NZS 5261:2003

GAS INSTALLATION

AMENDMENT NO. 1

May 2005

REVISED TEXT

EXPLANATORY NOTE

This amendment has been issued to correct anomalies which became evident in the Standard's implementation. The references have been updated and more definitions have been included. Clarification on commissioning and decommissioning has been provided. Appendix M provides information on fire resistant materials and Appendix N sets out clearance distances for small GMSs.

APPROVAL

Amendment No. 1 was approved on 24 March 2005 by the Standards Council and by the Associate Minister of Energy on 15 April 2005, to be an amendment to NZS 5261:2003 pursuant to the provisions of section 10 of the Standards Act 1988.

CONTENTS (page 1)

Add

Delete (page 2)

and **substitute:**

Delete (page 3)

and **substitute:**

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Delete (page 3)

2.3.3 Prohibited fittings 48

and **substitute:**

2.3.3 Prohibited types of joints and fittings 48

Delete (page 4)

2.4.6.2 Prohibited locations 64

and **substitute:**

2.4.6.2 Prohibited locations for quick connect devices 64

Delete (page 9)

2.7.1.1 Clearances around a gas cooking gas appliance 102

and **substitute:**

2.7.1.1 Clearance around a gas cooking appliance 102

Appendix (page 11)

Add:

M Fire Resistant Material (Informative) 168
N Typical Clearance Distances for a small GMS (Informative) 168

(Amendment No.1 May 2005)

RELATED DOCUMENTS

NZS (page 13)

Add

NZS/AS 1530:- - - -	Methods for fire tests on building materials, components and structures
Part 1 1994	Combustibility test for materials

Delete

NZS 5262:1997	Gas appliance safety
NZS 6101:- - - -	Classification of hazardous areas
Part 1:1988	Flammable gas and vapour atmospheres

and **substitute** in numeric order:

NZS 5262:2003	Gas appliance safety
NZS 5263:2003	Gas detection and odorization

AS/NZS (page 13)

Add

AS/NZS 1530:- - - -	Methods for fire tests on building materials, components and structures
Part 3:1999	Simultaneous determination of ignitability, flame propagation, heat release and smoke release
AS/NZS 4360:2004	Risk management

Delete

AS/NZS 2430:- - - -	Classification of hazardous areas
Part 3:1997	Examples of area classification
Part 3.1:1997	General
Part 3.4:1997	Flammable gases

and **substitute:**

AS/NZS 2430:- - - -	Classification of hazardous areas - Examples of area classification
Part 3.1:2004	General
Part 3.3:2004	Flammable liquids
Part 3.4:2004	Flammable gases
AS/NZS 60079:- - - -	Electrical apparatus for explosive gas atmospheres
Part 10:2004	Classification of hazardous areas (IEC 60079-10:2002 MOD)

NZS/BS (page 14)

Delete

NZS/BS 143:2000	Threaded pipe fittings in malleable cast iron and cast copper alloy

Delete

NZS/BS 1256:2000	Threaded pipe fittings in malleable cast iron and cast copper alloy

Delete

NZS/BS 3601:1987	Specification for carbon steel pipes and tubes with specified room temperature properties for pressure purposes

BS (page 15)

Add

BS 143 and 1256:2000	Threaded pipe fittings in malleable cast iron and cast copper alloy

Add (page 16)

BS/EN beneath the list of **BS** Standards.

BS/EN 10216:- - - -	Seamless steel tubes for pressure purposes – Technical delivery conditions
Part 1:2002	Non-alloy steel tubes with specified room temperature properties
BS/EN 10217:- - - -	Welded steel tubes for pressure purposes – Technical delivery conditions
Part 1:2002	Non-alloy steel tubes with specified room temperature properties

Other Publications (page 16)

Add

SAA/SNZ HB 436:2004 Risk management guidelines – Companion to AS/NZS 4360:2004

New Zealand Legislation (page 16)

Add

Hazardous Substances and New Organisms Act 1996

Hazardous Substances (Compressed Gases) Regulations 2004.

(Amendment No.1 May 2005)

1.1.5 *Definitions* (page 21)

Delete the definition of CYLINDER (page 22) and **substitute:**

CYLINDER. A container for the storage of LPG, with a capacity of more than 120 millilitres but no more than 500 litres, but does not include an aerosol container.

(The two sub definitions of CYLINDER remain unchanged.)

At the end of the definition of FIRE RESISTANT MATERIAL (page 23) **add**:
…"as described in Appendix M."

On page 25 **add** two new definitions:

HALLWAY. A space connecting several rooms and capable of being sealed off from living areas by doorways.

HOT WATER BOILER. A gas appliance for the production of hot water at pressures exceeding 200 kPa, and temperatures exceeding 100 °C that does not produce or contain steam.

Delete the definition of TANK (page 27) and **substitute:**

TANK. A container (other than a cylinder or aerosol container) designed for the storage of LPG in either the liquid or gaseous form.

On page 28 **add** the following definition:

WOBBE INDEX. The number produced when the calorific value of the gas (expressed in MJ/m^3) is divided by the square root of the relative density of the gas. The groupings of the numbers determine the interchangeability of the gas appliances.

(Amendment No.1 May 2005)

Add (page 30):

1.2.8 *Commissioning and recommissioning*

Every gas installation shall be commissioned upon installation to ensure safe start-up and operation of the gas installation, and shall include checks of safety and operating controls.

Following maintenance work on any part of a gas installation, the affected part of the installation shall be re-commissioned by checking to ensure safe start-up and operation.

Following a shut down of an installation, or supply to an installation, the installation shall be checked to ensure gas tightness and safe start-up.

1.2.9 *Decommissioning*

Every gas installation, or part of a gas installation, that is permanently decommissioned shall be physically disconnected from the gas supply, purged and sealed.

(Amendment No.1 May 2005)

1.6.2 *General gas appliance installation requirements* (page 37)

Delete the heading and first paragraph of this clause and **substitute:**

1.6.2 *General installation requirements*

Gas appliances and equipment shall be installed in accordance with the manufacturer's appropriate written instructions. Every gas appliance shall comply with NZS 5262.

(Amendment No.1 May 2005)

1.6.4 *Ventilation of the gas appliance space and air supply to gas appliances* (page 38)

Delete the first paragraph and **substitute:**

Ventilation shall ensure proper operation of the gas appliance and flueing system and maintain safe ambient conditions, including avoidance of negative pressure.

(Amendment No.1 May 2005)

1.6.7 *Commissioning* (page 39)

Delete both paragraphs and **substitute:**

Every gas appliance shall be commissioned upon installation to ensure safe start-up and operation, and shall include checks of safety and operating controls.

(Amendment No.1 May 2005)

2.2.1 *Gas supply* (page 41)

Add new item:

(f) Location of GMS (see Appendix N).

(Amendment No.1 May 2005)

2.2.10 *Dealing with a dangerous gas installation or gas appliance* (page 44)

Delete heading and **substitute:**

2.2.10 *Dealing with dangerous gas installations*

NOTE – (page 44)

Renumber the existing note "(1)" and **add** a new note:

(2) The consumer/operator should also be notified.

(Amendment No.1 May 2005)

2.3.2.1 *Acceptable Standards* (page 45)
Add at the end of the clause:

"… and 2.3.3."

(Amendment No.1 May 2005)

2.3.3 *Prohibited fittings* (page 48)

Delete and **substitute:**

2.3.3 *Prohibited types of joints and fittings*

The following fittings or jointing systems shall not be used for joints in gas pipework:

(a) Plain nipples e.g. running nipple with parallel threads;

(b) Croxed joints;

(c) Compression fittings with non-metallic olives;

(d) Compression fittings with metallic olives if not approved by the manufacturer for use with gas;

(e) Longscrew connectors;

(f) Internally threaded PVC-U fittings unless manufactured with a reinforcing metal band.

(Amendment No.1 May 2005)

2.4.3.12 *Piping embedded in concrete* (page 61)

Delete item (a) and **substitute:**

(a) The piping shall be plastic-coated or covered in a proprietary wrapping;

(Amendment No.1 May 2005)

2.4.6.2 *Prohibited locations* (page 64)

Delete heading and **substitute:**

2.4.6.2 *Prohibited locations for quick connect devices*

(Amendment No.1 May 2005)

2.6.5 *Special requirements for flueless gas appliances* (page 88)

Delete item (c) and **substitute:**

(c) For some other types of flueless gas appliances, specific ventilation requirements are given in section 2.7.

(Amendment No.1 May 2005)

2.6.12.10 *Application of twin wall flues* (page 96)

Delete the first sentence and **substitute:**

Where permanent ventilation of at least 2500 mm^2 cannot be provided at the base of the flue, twin wall flues installed in walls shall be used only for gas appliances having a flue gas temperature of less than 300 ^oC.

(Amendment No.1 May 2005)

Table 16 – Minimum clearances required for flue terminals shown in figure 3 (page 101)

Ref. j, in the 5th line "Gas appliances over 150 MJ/h input up to 200 MJ/h input" under the **"Fan Assisted"** column **delete** "500" and **substitute** "300".

In the 6th line "Gas appliances over 200 MJ/h input" under the **"Fan assisted"** column **delete** "1500" and **substitute**: "500".

(Amendment No.1 May 2005)

2.7.1.1 *Clearances around a gas cooking gas appliance* (page 102)

Delete the heading and **substitute:**

2.7.1.1 *Clearance around a gas cooking appliance*

(Amendment No.1 May 2005)

2.7.1.2 *Protection of a combustible surface near a gas cooking appliance* (page 103)

Delete the NOTE and **substitute:**

NOTE –
The following shall satisfy this requirement:
(a) The fixing of ceramic tiles of 5 mm thickness to the surface;
(b) Attaching fire-resistant material (see Appendix M) to the surface and covering with sheet metal with a minimum thickness of 0.4 mm.

(Amendment No.1 May 2005)

2.7.1.6 *Installation of LPG cook tops* (page 105)

Delete the NOTE and **substitute:**

NOTE – For safety, LPG cylinders should be located outside the building. See Appendix G LPG Cylinder Locations for outside installation requirements.

Delete (D) and **substitute:**

(D) The compartment in which the cylinder is located shall be ventilated directly to theoutside of the building, with a vent of at least 1000 mm^2 at low level.

(Amendment No.1 May 2005)

Figure E1 – Example of consumer piping layout (page 138)

Delete "Central heater 90 MJ/h" and **substitute:** Central heater 95 MJ/h.

(Amendment No.1 May 2005)

On page 168 **add** two new appendices**:**

APPENDIX M
FIRE RESISTANT MATERIAL

(Informative)

M1 Introduction

The primary purpose of fire resistant material is to provide thermal protection for a combustible surface and, in certain applications, it may also be called upon to support a load whilst maintaining its protective properties.

Therefore the material must provide a given thermal insulation – and not itself be combustible – and have, if necessary, physical properties which will enable it to support a known load with acceptable deformation.

M2 Specification for fire resistant material

Fire resistant material should have all of the following properties:

(a) When tested to NZS/AS 1530.1, be deemed not combustible;

(b) When tested to AS/NZS 1530.3, have a zero (0) index for all of the following:

  (i) Ignitability

  (ii) Spread of flame

  (iii) Heat evolved

  (iv) Smoke developed

(c) A thermal resistance (R) not less than 0.05 m ^{O}C/W, but in no instance should the material be of a thickness less than 6 mm;

(d) If required to support a load, a compressive strength of not less than 1.5 MPa;

(e) If required to support a load, deform not more than 2 % of its thickness when subjected to a compressive stress of 350 kPa.

(Amendment No.1 May 2005)

APPENDIX N
TYPICAL CLEARANCE DISTANCES FOR A SMALL GMS

(Informative)

N1 General

The following guidelines apply for locating a GMS with a meter having a capacity up to 25 m^3 per hour (actual) (G16).

(a) The GMS should be located to provide for the shortest, most direct route of gas service pipe (i.e. on front of a house or on side within 3.0 m of front);

(b) Where the property is on a corner lot, the GMS should be positioned on the side of the property that fronts the street address for that property;

(c) Where it is not possible to maintain the specified clearance, consideration should be given to installing the GMS at the consumer's boundary or other location and the meter outlet piped to the building;

(d) Where the GMS is installed in a recessed meter box the box should be sealed completely from wall cavities and consumer's premises;

(e) The meter should be installed so that the base of the meter is above finished ground level;

(f) The service valve should be a maximum height of 300 mm from finished ground level.

N2 Exclusion areas and hazardous zones

The exclusion areas and hazardous zones around the GMS have been determined from the applicable gas related and hazardous area codes, and include suitable margins to cover typical variations and layouts.

The determinations assume that the maximum inlet pressure to the service regulator does not exceed 1000 kPa and that the vent discharges vertically downwards.

N2.1 Electrical equipment

For the purposes of this Standard all fixed sources of ignition and/or building openings should be excluded from a Zone 1 or Zone 2 area (see NZS 5258:2003 – A19 Hazardous area classification).

Horizontal dimensions are taken from the service riser centre line, and vertical dimensions are taken from finished ground level. The distances given assume the service valve is installed at a height of no more than 300 mm above finished ground level. Where the service valve cannot be installed to this requirement then all vertical measurements should be adjusted accordingly.

The clearances specified should be increased if the GMS layout or position is likely to create any additional hazard.

NOTE – The service riser has been used as the point of reference as it is clearly identifiable and unlikely to be moved.

N2.2 Natural gas

In addition to N1, the following should apply for natural gas GMS installations:

(a) For a natural gas GMS with a venting regulator relief valve

(i) The interior of the GMS enclosure should be classified as Zone 1

(ii) An area of at least 0.8 m horizontally from the service riser centre line, and at least 1.5 m vertically from finished ground level should be classified as Zone 2.

(b) For a natural gas GMS with an automatic shut-off device regulator

(i) The interior of the GMS enclosure should be classified as Zone 1

(ii) An area of at least 0.4 m horizontally from the service riser centre line, and at least 0.8 m vertically from finished ground level should be classified as Zone 2.

N2.3 LPG

In addition to J1, the following should apply for LPG GMS installations:

(a) For a LPG GMS with a venting regulator relief valve

(i) The interior of the GMS enclosure should be classified as Zone 1

(ii) An area of at least 0.8 m horizontally from the service riser centre line, and at least 1.5 m vertically from finished ground level should be classified as Zone 2

(iii) A drain or pit should be excluded from an area of at least 1.5 m radius measured from the service riser centre line.

(b) For a LPG GMS with an automatic shut-off regulator device

(i) The interior of the GMS enclosure should be classified as Zone 1

(ii) An area of at least 0.4 m horizontally from the service riser centre line, and at least 0.8 m vertically from finished ground level should be classified as Zone 2

(iii) A drain or pit should be excluded from an area of at least 0.4 m radius measured from the service riser centre line.

(Amendment No.1 May 2005)