

05/24/23

Certificate for PN168434

CERTIFICATE OF COMPLIANCE

This summary is to show that the material

678 KV #1004743079

molded in Kulpsville, PA

as supplied to the Akron Rubber Development Laboratory by

Greene, Tweed & Co.

PASSED

the technical requirements for Rapid Gas Decompression as outlined by the test program prescribed by
ISO 23936-2 First Edition, Annex B / Norsok M-710 Edition 3, Clause 7

RGD TEST CONDITIONS	
Gas type	90%/10% Molar Volume CH ₄ /CO ₂
Temperature	100°C (212°F)
Pressure	150 Bar (2175 psig)
No. of cycles	8
Decompression rate (average)	20 Bar/min (290 psi/min)
Dwell between cycles	1 hour

Prepared By: 
 Bob Zickefoose
 Staff Engineer

Approved By: 
 Chelsye Dailey
 Mechanical Engineering Manager



An A2LA ISO 17025 Accredited Testing Laboratory-Certificate Numbers 255-01, 255-02, 255-03 and 255-04
 ISO 9001-2015 Registered



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05/24/23


Certificate for PN168434

ARDL verifies that the 678 KV material, supplied by Greene, Tweed & Company has been subjected to the testing regimen outlined by ISO 23936-2 First Edition, Annex B and Norsok M-710 Edition 3, Clause 7, under the conditions listed in this document.

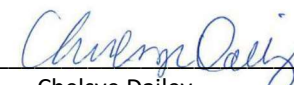
RGD TEST COMMISSIONED BY		
Greene, Tweed & Company		
SEAL COMPOUND DETAILS		
Seal manufacturer	Greene, Tweed & Company	
Supplied by	Greene, Tweed & Company	
Compound name/number/reference	678 KV	
Elastomer type to ASTM D1418	FFKM	
Lot/batch no.	1004743079	
Seal type	O-ring	
Manufacturing method	Not Disclosed	
Seal size (ISO 3601-1/AS 568)	312	
CSD (nominal)	mm	5.33
Mean CSD (actual, radial)	mm	5.30
SEAL HOUSING DETAILS		
Seal compression direction	Radial	
Groove ID (nominal)	mm	15.54
Groove OD (nominal)	mm	24.61
Groove width (nominal)	mm	5.97
Squeeze (average)	%	14.5
Groove fill (area basis)	%	80 to 85
Number of seals tested	4	
ISO TEST SEAL RATINGS		
SEAL REPLICATE	RATING	PASS/FAIL
1	0000	PASS
2	0000	PASS
3	0000	PASS
4	0000	PASS
678 KV - OVERALL RATING	PASS	

After evaluation, the 678 material molded in Kulpville, PA was shown to **PASS** the technical requirements of the ISO 23936-2, First Edition, Annex B and Norsok M-710, Edition 3, Clause 7 testing program. The full results and findings of the testing described herein can be found in ARDL Report PN168434.

Prepared By: _____


Bob Zickefoose
Staff Engineer

Approved By: _____


Chelsye Dailey
Mechanical Engineering Manager

05/24/23

Certificate for PN168434

CERTIFICATE OF COMPLIANCE

This summary is to show that the material

678 Selma #1004750135

molded in Selma, TX

as supplied to the Akron Rubber Development Laboratory by

Greene, Tweed & Co.

PASSED

the technical requirements for Rapid Gas Decompression as outlined by the test program prescribed by
ISO 23936-2 First Edition, Annex B / Norsok M-710 Edition 3, Clause 7

RGD TEST CONDITIONS	
Gas type	90%/10% Molar Volume CH ₄ /CO ₂
Temperature	100°C (212°F)
Pressure	150 Bar (2175 psig)
No. of cycles	8
Decompression rate (average)	20 Bar/min (290 psi/min)
Dwell between cycles	1 hour

Prepared By: 
 Bob Zickefoose
 Staff Engineer

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 Chelsye Dailey
 Mechanical Engineering Manager



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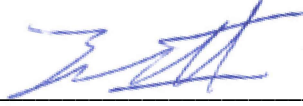
Certificate for PN168434

ARDL verifies that the 678 Selma material, supplied by Greene, Tweed & Company has been subjected to the testing regimen outlined by ISO 23936-2 First Edition, Annex B and NORSOK M-710 Edition 3, Clause 7, under the conditions listed in this document.


RGD TEST COMMISSIONED BY		
Greene, Tweed & Company		
SEAL COMPOUND DETAILS		
Seal manufacturer	Greene, Tweed & Company	
Supplied by	Greene, Tweed & Company	
Compound name/number/reference	678 Selma	
Elastomer type to ASTM D1418	FFKM	
Lot/batch no.	1004750135	
Seal type	O-ring	
Manufacturing method	Not Disclosed	
Seal size (ISO 3601-1/AS 568)	312	
CSD (nominal)	mm	5.33
Mean CSD (actual, radial)	mm	5.29
SEAL HOUSING DETAILS		
Seal compression direction	Radial	
Groove ID (nominal)	mm	15.54
Groove OD (nominal)	mm	24.61
Groove width (nominal)	mm	5.97
Squeeze (average)	%	14.5
Groove fill (area basis)	%	80 to 85
Number of seals tested	4	
ISO TEST SEAL RATINGS		
SEAL REPLICATE	RATING	PASS/FAIL
1	0000	PASS
2	0000	PASS
3	0000	PASS
4	0000	PASS
678 SELMA - OVERALL RATING	PASS	

After evaluation, the 678 material molded in Selma, TX was shown to **PASS** the technical requirements of the ISO 23936-2, First Edition, Annex B and NORSOK M-710, Edition 3, Clause 7 testing program. The full results and findings of the testing described herein can be found in ARDL Report PN168434.

Prepared By: _____


Bob Zickefoose
Staff Engineer

Approved By: _____


Chelsye Dailey
Mechanical Engineering Manager