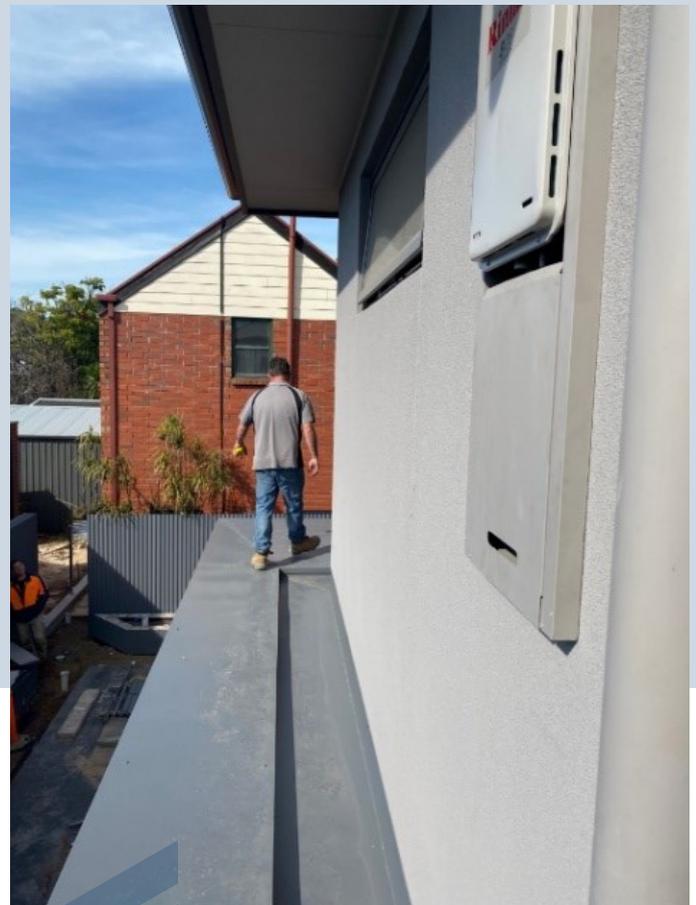
Water heaters are still being installed in non-compliant locations on new builds and house refurbishments by some tradies who claim they are just following design instructions issued on plans by architects, hydronics engineers and design consultants. Just because the appliance location is marked on a plan, that does not mean that it is correct.

Gas contractors and workers should all know the appliance manufacturer and AS/NZS 5601 installation requirements. They should be particularly familiar with height restrictions and prohibited locations for certain hot water heaters. Anything greater than 2.5m above the ground must be avoided in single residential premises.

The photograph below provided shows a water heater installed on the second storey wall above a parapet ledge on a new build. There is no permanent means of access, balustrading nor is there any fall protection. On single residential applications this arrangement does not comply and must be avoided.

If you see that a water heater is located in a non-compliant location on a house plan or see pipe tails high up a wall at first fixing stage then immediately contact the builder and discuss alternative compliant locations, if you cannot reach a resolution refer the builder to the OTR.

In applications other than single residential premises, the provisions of clause 6.3.13 must be met where the appliance is installed on a roof, wall or elevated structure.



Hot Water Heater Installations cont...

Underground

We thought we saw it all, but there is always another installation that tops all others and leaves you wondering? The pictured installation of an external model storage HWH under a building slab in a sealed basement without ventilation is just dangerous. It should never have occurred in the first place.

The correct appliance type for this location would have been an internal model fan assisted room sealed HWH which sources air from outside via the co-ax flue and discharges combustion products to outside atmosphere via the coaxial flue.

Room sealed gas appliances cost more but, in some instances, they can save on installation costs and the risks associated with conventional flueing and ventilation. In this case there was no basement ventilation which added to the risk of containing potential gas leaks and the buildup of Carbon Dioxide when occupied for any length of time.

In this case the OTR recommended the relocation of the existing appliance outside, or replacement of the HWH with an internal model, room sealed appliance flued to atmosphere and some basement ventilation to maintain indoor air quality. A combustible gas detector was also recommended to alarm in case a gas leak occurred.



[Poor pipe termination = gas leaks]

The OTR has received reports from network operators regarding gas leaks on the outlet standpipe risers which have emanated from gas contractors not preparing their terminations properly. The following photos show the steel outlet standpipe with rough cut, machine deburring. This creates sharp leading edges which pierce into the 25 mm Kinko rubbers resulting in outlet standpipe connection leaks gas within months of operation. Pipe ends should be deburred and filed smooth so there are no swarf or sharp edges.

Meter connections should not be overtightened to seal particularly if already leaking as the nuts are only plastic. If an 'O Connection' / outlet standpipe joint leaks, isolate the gas, disassemble the joint and fit a new Kinko rubber, check that there are no burrs or

sharp edges on the standpipe and that the end has a straight smooth cut. Push the Kinko rubber down so that it sits level and bedded before tightening the black plastic nut and don't forget to test the installation for soundness when you have completed the repairs. Contractors stand to lose their accreditation if they repeatedly offend as network operators keep records.





Plumbing Bulletin

Office of the Technical Regulator

Interactive Water Features

Plumbing Advisory Note

July 2020

The aim of this Advisory Note is to clarify the requirements for the connection of Interactive Water Features to an on-site drinking water service.

Requirements for Interactive Water Features

Interactive water features (IWFs) commonly referred to as water play features, spray parks, or splash pads have grown in popularity in recent years and now feature in many parks and playgrounds across South Australia. The Department for Health and Wellbeing have produced a detailed fact sheet providing guidance on how IWFs are designed, managed and maintained so that they can be safely enjoyed. Refer to the web site for a copy of the fact sheet. www.sahealth.sa.gov.au

The Office of the Technical Regulator (OTR) regulates the installation of pipework connected to the IWF including the installation of the backflow prevention devices.

Plumbing Installations

All plumbing installations must be carried out by appropriately licensed Plumber who is required to book the work in for auditing with the Office of the Technical Regulator or Local Government. Where a IWF is connected from a Network Utilities Drinking Water Supply a hydraulic design must be submitted to the Office of the Technical Regulator for assessment. otr.hds@sa.gov.au

- > [Hydraulic Design Submission Form](#)
- > IWF appliances are recognised as end of line equipment requiring a backflow device to protect the drinking water system. All plumbing pipework and equipment supplying water to these water features must be Watermarked.
- > A warning or prohibition sign compliant with *AS/NZS 3500.1 Clause 9.7.2* shall be installed at every outlet of a IWF.

Legislative Requirements

The National Construction Code Volume Three Part B1 sets out the requirements for the installation requirements for Cold Water Services.

AS/NZS 3500.1 is the “deemed to satisfy” standard which contain sections on installing Cold Water Services including backflow prevention devices.

Backflow Prevention

- > The installation of a high hazard Reduced Pressure Zone Backflow device (RPZD) is required to be installed on the dedicated water supply branch to the IWF to protect the on-site plumbing drinking water system from contamination. No branches shall connect to the pipework between the testable backflow prevention device and the water feature.
- > Testable backflow prevention devices must be commissioned by an appropriately licensed plumber and a copy of the commissioning, inspection and maintenance report and Certificate of Compliance must be forwarded to the owner/occupier of the facility and to the Office of the Technical Regulator within 7 days of completing the installation.
- > All testable devices are required to be retested annually with the test results forwarded to the owner and the Office of the Technical Regulator within 7 days of completing the retest.
- > Tanks supplying water to IWF's shall only be installed above ground and shall comply with AS/NZS 3500.1 Section 8.



[Typical hand pump interactive water feature.]



[Below ground sump supplying interactive water feature not approved.]

Summary:

- Submit a hydraulic design for the water feature including backflow prevention and signage details
- Book an audit with the OTR when the work is completed
- Issue a Certificate of Compliance to the owner of the property
- Electronically submit the commissioning, inspection and maintenance report for the backflow prevention device.

Office of the Technical Regulator

Fire sprinkler systems

Plumbing Advisory Note – July 2020

Requirements exist which are specific to the installation of fire sprinkler systems.

The requirements apply when installing fire sprinkler systems to Technical Specification FPAA101D (Automatic Fire Sprinkler Design and Installation-Drinking Water Supply) for buildings that are less than 25 m in effective height and contain Class 2 and 3 parts

Installers of FPAA101D Systems should refer to the FPAA101D Technical Specifications and the National Construction Code.

Background

The FPAA101D sprinkler system is supplied from the building's drinking water supply system. Each floor has a branch isolating valve that feeds both the drinking water and sprinkler system (and toilets).

The sprinkler system and toilets are connected downstream of a residential non-testable dual check backflow prevention device (DUAL-CV). The maximum length of any branch servicing a sprinkler head shall be no more than 3 m in length.

Design requirements

A hydraulic design submission must be lodged with the Office of the Technical Regulator (OTR) prior to the installation being carried out.

The design criteria must be hydraulically designed in accordance with FPAA101D .

It must be installed to achieve the simultaneous water supply flow demands of the sprinkler system and the toilet fixtures connected to the system. For more information, refer to Clause 4.2.3 of the FPAA101D technical specification.

Legislative requirements

The *National Construction Code* Volumes One and Three make reference to:

- FPAA101D Automatic Fire Sprinkler System Design and Installation Drinking Water Supply
- FPAA101H Fire Sprinkler System Design Installation Hydrant Water Supply.

Installation requirements

Water services

The water services component of a FPAA101D fire sprinkler system installation, including the connection from the isolation valve to toilet fixtures, can only be carried out by appropriately licensed plumbers.

The plumber must book an audit for the water services component with the OTR (refer to the diagram below).

Fire protection

The installation of the fire protection component of this system can be carried out by a registered sprinkler fitter.

The installation of the fire sprinkler service pipework and associated sprinkler heads are not regulated by the OTR. This part of the system does not need to be booked in for auditing.

Isolation valves

The fire sprinkler/drinking water isolation valve installed on each floor must be a quarter turn, lever operated type where the lever position indicates the direction of flow. The lever must be locked in the open position with a 003 padlock.

A DN15 locked off shut dump valve must be installed immediately downstream of the DUAL-CV to facilitate de-pressurising the installation if required.

A permanent or temporary pressure gauge must be installed for obtaining a pressure reading while performing the water supply proving test.

Materials and Products

All material and products installed on FPAA101D sprinkler systems must be WaterMarked in accordance with Part A2 of the *Plumbing Code of Australia*.

Refer to FPAA101D Technical Specification for further details.

Commissioning and Testing

The commissioning of a FPAA101D sprinkler system must be carried out in accordance with Section 6 of the Specification.

Certification

The installer of the fire sprinkler pipe work and fire sprinkler heads must certify the FPAA101D Sprinkler System by completing an ESP Form 2 (essential safety provisions). Refer to regulation 76 of the *Development Regulations 2008* or regulation 94 of the *Planning, Development and Infrastructure (General) Regulations 2017*. The form must be provided to the building owner who must then forward the details to the relevant planning authority/council.

An electronic Certificate of Compliance (eCoC) must also be submitted for the plumbing component of the system. This eCoC must be issued to the owner/occupier of the building and the to OTR within 7 days of completing the water services work.

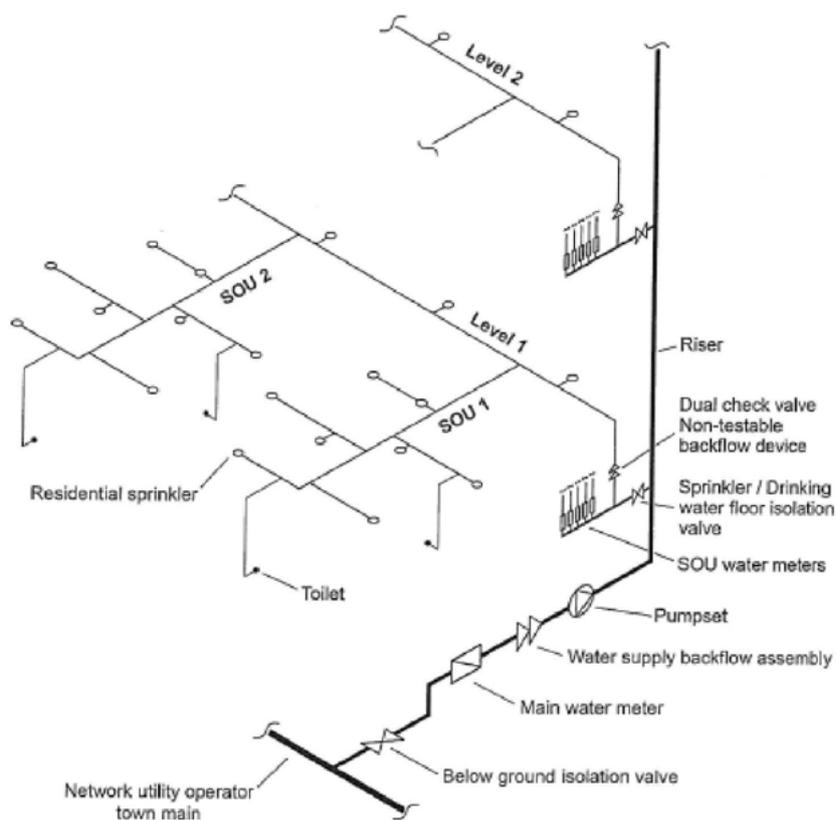


Figure 1 – Sample system diagram of an FPAA101D sprinkler system



Government of South Australia

[Standard for Dual Reticulation Infrastructure Published]

Following on the previous edition, the Standard for Dual Reticulation Infrastructure (the Standard) has been officially published in the Government Gazette on 9 April 2020.

The Standard and further information are available on the sa.gov.au website at the following location:

<https://www.sa.gov.au/topics/energy-and-environment/electrical-gas-and-plumbing-safety-and-technical-regulation/acts-regulations-and-standards/water-and-sewerage-acts-regulations-and-standards>

The purpose of the Standard is to prescribe the minimum requirements and responsibilities of all parties involved in dual reticulation infrastructure to ensure the safety and reliability of the water services provided to South Australian consumers.

Water industry entities have until the 30 June 2021 to adapt their processes. From this date, it will be expected that all new infrastructure will comply with the new Standard.

The Standard is not retrospective and will not apply to existing infrastructure. However, further work and repair on existing infrastructure is expected to comply with the Standard.

The Standard was developed in response to an increasing number of incidents and issues associated with dual reticulation supply in the State in recent years. The Office of the Technical Regulator (OTR) identified inconsistencies in industry practice between the various parties (i.e. developer, builder, plumber, water utilities), thus increasing the risk of incidents occurring.

In addition, dual reticulation developments are expected to increase, thus supporting the need for a solution to prevent further potential incidents. The Standard for Dual Reticulation Infrastructure provides a clear practice for industry to follow, removing the risk of misidentification of services and simplifying the responsibilities of each party.

The aim of the Standard for Dual Reticulation Infrastructure is to eliminate cross-connection incidents in dual reticulation supply, ensuring safe and reliable services to the community.





**Master
Plumbers**
SOUTH AUSTRALIA

PLUMBING *ROADSHOW*

SPECIAL EDITION

2020 UPDATES

- ▶ **NATIONAL CONSTRUCTION CODE VOLUME 3**
 - ▶ **AS/NZS3500 PLUMBING STANDARDS**
 - ▶ **LATEST INDUSTRY INFORMATION**
 - ▶ **FIRE SERVICES & BACKFLOW PREVENTION**
 - ▶ **ELECTRONIC CERTIFICATES OF COMPLIANCE**
 - ▶ **MANUFACTURER PRODUCTS**
-



[FROM THE OTR]

Roadshows provide the Office of the Technical Regulator (OTR) with the opportunity to support the Master Plumbers Association of SA Inc by providing important updates on regulatory matters which include amendments to the National Construction Code Volume 3 (Plumbing Code of Australia), AS/NZS 3500 Plumbing and drainage series as well as procedural/administrative matters.

Furthermore, Roadshows are an effective avenue for the Plumbing Industry to engage with the OTR and provide valuable feedback on, seek clarification and raise concerns with regulatory and technical matters.

Unfortunately, Roadshows scheduled for this year were not completed due to the advent of the Covid 19 virus however, Roadshows previously conducted in Mount Gambier, Port Lincoln and Port Augusta prior to the cancellation were a resounding success.

This year's topics included:

- OTR Plumbing Group overview
- National Construction Code updates
- New Plumbing Advisory notes
- OTR Administration procedures
- Enforcement procedures
- Part 1 Water Supply
- Part 2 Sanitary Plumbing and Drainage
- Part 4 Heated Water
- Fire Services & Backflow Prevention
- Certificate of Compliance update.

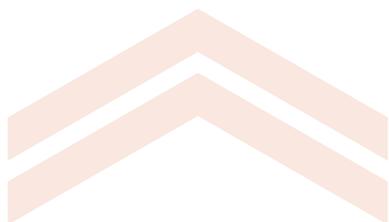
OTR Plumbing Group Overview

- Robert Beard–Manager of Plumbing Regulation.
- Mark Romaine–Plumbing Operations Coordinator.
- Mike Souvertjis–Senior Plumbing Installations Officer.
- Robert Knowles–Fire Services and Backflow Prevention Coordinator.
- Brent Slee–Regional Plumbing Installations Inspector.
- Carmelina Celentano–Senior Plumbing Compliance Officer.
- Greg Smith–Scheduler.
- Plumbing Installations Inspectors:
 - Todd Lewis.
 - Tim Pech.
 - Mark Stencil.
 - Josh Knight who will also conduct audits in the South-East.
- Rebecca Smith–Senior Administration Officer.
- Nina Matta–Administration Officer.
- Amanda Van Holt–Administration Officer.

Plumbing Enforcement

- Written warnings are issued for minor instances of non-compliant plumbing matters.
- Reinspection Fees of \$98 are issued when plumbing work must be re-inspected because it was either not ready at the time of inspection, covered over at the agreed inspection time or not compliant at the re-inspection despite clear instructions at the initial inspection.
- Enforcement Notices are issued for more serious offenses imposing a legal obligation to rectify non-compliant work within a specified period.

FROM THE OTR



[National Construction Code Volume Three (NCC)]



The NCC has been adopted by all States and Territories and will next be revised in the second half of 2022.

The 2019 series contains a new section Part B5 addressing mandatory requirements for cross-connection control and sets out cross-connection hazards and corresponding hazard ratings. The NCC is available free online by registering at www.abcb.gov.au. It is recommended plumbers download a copy to ensure they are kept up-to-date of the legislative requirements of the PCA.

Plumbing Advisory Notes

Several new Advisory Notes are available by logging on to sa.gov.au/plumbing_trades.

These include:

- Backflow for trade waste requirements
- Booking a plumbing audit
- Categories for audit bookings
- Changes to OTR audit notifications
- Floor waste gully sizing
- Tundish connections

From the OTR AS/NZS3500 Part 1 – Water Services

Fixing and supporting water services

One of the issues Plumbing Installations Officers are noticing when auditing the installation of water services is plumbers are installing grommets and silicone as clips on cold and hot water services. Pipes are to be installed to prevent lateral movement and securely attached to the building structure. This can only be achieved using an appropriate bracket, clip or hanger.

Grommets can only be used to separate pipework from the building structure. A

neutral silicone can be used to fill the annual space in studs not greater than 25mm. Plumbers must ensure there is 100mm separation between hot and cold-water services.

Chemical Dispensers

The NCC requires Chemical Dispensers to be Watermarked and have medium hazard rating for low toxicity applications and high hazard rating for high toxicity applications. If unsure contact the manufacture and ask for a copy of their certification.

Douche Seats and Handheld Sprays Adjacent Toilets

Douche seats and hand-held sprays installed adjacent toilets are required to be Watermarked. Most douche seats are required to be installed with a reduced pressure zone device (RPZ) on the water supply to the seat. All hand-held sprays installed adjacent to toilets must be installed with an RPZ on the water supplying the spray.



From the OTR AS/NZS3500 Part 2–Sanitary Plumbing and Drainage

The provision to use a self-sealing device such as a bladder grate, ping pong grate or grate seal as a method of controlling surcharge flood has been removed from AS/NZS 3500.2. These devices can still be used where there is a compliant overflow relief gully installed on the property.

Tundishes

There is a new clause requiring outlets from: refrigerated air conditioners, heat pumps, refrigerators, deep freeze cabinets, commercial coffee-making machines and ice makers to be connected to a tundish or self-sealing device.

Trade Waste

A wash-down tap must be provided up to 10m from the pre-treatment device (grease arrestor). A testable double check valve backflow prevention device is required to be installed on the water supply to the tap and a warning sign installed adjacent to the tap with the wording “NOT FOR DRINKING “.

Note:

SA Water has deployed a QR Code System to track the cleaning and maintenance of all pre-treatment devices.



From the OTR AS/NZS3500 Part 4 – Heated Water Services

Insulation

The insulating of pipework associated with the storage water heaters must comply with the respective Climate region in which they are installed as referenced in AS/NZS 3500. 4 Section 8 Energy Efficiency.

Circulatory Heated water systems

Class 2-9 buildings where a circulating heated water system is installed shall display water, fade and weather resistant diagrams that conform to the following:

- A diagram shall be permanently affixed in a prominent location adjacent to the circulation pumps.
- The diagram shall be not less than A3 in size and more than A1 in size.
- The diagram shall display a diagrammatic layout of the circulatory heated water piping and the water heater plant.

Certificate of Compliance Update

Following the introduction of the Electronic Certificate of Compliance, several enhancements have been introduced to assist plumbers with the process.

This includes the My Booking Tab which advises plumbers whether their job is scheduled for auditing and the name of the Plumbing Installations Officer allocated to the audit. For audits of Drainage, Fire Services, Trade Waste, Final Inspections, Relining Drains and Grey Water Installations, the plumber can check after 6pm on the working day prior to the audit and one hour before the audit for all other work.

Contact the OTR if you require further information on this Article on 08 8429 3827.



[Contact List]

Electrical Technical Advice

Office of the Technical Regulator

Level 8, 11 Waymouth Street, Adelaide
(Reception on Level 4)
Phone: (08) 8226 5518 (8:00am-4:30pm)
Fax: (08) 8226 5529
Email: otrmail@sa.gov.au

Gas Technical Advice

Office of the Technical Regulator

Level 8, 11 Waymouth Street, Adelaide
(Reception on Level 4)
Phone: (08) 8226 5722 (8:30am-4:30pm)
Fax: (08) 8226 5866
Email: otr@sa.gov.au

Plumbing Technical Advice

Office of the Technical Regulator

Level 8, 11 Waymouth Street, Adelaide
(Reception on Level 4)
Phone: 1300 760 311 (8:30am-4:30pm)
Email: otr.plumbenquiries@sa.gov.au
www.sa.gov.au/otrplumbing

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

Training

Gas

Master Plumbers Association

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

Gastrain

U1, 61-63 Tapleys Hill Road,
Hendon 5014
(PO Box 83, Royal Park 5014)
Phone: (08) 8447 7783
Phone: 1300 955 583
Fax: (08) 8447 7753
www.gastrain.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

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

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 Gas Distribution

Network Operator

Phone: 1300 001 001

[Additional websites for further information]

South Australian Parliament for Acts and Regulations

www.legislation.sa.gov.au

SafeWork SA

www.safework.sa.gov.au

Gas Energy Australia (formerly ALPGA)

gasenergyaustralia.asn.au

Australian Competition and Consumer Commission (ACCC)

www.accc.gov.au

Australian Gas Networks Ltd

(formerly Envestra)

www.australiangasnetworks.com.au

Elgas

www.elgas.com.au

Origin Energy

www.originenergy.com.au

Kleenheat

www.kleenheat.com.au

Australian Standards

<https://infostore.saiglobal.com/store/>

The Backflow Shop—new address:

27 South Road, Hindmarsh

www.backflowshop.com.au

Tomlinson Energy

26 Phillips Street

Thebarton SA 5031

www.tomlinsonenergy.com.au