

Specification for Polyethylene Line Pipe (PE)

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Specification for Polyethylene Line Pipe (PE)

1 Scope

1.1 Purpose

This specification covers polyethylene line pipe (PE) utilized for the production and transportation of oil, gas, mixed-phase fluids, and non-potable water. The piping is intended for use in new construction, insertion renewal, line extension, and repair of both aboveground and buried pipe applications.

1.2 Service Conditions

The standard service conditions for the API 15LE standard pressure rating are as follows.

The hydrostatic design stress (HDS) is considered to be the maximum long-term stress for an indefinite time and is the basis for the pipe's standard pressure rating. The standard pressure rating may be further adjusted to account for fluid service and temperature per the guidance in this standard. The design life is normally considered to be in excess of 50 years under these standard conditions but may vary depending on actual operating conditions.

Typical service temperature is between -30°F and 140°F .

If the service temperature is between -30°F and 140°F and is subject to temporary excursions outside of this range, it is recommended to consult with the manufacturer for guidance. See Annex A.

For sustained, long-term (e.g. 50 years) elevated design temperatures that exceed 140°F , see Annex A.

The fluid environment is oil, gas, mixed-phase fluids, and non-potable water, e.g. raw water, produced water, and brine.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

API Specification Q1, *Specification for Quality Management System Requirements for Manufacturing Organizations for the Petroleum and Natural Gas Industry*

ASTM D1598 ¹, *Standard Test Method for Time-to Failure of Plastic Pipe Under Constant Internal Pressure*

ASTM D1599, *Standard Test Method for Resistance to Short-Time Hydraulic Failure Pressure of Plastic Pipe, Tubing, and Fittings*

ASTM D1603, *Standard Test Method for Carbon Black Content in Olefin Plastics*

ASTM D2122, *Standard Test Method for Determining Dimensions of the Thermoplastic Pipe and Fittings*

ASTM D2290, *Standard Test Method for Apparent Hoop Tensile Strength of Plastic or Reinforced Plastic Pipe*

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

ASTM D2683, *Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter—Controlled Polyethylene Pipe and Tubing*

¹ ASTM International, PO Box C700, 100 Barr Harbor Drive, West Conshohocken, PA 19428, www.astm.org.