

AS/NZS5601 updates and hydrogen fuel cells FAQ

Energy Safe Victoria August 2024

Energy Safe Victoria (Energy Safe) published a video explaining amendments to the AS/NZS 5601 standards, the top 10 non-compliances for complex gas installations related to AS/NZS5601.1 and the top five non-compliances related to AS/NZS 5601.2. The video also provides an update on hydrogen fuel cells and fuel cell systems. You can watch the video on our website at <https://www.energysafe.vic.gov.au/5601>.

Three Q&A webinars were held during July 2024 with Energy Safe subject matter experts answering questions from gasfitters about the amendments and other topics covered in the video. This FAQ documents those questions and our answers. Please note, that the questions have been edited for brevity and clarity.

AS/NZS 5601 amendments

Q: Are press fittings deemed unsuitable for a gas installation and require OPSO or equivalent?

A: Press fit end connector fittings are suitable and do not require fire emergency isolation. OPSO's would only be required for any consumer piping if stipulated by AS/NZS 5601.1 to protect downstream equipment.

Q: Will you remove the need for reversion fittings on hybrid Gas lines, considering 1m of copper tails?

A: Reversion fittings are still required for multilayer pipe in accordance with AS/NZS 5601.1 clause 5.2.12 irrespective of the requirement to have 1m of metallic pipe into the building.

Q: Why are copper connections required inwall to connect appliances? We use a brass MI thread lugged elbow.

A: Metallic pipe connections to appliances are required due to the low temperature rating of multilayer pipe. As per clause 5.2.12, "Brazing, welding or annealing shall be conducted in accordance with the manufacturer's specifications but shall be not be less than 1m from a joint with non-metallic components."

The intent is to specifications, but multilayer pipe is not exposed to temperatures which may impact its integrity and therefore lead to a dangerous situation with a compromised material.

It is important to note that MI lugged elbows generally have parallel threads and are only permitted to be used with a permanent setting jointing compound and only when there is no other practical alternative as noted in AS/NZS 5601.1 Clause 4.4.

Q: Why on multilayer pipe systems can we not use brass MI thread elbows to allow connection to an appliance? We no longer weld and do not weld to a MI thread to change back to copper.

A: Whilst you personally may not weld or braze, the next gas fitter working on the installation may choose to and the requirement of 1m of metallic pipe in the wall protects the non-metallic components from heat that could cause damage. The intent is to ensure the concealed multilayer pipe is not exposed to temperatures which may impact its integrity and therefore lead to a dangerous situation with a compromised material.

Q: With consideration to the new home industry and the hybrid installation of multilayer pipe with copper tails and copper to be 1m into the new home, is there a possibility for dispensation to have the install of reversion fittings removed in this instance? Many 2 story new homes have no ducted heater and only a hot water heater and cooktop with particular attention to the hot water heater being close to the gas meter, so it's a costly exercise to provide access for reversion fittings if required in the roof OR reversion fittings in ground floor ceiling which requires ventilation and access?

A: The requirement for reversion fittings only applies when the main run exceeds 10m of multilayer pipe. No dispensations are allowed with the introduction of the 1m metallic pipe requirements.

Q: Do you have to fit an excess flow valve to an existing installation that contains multilayer piping if you are only doing an appliance replacement at the property?

A: No, where you are only changing over or installing a gas appliance a fire emergency isolation valve is not required to be retrofitted. However, Energy Safe strongly recommends the client is notified of the benefits of having fire emergency isolation installed on the installation as the client may request for fire emergency isolation to be installed.

Q: Regarding battery storage systems what distance should multilayer piping be away from the top of battery storage system?

There are no specific requirements in AS/NZS 5601.1. It is recommended that you consult the battery energy storage system installation instructions for guidance.

Q: An LP Gas installation of a commercial kitchen in a shipping container; Will it have its own category?

A: The AS/NZS 5601 committee is currently working to consolidate the requirements for mobile catering installations, making them accessible in a single location. However, this is not a part of the latest amendment.

Q: What is the maximum length of a hose assembly and if it is connected in an adjacent cupboard in an existing installation do I have to replace it?

A: The hose assembly should be of continuous length, as short as possible, and not exceed 3m, unless required by the specific appliance. As per Clause 5.9.4(c) of AS/NZS 5601.1 the hose assembly can pass through a fixed partition if the opening is large enough to prevent damage. Additionally, some hose assemblies have a maximum lifespan and must be periodically replaced, as indicated on the label attached to the hose or in the installation instructions.

Q: Can you use a hose assembly to connect a free-standing cooker if the cooker is located within a meter of a doorway?

A: AS/NZS 5601.1 Clause 5.9.3(b) requires hose assembly connection points to be at least 1m away from doorways. Although the clause includes a note about space heater installations, the requirement applies to all hose assembly connections, not just space heaters.

Q: Can you run the hose assembly through the brick wall to a gas bottle when installing a LP Gas pizza oven in an outside alfresco area?

A: No. AS/NZS 5601.1 clause 5.9.4 (b) prohibits a hose assembly to pass through a wall, portable partition, ceiling or floor.

Q: When consumer gas piping is supported by way of rods and hangers from a roof structure, are expansion joints required?

A: Yes, expansion joints or offsets are required when consumer gas piping runs are long enough to justify them. If the piping is supported by rods and hangers from a roof structure, the need for expansion joints or offsets still depends on the length of the run and other factors such as temperature changes and potential pipe movement.

Q: Do the expansions provisions need to be installed/offset to the vertical or offset in line with the installation?

A: This would all depend on what method you choose to use to provide for expansion. If it is a proprietary system i.e. an expansion hose assembly, then you would need to install the product as per the manufacturers installation instructions.

Q: Are there changes proposed to AS/NZS 5601.1 clause 5.8.3 - Diameter of rod hangers [for support of consumer piping]?

A: Yes. There are some changes being proposed in the next revision of AS/NZS 5601.1 It will not be covered in this amendment.

Q: Could you please clarify that when asked to do the mandatory 2-year gas check in a residential rental you use that form that is available on the VBA site for the reporting of appliances that are installed?

A: This is a requirement for standard gas installations, which falls under the jurisdiction of the Victorian Building Authority (VBA). Please contact the VBA for further information of their reporting requirements.

Q: Do you have to remove the heat exchanger completely on a wall furnace to check for cracks even if it's not spilling any carbon monoxide?

A: The inspection of a heat exchanger for cracks and abnormalities is a requirement as part of a gas appliance service as per AS 4575. Only if you were able to fully inspect the heat exchanger without removing it would this be acceptable.

Please note if the heat exchanger does have a crack but is not spilling carbon monoxide this should not be treated as immediately dangerous.

Q: Can you please explain the vapour barrier diagram in Figure 3.1.8(e)?

A: This diagram helps determine Y, the distance LPG can travel around a vapor barrier from a leak or vent. Z is the total distance from the vapor source to the end of the plume, X is the distance from the source to the barrier, and Y is from the plume's edge to the barrier. Y plus X should equal Z.

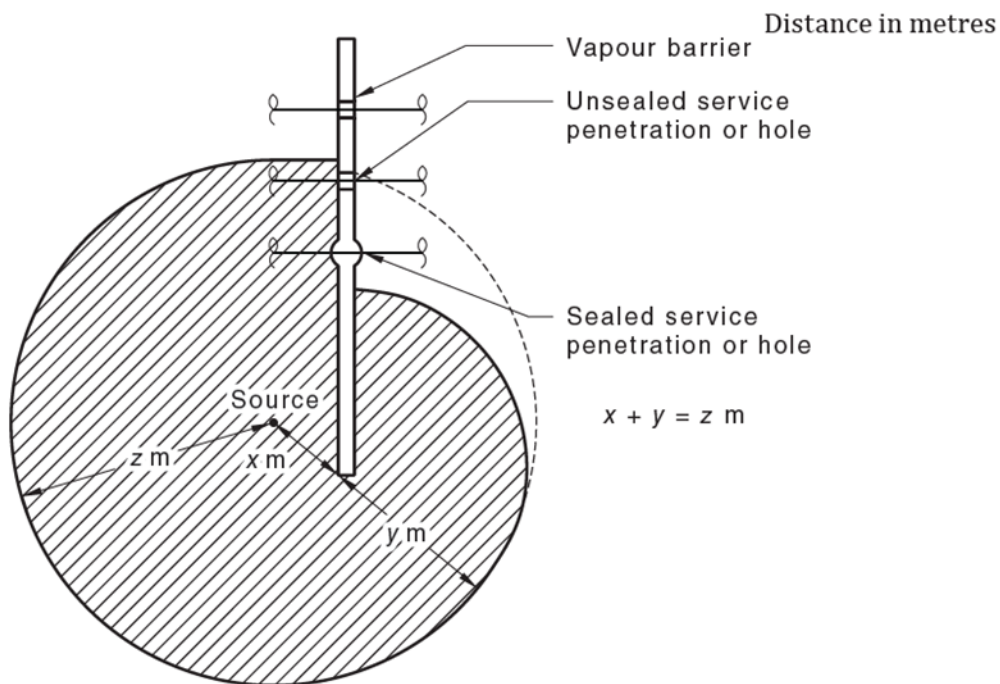


Figure 3.1.8(E) — Effect of a vapour barrier on the measurement of distances

Timing of the amendments

Q: When are these amendments due to be released on SAI Global?

A: Standards Australia have notified Energy Safe the amendments will be published in late August 2024. When the amendments are published Energy Safe and the VBA will be sending electronic notifications to gas fitters making them aware of the publications.

Hydrogen

Q: Is there Hydrogen in Victoria's gas supply yet?

A: Hydrogen has been blended with natural gas in several locations, however only in controlled quantities and under strict limitations.

Q: Will there be a new license for gasfitters with the introduction of hydrogen? When will training commence?

A: Currently there is no license class for Hydrogen. Works on hydrogen installations can now be performed under Section 2 of AS/NZS 5601.1 under a performance-based design and work on Hydrogen Fuel cells via complex and Type B applications via Gastrac.

Q: How will existing flue systems cope with blended hydrogen?

A: It is worth noting a lot more water is generated in the flue products of combustion from burning hydrogen. Whilst hydrogen does burn hotter than natural gas there are minimal effects when hydrogen is blended with natural gas at low volumes.

Transition to renewables

Q: What is the future of the gas industry? Is natural gas getting phased out?

A: Energy Safe is an independent statutory authority for gas, electrical and pipeline safety and is not in a position to speak on behalf of the Victorian Government about gas policy.

However, there is no indication from Government to date that existing gas connections will be shut down and it has been acknowledged that natural gas will continue to play an important role in our energy system during the transition to renewable energy sources.

Who we are

Energy Safe is Victoria's safety regulator for electricity, gas and pipelines. We regulate the energy industry and sector to ensure generation, supply and usage uphold safety standards.

We are also responsible for licensing and registering electricians and educating the community about energy safety.

In everything we do, we strive to deliver on our purpose to keep Victoria energy safe. Always.

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