



**Summary of Substantive Changes
between the 2012 and the 2013 editions of
ASTM F1973, “Factory Assembled Anodeless Risers and Transition
Fittings in Polyethylene (PE) and Polyamide 11 (PA11) and
Polyamide 12 (PA12) Fuel Gas Distribution Systems”**

Presented to the IAPMO Standards Review Committee on July 8, 2013

PE has been used extensively for decades for natural gas at pressures up to 125 psig. Later on, the use of polyamide Nylon 11 (PA 11) and Nylon 12 (PA 12) pipe was approved for natural gas and was also limited to 125 psig. In January 2009 the pressure rating of PA 11 was increased by the USDOT when the federal pipeline safety code Title 49 CFR Part 192 was revised to permit the use of PA 11 at pressures up to 200 psig.

ASTM D2513-09, *Thermoplastic Gas Pressure Pipe, Tubing, and Fittings*, covered multiple types of materials for gas pressure piping. The general requirements for all the materials were in the body of the standard and additional requirements for PA, PE, PEX, and PVC were covered as annexes. Annex A5 was for PA pipe and fittings.

ASTM D2513-09a, *Polyethylene (PE) Gas Pressure Pipe, Tubing, and Fittings*, was revised to cover only PE, and in 2012 two standards incorporating the requirements of Annex A5 were developed: ASTM F2785 for PA 12 and ASTM F2945 for PA 11.

The significant differences between the testing requirements for PA in ASTM D2513 and ASTM F2785 or ASTM F2945 is that the new standards provide for higher pressures used in testing, by allowing the use of calculated pressures based on actual measured dimensions. The sustained pressure and quick burst tests were effected as follows:

- (a) the sustained pressure test in ASTM D2513 Annex 5 was conducted at 2800 psig (19 MPa). In ASTM F2945 the sustained pressure test is conducted at the pressures calculated using the pipes measured dimensions.
- (b) the quick burst test in ASTM D2513 Annex 5 was conducted at 3900 psi (27 MPa). In ASTM F2945 the test is conducted at the greater of 3900 psi (27 MPa) or the pressure calculated using the pipes measured dimensions.

The testing requirements in ASTM F2785 and ASTM F2945 are primarily the same, and other than the sustained pressure and quick burst tests there is little difference between the remaining testing requirements of ASTM D2513 Annex 5 and ASTM F2785 or ASTM F2945.