

Procedure Number: **35.20.30**  
Title: **Service Connections**

**1.0 Purpose**

The purpose of this procedure is to provide requirements for service connections to low, medium, and high pressure mains.

**2.0 Scope**

This procedure applies to service connections to plastic mains, low, medium, and high pressure steel mains, and low pressure cast iron mains.

**3.0 General Information**

3.1 Each new service should be served through a separate tap from the top of the main whenever possible.

3.2 Fittings at the main will be designed with pull-out protection.

3.2.1 A compression joint or restraining coupling at the outlet of the service tee or a separate compression coupling immediately downstream of a flowlimitor will be used when the main is steel.

3.2.2 If a swing joint is used, face the branch of the service tee to the left as viewed from the building being served. This will cause the joint to tighten where the service elbow enters the branch of the service tee, if the service pipe should settle.

3.3 Compression fittings should be installed to effectively sustain the longitudinal pull-out or thrust forces caused by contraction or expansion of the piping, or by anticipated internal or external loads.

3.4 Each hot tap made on a transmission or distribution main must be performed by a qualified crew.

**4.0 Connection to Plastic Mains**

4.1 An approved mechanical service tee may be used for connecting new services to existing PVC main.

4.2 Service connections to plastic mains will be completed using a fusible service tee or an electrofusion tee.

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004	<a href="#">2/12/2018</a>	<a href="#">Frank Bennett</a>	<a href="#">4/23/2018</a>



**Figure 35.20.30-1 Service Connections to PE Mains**

[4.3](#) Refer to GOM 25.10.30 Electrofusion Fitting Installation Procedures for a review of plastic fusion installation procedures.

## **5.0 Connections to High Pressure and Medium Pressure Steel Gas Mains**

[5.1](#) Service connections to high and medium pressure steel gas mains will be completed using a steel service tee designed for tapping the main and controlling the escape of gas.

[5.1.1](#) If the wall thickness is sufficient for welding, the service tee must be a welded tee with a pressure rating equal to or greater than the MAOP of the steel main.

[5.1.2](#) If the wall thickness of the main is not sufficient for welding, an approved steel bolt-on service tee shall be used to tie into the main.

[5.2](#) Reinforcement of [branch connections](#) to the main ([i.e. fish-mouth to the main](#)) will meet the requirements of Sections 831.4 and 831.5 of the American Society of Mechanical Engineers B31.8 – Gas Transmission and Distribution Piping Systems Code.

[5.3](#) The recommended tap size should be at least 3/8” in diameter. Quarter inch taps may be necessary on thicker wall pipe.

[5.4](#) Use an approved weld inlet by pull-out resistant (Class One) compression style outlet punch tee fitting to attach PE 2406 and PE 3408 plastic services to steel mains.

[5.5](#) If the service is steel, a fully welded service tee should be used.

## **6.0 Connections to Low Pressure Steel Gas Mains**

- 6.1 Low pressure service connections to steel mains should be made with welded service tees or other approved welding fittings wherever possible.
- 6.2 [If the wall thickness of the main is not sufficient for welding, full seal clamps with an outlet sized for the service tee](#) may be used.
- 6.3 The largest drill or shell cutter capable of passing through the tee should be used to tap the main.

## 7.0 Connections to Low Pressure Cast Iron Gas Mains

- 7.1 Threaded taps may be made in cast iron pipe without reinforcement, providing the diameter of the tap is no greater than one quarter (25%) of the main diameter.
- 7.2 If the diameter of the tap is greater than one quarter (25%) of the main diameter, a [full seal clamp can](#) be used or a tee will be cut into the line.
- 7.3 The diameter of the taps should be the [as close as possible to](#) the service diameter.
- 7.4 Existing taps may be used for a replacement service if they are free of cracks and have good threads.
- 7.5 Service line connections shall not be brazed to cast iron mains.

## 8.0 Records

There are no record requirements that apply to this procedure.

## 9.0 Operator Qualification

The following Covered Task(s) may be needed for service connections to mains:

- Task #34 – Reinforce or anchor all compression fittings
- Task #48 – Install compression coupling
- Task #56 – Install bolt-on tee on plastic pipe
- Task #95 – Tapping tees

## 10.0 References

Federal Code  
49 CFR 192.151 Tapping  
49 CFR 192.273 General  
49 CFR 192.281 Plastic pipe  
49 CFR 192.283 Plastic pipe: Qualifying joining procedures  
49 CFR 192.367 Service lines: General requirements for connections to main piping

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49 CFR 192.369 Services lines: Connections to cast iron or ductile iron mains  
49 CFR 192.627 Tapping pipelines under pressure

ASME B31.8 Gas Transmission and Distribution Piping Systems