



Polyethylene Pipe Squeeze-Off

SOP

Issued

Effective:
3/30/2018

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Purpose and Scope

The purpose of this document is to enable the user to squeeze-off medium or high-density polyethylene (MDPE, HDPE, or PE) pipe during installation tie-ins and/or repairs.

Responsibility

To complete this task, employee must have Operator Qualification (OQ) Certification under task:

- M08.1141 – Squeeze Off Plastic Pipe

Definitions

FR Flame Resistant
HDPE High Density Polyethylene
IPM Inch per Minute
MDPE Medium Density Polyethylene
NGUS Natural Gas Utility Sheet
OQ Operator Qualification
PPE Personal Protective Equipment
QRG Quick Reference Guide
SDR Standard Dimension Ratio
SOP Standard Operating Procedure

Safety

Wear KUB standard personal protective equipment (PPE) (i.e., hard hat, safety glasses, safety toed footwear, and appropriately rated traffic vest). Per the *Flame Resistant Personal Protective Equipment for UGC Natural Gas Events* QRG, flame resistant (FR) PPE is required in an actual or potential gaseous environment. If squeezing-off in or near an actual or potential gaseous environment, at a minimum, the FR clothing required is as follows:

- HRC2 coveralls or HRC2 long sleeve shirts and pants
- Balaclava (sock)
- Leather gloves

Equipment and Materials

- PE pipe manufactured to ASTM D 2513
- Squeeze-off tool with built in grounding tools that comply with ASTM F1563
- Black tape
- Permanent marker
- Pit depth gauge, if applicable

References

- Performance Pipe Technical Note PP 801-TN – *Polyethylene Pipe Squeeze-Off (DriscoPlex)*
- Duraline Info Brief #8 – *Proper Squeeze-Off Procedure (PolyPipe)*
- Manufacturer Instructions for approved Squeeze-Off tool
- ASTM F1041 Standard Guide for Squeeze-Off of Polyolefin Gas Pressure Pipe and Tubing
- ASTM F1563 Standard Specification for Tools to Squeeze-Off Polyethylene Gas Pipe or Tubing
- ASTM F1734 Standard Practice for Qualification of a Combination of a Squeeze Tool, Pipe, and Squeeze-Off Procedures to Avoid Long-Term Damage in Polyethylene Gas Pipe
- TCHS-PPE-L03-QIK014 *Flame Resistant Personal Protective Equipment for UGC Natural Gas Events*
- *Grounding Polyethylene Pipe and Tools SOP*

Instructions

- ▶ Prior to performing squeeze-off and/or releasing squeeze-off tool(s), contact System Operations Services to notify them of the location and verify that work may be performed.
- ▶ **To complete this task, follow these steps:**

1. Take proper safety precautions to reduce static electricity in accordance with *Grounding Polyethylene Pipe and Tools* SOP.
2. Inspect squeeze-off tool to ensure that it is the proper size, functioning properly, and adjusted for the squeeze-off to be performed.
3. Inspect pipe for cuts, scrapes, gouges, or anomalies before placing the squeeze-off tool.
Note: Do not squeeze-off on pipe sections containing deep scratches (deeper than 10% of pipe wall thickness).
4. Locate the squeeze-off tool a minimum of 3x the pipe diameter, or 12 inches, whichever is greater, from any fusion joint, mechanical connection, prior squeeze-off point, or second squeeze-off tool.
Note: Do not squeeze-off more than once in the same location.
5. Ensure that the squeeze-off tool is square to the pipe with the squeeze plates parallel to each other.
6. Compress the pipe at a maximum compression rate of 2 inches per minute (IPM).
Note: If the temperature is below freezing, decrease the maximum compression rate to 1 IPM.
7. Squeeze the pipe until the flow of gas ceases or the mechanical stops built into the tool are contacted, whichever comes first. Continuing to operate the squeeze tool beyond this point will cause pipe or tool damage.
Note: On some squeeze tools, the mechanical lock-off device must be manually engaged. Refer to squeeze tool operation manual for additional information.
8. Complete tasks requiring squeeze-off of PE pipe.
9. Release the pipe at a maximum release rate of 0.5 IPM.
Note: If the temperature is below freezing, decrease the maximum release rate to 0.25 IPM.
10. Remove the squeeze-off tool and inspect the pipe for any signs of damage.
11. The pipe may be re-rounded by rotating the squeeze-off tool 90° and applying enough force to round the pipe or by using a special tool designed for this purpose.
12. Mark the squeeze-off location on the pipe with black tape and **the person who performed these tasks shall sign and date the pipe.**
13. If a repair requires pipe to be squeezed off in a method that does not meet the requirements set forth in this procedure, presume the pipe is damaged, and notify your Supervisor to determine or initiate next course of action for replacement or removal.
14. Any actions during the squeeze-off that do not meet the requirements set forth in this procedure shall be documented on the NGUS.

Checklists and Forms

- Natural Gas Utility Sheet (if required by Step 14)



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