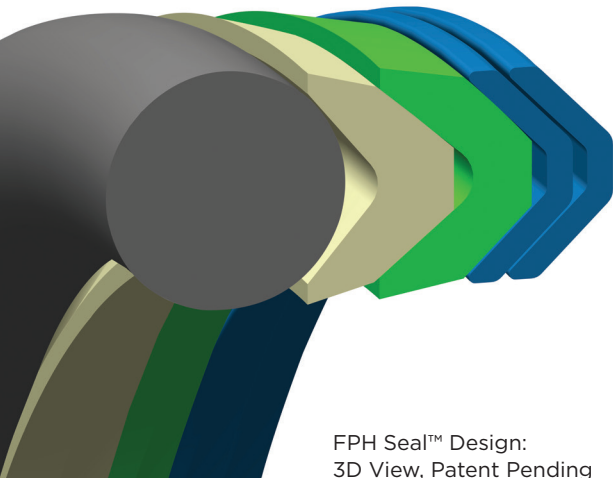




Fireproof Hydraulic Seal (FPH Seal™)

First to Market for the Aerospace and Defense Industry



FPH Seal™ Design:
3D View, Patent Pending

Features and Benefits

- Sealing system passed fireproof testing (2000°F avg. for 15 minutes) for hydraulic sealing applications on aircraft
- Uses standard aerospace glands in accordance with AS4716 and AS5857*
- Alternative to traditional fire shields that are typically heavy, bulky, easily damaged, costly, and require assembly

*In most instances, two backup width glands are required. Open/two-piece glands provide easy installation.

FPH Seal™ Innovation

Greene Tweed's Fireproof Hydraulic Seal (FPH Seal™) provides excellent high- and low-hydraulic pressure sealing in static applications for fireproof-rated equipment (1093°C/2000°F minimum average for 15 minutes).

Greene Tweed recognized the need for a new hydraulic seal design that would meet fireproof requirements, while providing static sealing capabilities in fire- and flame-resistant equipment, such as thrust reverser actuator systems (TRAS), fuel systems, and thrust vectoring/nozzle systems.

Greene Tweed and Outside Laboratory Fire Testing

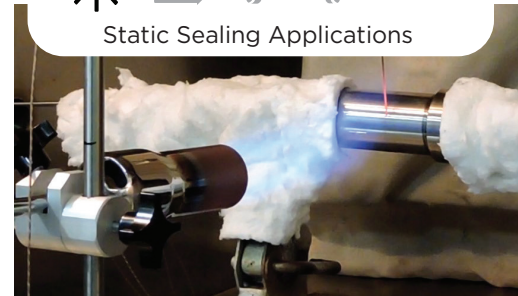
Extensive testing was performed in Greene Tweed's in-house testing laboratory on multiple design variations. The resultant design was resistant to temperature elevations and able to retain fluid pressure.

The FPH Seal™ was then tested at an outside laboratory to verify performance under exact DO-160G and ISO 2685 test parameters, which included application of pressurized phosphate ester to the seal, a calibrated kerosene burner, and vibration.

During those tests, no pressure drops were experienced and the fixtures did not produce smoke that would be typical of a leaking unit. In addition, the fixtures held pressure well after the end of each test (10+ minutes beyond the 15-minute duration).



Static Sealing Applications



Greene Tweed Testing of FPH Seal™



Outside Laboratory Fire Test in Progress

Greene Tweed

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