

## High Risk Equipment Safety Critical Testing

The Gas Technical Regulators of Australia Gas Equipment Certification Scheme Rules require conformity assessment bodies (CABs) to conduct ongoing post-certification surveillance activities as part of the overall certification process.

- For all products the post-certification surveillance consists of a physical inspection of a production sample, which involves a physical comparison of the sample against the relevant Technical Specification, a review of production instructions and markings, and consideration of any safety related complaints or incidents.
- For gas equipment that has been classified by the technical regulators as high risk, in addition to the physical comparison, the equipment is required to undergo safety critical testing every 2 years as part of surveillance activities.

This document provides a list of gas equipment that has been classified as high risk. It also specifies for each type of equipment the testing that is required to be undertaken once every 2 years on a representative sample.

Products have been classified as high risk due typically either due to inherent design risks with the equipment that cannot be reliably assessed through the existing post surveillance physical inspection process, or due to field incidents that highlight a safety risk. The High Risk Safety Critical Testing equipment list shall be reviewed by the Gas Technical Regulators bi-annually at which time changes to the list and requirements will be considered. Changes to the list will consider a range of factors when determining if it necessary for equipment or requirements in the list to be modified. These include:

- Field incidents and investigations
- Standard changes
- Input from industry stakeholders
- Other relevant evidence demonstrating a change in risk
- Recalls

Consultation with industry stakeholders will be undertaken as part of the review process.

## High Risk Gas Equipment Testing Requirements

Equipment Type	Testing Required
Open flued indoor water heaters <i>Note: Limited to natural draught appliances and appliances with draught diverters.</i>	Standard: AS/NZS5263.1.2:2020 <ul style="list-style-type: none"> <li>• Clause 3.3 Gas leakage</li> <li>• Clause 3.4 Gas consumption</li> <li>• Clause 5.2.2 Spillage of combustion products</li> <li>• Clause 5.2.3 Performance with downdraught and blocked flue (excluding updraught)</li> </ul>
Open flued space heaters	Standard: AS/NZS5263.1.3:2021 <ul style="list-style-type: none"> <li>• Clause 3.3 Gas leakage</li> <li>• Clause 3.4 Gas consumption</li> <li>• Clause 5.2.101 Safety shut down under negative room pressure</li> </ul>
Flueless space heaters	Standard: AS/NZS5263.1.3:2021 <ul style="list-style-type: none"> <li>• Clause 3.3 Gas leakage</li> <li>• Clause 3.4 Gas consumption</li> <li>• Clause 4.2 Underload combustion</li> <li>• Clause 5.13.1 Operation of ODS</li> </ul>
Type 2 open flued decorative effect appliances <i>Note: Limited to efficient decorative appliances as detailed in Clause 5.2.101 of AS/NZS5263.1.8</i>	Standard: AS/NZS5263.1.8:2021 <ul style="list-style-type: none"> <li>• Clause 3.3 Gas leakage</li> <li>• Clause 3.4 Gas consumption</li> <li>• Clause 5.2.101 Safety shut down under negative room pressure</li> </ul>
Domestic gas refrigerators	Standard: AS/NZS5263.1.5: 2019 <ul style="list-style-type: none"> <li>• Clause 3.3 Gas leakage</li> <li>• Clause 3.4 Gas consumption</li> <li>• Clause 5.13.1 Operation of ODS</li> <li>• Clause 5.13.4 Emissions test</li> </ul>
Radiant gas heaters <i>Note: Limited to area heaters, table top heaters and heaters for non-residential indoor use, excluding overhead radiant tube heaters</i>	Standard: AS/NZS5263.1.4:2017 <ul style="list-style-type: none"> <li>• Clause 3.3 Gas leakage</li> <li>• Clause 3.4 Gas consumption</li> <li>• Clause 4.2 Underload combustion</li> <li>• Clause 4.3 Overload combustion</li> <li>• Clause 5.13.1 Operation of ODS</li> <li>• Clause 5.13.3 Combustion at low appliance inlet pressure</li> </ul>
LP portable and mobile appliances <i>Note: limited to cookers with enclosed cartridges, and heaters</i>	Standard: AS/NZS2658:2022 <ul style="list-style-type: none"> <li>• Clause 3.4 Gas leakage</li> <li>• Clause 3.5 Gas consumption</li> <li>• Clause 4.2 Underload Combustion</li> <li>• Clause 4.3 Normal Combustion</li> <li>• Clause 6.4.1 Overpressure protection (cookers only)</li> <li>• Clause 7.6.1 Operation of ODS (heaters only)</li> </ul>

Equipment Type	Testing Required
<p>Hose and hose assemblies  <i>Note: Limited to class A, B, C, and D hoses</i></p>	<p>Standard: AS/NZS1869:2012</p> <ul style="list-style-type: none"> <li>• Clause 2.3.1 &amp; 2.3.2 Hydrostatic pressure</li> <li>• Clause 2.14 Hose and coupling compatibility</li> </ul>

## High Risk Equipment Details

<b>Appliance Type</b>	Open Flued Indoor Water Heaters					
<b>Scope Limitations</b>	None					
<b>Safety Risk Classification Basis</b>	<ul style="list-style-type: none"> <li>Open flued water heaters are indoor appliances where the risk spillage of combustion products under negative pressure conditions or other fault conditions is high. Experience with other open flued appliances has shown that minor changes to construction can have significant impact on compliance and safety and these variations are unlikely to be identified during a visual inspection.</li> </ul>					
<b>Testing Required</b>	<p>Standard: AS/NZS5263.1.2</p> <ul style="list-style-type: none"> <li>Clause 3.3 Gas leakage</li> <li>Clause 3.4 Gas consumption</li> <li>Clause 5.2.2 Spillage of combustion products</li> <li>Clause 5.2.3 Performance with downdraught and blocked flue (excluding updraught)</li> </ul>					
<b>Risk Assessment (where a fault is present)</b>						
	Property Damage	Injury	Fatality	Testing addresses safety risks	Foreseeable high risk misuse	
<b>Risk Rating</b>	1	5	5	5	1	
<b>Notes</b>	Risks relate to spillage of combustion products into the living area during use.					

<b>Appliance Type</b>	<b>Open Flued Space Heaters</b>					
<b>Scope Limitations</b>	None					
<b>Safety Risks Basis</b>	<ul style="list-style-type: none"> <li>Open flued space heaters are indoor appliances where the risk spillage of combustion products under negative pressure conditions or other fault conditions is high. Experience with open flued appliances has shown that minor changes to construction can have significant impact on compliance and safety, and these variations are unlikely to be identified during a visual inspection.</li> <li>Open flued space heaters have been involved in a number of incidents involving both injury and fatality.</li> </ul>					
<b>Testing Required</b>	Standard: AS/NZS5263.1.3 <ul style="list-style-type: none"> <li>Clause 3.3 Gas leakage</li> <li>Clause 3.4 Gas consumption</li> <li>Clause 5.2.101 Safety shut down under negative room pressure</li> </ul>					
<b>Risk Assessment (where a fault is present)</b>						
	Property Damage	Injury	Fatality	Testing addresses safety risks	Foreseeable high risk misuse	
<b>Risk Rating</b>	1	5	5	5	1	
<b>Notes</b>	Risks relate to spillage of combustion products into the living area during use.					

<b>Appliance Type</b>	<b>Flueless Space Heaters</b>					
<b>Scope Limitations</b>	None					
<b>Safety Risks Basis</b>	<ul style="list-style-type: none"> <li>Flueless space heaters are indoor appliances where the atmosphere quality relies on the safe operation of the burner and reliable operation of the ODS if room ventilation is compromised. Experience with other appliances has shown that minor changes to construction can have significant impact on compliance and safety and there is a risk that these variations are unlikely to be identified during a visual inspection.</li> </ul>					
<b>Testing Required</b>	Standard: AS/NZS5263.1.3 <ul style="list-style-type: none"> <li>Clause 3.3 Gas leakage</li> <li>Clause 3.4 Gas consumption</li> <li>Clause 4.2 Underload combustion</li> <li>Clause 5.13.1 Operation of ODS</li> </ul>					
<b>Risk Assessment (where a fault is present)</b>						
	Property Damage	Injury	Fatality	Testing addresses safety risks	Foreseeable high risk misuse	
<b>Risk Rating</b>	1	5	5	5	4	
<b>Notes</b>	Risks relate to increased emission of carbon monoxide products into the living area during use and ensuring reliable operation of the ODS if room ventilation is restricted.					

<b>Appliance Type</b>	<b>Open Flued Decorative Effect</b>					
<b>Scope Limitations</b>	Efficient decorative appliances as detailed in Clause 5.2.101 of AS/NZS5263.1.8					
<b>Safety Risks Basis</b>	<ul style="list-style-type: none"> <li>Similar to open flued space heaters, efficient decorative effect appliances are indoor appliances where the risk spillage of combustion products under negative pressure conditions or other fault conditions is high. Experience with open flued appliances has shown that minor changes to construction can have significant impact on compliance and safety, and these variations are unlikely to be identified during a visual inspection.</li> </ul>					
<b>Testing Required</b>	Standard: AS/NZS5263.1.8 <ul style="list-style-type: none"> <li>Clause 3.3 Gas leakage</li> <li>Clause 3.4 Gas consumption</li> <li>Clause 5.2.101 Safety shut down under negative room pressure</li> </ul>					
<b>Risk Assessment (where a fault is present)</b>						
	Property Damage	Injury	Fatality	Testing addresses safety risks	Foreseeable high risk misuse	
<b>Risk Rating</b>	1	4	4	5	1	
<b>Notes</b>	Risks relate to spillage of combustion products into the living area during use.					

<b>Appliance Type</b>	<b>Domestic Gas Refrigerators</b>					
<b>Scope Limitations</b>	None					
<b>Safety Risks Basis</b>	<ul style="list-style-type: none"> <li>Gas Refrigerators are indoor appliances where the atmosphere quality relies on the safe operation of the burner and reliable operation of the ODS if room ventilation is compromised. Experience with other appliances has shown that minor changes to construction can have significant impact on compliance and safety and there is a risk that these variations are unlikely to be identified during a visual inspection.</li> <li>Gas refrigerators have been involved in a number of incidents and fatalities when used in confined locations.</li> </ul>					
<b>Testing Required</b>	Standard: AS/NZS5263.1.5: 2019 <ul style="list-style-type: none"> <li>Clause 3.3 Gas leakage</li> <li>Clause 3.4 Gas consumption</li> <li>Clause 5.13.1 Operation of ODS</li> <li>Clause 5.13.4 Emissions test</li> </ul>					
<b>Risk Assessment (where a fault is present)</b>						
	Property Damage	Injury	Fatality	Testing addresses safety risks	Foreseeable high risk misuse	
<b>Risk Rating</b>	1	5	5	5	5	
<b>Notes</b>	Risks relate to increased emission of carbon monoxide products into the living area during use and ensuring reliable operation of the ODS if room ventilation is restricted.					

<b>Appliance Type</b>	<b>Radiant Gas Heaters</b>					
<b>Scope Limitations</b>	Limited to appliances approved for non-residential indoor use, area heaters and table top appliances only. Excluding overhead radiant tube heaters					
<b>Safety Risks Basis</b>	<ul style="list-style-type: none"> <li>Indoor radiant appliances operate where the atmosphere quality relies on the safe operation of the burner and reliable operation of the ODS if room ventilation is compromised or misuse occurs. Experience with other appliances has shown that minor changes to construction can have significant impact on compliance and safety and there is a risk that these variations are unlikely to be identified during a visual inspection.</li> <li>Table top and area heaters in particular are at an increased risk of misuse from being operated in an enclosed area.</li> </ul>					
<b>Testing Required</b>	Standard: AS/NZS5263.1.4:2017 <ul style="list-style-type: none"> <li>Clause 3.3 Gas leakage</li> <li>Clause 3.4 Gas consumption</li> <li>Clause 4.2 Underload combustion</li> <li>Clause 4.3 Overload combustion</li> <li>Clause 5.13.1 Operation of ODS</li> <li>Clause 5.13.3 Combustion at low appliance inlet pressure</li> </ul>					
<b>Risk Assessment (where a fault is present)</b>						
	Property Damage	Injury	Fatality	Testing addresses safety risks	Foreseeable high risk misuse	
<b>Risk Rating</b>	1	5	5	5	5	
<b>Notes</b>	Risks relate to increased emission of carbon monoxide products into the living area during use and ensuring reliable operation of the ODS if room ventilation is restricted.					

<b>Appliance Type</b>	<b>LP Portable and Mobile Appliances</b>					
<b>Scope Limitations</b>	Limited to cookers with enclose cartridges, and portable heaters					
<b>Safety Risks Basis</b>	<ul style="list-style-type: none"> <li>Butane cartridge cookers and portable heaters are at high risk of misuse where the correct operation of safety devices are critical for product safety. Minor changes to construction or quality control can have significant impact on compliance and safety and there is a risk that these variations are unlikely to be identified during a visual inspection.</li> <li>Butane cartridge cookers and portable heaters have been involved in a high number of field incidents and have a history of safety and compliance issues.</li> </ul>					
<b>Testing Required</b>	<p>Standard: AS/NZS2658:2022</p> <ul style="list-style-type: none"> <li>Clause 3.4 Gas leakage</li> <li>Clause 3.5 Gas consumption</li> <li>Clause 4.2 Underload Combustion</li> <li>Clause 4.3 Normal Combustion</li> <li>Clause 6.4.1 Overpressure protection (cookers only)</li> <li>Clause 7.6.1 Operation of ODS (heaters only)</li> </ul>					
<b>Risk Assessment (where a fault is present)</b>						
	Property Damage	Injury	Fatality	Testing addresses safety risks	Foreseeable high risk misuse	
<b>Risk Rating</b>	4	5	5	5	5	
<b>Notes</b>	Risks relate to increased emission of carbon monoxide products from heaters into the living area during use and ensuring reliable operation of the ODS if room ventilation is restricted, and ensuring safety shutoff is reliable if a cartridge in a cooker is overheated.					

<b>Appliance Type</b>	<b>Hose Assemblies</b>					
<b>Scope Limitations</b>	Limited to hoses with classes A, B, C, and D of AS/NZS1869					
<b>Safety Risks Basis</b>	<ul style="list-style-type: none"> <li>The integrity of the hose assemblies are critical and failure can result in serious incidents. Minor changes to construction can have significant impact on compliance and safety and there is a risk that these variations are unlikely to be identified during a visual inspection</li> </ul>					
<b>Testing Required</b>	Standard: AS/NZS1869:2012 <ul style="list-style-type: none"> <li>Clause 2.3.1 &amp; 2.3.2 Hydrostatic pressure</li> <li>Clause 2.14 Hose and coupling compatibility</li> </ul>					
<b>Risk Assessment (where a fault is present)</b>						
	Property Damage	Injury	Fatality	Testing addresses safety risks	Foreseeable high risk misuse	
<b>Risk Rating</b>	5	5	4	5	4	
<b>Notes</b>	Risks relate to gas leakage that may ignite.					