VISIT PRODUCT PAGE

FURON®
Pure Performance

Statement of Performance

Furon® Single & Dual Tongue & Groove Sealing Systems - Maximum Pressure Resistance

Furon® SSUM (Single Seal System) and DSUM (Dual Seal System) fittings, generally used in a FuseBond™ or welded installation of PFA pipe, were tested side by side for maximum pressure resistance (Figure 1).

When it was originally designed, Furon SSUM was rated for 300 PSI max pressure. Furon DSUM was developed based on the Furon SSUM concept and customer feedback on their experience with a Saint-Gobain No O-ring connector. The goal of the DSUM design was to provide additional safety (locking tab, secondary sealing, etc...), help the installation process and offer the same sealing properties as the SSUM design.

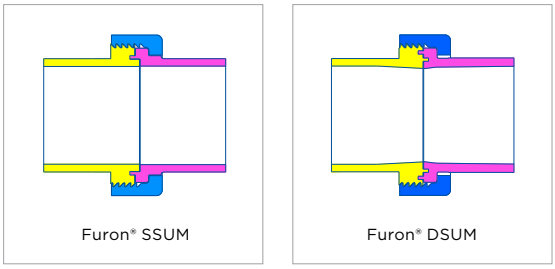
Vibration Test

In this analysis, **Furon HGVM 2-inch valves** were used to test the efficiency and reliability of both the Furon SSUM and Furon DSUM fittings in a complex environment. A tight 88.5 lbs/ in torque connection was applied before tabs were set into position. Then the connections were plugged into 100 PSIG Clean Dry Air (CDA) and immersed in water to monitor any bubbles created during a one minute period. If a single bubble was created during this time, the product was rejected. The components were then installed on a vibrating bench and the Furon valves were cycled in order to increase stress on the connections.

Figure 1 – Vibration Test

Additional test conditions included:

- Vibration: 8200 VPM
- Inlet Pressure: 100 PSIG
- Valve Actuation Pressure: 70 PSIG
- Cycle Rate: 3 seconds on and 3 seconds off
- Temperature: 72°F +/-1



After 48 hours of continuous testing, the components were removed from the vibration unit and subjected to the bubble test again. No bubbles appear during the one minute test period for either the SSUM or DSUM fitting design.

Maximum Pressure Test

For this analysis, the Furon SSUM and DSUM fittings were connected to a liquid pumping system, allowing a slow but consistent pressure increase starting at 0 PSIG up to 310 PSIG. The test was performed in a controlled environment at 72°F +/-1 .

The SSUM system performed in agreement with the product properties (max pressure 300 PSIG) and leakage started to occur at 303 PSIG.

The DSUM system was brought to the system test limit (310 PSIG) without suffering any leakage.

Summary

Both Furon SSUM and DSUM connections achieved 300 PSIG, which far exceeds any pressure normally encountered in a high purity chemical installation in the semiconductor industry. Thus the use of either fitting allows for ample safety on any chemical distribution system found in a fab environment. The test also highlights that the Furon DSUM fitting offers an even higher level of safety thanks to its high pressure resistance and its locking tab system design.

The data provided here was obtained under defined test conditions. The tests were designed to mimic use or worst case conditions. However, Saint-Gobain Performance Plastics makes no specific claims about the performance of the components in other chemicals or systems.

SAINT-GOBAIN

FLS-6323-0818-SGLS