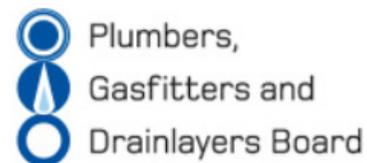


# Information on

## AS/NZS 5601.1:2010 Gas Installations

### – Part 1 General Installations



# Information on AS/NZS 5601: *Gas installations* – *Part 1* as the mandatory Standard for gas installations in New Zealand

Slide reference number	Text
<b>Introduction</b>	
<b>1</b>	<p>This presentation provides information on AS/NZS 5601: <i>Gas installations – Part 1</i>.</p> <p>With the Gas (Safety and Measurement) Regulations now citing AS/NZS 5601: 2010 – the Installation Standard – in place of NZS 5261 as the mandatory Standard for gas installations in New Zealand, there are some significant changes all practitioners need to be aware of.</p> <p>In this presentation, we will cover some of the key changes to the Installation Standard. There are, however, additional changes to the Installation Standard not covered by this presentation. For this reason, it is important for gasfitters and other practitioners to review the Standard.</p>
<b>2</b>	<p>The presentation has been developed by Energy Safety; the Plumbers, Gasfitters and Drainlayers Board; and Standards New Zealand to assist gasfitters and practitioners with using the Installation Standard, in conjunction with the Amendments to the Gas (Safety and Measurement) Regulations 2010 that come into effect on 1 July 2013.</p> <p>This presentation is available on the Energy Safety website.</p> <p>These webpages contain other useful information, including a companion video that describes amendments to the gas certification regime that come into effect 1 July 2013.</p>

3	Gasfitters who have a current licence are able to access AS/NZS 5601 and other key Standards to view the latest versions. This can be done by logging onto the practitioner logon at the Plumbers, Gasfitters and Drainlayers Board's website, which links to the Standards New Zealand online library service. Or you may purchase Standards directly from Standards New Zealand.
4	<p>For the purposes of this presentation:</p> <ul style="list-style-type: none"> <li>• the Gas (Safety and Measurement) Regulations 2010 will be referred to as the Regulations</li> <li>• the Plumbers, Gasfitters and Drainlayers Act will be referred to as the PGD Act</li> <li>• AS/NZS 5601 will be referred to as the Installation Standard</li> <li>• the Plumbers, Gasfitters and Drainlayers Board will be referred to as the Board</li> <li>• pressure in kilopascals is referred to as kPa.</li> </ul>
<b>Installation Standard</b>	
5	<p>With the Regulations now citing AS/NZS 5601: 2010, in place of NZS 5261 as the mandatory Standard for gas installations in New Zealand, there are some significant changes all practitioners need to be aware of.</p> <p>AS/NZS 5601 incorporates additional technical and editorial amendments. The installation requirements for caravans and boats can be found in AS/NZS 5601 Part 2, which replaces the means of compliance Standard for caravans and boats, NZS 5428.</p> <p>Both parts of AS/NZS 5601 – the Installation Standard – follow a similar structure, with mandatory essential requirements in section 2 of each part, and means of compliance in the remaining sections of each part.</p> <p>This presentation outlines aspects of AS/NZS 5601 Part 1 that differ from NZS 5261.</p>
6	<p>Major changes in this revision include:</p> <ul style="list-style-type: none"> <li>• additional requirements for the use of proprietary multilayer piping systems</li> <li>• changes to the installation of a freestanding cooking appliance connected with a hose assembly</li> <li>• revision of the appendix on pipe sizing – Appendix F</li> <li>• inclusion of a new appendix on gas in high-rise buildings – Appendix K</li> <li>• inclusion of a new appendix with diagrammatical representation of outdoor areas – Appendix I.</li> </ul> <p>In this presentation we'll discuss each of these changes in more detail. We will also discuss the mandatory change regarding negative air pressures, and a number of key changes to means of compliance.</p>

<p><b>7</b></p>	<p><b>Additional requirements for the use of proprietary multilayer piping systems</b></p> <p>There are two mandatory requirements that are important to note.</p> <ol style="list-style-type: none"> <li>1. Proprietary systems need to be suitable for the type of gasfitting undertaken and they need to be installed as a complete entity. See 2.3.2.</li> <li>2. Proprietary systems in residential premises shall be designed to permit future additions or repairs to be undertaken. See 2.4.2.</li> </ol>
<p><b>8</b></p>	<p><b>Other changes to proprietary systems</b></p> <p>Before installing a proprietary system, you as the gasfitter must determine its suitability for the type of installation including the consideration of the gas measurement system and the type and quality of gas, the pressures that the system may be subject to, and any environmental conditions likely to be experienced. See 4.5.1.</p> <p>Manufacturers' instructions for proprietary systems must be strictly adhered to.</p> <p>Proprietary systems cannot be mixed with parts from another proprietary system without the approval of the relevant manufacturers. There is provision in the Installation Standard for transition from conventional piping to a proprietary system, but the transition must be made using the appropriate components.</p> <p>A manufacturer's label must be attached adjacent to the gas measurement system or LP Gas cylinder identifying the make or trade name of the system. See 4.5.4.</p> <p><b>Proprietary multilayer piping</b></p> <p>Installations where proprietary multilayer piping is used in multi-unit dwellings exceeding the 10-metre provision must be made for future connections using alternate materials. Installations where multilayer piping is being used should also make provision for reversion so that no more than 30% or 10 metres, whichever is greater, of the main pipe run lies downstream of a reversion point.</p> <p>In this context, reversion refers to providing a means for connection to a proprietary system in an accessible position so that at a later date a gasfitter can connect onto that system for any additional gas reticulation requirements. Fittings used would be a section of pipe or a barrel union that are not part of the proprietary system to bridge between the sections of the multilayer piping. An example of this is found in Figure 5.2 of the Installation Standard.</p> <p>Multilayer piping installed outdoors above the ground must be protected from degradation due to exposure to ultraviolet light and physical damage, and may include the use of sleeving or wrapping using a suitable protective material.</p>

<p><b>9</b></p>	<p><b>Changes to the installation of a freestanding cooking appliance connected with a hose assembly</b></p> <p>Installing the hose assembly and the restraining wire or chain for a freestanding cooking appliance now has specific installation requirements. See 2.4.1.</p> <p>This is to ensure the hose is kept clear of the floor when the appliance is situated in its normal operating position and the restraining wire or chain prevents stress on the hose when the appliance is moved. Details are outlined in clause 6.10.1.9.</p>
<p><b>10</b></p>	<p><b>Revision of the appendix on pipe sizing – Appendix F</b></p> <p>The process employed for pipe sizing under the former Standard remains. The Installation Standard, however, introduces an alternative means of compliance method of pipe sizing using tables. In using either pipe sizing method, the following information should first be obtained:</p> <ul style="list-style-type: none"> <li>• the type of gas to be used in the installation, its heating value, and specific gravity</li> <li>• the input rating of each gas appliance, megajoules per hour, and the required input pressure</li> <li>• the diversity, if any, arising from use of different gas appliances at different times</li> <li>• the piping layout – length of run, and number and type of fittings</li> <li>• available pressure</li> <li>• allowable pressure drop.</li> </ul> <p>Worked examples for both methods of pipe sizing are provided in the Installation Standard.</p>
<p><b>11</b></p>	<p><b>Inclusion of a new appendix gas in high-rise buildings – Appendix K</b></p> <p>Appendix K is an informative appendix that provides guidance for those associated with the design and installation of gas systems in high-rise buildings. It is not, however, a comprehensive design guide. High-rise building gas installations are complex and their design needs to resolve issues not normally encountered in low-rise gas installations. High-rise building gas system design and installation should only be undertaken by practitioners with demonstrated competency in this type of work.</p> <p>Ensuring a safe gas installation in a multi-storey building is significantly more complex than for single-storey residential installations. They generally consist of larger, more complex systems that are installed in areas with smaller amounts of adventitious ventilation and more opportunities for escaping gas to accumulate. As a rule, occupants of multi-storey buildings should not be exposed to a risk greater than that for a single-level residence. At the design stage of a gas system in a high-rise building, the risks need to be assessed and measures implemented to eliminate or moderate the associated hazards.</p>

12	<p><b>Inclusion of a new appendix with diagrammatical representation of outdoor areas – Appendix I</b></p> <p>Appendix I is an informative appendix and provides diagrams to assist gasfitters and others to determine the appropriate positioning of indoor or outdoor appliances in areas where there is some form of enclosure.</p>
13	<p><b>Negative air pressures</b></p> <p>Another mandatory change in this revision is that negative air pressures shall be avoided except for installations that include industrial appliances and gas turbines. See 2.6.5.</p>
14	<p><b>Changes to means of compliance include the following</b></p> <ul style="list-style-type: none"> <li>• Methods of locating gas leaks. The Installation Standard provides a means of safely locating gas leaks, as well as managing the environment in which gas leaks have occurred. See 3.11.</li> <li>• Two types of joints that are not to be used are: <ul style="list-style-type: none"> <li>– Capillary fittings containing soft solder are not be used in consumer piping. See 4.4.</li> <li>– The crimping of a larger pipe to accommodate a smaller pipe diameter. See 5.1.7.</li> </ul> </li> <li>• Consumer piping shall not be attached to a fence. See 5.3.1.</li> <li>• Depth of cover for consumer piping has decreased from 600 millimetres in roadways to 450 millimetres. See 5.4.3.</li> <li>• Piping beneath buildings and in the ground shall be done either in copper with joints brazed and kept to a minimum, multilayer pipe without joints, or plastic coated semi-rigid stainless steel without joints. Note: the term building includes carparks as defined in the New Zealand Building Code. See 5.3.11.</li> <li>• Changes to spacing and support dimensions for various types of pipe work. See Tables 5.5 and 5.6.</li> <li>• Where a gas appliance regulator is not fitted, a relief valve set to the maximum overpressure of the gas appliance shall be installed. See 5.2.2.</li> <li>• Where the outlet operating pressure setting of a consumer piping gas pressure regulator for natural gas exceeds 1.5 kPa or for LP Gas exceeds 3.5 kPa, there shall be a permanent and durable notice in a prominent position near the regulator showing the outlet pressure setting. See 5.11.1.6.</li> <li>• In installations other than single occupancy residential premises, consumer piping shall be identified if the operating pressure exceeds 7 kPa or the location is not easily identified as consumer piping. See Figure 5.1 for the provision of the marking and identification of pipework. See 5.1.12.</li> </ul>

<b>Conclusion</b>	
<b>15</b>	In this presentation we have covered some of the key changes to the Installation Standard. There are, however, additional changes to the Installation Standard. It is important for you to review the Standard to see how it affects you and the work you do.
<b>16</b>	AS/NZ 5601, the Installation Standard, is currently under review and it is likely that the revised Standard will be published in time for citation in the regulations in 2014.  Some useful information, such as the checklists, are not included in the 2010 version of the Installation Standard but will be included in this next revision of the Standard.
<b>17</b>	To learn more about the changes and transitioning to the new regimes, visit the Energy Safety website. You may also want to visit the Board's website to learn more about what these changes mean to you as a practitioner.  In addition, you may wish to subscribe to Standards New Zealand's free electronic magazine, Touchstone, to keep up to date with the latest news on Standards.