



Product Test Report

PTR-4135

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TITLE

Steam Cycle Test of Swagelok® U Series PFA Hose Assemblies

PRODUCT TESTED

The following Swagelok U series PFA hose assemblies with sanitary Kwik Clamp connections were tested.

| Ordering Number | Hose Size in. | Test Quantity |
|--------------------|------------------|------------------|
| SS-UT24KE24KE24-40 | 1.5 | 12 |
| SS-UT32KE32KE32-40 | 2 | 12 |

PURPOSE

The hose assemblies were tested to observe the leak-tight performance when subjected to internal steam and cold water cycles under laboratory conditions.

TEST CONDITIONS

Original test date: July 2016

Temperature range: 50 to 275°F (10 to 135°C)

Pressure range: 5 to 30 psig (0.34 to 2.0 bar)

TEST METHOD

- Hose assemblies were attached to the inlet and outlet sides of the steam bench.
- A Type K thermocouple was placed internal to the steam bench inline and upstream of the hose assemblies.
- A Type K thermocouple probe was placed in contact with the outside of the sanitary Kwik Clamp fitting to monitor temperature at the surface of the hose. One thermocouple was attached to each hose assembly on the downstream side of the hose assembly.
- The steam bench was programmed to run 1000 steam and cold water cycles. A cycle consisted of the following:
 - Thirty minutes of steam at 275°F (135°C) at 30 psig (2.0 bar) through the hose assemblies.
 - Five minutes of a constant flow of cold tap water at temperature between 50°F (10°C) and 70°F (20°C) at 5 psig (0.34 bar) through the hose assemblies.
 - Three minutes of internal cold water dead-headed at temperature between 50°F (10°C) and 70°F (20°C) at 30 psig (2.0 bar) in the hose assemblies.
- The hose assemblies were monitored during the steam and cold water cycle test for any visible leakage.
- After the cycling, samples were removed and observed for core tube bulging near the end connection of the hoses.
- A representative hose sample was cut and the ID portion of the hose was photographed.

TEST RESULTS

| Ordering Number | Hose Size in. | Test Quantity | Steam Cycle Test Results |
|--------------------|---------------|---------------|---|
| SS-UT24KE24KE24-40 | 1.5 | 12 | No visible leakage No core tube bulging observed |
| SS-UT32KE32KE32-40 | 2 | 12 | No visible leakage No core tube bulging observed |

PHOTOS OF SAMPLE



This test was 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.