Product Test Report

Swagelok Company
29500 Solon Road
Solon, Ohio 44139 U.S.A.

TITLE
Tensile Pull Test of 6 mm 316 Stainless Steel Swagelok® Medium-Pressure Tube Fittings

PRODUCT TESTED
The following stainless steel Swagelok medium-pressure tube fittings were tested with the identified stainless steel tubing:

Ordering Number	Form	Tubing mm	Tubing Hardness
SS-6MFK0-1-4	Bar stock	6 × 2.2 annealed	85 Rb
SS-6MFK0-1-4	Bar stock	6 × 1.5 cold-drawn 1/8 hard	23 Rc

PURPOSE
The assemblies were tested to observe the tensile pull performance of the 6 mm 316 stainless steel Swagelok medium-pressure tube fitting under laboratory conditions.

TEST CONDITIONS
Original test date: March 2008

Each non-pressurized sample tested consisted of one tube length and two test fittings. The fitting was assembled by torque according to the Swagelok medium-pressure tube fitting installation instructions. Testing was conducted at ambient room temperature.

TEST METHOD
1. Each sample was attached in turn to a tensile test stand.
2. Samples were tensile pulled at a rate of 3/8 in. (9.5 mm) per minute until either the tube pulled out of the fitting or the tube fractured.
3. The judgment criterion is taken from ASTM F1387, Annex A7.

   Calculated tensile load = Ap × Sy
   where:
   Ap = cross-section area of the tube based on wall thickness
   Sy = minimum specified yield strength of tube.

4. The test result should exceed the calculated tensile load.

Swagelok Company
29500 Solon Road
Solon, Ohio 44139 U.S.A.

TEST RESULTS

Tubing Size mm	Samples Tested	ASTM F1387 Calculated Tensile Load lb (kg)	Result
6 × 2.2	6	1219 (552)	Pass
6 × 1.5	6	2461 (1116)	Pass

The stainless steel Swagelok medium-pressure tube fittings achieved a tensile load in excess of the calculated load under laboratory conditions.

The tests were conducted beyond the product's recommended operating parameters and do not modify the published product ratings.

These tests were performed to consider a specific set of conditions and should not be considered valid outside those conditions. Swagelok Company makes no representation or warranties regarding these selected conditions or the results attained. Laboratory tests cannot duplicate the variety of actual operating conditions. Test results are not offered as statistically significant. See the product catalog for technical data.

SAFE PRODUCT SELECTION

When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

Referenced Documents

ASTM F1387-99, *Standard Specification for Performance of Piping and Tubing Mechanically Attached Fittings*, American Society of Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428