

# Akron Rubber Development Laboratory, Inc.



## TEST CERTIFICATE

This document certifies FKM 938

From

**Greene, Tweed & Co.**


**PASSED**

The requirements for resistance to Rapid Gas Decompression (RGD)

*In accordance with Annex B, ISO 23936-2, 2011 Edition and NORSOK M-710, Rev.3*

Test Gas	90% / 10% Molar Volume CH <sub>4</sub> / CO <sub>2</sub>
Test Temperature	100°C (212°F)
Test Pressure	150 Bar (2175 psig)
Number of Cycles	8
Decompression Rate	20 Bar/Minute (290 psi / min)
Seal Size	ISO 3601-1-312 Class A O-ring, 5.33 mm CX ( .210" )

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Approved By:

  
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An A2LA Accredited Testing Laboratory — Certificate Numbers 255.01 & 255.02  
 ISO 9001:2008 Registered

**ISO 9001:2008**  
 Registered

\*Certificate Numbers 255.01 & 255.02

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ARDL verifies that FKM 938 o-ring specimens, supplied by Greene, Tweed & Co., have been subjected to a multi-cycle RGD test, as detailed below:

<b>RGD TEST COMMISSIONED BY</b>		
Greene Tweed & Co.		
<b>SEAL COMPOUND DETAILS</b>		
Seal Manufacturer	Greene Tweed & Co.	
Supplied By	Greene Tweed & Co.	
Compound name/number/reference	FKM 938	
Elastomer type to ASTM D1418	FKM	
Lot/batch no.	1002650387	
Seal Type	O-ring	
Manufacturing method	Not disclosed	
Seal size (ISO 3601-1-312)	312	
CSD (nominal)	mm	5.33
Mean CSD	mm	
<b>RGD TEST CONDITIONS</b>		
Temperature	°C	100±2
Pressure	Bar	150 +10/-5
No. of cycles		8
Dwell between cycles	Hour	1
Decompression rate (average)	Bar/min	20
Gas type	Mol%	90/10 CH <sub>4</sub> /CO <sub>2</sub>
<b>SEAL HOUSING DETAILS</b>		
Seal compression direction	Radial	
Groove ID	mm	15.54 -0.05
Groove OD	mm	24.61 +0.05
Groove Width	mm	5.97 +0.25
Squeeze (average)	%	14.5
Groove fill (area basis)	%	80 to 85
Number of seals tested		4
<b>ISO TEST SEAL RATINGS</b>		
SEAL REPLICATE	RATING	PASS/FAIL
1	0,0,0,0	PASS
2	0,0,0,0	PASS
3	0,0,0,0	PASS
4	0,0,0,0	PASS
<b>OVERALL RATING</b>	<b>PASS</b>	
<b>GENERAL</b>		
Test laboratory		ARDL, Inc.
Test date		7-15 May 2014
Test gas certified and available	YES/NO	YES
Transducer CALIBRATION AVAILABLE	YES/NO	YES
P/T log available	YES/NO	YES
<b>TEST LABORATORY STAMP/SIGNATURE</b>		

The results indicate the material is resistant to the RGD cycles specified herein. The FKM 938 material **PASSED** the Rapid Gas Decompression testing per the full requirements of ISO 23936-2 and NORSOK M-710, Rev.3, under the stated conditions.