

Gas Equipment Bulletin: Installation of Buried Piping or Tubing by Directional Boring, Pushing or Ploughing

ITS 21-017

CSA B149.1-2015 - Natural gas and propane installation code

6.15 Underground piping and tubing

Topic

CSA B149.1-2015 - Natural gas and propane installation code requires underground pipes to be protected against corrosion and physical damage in accordance with good engineering practice, and in accordance with the manufacturer's instructions.

Important Information

Piping or tubing is required to be mounted, braced, and supported to provide for expansion, contraction, jarring, vibration, and settling, and must be protected against either damage or breakage due to strain, wear, and mechanical impact. In addition, it is important to accompany plastic piping or tubing by a tracing wire or other approved electronically detectable tracing media.

The following best practices should be employed during the installation of buried piping or tubing by directional boring, pushing or ploughing.

- i. All underground steel pipe is to be factory coated or double wrapped.
- ii. Plastic piping and tubing is to be inspected by the installer before installation for defects such as cuts, scratches and gouges.

Damaged cylindrical pieces are to be cut out and replaced.

Inspection must be adequate to confirm sound joints. Refer to clause 6.26. of the CAN/CSA B-149.1-15.

iii. Polyethylene pipe and fittings are to be joined by heat fusion, electro-fusion or mechanical methods. Such joining methods must be compatible with the materials being joined. Manufacturer's instructions are to be followed when performing heat fusion, electro-fusion and bonding in polyethylene piping systems.

All fusers are to be certified in the applicable procedures by the manufacturer or an organization acceptable to the inspecting authority.

iv. Polyethylene pipe fusion joints will not be classified as welded joints in respect to pressure test requirements.

v. Polyethylene pipe must not be installed above ground.

vi. Polyethylene piping or tubing are to be accompanied by a tracer wire or an equivalent medium. An acceptable method could be to use a minimum of 14-gauge wire as a means of pipeline location. Both ends of the wire are to be attached to the polyethylene pipe above grade with a minimum of 18 inches (450 mm) of wire left above grade.

vii. Pressure testing conducted is to be conducted as per CAN/CSA B-149.1.

viii. If the ploughing method is used, the installer must leave all joints and connections exposed to allow visual inspection by the inspecting authority.

ix. The installer may be required to verify the integrity of the tracer wire to the inspecting authority upon request.

x. Cathodic protection may be required to be installed as necessary. The responsibilities of an installer performing the installation and replacement of appliances that are connected to an underground line that was installed by directional boring, pushing, ploughing or an existing line installed by a third party are as follows:

(i) Connections made to a line installed by a third party must be made by a licensed gas fitter.

(ii) The licensed gas fitter assumes responsibility of the installation of all underground piping or tubing back to the interconnection to the Utility meter or customer piping.

(iii) The licensed gas fitter may be required to verify the integrity of the tracer wire to the inspecting authority upon request.

To illustrate good engineering practices, an example arrangement is provided below, demonstrating items to consider in the process of installation of buried steel gas piping, on Figure (1), copper tubing on Figure (2) and plastic pipe on Figure (3)

Figure (1) Installation of buried steel pipe to supply outbuildings

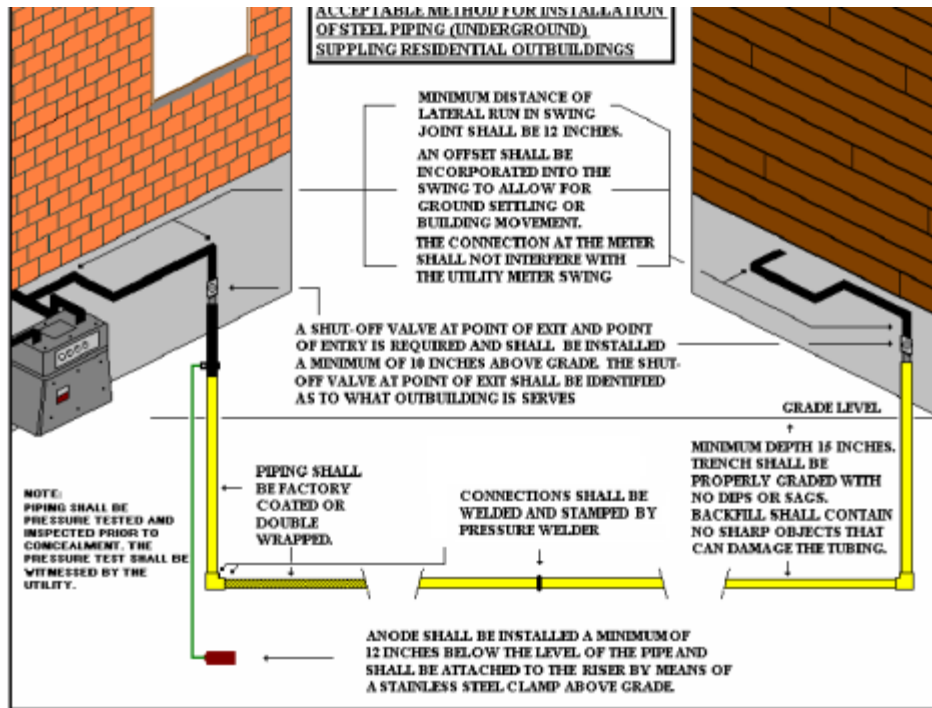


Figure (2) Installation of buried copper tubing to supply residential outbuildings

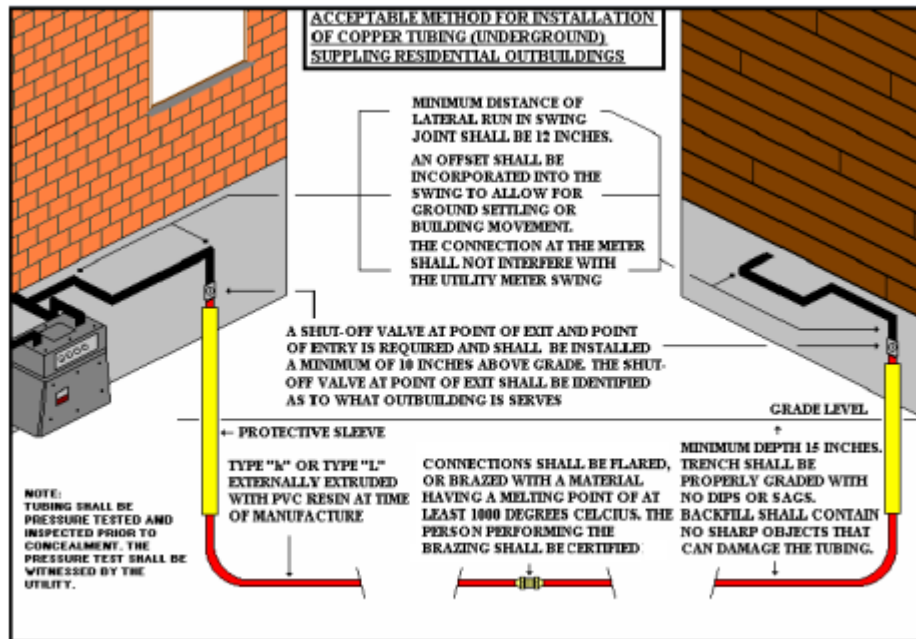
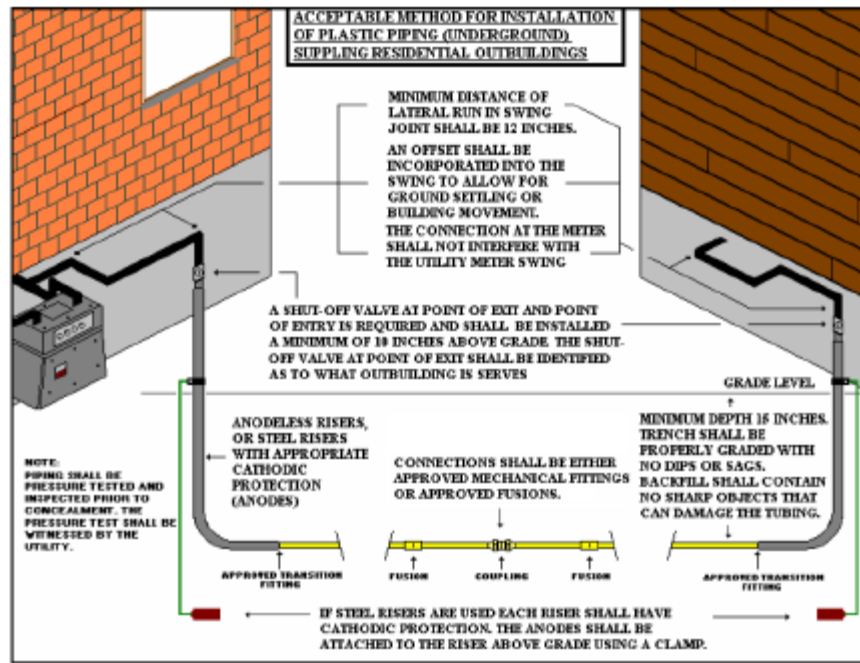


Figure (3) Installation of buried plastic pipe to supply residential outbuildings



Reference Documents:

Gas and Oil Burner Regulation 104/87 R

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