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Comment is on

☐ DR S008:2019

☒ DR S009:2019

☐ DR C637:2019

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Summary of comments come from observations at new development construction sites, where **nbn** is to deploy network infrastructure. The developer/building owner has engaged a contractor to prepare the project for connection.

1. TOs – operation by ordinary persons
2. Hazardous Areas (Gas) – application for installation of conduit

TOs – operation by ordinary persons

nbn new developments provides property developers and contractors with technical standards for the preparation of reservation areas for the fitting of **nbn** network infrastructure for broadband. The standards take in to account the need for an ordinary person to access the installed equipment, to plug and unplug cords from the User Network Interface (UNI) ports. **nbn** has provided standards for locations and the height range of the equipment reservation areas. Customer cabling is beyond the scope of these **nbn** standards, but is best co-located for operation by ordinary persons. **nbn** observes situations where first socket or TO, has been installed in new buildings where the socket is not easily accessible, or requires the ordinary person to use a step ladder to reach. This can also cause risk to the service provider who has provided equipment such as a WiFi Modem/Router, and requires the ordinary person to perform tasks and check indicator lights during a service fault situation. Retail Service Providers also rely on self-installation kits for new service connections.

Note that there are references to safety:

2.2

Objective

The basic objective of this Standard is to—

- (a) protect the health and safety of any person who may—
 - (i) operate;
 - (ii) work on;
 - (iii) use services supplied by means of; or
 - (iv) be otherwise reasonably likely to be affected by the operation of;

a TELECOMMUNICATIONS NETWORK or a FACILITY; and

2.5

Basic aims

This Standard covers design and construction practice sufficient to ensure that—

- (a) the installation or normal use of the CABLING does not expose CARRIER personnel, CABLING PROVIDERS, customers or other persons to any danger; and
- (b) the installation or normal use of the CABLING does not adversely affect the integrity (proper end-to-end functioning) of a TELECOMMUNICATIONS NETWORK.

2.6

Safety of the installation

In the performance of any CABLING WORK, in general the CABLING PROVIDER should ensure that—

- (a) ORDINARY PERSONS are safeguarded from contact with any electrical energy source other than ES1 and from any exposure to hazardous laser radiation;
- (b) CABLING PROVIDERS are safeguarded from accidental personal electrical contact with LV telecommunications circuits,

LV POWER and HV circuits or accidental exposure to hazardous laser radiation;

- (c) CABLING PROVIDERS who are required to access, install or maintain LV telecommunications circuits, are safeguarded from accidental personal electrical contact with LV POWER and HV circuits;
- (d) licensed electrical workers are safeguarded from accidental personal electrical contact with any telecommunications circuits or accidental exposure to hazardous laser radiation;
- (e) the creation of any general safety hazard is avoided, e.g. tripping, falling or bodily impact with a protruding object; and
- (f) any manufacturer warning or instruction label is not damaged or obscured during installation.

There is some reference to installation practice, seeking clarity or amendment to the S009 requirements that would address these situations more clearly.

5.1 Safe and sound practice

CUSTOMER CABLING **shall** be installed in accordance with principles of safe and sound practice.

Note: An example of practices that are not considered to be safe and sound are those that may, in due course, lead to the injury of a CABLING PROVIDER or ORDINARY PERSON, such as—

- (a) physical protrusions in trafficable areas that a person may bump into or trip over (e.g. due to their location or low visibility);
- (b) non-compliance with another industry Standard or Code; or
- (c) the improper installation of a CABLING PRODUCT and associated equipment that makes it unfit for purpose.

5.2 Manufacturer's instructions

CABLE and CABLING PRODUCTS installed for connection to a CARRIER'S TELECOMMUNICATIONS NETWORK **shall** be installed—

- (a) in accordance with the manufacturer's instructions, including, in the case of CABLE, such things as CABLE bend radius, tension, manner of CABLE fixing, colour code, etc.; and
- (b) in accordance with the instructions of the manufacturer or supplier of any equipment to which the CABLE or equipment is to be CONNECTED.

5.5 Proper use

5.5.1 Fitness for purpose

A CABLING PRODUCT **shall** be selected and installed so that it is fit for its intended purpose.

Note: A PLUG with inadequate performance characteristics or an ineffectively terminated PLUG would be an example of an installation practice that is not fit for purpose.

nbn site observations:



***nbn** example site installation observation – customer cabling TO in area not easily accessible for ordinary person*



***nbn** example site installation observation – customer cabling TO at a height and location not easily operated by ordinary person.*

Hazardous Areas (Gas) – application for installation of continuous conduit

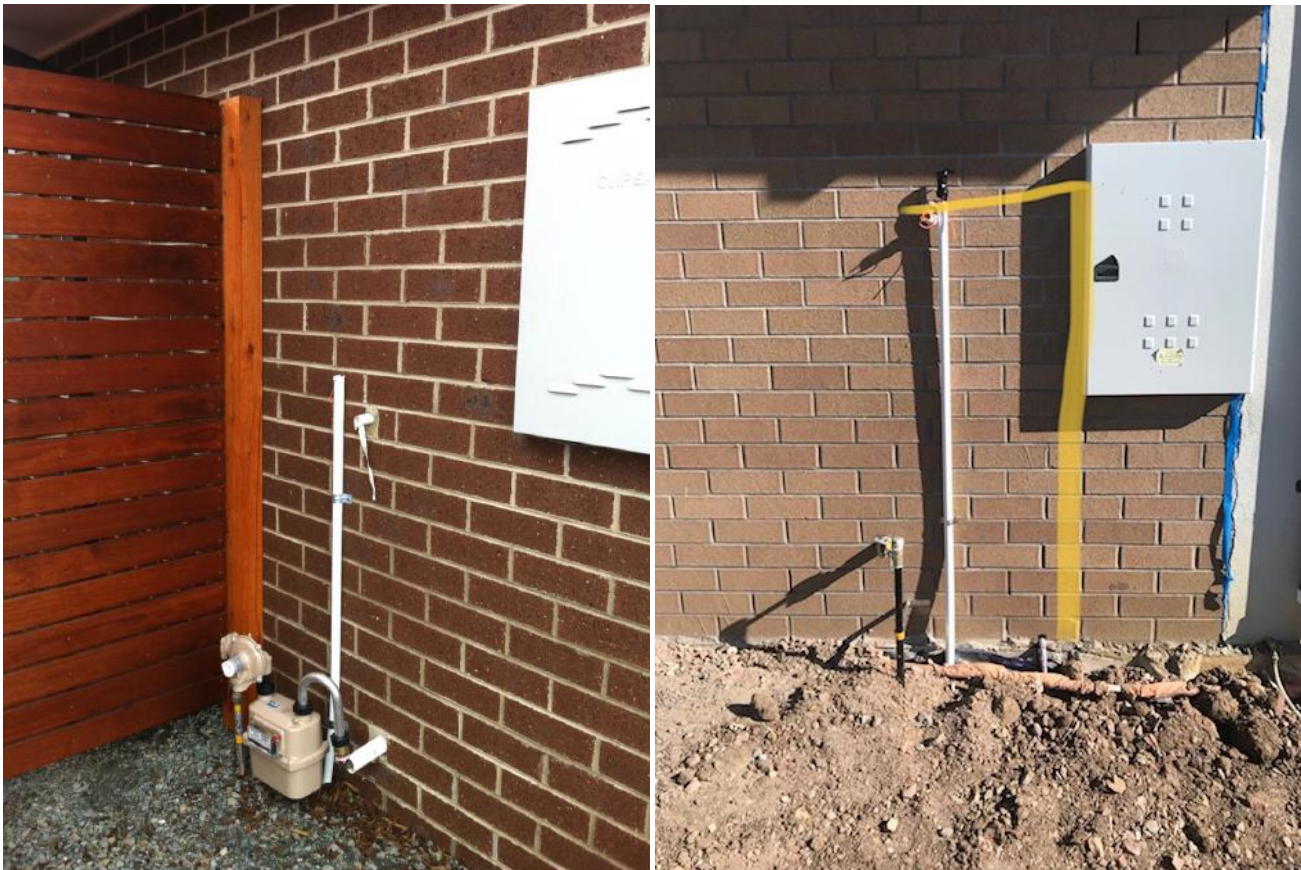
nbn new developments provides property developers and contractors with technical standards for the preparation of reservation areas for the fitting of **nbn** network infrastructure for broadband. The standards provide technical details for the reservation area for a Premise Connection Device or Network Termination Device, fitted the external surface of a building structure. **nbn** details align with AS/CA S009 about hazardous areas of domestic gas installation.

Installation contractors preparing mostly buildings and building units for connection to services, will pre-wire customer cabling and prepare lead-in and internal telecommunication conduits. Disputes have occurred between building contractors and reticulated gas suppliers about the location of Telecommunication conduits and boxes.

The hazardous area in 7.1.2.3 Figure 1 is quite large when taking in to account the gas meter/regulator assembly, and would typically be approximately 2.5m (wide) by 1.2 (high). For a typical installation at side of a new dwelling, the builders are also allowing for space to accommodate an electrical meter panel, and the telecommunications connection. The builders have been able to prepare for the telecommunications by preparing a position above the hazardous area and adjacent to the electrical meter panel.

The disputes with gas suppliers have been about conduit passing through the hazardous area to the higher telecommunications preparation area above. The builder contractors are seeking clarity about conduit going through a hazardous area without any openings when referencing AS/CA S009.

nbn site observations:

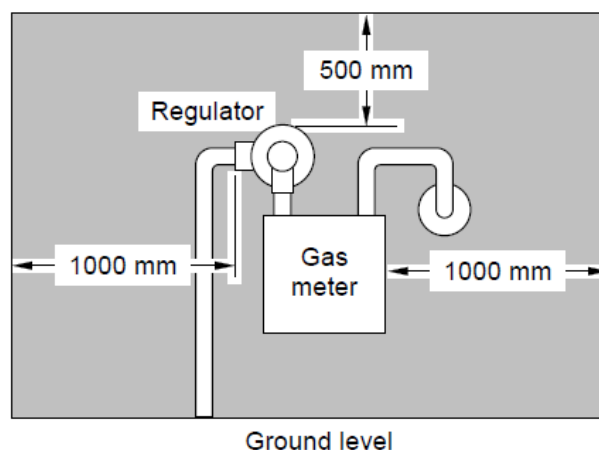


nbn example site installation observation – continuous conduit through hazardous area with opening outside the area.

7.1.2.3 Domestic premises

There are no specific Australian Standards for classification of HAZARDOUS AREAS in domestic PREMISES. For domestic PREMISES, HAZARDOUS AREAS are defined in this Standard for flammable gas installations only, as follows:

- (a) Reticulated natural gas meters and regulators, as set out in Figure 1.
- (b) Heavier-than-air bottled gas, e.g. Liquid Petroleum Gas (LPG), stored in exchange cylinders or in-situ fill cylinders, having an aggregate gas capacity exceeding 30 m³ (approximately 56 kg of LPG) - as set out in Figure 2.



Note 1: The distances are measured from the surface of the gas meter, gas regulator or any gas fitting, whichever is outermost.

Note 2: The HAZARDOUS AREA does not extend outside—

- (a) an approved gas enclosure; or
- (b) the gas compartment of a combined gas and telecommunications enclosure approved by the relevant gas utility.

Figure 1

**Hazardous area for reticulated gas supply meters and regulators
(domestic premises)**

7.1.2.4 Risk factors for cabling

Any CONDUIT, CABLE or equipment installed, or being installed, within a HAZARDOUS AREA may create an explosion hazard due to—

- (a) piping or leakage of flammable gas or liquid via CONDUITS, CABLE sheaths or holes through walls to points outside the HAZARDOUS AREA where the explosion risk is not controlled;
- (b) propagation of an explosion; or
- (c) ignition of a flammable mixture by electric arcing or sparking caused by such things as—
 - (i) the use of electric tools and equipment during installation or repair;
 - (ii) jointing, connecting or jumpering of metallic conductors;
 - (iii) fusion splicing of optical fibre;
 - (iv) CABLE damage (e.g. impact, corrosion);
 - (v) overvoltages (e.g. due to lightning activity); or
 - (vi) static electricity.

7.1.3.3 Conduits

Where a CUSTOMER CABLING CONDUIT is installed in a HAZARDOUS AREA—

- (a) any CONDUIT that terminates in a HAZARDOUS AREA, including within any pit, draw box, ENCLOSURE or other CABLE access point, **shall** be sealed against the transmission of any gas or liquid from the HAZARDOUS AREA to any non-hazardous area; and
- (b) any CONDUIT located within a HAZARDOUS AREA **shall not** contain any discontinuity, union, coupling or other fitting between the boundaries of the HAZARDOUS AREA or between a sealed point described in Item (a) and any non-hazardous area.

7.1.3.6 Cables

Where any CUSTOMER CABLE is located within a HAZARDOUS AREA:

- (a) The CABLE **shall not** contain any discontinuity between the boundaries of the HAZARDOUS AREA or between a termination point that complies with Clause 7.1.3.7 and any non-hazardous area.

- (b) Any CABLE that contains ELECTRICALLY CONDUCTIVE ELEMENTS passing through or above a HAZARDOUS AREA should be protected against mechanical damage (e.g. impact) or environmental damage (e.g. heat, UV) that may result in arcing or sparking.

Note 1: CABLE damage has the propensity to give rise to sparking that may be incendiary and that may fall into the HAZARDOUS AREA if the CABLE is installed outside, but above, the HAZARDOUS AREA.

Note 2: Mechanical protection may be in the form of a robust BUILDING protrusion or recess, or may be provided by installing the CABLE in suitable CONDUIT.

- (c) Where any CABLE that contains ELECTRICALLY CONDUCTIVE ELEMENTS passes through or above a HAZARDOUS AREA, lightning surge suppression should be installed in the CABLE outside the HAZARDOUS AREA to reduce any overvoltages to a level that would significantly reduce the risk of arcing or sparking within or above the HAZARDOUS AREA.

Note 1: Overvoltages have the propensity to give rise to sparking that may be incendiary and that may fall into the HAZARDOUS AREA if the CABLE is installed outside, but above, the HAZARDOUS AREA.

Note 2: Refer to AS/NZS 1768 for guidance about installing lightning surge suppression.

7.1.3.7

Cable terminations, joints, splices and telecommunications outlets

Equipment that may be a source of ignition, such as CABLE terminations, joints/splices and TELECOMMUNICATIONS OUTLETS, **shall not** be located in a HAZARDOUS AREA described in Clause 7.1.2 unless they are selected and installed in accordance with AS/NZS 60079.14.

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