



**TECHNICAL  
DATA SHEET**

M77 REV.00

<i>Compound Code:</i> <b>GFLT90MD</b>	<i>Revision:</i> <b>00</b>
<i>Compound Description:</i> <b>GFLT-S Nero / Black 90 ±5 m IRHD Norsok M-710</b>	<i>Date:</i> <b>13/02/2018</b>
<i>Specification:</i> <b>NORSOK M-710 ED3 ISO 23936-2 (rapid gas decompression resistance) FKM 90 AED BLACK TR10 -24°C (Vs Viton® GFLT)</b>	<i>Person Responsible:</i> <b>Valerio Vezzoli</b>

**Samples Curing Conditions**

	Temperature	Unit	Time	Unit	Note
<b>Curing</b>	170	°C	10	min	
<b>Postcuring</b>	230	°C	24	h	

**Original Properties**

Properties	Tested Value	Unit	Test Method	Limit	Note
Hardness Shore A 3 Sec.	94	PUNTI	ASTM D2240		90±5 m IRHD on finished products
Density	1,82	g/cm <sup>3</sup>	ASTM D1817	1,81±0,05 g/cm <sup>3</sup>	
Tensile Strength	15	N/mm <sup>2</sup>	DIN 53504 S2		
Elongation at break	100	%	DIN 53504 S2		
Tear Strenght	30	N/mm	ASTM D624B		

**Low Temperature Properties**

Properties	Tested Value	Unit	Test Method	Limit	Note
TR TEST TR10	-24	°C	ASTM D 1329		

**Compression Set**

Deformation: 25 %

Temperature °C	Time H	Tested Value	Unit	Test Method	Limit	Note
200	22	30		ASTM D395		

**Value Change After Treatment**

Treatment	Method	Time / Temperature		Hardness Shore A		Tensile strength %		Elongation %		Volume %		Weight %	
		hours	°C	requested	measured	requested	measured	requested	measured	requested	measured	requested	measured
OIL ASTM 3	ASTM D-471	70	150		-1,00		-4,00		-3,00		+2,00		
FUEL C	ASTM D-471	168	40		-4,00		-33,00		-25,00		+9,00		
ETHANOL	ASTM D-471	168	23		-5,00		-30,00		-13,00		+7,00		

**Storage periods for unassembled components**

Initial storage period 10 years,  
Extension storage period 5 years



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### O-rings in compound

**GFLT90MD**

supplied by

**BER-PA S.R.L**

have been tested according to the requirements of

**NORSOK M-710 Edition 3 and ISO 23936-2  
(Rapid gas decompression resistance)**

# PASSED

Test gas: 90/10 mol% CH<sub>4</sub> / CO<sub>2</sub>  
Test temperature: 100 ±2 °C  
Test pressure: 150 bar (15 MPa)  
Number of cycles: 8  
Decompression rate: 20.6 bar/minute  
Seal Size: 312 (ISO 3601-1/AS 568)

Conor Raftery  
Scientist

9<sup>th</sup> February 2018  
Date

Element Hitchin has been assessed to BS EN ISO 9001 by the British Standards Institution (BSI) and is a registered firm under the BSI Quality Assurance scheme for the provision of professional and technical services.



### Element Materials Technology

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Element Hitchin verify that O-rings in compound GFLT90MD supplied by BER-PA S.R.L have been subjected to a multi-cycle RGD test under the conditions detailed below.

<b>RGD TEST COMMISSIONED BY</b>			
BER-PA S.R.L			
<b>SEAL COMPOUND DETAILS</b>			
Seal Manufacture	BER-PA S.R.L		
Supplied by	BER-PA S.R.L		
Compound name/number/reference	GFLT90MD		
Elastomer type to ASTM D1418	FKM		
Lot/Batch No.	Not disclosed		
Seal type	O-ring		
Manufacturing method	Not disclosed		
Seal size (ISO3601-1/AS 568)	312		
CSD (nominal)	mm	5.33	
Mean CSD (actual, radial)	mm	5.31	
<b>RGD TEST CONDITIONS</b>			
Temperature	°C	100 ±2	
Pressure	MPa (bar)	15 +2/-0 (150 +10/-5)	
No. of cycles		8	
Dwell between cycles	hour	1	
Decompression rate (average)	MPa/min (bar/minute)	2.0 (20)	
Gas type	mol%	90/10 CH <sub>4</sub> /CO <sub>2</sub>	
<b>SEAL HOUSING DETAILS CONDITIONS</b>			
Seal compression direction	Radial		
Groove ID	mm	25.44	
Groove OD	mm	15.96	
Groove width	mm	5.65	
Squeeze (average)	%	10.7	
Groove fill (area basis)	%	83	
Number of seals tested	4		
<b>ISO TEST SEAL RATINGS</b>			
	SEAL REPLICATE	RATING	PASS/FAIL
	1	0000	Pass
	2	0000	Pass
	3	0000	Pass
	4	0000	Pass
<b>OVERALL RATING</b>			PASS
<b>GENERAL</b>			
Test laboratory	Element Materials Technology, Hitchin, U.K.		
Test date	24 <sup>th</sup> November – 1 <sup>st</sup> December 2017		
Test gas certified and available	YES/NO	YES	
Transducer calibration available	YES/NO	YES	
P/T log available	YES/NO	YES	
TEST LABORATORY STAMP/SIGNATURE	 Element Hitchin, UK		

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