

### Certificate of Test

Freudenberg Oil & Gas Technologies' 400 series long axial groove length 5.00" and 13.00" S Seals were successfully pressure/temperature cycle tested in accordance with ISO 10423, Annex F.1.11 (Valve Performance Class, PR2).

**Sizes Validated per ISO 10423  
F.1.14.3.2 Scaling Limitations:**

4-7/8" through 13-1/2" with 400 series groove radial width

**Product Details: FO&GT – 5.00" and 13.00" S Seal**

Manufacturer:	Freudenberg Oil & Gas Technologies	
Part Number:	SPE-425-3-728-1 & SPE-454-3-728-1	PO Number: 31717
Product Type:	Spring Seal	
Compound ID:	Gazguard 728 OGT	
Material Class:	FF/HH	
Compound Description:	HNBR	
Molding Site:	FO&GT Newcastle, UK	

**Test Parameters:**

Validation Test Standard:	ISO 10423, Annex F.1.11		
Test Pressure:	68.94 MPa	10,000	psi
Maximum Temperature:	121 °C	250	°F
Minimum Temperature:	-18 °C	0	°F
Test Medium:	N2 (Nitrogen Gas)		
Pressure Cycles:	8	Temperature Cycles:	3
Duration of Hold Periods:	1 hour	Temperature Class:	U
Acceptance Criteria:	Maximum leakage allowance 20cm <sup>3</sup> /hour		

**Test Details:**

Test Performed by:	Freudenberg Oil & Gas Technologies
Test Location:	Materials Development & Product Testing Lab 4535 Brittmoore Rd. Houston, TX 77041
Internal Test Procedure:	SOP-00096
Test Completion Dates:	October 19, 2016 and November 02, 2016
Test Results:	Gas leakage during each of the hold periods were no greater than 1.9 cm <sup>3</sup> /hour

**Authorized by:**

Michael LoGiudice

*Michael LoGiudice*

Product Champion, Down Hole Tool Technology

