



Weld-End ID Controlled Polyethylene-to-Steel Transition Fittings

Letter of Compliance

The following standards are directly or tangentially considered in the design and manufacture of Hawkeye Industries' Transition Fittings. As not all sections of all listed documents are applicable to the design of transition fittings specifically, engineering judgment has been used to specify which sections are appropriate to the design of the transition piece.

Primary Fitting Codes and Standards

CSA B137.4-05

Polyethylene Piping Systems for Gas Service

Hawkeye Industries uses only pipe conforming to this standard for the manufacture of transition fittings. Pipe meeting this specification will simultaneously meet ASTM D2513.

CSA B137.4-05 also specifies the minimum required pullout strength for fittings up to 12 NPS (see table 7 of the standard). These minimum pullout values are significantly lower than the tensile strength of the polyethylene pipe. The pullout strength of Hawkeye Industries' transition fittings are designed to meet or exceed the tensile strength of polyethylene pipe.

Hawkeye Industries' transition fittings have been pressure tested to 150% maximum allowable operating pressure (MAOP). For ASTM materials, MAOP is derived from PPI TR-9 (i.e. PE3608, PE4710), and for ISO materials (i.e. PE80, PE100) MAOP is derived from ERCB Directive 077.

CSA Z662-07

Oil and Gas Pipeline Systems

Fittings manufactured by Hawkeye Industries Inc. meet the material criteria, as specified in CSA Z662-07 sections 13.3.3.1, 13.3.3.2 and 13.3.3.3 for manufacturing, design strength and resin requirements respectively.

Referenced Codes and Standards

API 15LE

Specification for Polyethylene Line Pipe

Sections 1 through 9 are referenced in CSA Z662-07 §13.3.3.1, specifying purchasing guidelines, design, manufacture, quality control, marking and storage.

ASTM F1973-05

Standard Specification for Factory-Assembled Anodeless Risers and Transition Fittings in Polyethylene (PE) and Polyamide (PA11) Fuel Gas Distribution Systems

ASME B31.8-2003

Gas Transmission and Distribution Piping Systems

ASTM D2513-05

Standard Specification for Thermoplastic Gas Pressure Pipe, Tubing and Fittings

ASTM D2837-04

Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Bases of Thermoplastic Products

ASTM D3035-03

Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Base on Controlled Outside Diameter

ASTM D3350-05

Standard Specification for Polyethylene Pipe and Fittings Materials

Referred to in CSA Z662-07 §13.3.3.3

ASTM F714-05

Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter

ASTM F1588-02

Standard Test Method for Constant Tensile Load Joint Test (CTLJT)

CSA B137.0-05

Definitions, General Requirements, and Methods of Testing Thermoplastic Pressure Piping

ERCB Directive 077

Pipelines – Requirements and Reference Tools
Rescinding and replacing EUB Directive 022

PPI TR-3

HDB/PDB/SDB/MRS Policies

PPI TR-4

HDP/PDB/SDB/MRS Listed Materials

PPI TR-9

Recommended Design Factors and Design Coefficients for Thermoplastic Pipe

PPI TR-21

Thermal Expansion and Contraction in Plastic Piping Systems

The following three standards refer specifically to materials used with the ISO design criteria (i.e. PE80 and PE100)

ISO 9080:2003

Plastics Piping and Ducting Systems – Determination of the long-term hydrostatic strength of thermoplastic materials in pipe form by extrapolation

ISO 12162:1995

Thermoplastics Materials for pipes and fittings for pressure applications: Classification and designation – Overall service (design) coefficient

Technical Information

The following technical bulletins, available on our website, contain more technical information regarding Hawkeye Industries' transition fitting and polyethylene fittings:

TB-0207

ID-Controlled Polyethylene to Steel Transition Fittings: Material and Design Specifications

TB-0807

Pressure Rating Polyethylene Fittings using CSA Z662-07, PPI TR-4 & TR-9, and ERCB Directive 077

TB-0408

Fabricated Fitting Butt Fusion Procedure

Material Traceability

Standard P.O. / MTR document control tracks steel and other metallic fitting components.

Raw polyethylene used to manufacture the Hawkeye Industries transition fitting is identified immediately upon receipt with the following information:

- Resin type (PE 4710, PE 100, etc)
- Manufacturer of the Raw Material
- Size and SDR of the raw material
- Our purchase order number

Following each manufacturing operation, information is reapplied to the part if, as a result of the handling and machining, the information is removed. At no time is a polyethylene part staged, assembled or stored without individual identifying information.

Material is traceable from end-user purchase order number, through Hawkeye Industries internal work order number, to raw material supplier to resin manufacturer.

Sincerely,



Jason Lauder, P.Eng
Engineering Manager
Hawkeye Industries Inc.

JL/jh