



Standard Practice for Qualification of a Combination of Squeeze Tool, Pipe, and Squeeze-Off Procedures to Avoid Long-Term Damage in Polyethylene (PE) Gas Pipe¹

This standard is issued under the fixed designation F1734; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice covers qualifying a combination of a squeeze tool, a polyethylene gas pipe, and a squeeze-off procedure to avoid long-term damage in polyethylene gas pipe. Qualifying is conducted by examining the inside and outside surfaces of pipe specimens at and near the squeeze to determine the existence of features indicative of long-term damage. If indicative features are absent, sustained pressure testing in accordance with Specification **D2513** is conducted to confirm the viability of the squeeze-off process. For assistance with specimen examination, an Adjunct, **ADJF1734**², is available from ASTM.

1.2 This practice is appropriate for any combination of squeeze tool, PE gas pipe and squeeze-off procedure, and is particularly appropriate for pre-1975 Polyethylene (PE) pipe, and for pipe sizes of 8 in. or above, because of a greater possibility of long-term damage.

1.3 This practice is for use by squeeze-tool manufacturers, pipe manufacturers and gas utilities to qualify squeeze tools made in accordance with Specification **F1563**; and squeeze-off procedures in accordance with Guide **F1041** with pipe manufactured in accordance with Specification **D2513**.

1.4 Governing codes and project specifications should be consulted. Nothing in this practice should be construed as recommending practices or systems at variance with governing codes and project specifications.

1.5 Where applicable in this guide, “pipe” shall mean “pipe and tubing.”

1.6 *Units*—The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.7 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2. Referenced Documents

2.1 ASTM Standards:³

D2513 Specification for Polyethylene (PE) Gas Pressure Pipe, Tubing, and Fittings

D3350 Specification for Polyethylene Plastics Pipe and Fittings Materials

F1041 Guide for Squeeze-Off of Polyolefin Gas Pressure Pipe and Tubing

F1563 Specification for Tools to Squeeze-off Polyethylene (PE) Gas Pipe or Tubing

2.2 ASTM Adjuncts:

Interpretation Aid for Squeeze-Off Damage²

3. Terminology

3.1 Definitions:

3.1.1 *squeeze-off, n*—a technique used to temporarily control the flow of gas in a polyethylene gas pipe by flattening the pipe with a mechanical or hydraulic device.

3.1.2 *squeeze process, n*—the combination of the squeeze tool, the pipe being squeezed, and the squeeze-off procedure being used.

3.1.3 *wall compression (WC), n*—the percentage extent to which the pipe walls are compressed when the pipe is squeezed. (See **Fig. 1**.) It is defined as:

$$WC, \% = \left(1 - \frac{L}{2t} \right) \times 100 \quad (1)$$

¹ This practice is under the jurisdiction of ASTM Committee **F17** on Plastic Piping Systems and is the direct responsibility of Subcommittee **F17.60** on Gas.

Current edition approved Aug. 1, 2009. Published September 2009. Originally approved in 1996. Last previous edition approved in 2003 as F1734 – 03. DOI: 10.1520/F1734-03R09.

² Available from ASTM International Headquarters. Order Adjunct No. **ADJF1734**. Original adjunct produced in 1995.

³ For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.