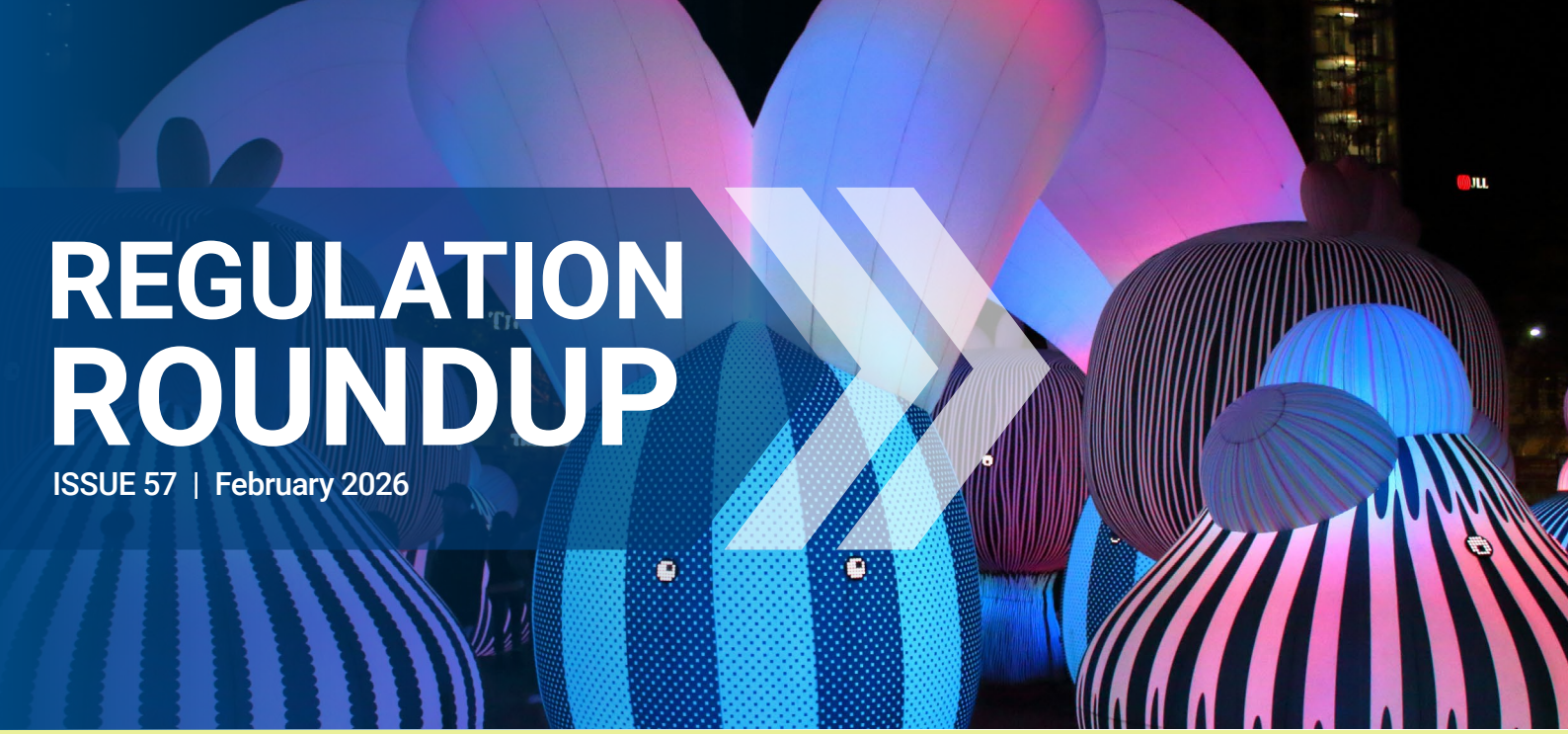

REGULATION ROUNDUP

ISSUE 57 | February 2026

A bulletin for Electrical, Gas and Plumbing industry workers brought to you by the Office of the Technical Regulator

IN THIS ISSUE

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 | (8:00am – 4:30pm)

Government of South Australia

be energy safe

www.otr.sa.gov.au

MESSAGE FROM THE TECHNICAL REGULATOR

Welcome to issue 57 of Regulation Roundup.

Once again, we have filled this edition with the topical issues that have come across our desks in the OTR. As we commence the new year, I note we have published the timetables for the next series of roadshows. While it is an investment in time, educational activities such as these can prevent the need for rework which in the end will be a far more expensive option. Ongoing upskilling and gaining knowledge is essential within the industry that we work within. The pace of change has never been greater.

I note that we have expanded the contribution from other participants in the industry which is pleasing to see as we can bring you a wider perspective of the industry.

I hope 2026 will be a great year for the industry.

We hope you get a lot out of this edition.

Robert Faunt, Technical Regulator

IN THIS ISSUE

CONTENTS

NECA SA/NT ROADSHOW SEMINAR SERIES IS BACK FOR 2026!

We are pleased to announce that the NECA SA/NT Roadshow Seminar Series is back in 2026! The seminars will be hosted in 14 locations across metropolitan and regional South Australia between March and May 2026.

We highly encourage all electrical contractors and their employees to attend to ensure they are up-to-date with the latest developments in the electrotechnology industry, with presentations including discussions on:

- NECA SA/NT: electrical licensing penalties, payday super, solar and environmental conditions, ChatTKB, and the NECA Awards Program.
- SA Power Networks: industry updates (including cable types of connections, identification of consumer mains, meter panel size, and changes to the certification process for eCOCs and ATCs), consumer energy resource updates (CER compliance, reviewing SEG/MEG thresholds, SWER changes, and electric vehicles), and improvements to online services.
- Office of the Technical Regulator: metering installer responsibilities, temporary power on construction sites, voltage drop, common breaches, electrical fire incidents, alterations and repairs, enforcement, and solar batteries.

Various suppliers, manufacturers, and wholesalers will be at each location with their product and service displays. NECA SA/NT staff will also be on hand to answer any questions in regard to how we can assist you and your business.

The dates and locations for the 2026 roadshows are as follows:

Date	Day	Location
2 March	Monday	Whyalla
3 March	Tuesday	Port Lincoln
11 March	Wednesday	Seaford
16 March	Monday	Wallaroo
17 March	Tuesday	Port Pirie
23 March	Monday	Naracoorte
24 March	Tuesday	Mount Gambier
29 April	Wednesday	Morphettville
4 May	Monday	Hahndorf
6 May	Wednesday	Victor Harbor
11 May	Monday	Barossa
12 May	Tuesday	Berri
18 May	Monday	Adelaide
20 May	Wednesday	Modbury

The seminars will commence at 4:30pm and conclude at 7pm.

Please be advised that the 2026 Roadshow Seminar Series is a Solar Accreditation Australia (SAA) accredited training course. By attending one of these roadshow seminars, you can obtain 20 CPD points, which is 1/5 of your annual requirements.

To register, please visit our Eventbrite page or scan the QR code. Please be advised that NECA SA/NT is now a CITB endorsed training provider. NECA SA/NT members with an eligible CITB number can attend the seminars for FREE by using a promo code sent via email on 16 February 2026. Non-NECA SA/NT members with an eligible CITB number can attend the seminars for a discounted rate – please contact the NECA SA/NT office via the contact details below for the promo code. Non-NECA SA/NT members can attend the seminars for $35 per person plus booking fees.

For further information, please visit the NECA SA/NT website via https://bit.ly/2026NECARoadshowInformation.
If you have any queries, please contact the NECA SA/NT office on (08) 8272 2966 or via neca@necasa.asn.au.

2026 PLUMBING & GAS ROADSHOWS

Master Plumbers
SOUTH AUSTRALIA

2026 PLUMBING AND GAS ROADSHOWS

MARCH

- ☐ **17th Tues - Port Lincoln**
  Ravendale Community Sport Centre, 40 Stamford Tce, Pt Lincoln
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CONSUMER AND BUSINESS SERVICES

New penalties for building industry

Major changes have commenced for South Australia's building and construction industry. These changes aim to protect and empower consumers, and ensure responsible and accountable business conduct, with increased penalties, new offences and additional enforcement options. The reforms follow a comprehensive review of SA's building and construction industry, with input from industry, government, and consumers.

Changes to Compliance and Enforcement

Those in the building and construction industry should be aware that the number of construction industry offences now fineable by CBS has significantly increased – with $5,000 fines for key breaches.

Maximum penalties have been raised to discourage builders and tradespeople from doing the wrong thing. Maximum penalties for repeat offenders are now $150,000 for individuals and $550,000 for companies.

There are also higher penalties for builders and tradespeople who give false or misleading information, break a contract or breach advertising laws.

New offences also exist for:

- unlicensed work
- hiring unlicensed subcontractors to undertake licensed work
- using another contractor's licence number
- falsely claiming to be licensed or registered.

A contractor or subcontractor's licence can be checked using CBS' Licensing public register.

BII insurance reforms

For further information please refer to the Building Indemnity Insurance website at www.bii.sa.gov.au.

Building inspector registration

Another reform area already consulted on is a new registration scheme for residential building inspectors. Mandatory registration would make sure their qualifications and experience meet appropriate standards. Consultation with key stakeholders took place between 14 November and 12 December 2025. The findings are helping consideration of the minimum requirements for registration to safeguard homeowners and industry workers while limiting the impact on building inspectors' administrative workload.

More information

For more information about building industry reforms, including a table of penalties, visit https://www.cbs.sa.gov.au/campaigns/south-australias-building-and-construction-industry-changes.

TAFE

LECTURER ELECTRICAL | TAFE SA

THE GROWING DEMAND FOR ELECTRICAL TRADESPEOPLE

The growing demand for electrical tradespeople is becoming increasingly evident in today's market. Our industry is currently experiencing a shortage of skilled and qualified workers. Addressing this escalating demand requires ensuring that a greater number of apprentices are trained to a high standard, both on the job and through their studies at trade school.

To support the best possible outcomes for learners, TAFE SA invests in its teaching staff by attracting highly qualified candidates with strong hands-on industry experience, supported by relevant educational qualifications and practical training. As apprentice numbers continue to grow, so too does the need to recruit additional qualified lecturers to educate and support these learners. TAFE SA is therefore seeking motivated and experienced lecturers to join its team at the Tonsley Campus.

So, what qualifications do I need to have to be a TAFE SA lecturer?

- Minimum 5 years industry experience
- Experience and up-to-date knowledge and understanding of the Electrotechnology Industry
- A broad range of experience is preferred, including across Commercial, Industrial, Domestic, Mining
- Current Unrestricted Electrical Licence
- Qualifications in the electrical area – Minimum Cert III Electrotechnology
- A Certificate IV in Training and Assessment (40116 or 40122) is desirable but not essential

If this opportunity interests you, please send your resume to ashley.clarke@tafesa.edu.au, and we will be happy to arrange a chat. TAFE SA is also seeking to recruit lecturers who already hold the required qualifications. If this applies to you, we also encourage you to submit your resumé to the same email address.

SA POWER NETWORKS

Upcoming Changes to eCoC and ATC Processes

From 1 June 2026, all new connections to the network will require a copy of an electronic Certificate of Compliance (eCoC) available on-site. Paper-based Authority to Connect (ATC) forms will no longer be accepted for new connections from this date.

For other application types, an updated version of the Authority to Connect (ATC) form will still be accepted, but previous versions of the form will no longer be valid. The updated ATC form will be available on the SA Power Networks website soon.

What are the benefits of these changes?

These updates are designed to make the connection process easier over time and improve compliance across the industry. Additionally, SA Power Networks is soon integrating eCoCs into the Portal, providing digital access to connection technicians. Once integration has taken place the benefits will include:

- Reduced reliance on paper-based forms.
- Faster submission and processing, saving time and streamlining workflows.
- Improved compliance aligned with regulatory requirements and industry best practice.

What is required from industry?

To ensure compliance, electricians and industry representatives will need to:

- Submit eCoCs and provide an on-site copy for all new connections from 1 June 2026.
- While use of eCoCs is preferred, the ATC form can be used for other application types. Notification will be sent when the updated form is available on our website.

How will these changes be communicated?

SA Power Networks will be sharing detailed information at the NECA roadshows throughout 2026. These roadshows are a great opportunity to learn more, ask questions, and prepare for the transition. Notification will also be sent once the updated ATC form is available on our website.

Reminder: Mark MEG Applications as 'Installed' in the Portal

At SA Power Networks, we are committed to ensuring the efficient and accurate management of Medium Embedded Generation (MEG) applications. However, we've noticed that a significant number of MEG applications remain in an 'Approved' status in our Portal, even though the installations have been completed on site.

We'd like to remind all installers that it is a requirement to mark every MEG application as 'Installed' via the Installations tab in the Portal once the system has been commissioned. This process is under currently review, and we are planning to introduce checks to MEG application status as part of our compliance program in 2026.

If you've previously submitted a MEG application in our Portal, we encourage you to please verify whether the installation has been marked as complete. This will help ensure your business is prepared for any upcoming compliance changes. We will publish more industry communications on this topic as the year progresses.

If you're unsure or need assistance, our Industry Enquiries team is here to help. You can contact us on 13 12 62 to check if you have any outstanding applications requiring attention.

Want to find out more?

Visit our website for more information about the updated ATC form and eCoC requirements.
www.sapowernetworks.com.au

MATES IN CONSTRUCTION

Supporting Mental Health and Psychosocial Safety Across Worksites and Offices

Mental health and psychosocial safety are essential components of a safe, sustainable workforce, whether on site, in offices, or across FIFO (Fly-In Fly-Out) and DIDO (Drive-In Drive-Out) operations. Long hours, demanding workloads, time away from family, isolation, tight deadlines, and ongoing pressure can affect wellbeing and increase risk if left unaddressed.

In high-risk industries such as construction, mining, energy, and manufacturing, these pressures are often seen as "part of the job". However, without the right support, they can increase the risk of mental ill-health, burnout, and serious harm – including suicidal thoughts or crisis, impacting individuals, teams, and organisations alike.

At MATES SA, we support workers and businesses to better understand these pressures and to respond early, appropriately, and effectively.

Support When People Need It

MATES SA offers practical, confidential support for individuals who may be struggling or at risk and assist workplaces responding to critical incidents or ongoing stressors. Services include a 24/7 confidential helpline (1300 642 111), on-site and phone-based intervention, field visits, one-on-one follow-up, personalised case management, and postvention support.

Importantly, MATES SA is available to respond immediately helping to ensure workers are not left to manage challenges alone.

Building Capability Through Training

Alongside support services, MATES delivers a range of mental health and suicide prevention training programs designed for the realities of modern work environments including site-based, office-based, and remote teams.

Our training includes:

- **General Awareness Training (GAT)** to build understanding and reduce stigma
- **Connector Training** to help workers recognise warning signs and connect people to help
- **Toolbox Talks** that address key issues in a practical, accessible way
- **Respond** a recently introduced program focused on strengthening organisational response to psychosocial risk and early intervention
- **ASIST** gives you the skills to step in when someone's at risk and help keep them safe

MATES international recognised programs endorsed by WHO, help organisations move from awareness to action ensuring people know how to recognise when something isn't right and what steps to take next.

Planning for the Year Ahead

As organisations plan for the year ahead, embedding mental health support and training into business and workforce strategies is a vital step in supporting wellbeing across all work environments. Early planning enables support and training to be delivered proactively, rather than reactively, helping to build more resilient teams over time.

For information about MATES services, training options, or to access support, contact **MATES in Construction SA** or call the **24/7 helpline on 1300 642 111.**

MATES IN CONSTRUCTION

MASTER ELECTRICIANS AUSTRALIA

Fatal Ceiling-Space Incident Highlights Hidden Risks of Electrical Work

The death of a 73-year-old electrician who was electrocuted while working in a ceiling space in Adelaide has renewed concerns about the dangers of working in roof and crawl spaces – one of the most hazardous environments in residential electrical work.

Ceiling spaces often conceal serious electrical risks, including damaged insulation caused by rodents or age, unlicensed or non-compliant past work, and live cables hidden by insulation, dust or poor lighting. These risks can be difficult to detect and, as this tragic incident shows, can be fatal.

While isolating the electrical supply before entering a roof space is not yet mandatory in South Australia, Master Electricians Australia strongly recommends all workers to do so as a basic safety measure. This includes isolating power at the main switchboard and confirming isolation before entry. The requirement is already mandatory in Western Australia and Queensland, reflecting a growing national recognition of the risks.

Electricians are also reminded that isolating the main supply does not eliminate all hazards. Incoming overhead mains cables can still run through ceiling spaces, and solar installations may introduce live DC voltages even when the main switch is off. These factors must be identified and managed as part of pre-work planning.

Master Electricians Australia recommends rethinking how fault-finding is approached. In many cases, preparatory work, such as removing covers or accessing equipment, can be done with the power isolated, before briefly re-energising only when absolutely necessary. The extra few minutes this takes can be life-saving.

The incident serves as a stark reminder that no job is routine when it comes to electrical safety, and that rigorous planning and isolation practices are essential to ensuring every worker gets home safely.

ELECTRICAL BULLETIN

POOL BONDING BY OTHERS

We have received a large number of calls recently regarding Bonding of Pools, and specifically who's responsible for the works completed by the pool installer/Builder.

As the Electrical Contractor who is signing an eCoC, that is stating the installation is compliant to the Electricity Act 1996 and Australian Standards, and unless you have been shown/provided an eCoC that has been completed covering the works which have been done by others. You are.

Historically, we have found multiple installations where the bonding system has been installed in a Non-Compliant manner and the requirements of the relevant Australian Standards have not been met.

The Bonding system is a very important part of the installation and if installed incorrectly and damaged or degraded, may never be identified until the day its needed, and may not provide the protection for the end user as intended.

If you are expected to take ownership of works completed by others, you need to ensure they are compliant and if not repair / replace the non-compliant works. This may include requesting photos of the installation, tech data on any products used and any other relevant information to confirm compliance, suitability for the environment and manner used.

Remember: depth of burial, enclosure of cables, protection against corrosion and following manufacturer's instructions are just some of the methods used to ensure the integrity of the bonding system is maintained.

Photographs show incorrect depth of burial, lack of mechanical protection and incorrect wiring system (conduit) has been used.

GROUND MOUNTED SOLAR FARM MAINTENANCE

Solar farm operators: it is still fire danger season, so remember to regularly inspect ground mounted solar panels, following the manufacturer's recommendations. Check whether plugs show any signs of corrosion or damage and manage vegetation underneath the panels.

ELECTRIC SHOCK INCIDENT LIST

Shock Source	Cause	Contributing Factors	Injury	Action to Make Safe
Pole top high voltage distribution transformer.	Deliberate contact.	Person climbed pole to remove copper cable not realising power still connected.	Electrical shock and burns to chest plus fall injuries.	Network Operator isolated transformer.
Pole top flood light.	Isolation procedure incorrect.	Two separate supplies contained in this light pole but only one was isolated.	Electric Shock to right hand.	Review of isolation procedures.
Public reserve electric barbecue.	Distribution system neutral continuity fault.	Electrical Contractor attended site to repair hand dryer in facilities block and replace barbecue element when they received shock.	Electric shock to hand.	Network Operator repaired neutral connection.
Metal frame attached to wall.	Cable in wall.	Hotel workers were attaching a metal frame to a wall and drilled through a live electric cable within the wall.	Electric shock to hands.	Electrical Contractor attended and repaired cable.
Laptop power supply cord.	Power supply cord had exposed live conductor.	Student went to plug in laptop charger and in doing so contacted live damaged uninsulated conductor.	Electric shock to hands.	Power supply removed from service.
Classroom entrance doors.	Synthetic decking.	Students walking across synthetic decking built up a static charge. This discharged when touching earthed metal doors.	Static electricity discharge through hands.	School to research systems to reduce this effect.
Shower taps.	VIR Consumer Mains had failed.	When the consumers mains cable failed the occupier had been using the shower taps.	Electric shock to hands.	Network Operator isolated supply for Electrical Contractor to replace cable.
Kitchen sink and taps.	Kitchen power circuit damaged by vermin.	Owner had been using kitchen sink/taps unaware of cable damage in wall cavity.	Electric shock between hand and foot.	Network Operator isolated kitchen power circuit for Electrical Contractor to repair.
Light fittings.	Failure to correctly isolate circuit.	Electrical Contractor was replacing light fittings when they received an electric shock. Building occupiers had turned on lighting circuit breaker.	Electric shock to right hand.	Electrical Contractor to review isolation procedures.
Hand dryer.	Fixed cover removed.	Student removed cover from hand dryer and contacted live cable terminations inside.	Electric shock to hand.	Facilities block isolated until repairs completed by Electrical Contractor.
Air conditioner unit.	Wrong circuit isolated.	Worker changing drain pump in air conditioner had isolated wrong circuit and failed to test isolation was correct.	Electric shock to hand.	Workers to review isolation procedures and testing protocols.
High Voltage SWER line.	Auger contacted overhead line.	Farmhands pushing auger without lowering unit contacted the overhead line. High Voltage found a path to ground not through the persons pushing the unit.	Minor electric shocks between hands and feet.	Network Operator attended and assessed overhead SWER line.

GAS BULLETIN

Master Plumbers
SOUTH AUSTRALIA

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EXPIATION NOTICE REPORT

Location	Non Conformance	Breach / Clause	Expiation Issued
Mount Barker	Gas leak on pipe-work at hot water heater, gas certificate of compliance not submitted	Appendix E.5 AS/NZ5601.1 and Section 56 (2) of the Gas Act	2
Willunga South	Owner - Responsibility of owner or operator of infrustructure or installation	Section 56 (1)(a) of the Gas Act	1
Wynn Vale	Failure to test for gas tightness by installing contractor	Appendix E.3.2 AS/NZ5601.1	1
Mount Gambier	Gas leak on pipe-work at hot water heater, failure to provide fire emergency isolation (EFV)	Appendix E.3.1 & 5.2.11 AS/NZ5601.1	2
Mount Barker	Gas leak on outlet pipe-work from billing meter	Clauses 3.5.1 AS/NZ5601.1	1
Morphett Vale	Failure to provide fire emergency isolation (EFV)	Clause 5.2.11 AS/NZ5601.1	1
Morphett Vale	Failure to provide fire emergency isolation (EFV)	Clause 5.2.11 AS/NZ5601.1	1
Morphett Vale	Failure to provide fire emergency isolation (EFV)	Clause 5.2.11 AS/NZ5601.1	1
Willunga	Incorrect hose-assembly for freestanding commercial cooking appliance	Clause 6.10.2.7 AS/NZ5601.1	1
Flinders Park	Failure to provide fire emergency isolation (EFV)	Clause 5.2.11 AS/NZ5601.1	1
Flinders Park	Prohibited types of joints and fittings (water fittings used)	Clause 4.4 AS/NZ5601.1	1
Adelaide	Gas isolation not provided to commercial kitchen when there is more than one appliance & uncapped isolation valve	Clauses 5.2.9.2 & 3.4.3 AS/ NZ5601.1	2

Notices issued between 1 July 2025 and 31 December 2025

Type B Appliance Badge Plates

When installing and/or commissioning Type B gas appliances AS3814:2018 Clause 4.1 requires the appliance be fitted with a clear, permanent marking that is readily accessible and easy to read. These markings must include such information as model identification, gas type, purge time and gas consumption (refer to clause 4.1.1 for a complete list of mandatory inclusions). The purpose of these permanent markings is to ensure that all essential information is readily available not only for the safe commissioning but also for the ongoing safe operation over the life of the appliance.

It is the responsibility of the commissioning agent to ensure these markings have been completed and fitted prior to onsite testing by an authorised Type B certifier. You may wonder, aren't these markings the badge plate that is fitted by the authorised certifier after the completion of the certification process? No. The permanent markings referenced in clause 4.1 are a mandatory requirement that may, at times, be provided by the manufacturer, or if missing, may require the commissioning agent to provide and fit. Failure to provide these markings and labels prior to onsite testing by an authorised Type B certifier may result in a non-compliance being issued, additional costs, and delays in Type B Compliance being issued.

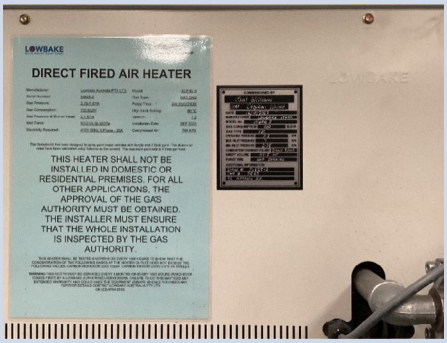


Figure 1 – Example of Appliance Marking on LHS, along with Type B compliance plate issued by Type B certifier on RHS.

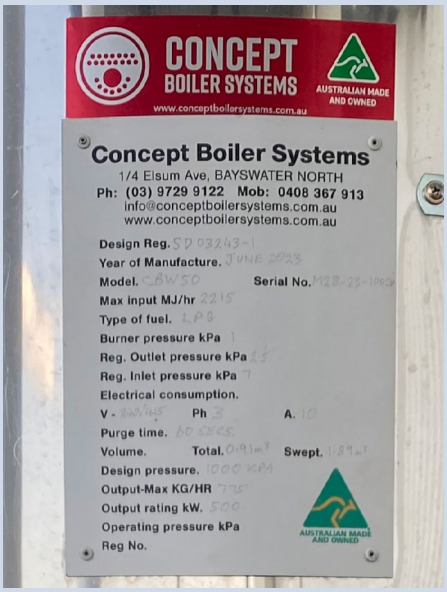


Figure 2 – Example of Type B appliance Markings

Image shows Integral 2-stage regulator not commissioned, the outlet pressure at the regulator is set at 2.1kPa

Commissioning LP Gas Regulators

Gas inspectors undertaking audits are finding many LPG gas regulators are not being commissioned. Generally, testing the operating pressure at the appliances inlet test points shows the pressures lower than the prescribed 2.75kPa, resulting in gas appliances operating at lower pressures than specified by manufacturers, thus the appliances are not performing to their maximum efficiency.

It is the installer's and service person's responsibilities to ensure there is adequate supply to the gas appliances.

The main reasons for supply being diminished are:

- An undersized gas service
- Gas regulator undersized
- Gas regulator not commissioned*
- Or a combination of these

*Normally the outlet of the integral 2-stage regulator located at the cylinder should be set to an operating pressure of 3kPa, this allows for the correctly sized outlet service with allowable pressure drop of 0.25kPa to provide 2.75kPa to the appliance inlets.

Are you installing or working on uncertified appliances?

All **Type A** or **Type B** (domestic, commercial and industrial) appliances must be certified for use in Australia. As a licensed gas worker, it is your responsibility to ensure that the appliance you are working on has been appropriately certified before installing, converting, repairing or servicing it.

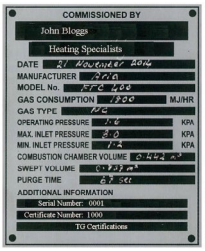
Certified Type A gas appliances can be easily identified by the data plate that includes information such as the certification number and gas type. Additionally, look for the hallmark certification label from one of the following Conformity Assessment Bodies (CABs) and a Gas Compliance Mark fitted to the appliance.

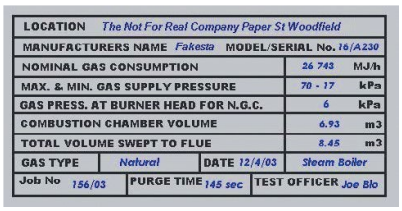
- IAPMO Oceania
- AGA
- SAI Global
- Global-Mark
- Vipac
- BSI

Type A Certification Labels

Before gas is turned on to a Type B gas appliance it is required to be independently tested and certified by a recognised Type B certifier, for which we have 2 in South Australia – Australian Gas Association and TG Certifications. See examples below.

Type B Certification Labels





Failure to locate the appropriate certification label is a clear sign that the appliance may not be appropriately certified and requires further investigation.

If you are unsure:

- Contact the manufacturer
- Access the national database of certified gas appliances and components at National Database of certified Gas Appliances and Components
- View appropriate technical bulletins by visiting the Gas trades webpage Gas Trades Webpage
- Contact the OTR Gas Team Ph: 8226 5722 or email: otr@sa.gov.au

If the appliance is uncertified, the issue must be raised with the owner. The owner should be clearly informed of the certification requirements and the consequences of non-compliance, including it being a breach of the Gas Act 1997, the potential of invalidating commercial insurance and possible enforcement action.

After explaining these requirements, if the owner chooses not to comply, then the appliance must be made safe and the OTR notified.

STERN REMINDER – THIS TAG MUST NOT BE REMOVED

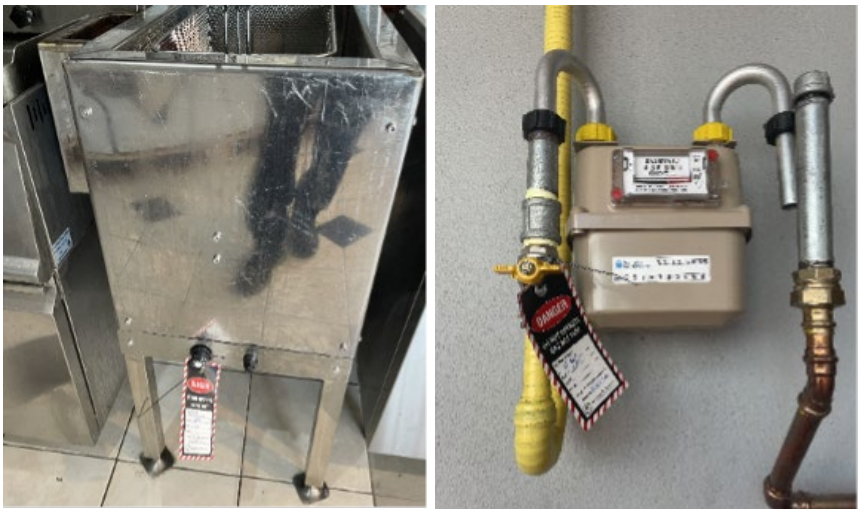
If an inspector from the OTR has isolated the gas supply to an installation and placed a danger tag on it, or if you have been engaged to rectify and eliminate the **DANGER**, you need to contact the OTR and advise of the rectification work. An eCoC must be submitted immediately outlining full works carried out and photos must be attached. Only then will you be instructed by the inspector that the tag can be removed if satisfied with rectification.

Removal of a **DANGER** tag without contacting the issuing officer is an offence under the Gas Act 1997 Section 68 – Disconnection of the Gas Supply.

IMMEDIATELY DANGEROUS REPORTS

The OTR often receives eCoC Immediately Dangerous Reports (IDRs) from gas fitters performing gas fitting work. Once an IDR eCoC is submitted, our office receives a notification, this is so we can follow up with the situation. An OTR inspector will contact the gas fitter who has submitted the IDR for background information on what prompted this action, the inspector will then follow up with the customer explaining their responsibility under Section 55 of the Gas Act 1997.

Most IDRs we receive from gas fitters turn out to be unwarranted; this is because the immediately dangerous situation has been safely dealt with by the gas fitter. For instance, a gas fitter has identified a gas leak, after discussion with the owner the gas fitter has disconnected the gas supply and capped off the service to made safe. There no longer is a danger as the hazard has been mitigated. All the gas fitter needs to do is submit a regular eCoC and note that the service has been capped off due to a leak. Remember if you are capping a service or an appliance off, you are required to add a danger tag with your details.



IMMEDIATELY DANGEROUS REPORTS

Other situations, following the discussion with the homeowner, where they instruct you to leave and you are unable to make the installation safe, the hazard has not been mitigated, this is where you submit an IDR eCoC. If you feel the need to call the OTR due to the severity of the IDR, then please do so as we may not receive the notification until the next day (depending on when you submit the eCoC), you could even call the out of hours emergency number if you deem the situation extremely dangerous. The out of hours number is as follows – 1800 558 811.

Owners have an obligation to ensure their gas installation is safe, Section 55 of The Gas Act 1997 explains their responsibility:

Part 5 – Safety and technical issues

55 – Responsibility of owner or operator of infrastructure or installation

(1) A person who owns or operates gas infrastructure or a gas installation must take reasonable steps to ensure that –

(a) The infrastructure or installation complies with, and is operated in accordance with, technical and safety requirements imposed under the regulations; and

(b) The infrastructure or installation is safe and safely operated.

Maximum penalty: $250,000.

(2) For the purpose of ensuring under this section that a gas installation complies with the technical and safety requirements, a person may, subject to the regulations, rely on a certificate of compliance issued under this Division in relation to the installation.

Negligence is not an excuse for not keeping up with standards and regulations

Negligence, inattentiveness and ignorance of the gas installation standards are not excuses for non-compliant work.

Contractors and workers have a responsibility under section 56 of the Gas Act 1997 to ensure their work is safe, in good working order and compliant.

This is achieved by staying informed about standards updates, and regulatory changes that apply to the gas industry.

Gas fitters must maintain knowledge in the industry by being aware of updates, seeking industry training, following official guidance ensuring avoidable mistakes are not made.

Compliance is an expectation, not an option.

Contractors who are investing time and resources complying with standards are becoming frustrated and disadvantaged to those who neglect their responsibility to industry. This is not fair on them and is not fair for the customer.

Accountability is essential, industry and the public rely on you as the professional for assurance their gas installation is technically compliant and safe.

As professionals, contractors are expected to have the necessary qualifications, knowledge, skills, and competence to carry out gas fitting work.

Claiming ignorance or relying on outdated practices is not acceptable, the OTR will hold contractors and workers accountable for non-compliant work.

ARE YOU WORKING WITHIN THE SCOPE OF YOUR GAS LICENCE REGISTRATION?

It is **your** responsibility to ensure that **you and any worker acting on your behalf** are appropriately licensed.

The Office of Consumer & Business Affairs (CBS) is the licensing authority for gas fitters in South Australia.

If you are performing work within the gas industry, you must obtain a **Workers Licence** issued by CBS under the Plumbers, Gas Fitters and Electricians Act 1995.

The scope of work that you can perform will be listed on the rear of your licence and is based on the qualifications you have presented to CBS on your application.

Contractors Licences are required for individuals, including partners in a business, and companies if they run a business that carries out or organises plumbing, gas and electrical work. To submit an eCoC, there must be certification by both the Worker **and** the Contractor with the appropriate endorsement on their licences (these may be the same person, for example in the case of a sole trader).

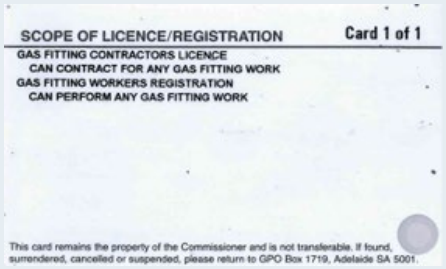
If you have attended and successfully passed recognised certificate courses applicable to your trade, you must provide these certificates to CBS so that they can be applied to your licence. If you do not provide these certificates to CBS, your qualifications will not be included on your licence, preventing you from **legally** performing work that you have trained for and invested valuable time and money to achieve.

In short, obtaining a qualification does **not** allow you to actively carry out that work **unless, and until,** you are appropriately licensed to do so. You may be liable for a penalty if you are found to be carrying out gas work in an unlicensed state.

As part of our audit process, OTR checks the status of persons carrying out gas work to verify that each person is appropriately licensed. In recent months, we have identified a considerable number of gas fitters working outside the scope of their licence or carrying out gas fitting work without holding a current gas fitting licence at all. In such situations, we will refer the matter to CBS for investigation.

If you are unsure what the scope of your licence is, take a few minutes to read the back of your licence for the specific endorsements or limitations. If there are any concerns, or you are unsure what your endorsements include, it is in your best interest to contact CBS on 13 18 82 and ask them to explain the limits of the endorsements listed.

To check licence status of workers and contractors you can visit the CBS licensing website here www.cbs.sa.gov.au.



Example of a Combined Workers and Contractors Licence

PLUMBING BULLETIN

Drains in Unstable Ground – Excavation Bedding & Support

1. Purpose

To clarify the deemed-to-satisfy (DTS) requirements for excavation, bedding, support and backfilling of sanitary drainage installed in unstable or water-charged ground, and to distinguish Office of the Technical Regulator (OTR) recommendations from AS/NZS 3500.2:2021 requirements.

2. Scope and application

- Applies to sanitary drainage up to DN 225 (Section 5 scope).
- Use in conjunction with project design, builder/engineer information and any local regulatory conditions.
- Where work occurs near footings or under buildings, also refer to Clause 3.8.2 (installation near and under buildings).

3. Pre-works (before excavation)

- Obtain the site soil reactivity classification (AS 2870 context) from the builder/engineer to understand potential ground movement and whether Appendix G measures are applicable.
- Confirm the proposed drain alignment, grades and cover meet design and Clause 3.7 (minimum cover).
- Plan trench widths to achieve the minimum clearances around the pipe barrel in Clause 5.2.1 (≥100 mm each side).

4. When is compliant bedding required?

- Always provide bedding in clay, rock, shale, gravel or ground containing hard objects (Clause 5.4.1(b)).
- Where the trench has been over-excavated (Clause 5.2.2).
- In water-charged ground (Clause 5.2.3) – see Section 9 below.
- Otherwise, in stable soil a drain may be laid on undisturbed trench base provided it is free from rocks, roots or hard objects (Clause 5.4.1(a)).

5. Bedding materials (DTS)

- Crushed rock / gravel screenings or similar recycled material of nominal size between 7 mm and 10 mm (Clause 5.4.2(a)).
- Cement mortar (1 part Portland cement to 4 parts sand) – use particularly where the base is rock/shale; if grade >20% provide ≥50 mm depth below the barrel, supports at ≤1500 mm centres and keep ≥20 mm from flexible joints (Clause 5.4.2(c)).
- Free-running sand capable of passing a 2 mm sieve and free from clay/organic/deleterious matter (Clause 5.4.2(d)).

6. Installation – bedding, side support and overlay

- Provide continuous support to the drain so loads from the pipeline and surrounding ground are accommodated (Clause 5.4.1).
- Place and compact bedding to the pipe springline; side support and overlay materials shall be not inferior to the bedding (Clauses 5.4.1 and 5.4.3).
- Surround the pipe with not less than 75 mm of compacted sand or fine-grained soil (no hard-edged objects in contact with the pipe) (Clause 5.4.3).
- Install in a manner that prevents groundwater/surface water disturbing bedding (Clause 5.4.1(c)).

7. Backfilling and cover

- Backfill shall be compacted to restore the trench and reduce subsidence (Clause 5.5.1).
- Excavated material may be reused if free from rock, hard matter and organic material and broken up so soil lumps >75 mm are not present (Clause 5.5.2).
- Backfill immediately above the overlay shall be free of builder's waste; exclude rocks >25 mm and soil lumps >75 mm (Clause 5.4.4).
- Provide minimum cover to buried pipes in accordance with Clause 3.7 and Table 3.7.2. Where less than minimum cover, provide paving/protection per Clause 3.7.3.

8. Over-excavation

Where the trench is deeper than necessary, fill the excess depth with compacted bedding (to a density as near as possible to the original soil) or with concrete (Clause 5.2.2).

OTR recommendation: Treat "significant" over-excavation (e.g. >200 mm) by building up with concrete or stabilised sand to a level that allows efficient placement of the selected bedding. This is guidance only and not a DTS trigger in AS/NZS 3500.2.

9. Water-charged ground (dewatering)

- Lower the water level below the trench base and maintain it during excavation, laying and backfilling (Clause 5.2.3(a)).
- Discharge removed water where it will not cause nuisance or damage, and do not discharge to the sewer (Clause 5.2.3(b)).

10. Drains in other than stable ground (filled/ unstable/reactive)

- Where drains are to be laid in filled, unstable or water-charged ground and where a trench has been "over excavated" the excess depth is required to be filled with a compacted compliant bedding material.
- If the design specifies allowance for expansion to the sanitary drainage your installation is in unstable soil.
- For plastics pipe systems under slabs or adjacent to footings on reactive sites, refer to Appendix G (informative) and the principles of AS 2870 for flexible joints, lagging and water-ingress control.
- Class P/problem sites (e.g. landslip, mine subsidence) should be subject to specific engineering design and relevant authority advice.

11. OTR recommendations (guidance – not DTS)

- Material selection: 7–10 mm gravel screenings are preferred for many under-floor drainage applications due to placement control and self-compaction characteristics.
- Thickness management: Following advice provided to the OTR by a civil engineer. Where screenings are used, OTR suggests limiting the placed thickness in a single lift to about 200mm to aid compaction quality; other compliant bedding materials should be placed in controlled lifts of approximately 100mm as appropriate to the material behavior.
- Trenching: Select the correct bucket size that provides adequate clearance and working room; adjust to suit pipe size, shoring and safety requirements.

12. Quality checkpoints (site)

- Trench base free of rocks/roots; bedding placed to grade and compacted before pipe is laid.
- Pipe barrel continuously supported; joints not bridged by voids; flexible joints kept clear of mortar by ≥20 mm when mortar bedding is used.
- Side support and overlay placed and compacted; ≥75 mm fine surround maintained.
- Backfill free of deleterious material; compaction in layers; surface reinstatement to avoid ponding over gullies/vents.

13. Where in the Standard

AS/NZS 3500.2:2021 clauses: 5.1 (Scope); 5.2.1 (Trench dimensions); 5.2.2 (Over-excavation); 5.2.3 (Water-charged ground); 5.3 (Concrete support); 5.4.1–5.4.4 (Bedding, side support, overlay & backfill); 5.4.5 (Minimum cover via Clause 3.7); 5.5 (Backfill); 5.6 (Drains in other than stable ground); 3.7 (Depth of cover); 3.8.2 (Installation near and under buildings); Appendix G (informative – unstable soils).

14. Performance Requirements – NCC Volume Three (C2P7 & C2P6)

C2P7 – Damage Prevention: The sanitary drainage system must be installed to prevent damage from superimposed loads, ground movement, and root penetration, ensuring system integrity throughout its service life.

C2P6 – Prevention of Blockage and Uncontrolled Discharge: The system must be designed and installed to avoid blockages and uncontrolled discharge, maintaining hygienic and safe operation.

Impact of Incorrect Bedding:

Incorrect bedding can lead to point loading, pipe deformation, loss of grade and increased susceptibility to ground movement. These outcomes compromise compliance with C2P7 by exposing the system to structural stress and premature failure.

Improper bedding can also create voids or uneven pipe support. This allows pipe sagging, debris accumulation and formation of blockages, breaching C2P6 by increasing the risk of uncontrolled discharge and system malfunction.

Good

Bad

Bad

2026 PLUMBING & GAS ROADSHOWS

Master Plumbers
SOUTH AUSTRALIA

2026 PLUMBING AND GAS ROADSHOWS

MARCH

- **17th Tues - Port Lincoln**
  Ravendale Community Sport Centre,
  40 Stamford Tce, Pt Lincoln
- **18th Wed - Whyalla**
  Whyalla Hockey Association, Crn
  Nicolson and Searle St, Whyalla Norrie
- **19th Thurs - Port Augusta**
  Central Football Club, 3 Hannagan St,
  Pt Augusta
- **25th Wed - Lonsdale**
  South Adelaide Football Club,
  1 Lovelock Dr, Noarlunga Downs

APRIL

- **29th Wed - Mt Gambier**
  Mantra Mt Gambier, 96 Jubilee
  Highway East, Mt Gambier

MAY

- **12th Tues - Port Adelaide**
  British Hotel, 13 North Parade,
  Port Adelaide
- **20th Wed - Murray Bridge**
  Murray Bridge RSL Club,
  2 RSL Lane, Murray Bridge East
- **27th Wed - Tonsley**
  Tafe Tonsley, 1284 South Rd, Tonsley

JUNE

- **3rd Wed - Modbury**
  Modbury Bowling Club,
  50-97 Jack High Lane, Ridgehaven
- **10th Wed - Gawler**
  Gawler Greyhound Club,
  Nixon Tce, Gawler
- **17th Wed - Renmark**
  Hotel Renmark,
  81 Murray Ave, Renmark

JULY

- **22nd Wed - Mt Barker**
  Mt Barker Summit Sports & Rec Centre, 304
  Summit Rd, Mt Barker
- **28th Tues - Marion Bay (dinner only)**
  Marion Bay Tavern and Motel,
  5 Stenhouse Bay Rd, Marion Bay
- **29th Wed - Wallaroo**
  Moonta Football Club, Milne Tce, Moonta

AUGUST

- **5th Wed - Norwood**
  Kensington Gardens Bowling Club,
  432 The Parade, Kensington Gardens

Product Expo followed by Office of Technical Regulator 4.30pm - 8.30pm

Tickets - $15
To register, click on the QR code

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NO WAY IN SA: EVEKARE EVK-1082-MCE BIDET TOILET SEAT

The plumbing industry is facing growing attention around the use of retro fit bidet toilet douche seats, particularly those incorporating integral backflow prevention devices. Recent enquiries have raised concerns about whether these products meet the stringent requirements for high-hazard protection under the National Construction Code and associated standards. One such product, the Evekare EVK-1082-MCE, has come under scrutiny following an internal review of its components. This article aims to highlight the potential compliance risks associated with these fixtures and provide guidance for industry professionals on what to look for when assessing similar products.

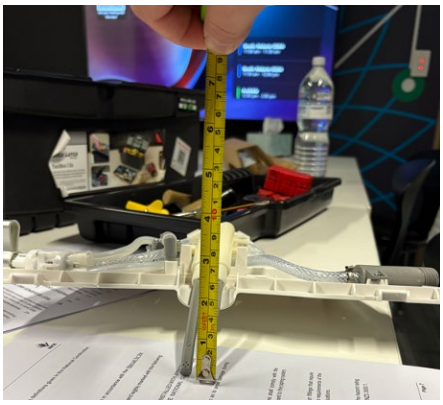
This product is readily available for purchase through major hardware retailers and potentially other similar outlets. The manufacturer also offers an extended range of related fixtures that may be subject to the same considerations.

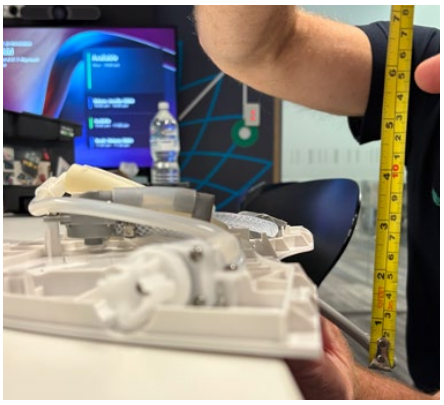
The OTR has received numerous industry enquiries regarding this product, specifically about the status of its integral atmospheric vacuum breaker (AVB) and whether the AVB provides adequate protection for high-hazard situations.

To investigate, the OTR obtained an Evekare EVK-1082-MCE on 25/11/2025 and disassembled it on 26/11/2025 to review its internal components.

The following observations were made:

- The integral AVB is not 150mm above the highest outlet. If you refer to the below picture, you'll see that the AVB is only approximately 85mm above the extended wand outlet height.
- If you refer to the picture below which is a height reference picture of the extended outlet wand versus the AVB location you'll see where the 150mm height is meant to be in reference to the extended wand outlet and AVB location.





This height requirement of the AVB therefore does not comply with AS/NZS 3500.1:2021 section 4.6.3.3 (a) (i) as it is not higher than 150mm above the highest outlet as follows.

4.6.3.3 Non-testable devices

Non-testable devices shall be installed as follows:

(a) *Atmospheric vacuum breaker (AVB) – AVBs shall –*

(i) be located not less than 150mm above the highest outlet;
(ii) have no isolating valves located downstream of the vacuum breaker;
(iii) under normal operation, not remain continuously pressurized for more than 12 h;
(iv) be ventilated to the atmosphere, at all times;
(v) not be located in an area that may be subject to ponding; and
(vi) be located in-line and be at least the same size as the supply and discharge piping.

Therefore, this does not comply with AS/NZS 3500.1:2021 as follows:

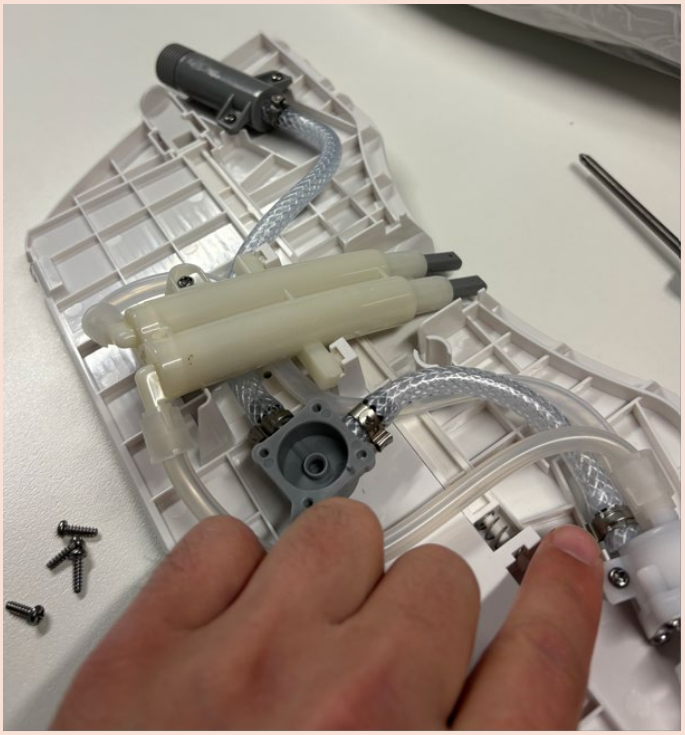
4.6.3.3 Non-testable devices

Non-testable devices shall be installed as follows:

(a) *Atmospheric vacuum breaker (AVB) – AVBs shall –*

(i) be located not less than 150mm above the highest outlet;
(ii) have no isolating valves located downstream of the vacuum breaker;
(iii) under normal operation, not remain continuously pressurized for more than 12 h;
(iv) be ventilated to the atmosphere, at all times;
(v) not be located in an area that may be subject to ponding; and
(vi) be located in-line and be at least the same size as the supply and discharge piping.

- If you refer to the below photo, you'll see that the pipework downstream of the AVB that leads to the water outlet control valve will be constantly under pressure until the control valve is operated.



WMTS 051:2021 is a WaterMark Technical Specification issued by the Australian Building Codes Board (ABCB), specifically for toilet douche (bidet) seats. Here are the key details:

- This technical specification outlines design, performance, and backflow prevention requirements for toilet douche seats using water dispensed by a spray for personal hygiene.
- It ensures these products comply with national plumbing standards and are suitable for safe installation in Australian plumbing systems.

WMTS 051:2021 specifies marking requirements within section 6. Section 6 states the following:

6 MARKING

Markings to be placed on products or packaging shall be in accordance with the Manual for the WaterMark Certification Scheme.

Additionally, each toilet douche seat shall be permanently and legibly marked with the following:

(a) A label as follows:

'WARNING: THIS TOILET DOUCHE SEAT MUST BE INSTALLED WITH APPROPRIATE BACKFLOW PROTECTION CONFORMING TO THE NATIONAL CONSTRUCTION CODE – VOLUME THREE'

Upon review the above warning label is neither placed on the packaging or the product. The warning label is in the installation manual within the packaging. Further to this, the product packaging states that the bidet toilet seat is fitted with an integral atmospheric vacuum breaker (AVB). This is misleading and confusing as an AVB is listed within AS/NZS 3500.1:2021 table 4.4.1 as a device that can provide low/medium/high hazard protection for the purpose of cross connection control.

It is the determination of the OTR that the product certification is non-compliant and the integral AVB does not meet the installation requirements of AS/NZS 3500.1:2021 making it unsuitable to provide high hazard cross-connection control.

PREPARING A SANITARY DRAIN AND UNDERFLOOR FOR INSPECTION

Legislative Requirements

The Water Industry Act 2012 is a key piece of legislation enacted by the South Australian Government to regulate the water and sewerage industry. Under sections 66 and 67 of the Act, the Technical Regulator publishes the Plumbing Standard, which outlines mandatory requirements for inspection bookings.

Presenting Underfloor and In-Ground Sanitary Drainage for Inspection

Inspections must be booked in accordance with the Plumbing Standard issued by the Technical Regulator. Categories for inspection include, but are not limited to, sanitary drainage and underfloor installations. Refer to the OTR plumbing trades website for detailed instructions for making bookings for inspections Plumbing Trades | Energy & Mining

If Your Installation Is Not Ready

If an authorised OTR officer attends a site and the work is incomplete or non-compliant, a re-inspection fee may apply. If you anticipate that your work will not be ready at the agreed time, contact the OTR on 1300 884 005 immediately to cancel and reschedule. You may also contact the nominated authorised officer directly.

Preparing for Inspection

When booking a sanitary drainage or underfloor inspection, ensure the following:

- The installation is complete and ready for backfilling.
- Inspection occurs before any backfilling.
- Concrete is installed where required.
- Bracketing of suspended branch drains or waste pipes within footings is complete.
- Lagging is installed only after inspection and successful hydrostatic testing.
- The installation is under hydrostatic test.
- The trench base is clearly visible.

Additional Guidance

Ensure pipe supports (e.g., star pickets) are correctly installed for branches within footings. Lagging should only be applied after confirming no leaks during hydrostatic testing and after inspection.

Re-booking a failed inspection

If an inspection is flagged as a fail due to not being ready for inspection at the nominated time or if there is an installation non-compliance issue that needs to be rectified, the following applies.

- It is your responsibility to re-book the failed inspection via the eCoC booking portal
- The failed inspection must be re-booked when the issue is rectified using the same eCoC that was used for the original inspection.

For more information:

Website: sa.gov.au/otr
Email: otr.plumbregulator@sa.gov.au
Phone: 1300 760 311

This photo demonstrates star picket pipe supports that have been installed for branches located within footings. Lagging is to be installed around pipes, fittings and joints after hydrostatic testing has confirmed there are no leaks after the inspection.

This photo demonstrates an acceptable visible base of trench with a completed installation ready for inspection.

This photo demonstrates a section of sanitary drainage laid on a compliant and visible base of trench ready for inspection.

Compliance Advisory Notice

CarePort Portable Bathroom Unit

Product: CarePort Portable Bathroom Unit (Shower only or Shower + Flush Toilet with Macerator)

Proposed Use: Indoor sanitary facility within an existing dwelling (South Australia)

Purpose of this Notice

This Compliance Advisory Notice outlines mandatory plumbing compliance requirements under NCC 2022 Volume Three (PCA) as adopted in South Australia. It does not constitute approval.

Applicability of NCC Volume Three

Pursuant to A1G3, NCC Volume Three applies to plumbing and drainage work in new and existing buildings, including prefabricated, temporary or portable sanitary installations and systems incorporating mechanical devices.

Governing Requirements — Product Suitability and Evidence

A5G1 – Suitability: Plumbing products must be fit for purpose and installed appropriately to achieve NCC compliance.

A5G4 – Evidence of suitability: Regulated plumbing products must be supported by WaterMark certification, WMTS compliance or other acceptable evidence.

Sanitary Plumbing and Drainage Systems

C1P1 – Disposal: Sanitary waste must discharge to a sanitary drainage system or approved disposal system.

C1P2 – Access: Plumbing systems must provide access for maintenance and clearing of blockages.

Pumped and Macerated Discharge Systems

Macerator or pumped systems are only acceptable where gravity drainage is impracticable and must comply with AS/NZS 3500.2, manufacturer instructions, and applicable WaterMark Technical Specifications.

Jurisdictional Variations — Schedule 8 (South Australia)

Schedule 8 (South Australia) variations apply and prevail where inconsistent with general NCC provisions.

Installation and Regulatory Requirements — South Australia

Plumbing work must be performed by a licensed plumbing contractor and may be subject to certification or inspection by the Office of the Technical Regulator (OTR).

South Australian Plumbing Industry Regulator (OTR) — Clarifying Advisory Positions

Macerator Discharge Arrangement: The OTR does not accept macerator or pumped sanitary waste discharging over the top of a disconnector gully. Discharge shall connect to the sanitary drainage system by an approved means in accordance with NCC Volume Three Section C and AS/NZS 3500.2.

Water Supply Connection and Cross-Connection Control: The OTR does not accept water supply connections via hand basin outlets or mixer tap aerator connections. A dedicated water connection point must be provided and fitted with suitable cross-connection control in accordance with NCC Volume Three Specification 41 and AS/NZS 3500.1.

Compliance Advisory Notice

CarePort Portable Bathroom Unit

Product: CarePort Portable Bathroom Unit (Shower only or Shower + Flush Toilet with Macerator)

Proposed Use: Indoor sanitary facility within an existing dwelling (South Australia)

Hot Water Temperature Delivery and Scald Prevention (South Australia)

For installations in South Australia, the delivery temperature of heated water at the outlet of each sanitary fixture must be controlled in accordance with SA B2D5(1) to minimise the risk of scalding.

a. not more than 45 °C in any –

   i. residential part of an aged care building; or

   ii. patient care area in a health-care building; or

   iii. part of an early childhood centre, or primary or secondary school, that is used by children; or

   iv. designated accessible facility in a common area of a Class 2 building, or in any part of a Class 3, Class 5, Class 6, Class 7, Class 8, Class 9a, Class 9b, Class 9c or Class 10 building; or

b. not more than 50°C in all other cases.

Compliance may be achieved through thermostatic mixing valves or temperature-limiting devices installed and commissioned in accordance with AS/NZS 3500.4. These limits are critical for avoiding scalding events, particularly in NDIS, SDA, aged care and government-managed residential facilities.

Compliance Mapping – CarePort Components to NCC Clauses

Component	Function	Key NCC/SA Clauses	Notes
Macerator unit	Pumped sanitary discharge	A5G1; A5G4; C1P1; C1P2	No discharge over disconnector gully permitted
Water supply point	Supply to unit	Spec 41; AS/NZS 3500.1	Dedicated outlet with compliant cross-connection control
TMV / temperature limiting device	Scald protection	SA B2D5(1); AS/NZS 3500.4	Mandatory where applicable

Evidence of Compliance – Documentation to be Retained

- WaterMark licenses for regulated products
- Manufacturer installation and commissioning records
- Plumbing compliance certificates and inspection records

Program-Specific Notes – NDIS / SDA / Government Housing

Particular care must be taken to ensure ongoing access for maintenance, failure response mechanisms for pumped systems, and continued effectiveness of temperature control devices for occupant safety.

Prepared for internal compliance guidance. This advisory does not replace regulatory approvals or inspections.

HISTORICAL SOUTH AUSTRALIAN BACKFLOW INCIDENTS AND MODERN CROSS-CONNECTION CONTROL

This document summarises various South Australian cross-connection and backflow incidents extracted from an article published in 1993 by the Water Use Advisory Service. It includes incidents numbered 1 to 24 and additional findings noted in the same section.

South Australian Historical Backflow Incidents

1. Port Pirie (1950s/60s): Petrol flowed from an excavated burst water main due to a cross-connection at a local oil terminal where water was used to separate oil fractions; product back flowed into the main.
2. Police HQ, Adelaide: Yellow water from drinking fountains traced to a cross-connection with the air-conditioning system dosed with a chromate corrosion inhibitor.
3. Adelaide (late 19th/early 20th century): Typhoid outbreaks from human excreta entering the water supply via direct-flushed toilet pans during backflow; led to the adoption of cisterns for indirect flushing after a Royal Commission.
4. Adelaide (domestic premises): Blue discoloration in tap water caused by toilet-cistern disinfectant backflowing into the supply (e.g., while basin taps were running).
5. Vista: Garden hose delivered soapy water when used as the washing machine emptied, allowing wash water to enter the reticulation system.
6. Bakery (SA): Steam/water cross-connection used for hot cleaning caused steam to emerge from a nearby hand-basin tap; multiple workers suffered scalds.
7. Wingfield (late 1970s): Steam pressure overcame low water pressure at a plant cooking chicken feed, melting underground PVC pipes; a fountain of hot water resulted; >$3,000 damage.
8. Adelaide Hills (private property): Fishpond siphoned empty after hose left submerged; water back flowed into the supply.
9. Inman Valley (dairy farm): Reverse flow drew urea fertiliser into the milking parlour; cows drank contaminated water – loss of a 47-cow herd.
10. Port Adelaide (chemical firm): After repairing an underground burst, chemicals (manganese salts) syphoned back via an immersed connection; three workers hospitalised after drinking from the fountain.
11. North Adelaide: Vehicle knocked down a fire hydrant, causing widespread pressure to drop and air ingress; highlighted risk that any existing cross-connection could have led to serious contamination.
12. Children's Hospital / Medindie: Dirty, soapy tap water traced to an automatic car wash pumping wash water back into the mains due to a recycling-system fault.
13. Robo car wash (SA): Acid sprayed onto a newly resprayed car due to a water-treatment fault; noted the potential for mains contamination had acid entered the supply.
14. Norwood (residence): Significant oil observed coming from a bath tap; likely (though not definitively) linked to a nearby service station's unusual water system.
15. Large SA dairy manufacturer: Poor-quality tea water traced to a steam cross-connection on the premises.
16. Thebarton / Bonython Park (model yacht pool): Bacteriological contamination in the reticulation; source tied to a 50 mm submerged inlet left open weekly at a high-elevation pool in a low-pressure area; resolved by installing an air gap.
17. Daws Road Repatriation Hospital vicinity: Legionnaires' disease cases with the bacterium found in hospital cooling towers; suspected backflow drawing contaminated water into the supply.
18. Unley Park (doctor's surgery): Brown water traced to neighbour's fish-pond hose left submerged; negative main pressure caused pond water to backflow (pond nearly emptied).
19. Adelaide Hospital (theatre/autoclave): Broken water and sewer pipes in a trench allowed sewage (e.g., toilet paper) to enter the autoclave via the water supply.
20. Adelaide factory: Air-conditioning chemical additives back flowed into potable water; two or three workers hospitalised after drinking.
21. Port Pirie (1992): Factory suspected seawater pumped into public mains; flushing released high-pH (8.9) caustic solution that damaged car paint and chamois—likely caustic soda back flowed into the service.
22. Murray Bridge (farm): Pesticide injected into irrigation lines entered a sheep trough; animals prevented from drinking; a break tank installed afterward.
23. Wayville (1993 Home Show): Backflow recorded when water was turned off to replace a valve on the main supply; impacts unknown.
24. Glanville / Island Seaway (Dec 1993): Complaints of salty tap water traced to a hydrant connection supplying ship firefighting; sea-water pumps sometimes left intake valves open, pushing 70 m head sea water into ~45 m head mains.

Additional South Australian Findings

- Edwardstown (1974 survey): 275 cross-connections found across 56 industrial premises; most serious was a bottom connection to a cyanide tank.
- Other hazardous examples in Adelaide: Venturi equipment used to drain body fluids from corpses; hoses on lab taps dangling into sink traps labelled for radioactive-waste disposal—both posing cross-connection risk.

Moving forward

With advancements in industry practices, updated standards, and stronger regulatory frameworks, these historical incidents could have been prevented if contemporary cross-connection control and backflow risk mitigation measures had been implemented at the time

To improve understanding of cross-connection control and emphasize its critical role in maintaining safe, contaminant-free drinking water systems, the Australian Building Codes Board has published a comprehensive Cross-connection Control Handbook.

Click to view the Handbook

SUMMARY OF THE HANDBOOK

The handbook, provides guidance on cross-connection control and compliance with the National Construction Code (NCC) Volume Three – Plumbing Code of Australia (PCA). It is advisory rather than mandatory but aligns with NCC 2022 requirements.

Key Concepts

1. **Cross-connection**
   Defined as any actual or potential link between a drinking water supply and a contaminant source (e.g., chemicals, sewage, industrial fluids). Contamination occurs via:
   - Back siphonage: Reverse flow caused by negative pressure in pipes.
   - Backpressure: Reverse flow caused by higher pressure in a connected system.
2. **Backflow Prevention**
   - Air gaps (AG) and break tanks (BT): Non-mechanical, highly effective for back siphonage/backpressure.
   - Mechanical devices:
   - Dual check valves (DCV) for low/medium hazards.
   - Reduced Pressure Zone Devices (RPZD) for high hazards.
   - Vacuum breakers (AVB, PVB) for siphonage protection.

Device choice depends on Hazard Rating (Low, Medium, High).

3. **Hazard Ratings**
   - High Hazard: Potential to cause death (e.g., industrial chemicals, sewage).
   - Medium Hazard: Potential to injure health.
   - Low Hazard: Nuisance only (taste, colour).

Ratings guide device selection and maintenance requirements.

4. **Compliance Pathways**
   - Performance Requirement B5P1: Water services must be designed and installed to avoid contamination.
   - Verification Method B5V1: Risk-based scoring system for hazard assessment.
   - Deemed-to-Satisfy (DTS) Provisions: Prescriptive requirements for common scenarios.
5. **Maintenance & Testing**
   - Testable devices (e.g., RPZD, DCV, PVB) must be commissioned and tested annually.
   - Registration schemes for high-risk installations ensure ongoing compliance.

How These Techniques Prevent Incidents Like Those in SA

The South Australian historical incidents (e.g., petrol in mains, sewage in hospital autoclaves, chemical backflow from car washes, Legionella contamination) occurred due to unprotected cross-connections and pressure fluctuations. Applying handbook principles would have prevented these by:

- **Air gaps or break tanks** at points like toilet cisterns, fishponds, and chemical tanks would have stopped siphonage (Incidents 4, 8, 10).
- **RPZD or DCV devices** on industrial sites (oil terminals, dairies, car washes) would have prevented backpressure contamination (Incidents 1, 9, 12, 13).
- **Containment protection** at property boundaries would have isolated hazards from the public mains (Incidents 21, 24).
- **Regular testing and registration** would have detected faults early (e.g., defective recycling systems at Medindie car wash).
- **Hazard Rating assessment** would classify high-risk sites (chemical plants, hospitals) as High Hazard, mandating robust devices like RPZD and strict maintenance.

Bottom line

The handbook's systematic approach covering risk assessment, appropriate device selection, and ongoing maintenance targets the underlying causes of backflow incidents. Had these measures, along with current South Australian plumbing regulatory practices, been in place, the majority of those historical cases could have been prevented.

List of Common Australian Standards

Australian Standard	Current Publication	Current Status
ELECTRICAL STANDARDS		
AS/NZS 3000: 2018 + Amend 1 & Amend 2:2021, Amend3:2023 *Wiring Rules*	19/05/2023	
AS/NZS 3001.1:2022 *(Caravan) Electrical Installations – Site supplies for Connectable electrical Installations*	18/11/2022	
AS/NZS 3001.2:2022 *(Caravan) Electrical Installations – Connectable electrical Installations*	18/11/2022	
AS/NZS 3002:2021 *Shows, Carnivals and Events*	25/06/2021	
AS/NZS 3003:2018 + Amend 1:2019 *Patient Areas*	29/06/2019	
AS/NZS 3004.1:2014 *Marinas and Boats*	27/06/2014	
AS/NZS 3004.2:2014 + Amend 1:2015 *Boat Installations*	17/07/2015	
AS/NZS 3008.1.1:2017 *Selection of Cables*	02/02/2017	
AS/NZS 3010:2017 + Amend 1:2020 *Electrical Installations - Generation Sets*	24/04/2020	
AS/NZS 3012:2019 + Amend 1:2020 *Electrical Installations - Construction and Demolition Sites*	20/03/2020	
AS/NZS 3017:2022 *Electrical installations – Verification by inspection and testing*	02/12/2022	
AS/NZS 3019:2022 *Electrical installations – Periodic assessment*	09/09/2022	
AS/NZS 4836:2011 + Amend 1:2017 *Safe working on or near Low-Voltage electrical Installations*	03/03/2023	
AS/NZS 4777.1 *Grid connection of energy systems via Inverters*	23/08/2024	
AS/NZS 4777.2:2020 + Amend 1 *Grid connection of energy systems via Inverters – Inverter requirements*	01/10/2021	
AS/NZS 5033:2021 *Installation Safety requirements for Photovoltaic (PV) arrays*	19/11/2021	
AS/NZS 5139:2019 *Electrical Installations – Safety of Battery systems for the use with power conversion equipment*	11/10/2019	
AS/NZS IEC 60479.1 *Effects of Current on the Human beings & Livestock: General*	25/03/2022	
SAPN Service & Installation Rules Manual #32 **Amendment #1**	01/05/2023	
Electricity (General) Regulations	14/03/2024	
Electricity Act 1996	01/10/2020	

List of Common Australian Standards continued...

List of Common Australian Standards cont...

Australian Standard	Current Publication Date	Current Status
GAS STANDARDS		
AS/NZS 5601 Part 1 *General Installations*	07/10/2022	
AS/NZS 5601 Part 2 Amend 1 *LP Gas Installations in Caravans & Boats non-propulsive purposes*	26/02/2021	
AS 4575 *Gas Appliances – Servicing Type A Appliances*	09/08/2019	
AS 3814 *Industrial & Commercial gas-fired appliances*	25/10/2018	
AS 1375 *Industrial Fuel Fired Appliances*	13/10/2023	
AS/NZS 4645.1 *Gas distribution networks – Network Management*	28/02/2018	
AS/NZS 4645.2 *Gas distribution networks – Steel Pipe systems*	28/02/2018	
AS/NZS 4645.3 *Gas distribution networks – Plastic Pipe systems*	28/02/2018	
AS/NZS 1596 Amend 2 *The Storage & Handling of LP Gas*	01/10/2020	
PLUMBING STANDARDS		
***Plumbing Code of Australia**	01/10/2022	
Plumbing Standard Issued by the Technical Regulator	2020	
AS/NZS 3500 Plumbing and drainage Part 0: **Glossary of terms**	14/05/2021	
AS/NZS 3500 Plumbing and drainage Part 1: *Water services*	28/05/2021	
AS/NZS 3500 Plumbing and drainage Part 2: *Sanitary plumbing and drainage*	28/05/2021	
AS/NZS 3500 Plumbing and drainage Part 4: *Heated water services*	28/05/2021	
AS/NZS 2845.2 Water supply - Backflow prevention devices **Part 2:** *Registered air gaps and break tanks*	30/06/2010	
AS/NZS 2845.3 Water supply- Backflow prevention devices **Part 3:** *Field testing and maintenance of testable devices*	14/02/2020	
AS 2419.1 Fire hydrant installations **Part 1:** *System design, installation, and commissioning*	03/09/2021	
AS 2441 Installation of fire hose reels *(incorporating Amendment 1)*	2001	
FPAA101D Automatic Fire Sprinkler System Design and Installation - Drinking Water Supply	2021	
Guidelines for Non-Drinking Water in South Australia **Part 0:** Glossary of Terms, Abbreviations and References **Part 1:** Infrastructure **Part 2:** On site Plumbing	31/07/2017	Currently Under Revision
AS/NZS 1260 *PVC-U pipes and fittings for drain, waste and vent applications Amend 1*	2017	
AS 1428.1 *Design for access and mobility-General requirements for access - New building work*	2001	

At Standards Australia you can view the draft with latest comments and provide your feedback here: https://comment.standards.org.au/

[Contact List]

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Level 8, 11 Waymouth Street,
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(Reception on Level 4)
Phone: (08) 8226 5518 (8am – 4:30pm)
Fax: (08) 8226 5529
www.otr@sa.gov.au

Electrical Technical Advice
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Phone: (08) 8226 5518 (8am – 4:30pm)
Fax: (08) 8226 5529
Email: otrmail@sa.gov.au

Gas Technical Advice
Office of the Technical Regulator
Phone: (08) 8226 5722 (8am – 4:30pm)
Fax: (08) 8226 5866
Email: otr@sa.gov.au

Plumbing Technical Advice
Office of the Technical Regulator
Phone: 1300 760 311 (8:30am – 4:30pm)
Email: otr.plumbenquiries@sa.gov.au
www.sa.gov.au/otrplumbing

eCoC Team
Department for Energy and Mining
Phone: (08) 8429 3394 (8:30am – 4.30pm)
Email: otr.ecoc@sa.gov.au

EXTERNAL CONTACTS

General Information
Licence or Registration Applications and Address Changes
Consumer and Business Services
Phone: 13 18 82 (9am – 4:30pm)
Email: occupational@sa.gov.au
www.cbs.sa.gov.au

Appointments and Information
SA Power Networks
Builders & Contractors:
1300 650 014 (8am – 5pm)
General Enquiries: 13 12 61 (9am – 5pm)
Faults & Emergencies: 13 13 66 (24/7)
Fax: 1300 650 016
Email:
customerservice@sapowernetworks.com.au
www.sapowernetworks.com.au

Australian Standards
Standards Australia
Phone: 1800 035 822 (9am – 5pm)
www.standards.org.au

Australian Gas Association (AGA)
Phone: (03) 9580 4500 (8:30am – 5pm)
Email: office@aga.asn.au
www.aga.asn.au

Training: Gas
Master Plumbers Association
213 Greenhill Road, Eastwood SA 5063
(PO Box 145, Fullarton SA 5063)
Phone: (08) 8172 8800 (8:30am – 5pm)
www.mpasa.com.au

Gas Services SA
2/16 Staite Street, Wingfield SA 5013
Phone: 1300 139 093 (9am – 5pm)
Fax: (08) 8162 5638
www.gasservicessa.com.au

Gastrain
Unit 1, 61-65 Tapleys Hill Road,
Hendon SA 5014
(PO Box 83, Royal Park SA 5014)
Phone: 1300 955 583 (9am – 5pm)
Phone: (08) 8447 7783
Fax: (08) 8447 7753
www.gastrain.com.au

TAFE SA
Electrical and Gas
For all training enquiries
Phone: 1800 882 661 (9am – 5pm)
www.tafesa.edu.au/courses

PEER
Industry training and apprenticeships
1042 Port Road, Albert Park SA 5014
Phone: (08) 8348 1200 (7:30am – 5pm)
www.peer.com.au

Electrical
Powerlines and building/vegetation clearance zones
Contact the Office of the Technical Regulator
Phone: (08) 8226 5667 (9am – 5pm)
Email: otrmail@sa.gov.au

SA Power Networks
General Enquiries: 13 12 61 (9am – 5pm)
Faults & Emergencies: 13 13 66 (24/7)
Email:
customer.service@sapowernetworks.com.au

Locations of Gas, Electricity or Telecommunications
Before You Dig Australia (BYDA)
Formerly Dial Before You Dig (DBYD)
Phone: 1100
www.byda.com.au

After-hours locations or Gas Emergency (including LPG)
Origin Energy LPG
24-hour hotline: 1800 808 526

Kleenheat
LPG emergencies (cylinders & tanks):
1800 093 336

ELGAS
Emergency response: 1800 819 783

APA
Emergency Gas Leak: 1800 GAS LEAK
(1800 427 532)
LPG Leak: 1800 808 526
Gas Transmission Pipelines (SA): 1800 808 526

Gas or Electrical major incident reporting 24/7
Office of the Technical Regulator
24/7 SA Emergencies: 1800 558 811

Gas Trade contact
APA
Local Gas Distribution Network:
1800 GAS LEAK (1800 427 532)
Connections & Enquiries: 1300 001 001

[Additional websites for further information]

Acts of the Parliament of SA
www.legislation.sa.gov.au

SafeWork SA
www.safework.sa.gov.au

Gas Energy Australia (GEA)
www.gasenergyaus.au

Australian Competition & Consumer Commission (ACCC)
www.accc.gov.au

Australian Gas Networks
www.australiangasnetworks.com.au

ELGAS
www.elgas.com.au

Standards Australia
www.standards.org.au