Product Test Report

PTR-864

Swagelok Company
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TITLE

Hydrostatic Pressure Test of Alloy 825 Swagelok® Tube Fittings with Alloy 825 Tubing

PRODUCT TESTED

The following alloy 825 bar stock and forged body Swagelok tube fittings were tested with alloy 825 tubing.

Ordering Number	Part Form	Tubing Size	Tubing Hardness Rb
Fractional, in.			
825-400-1-4	Bar stock	1/4 × 0.065	88
825-400-9	Forging		
825-600-1-4	Bar stock	3/8 × 0.065	87
825-600-9	Forging		
825-810-1-4	Bar stock	1/2 × 0.065	89
825-810-9	Forging		
Metric, mm			
825-6M0-1-4	Bar stock	6 × 1.2	90
825-6M0-9	Forging		
825-10M0-1-4	Bar stock	10 × 1.5	88
825-10M0-9	Forging		
825-12M0-1-4	Bar stock	12 × 1.8	88
825-12M0-9	Forging		

PURPOSE

The assemblies were tested to observe the tube grip performance of alloy 825 Swagelok tube fittings with alloy 825 tubing under hydrostatic pressure in laboratory conditions.

TEST CONDITIONS

Original test date: December 2004

Each sample tested consisted of one tube length and two test fittings. The fitting was assembled according to the Swagelok tube fitting installation instructions.

TEST METHOD

The fittings were tested as follows:

1. Each sample was attached to a hydraulic test stand.
2. The tubing was restricted from burst by clamping blocks thereby forcing a failure at the fitting-to-tubing engagement.
3. Pressure was gradually increased and the pressure was recorded when loss of tube grip, material rupture or leakage that prevented applying higher pressure occurred, whichever came first.
4. Results were compared to the tubing working pressure.

TEST RESULTS

Tubing Size	Samples Tested	Working Pressure psig (bar)	Samples Attaining 4 × Working Pressure
Fractional, in.			
1/4 × 0.065	22	11 600 (799)	22/22
3/8 × 0.065	22	8200 (564)	22/22
1/2 × 0.065	22	5900 (406)	22/22
Metric, mm			
6 × 1.2	22	9580 (660)	22/22
10 × 1.5	22	6967 (480)	22/22
12 × 1.8	22	6967 (480)	22/22

The alloy 825 Swagelok tube fitting demonstrates the ability to hold pressure in excess of 4 times the working pressure when assembled according to Swagelok tube fitting installation instructions.

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.