Bulletin: Protection of Piping and Tubing Approved Swing Joints

Bulletin # 24-01
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This Bulletin is for informational purposes only with respect to regulated gas work in the City of Kelowna which falls within the City's jurisdiction and is not intended as guidance outside of the City's jurisdiction. For further information related to jurisdiction please see Bulletin #23-02 City of Kelowna Gas Installation Permit Jurisdiction.

Purpose

This bulletin is intended to provide information and recommendations on how to effectively protect piping and tubing systems as required by the CSA B149.1 *Natural Gas and Propane Installation Code* (Gas Code) so as to avoid any damage to the gas piping and reduce the potential for injury (resulting from explosions or fires).

Definition:

Swing Joint: an assembly of pipe joints so constructed that the parts joined are movable either so that one of the parts may be rotated relative to the other or so that one of the parts in addition to being rotatable relative to the other may be moved about its own axis.

General Information

As required by Gas Code clause 6.16.3, all piping shall be mounted, braced, and supported to provide for expansion, contraction, jarring, vibration, and settling, and shall be protected against either damage or breakage due to strain, wear, and mechanical impact. Where piping is required to be protected as required by the Gas Code an approved swing joint or other approved alternative is required.

Swing Joints Required:

When soil or cover material settles or heaves from frost action on the inlet side of a residential utility gas meter, it can cause the inlet piping to move in a downward/upwards/sideways direction causing excessive stress on the meter or piping. The gas meter installation is designed and engineered to allow for this movement through the use of a piping swing that pivots on predetermined points either on the inlet or the outlet side of the meter.

Note: Swing joints for gas meters apply to typical residential or small commercial installations and may not be required where multiple meters are installed such as meter manifolds. Multiple meter sets or meter manifolds are normally installed wall mounted. These meter set assemblies have the required piping swing joint on the inlet of the meter set prior to the connection to the meter set inlet.

New Appliance Installations:
On new appliance installations the supply piping to any appliance should be connected in a manner that does not compromise the Utility meter swing or interfere with the use of the Utilities Meter by-pass tee or fitting.

Replacement Appliances:
On replacement appliance installations the existing piping should not be installed in a way that compromises the Utility Meter Swing.

Note: It is the responsibility of the licensed gas contractor and certified gas fitter replacing the appliance to ensure that any existing piping to the appliance or meter is upgraded where a hazard exists.

Tubing Connections at Gas Meters
Where corrugated stainless-steel tubing (CSST) or copper tubing is utilized as house piping, the connection to any unsupported gas meter must be made with an approved iron pipe swing joint. The swing joint must be effectively supported on the downstream side with either a listed CSST meter stub out, bracket or pipe clamp to ensure no stress can be transferred to the tubing system or gas meter.

Code Requirements

Protection of Piping and Tubing

Gas Code

6.16.1

Outdoor piping or indoor piping and tubing that is exposed to atmospheres that are corrosive to the piping or tubing shall be protected by either painting or coating.

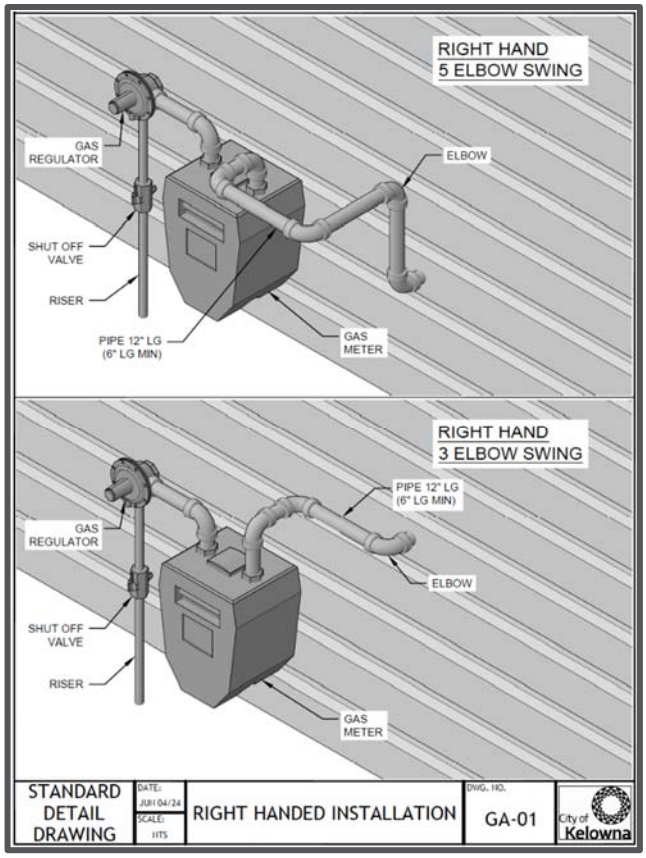
6.16.3

Piping or tubing shall be mounted, braced, and supported to provide for expansion, contraction, jarring, vibration, and settling, and shall be protected against either damage or breakage due to strain, wear, and mechanical impact.

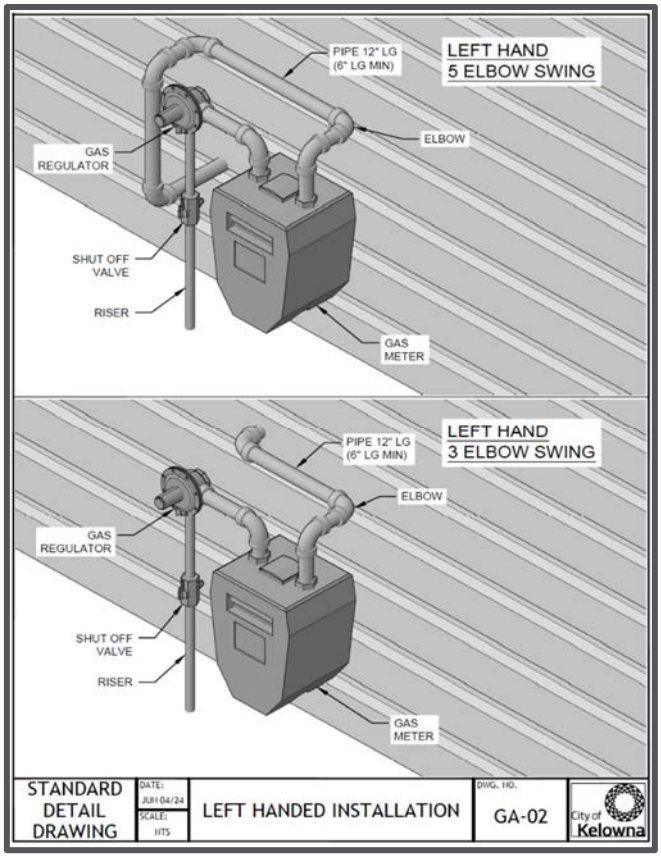
Note: Moving snow loads and ice on sloped roofs have been known to damage or break pipes

Recommendations

a) Right-Hand Supply
(supply from above and below gas meter)



b) Left Hand Supply
(supply from above and below gas meter)



Note: *All of the above recommendations for approved swing joints are provided as minimum best practice and as such must be complied with.*

Gas Utility Fittings and Meter Identification

a) Utility Meter Bypass Fittings or Assemblies

The standard design of all new gas utility meter Installations with a 1-inch outlet may incorporate a fitting immediately downstream of the outlet meter swivel. This fitting is installed on the meter outlet to facilitate the use of a meter bypass system. The gas utility uses this fitting and meter bypass system to change meters without interrupting the customer's gas supply.

This fitting is the property of the gas utility (FortisBC) and should not be removed from the system. Customer piping should be connected to the outlet of this fitting leaving the side access plug for the utility.

Fig 1.0: Typical (Jomar) bypass fitting

b) Identification of Piping or Tubing Systems for Gas Meter Manifolds

Gas Code clause 6.17.4 requires that every piping or tubing system that enters a building that has two or more gas meters shall be permanently identified with the room number, apartment number, or the area of the building it serves. To assist the gas utility in recording the correct gas meter with the appropriate address, it is recommended that at the time of gas piping rough-in (typically prior to the gas meter installation), that individual piping and tubing systems serving two or more gas meters be identified. If initial identification is not permanent, identification labels must be updated with a permanent type prior to final inspection.