

V1238-95

Explosive Decompression And Extrusion Resistant Fluorocarbon Elastomer



Sealing for high pressure, high temperature and 100% CO2 environments:

Parker compound V1238-95 is a 95 Shore A durometer fluorocarbon material developed to help protect critical applications from the detrimental effects of explosive decompression and extrusion typically required in the EOG market. Compound V1238-95 has a unique combination of superior physical and chemical properties, as well as excellent compression set resistance. With superior internal properties, V1238-95 has passed some of the most stringent test requirements found in the EOG market.



Contact Information:

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Features:

- Extrusion resistant
- Explosive decompression (ED) resistant
- True 95 durometer material
- Approved to Norsok M-710 (refer to ORD 5754 for test data), sour service (H2S) test conditions and rapid gas decompression
- Passed API 6A, appendix F requirements (specification for wellhead and Christmas tree equipment)
- Available in AS568 and class II dimensions and tolerances

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Mechanics of Explosive Decompression (ED)

When a system is decompressed rapidly, explosive decompression or “ED” can occur. This is due to gas permeating or dissolving into the seal material. When the system pressure decays quickly, the entrapped gas expands, rupturing the O-ring.

Mechanics of Extrusion

Extrusion occurs when a gas or liquid at high pressure forces the seal material into the clearance gap between the mating surfaces. The larger the diametrical clearance, the more likely extrusion will occur. Elevated temperature and chemical compatibility may also influence potential for seal extrusion.

Extrusion test conditions Test samples: V1238-95 AS568-227 O-rings

Typical physical properties

Hardness, Shore A	94
Tensile strength, psi	2402
Elongation, %	75
50% Modulus, psi	1632
Compression set (70 hrs @ 392°F)	20.6%
PI Extrusion test, 302°F, 0.0626" gap	
Failure pressure, psi	510
Visual appearance or degradation	Light extrusion

Explosive decompression test conditions (Test samples: V1238-95 AS568-227 O-rings)

Typical physical properties

Hardness, Shore A	94
Tensile strength, psi	2610
Elongation, %	70
50% Modulus, psi	1710
Compression set (70 hrs @ 392°F)	23.5%
Test 1 (75°F, 1000 ml CO ₂ , 820 psig, 120 hrs)	
Hardness change, Shore M, pts.	-3
Volume change, %	+24
Weight change, %	+9
Tensile strength change, %	-57
Elongation change, %	-12
50% Modulus change, %	-53
20 Second decay (820 to 0 psig)	Good, medium swell
Visual appearance	No damage
Test 2 (250°F, 1000 ml CO ₂ , 1000 psig, 72 hrs)	
Hardness change, Shore M, pts.	-2
Volume change, %	+3
Weight change, %	+2
Tensile strength change, %	-36
Elongation change, %	-13
50% Modulus change, %	-34
20 Second decay (820 to 0 psig)	Excellent, low swell
Visual appearance	No damage
Test 3 (75°F, 1000 ml CO ₂ , 1000 psig, 72 hrs)	
Hardness change, Shore M, pts.	-3
Volume change, %	+3
Weight change, %	+2
Tensile strength change, %	-59
Elongation change, %	-32
50% Modulus change, %	-41
20 Second decay (820 to 0 psig)	Good, low swell
Visual Appearance	No damage

WARNING:

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THESE PRODUCTS CAN CAUSE EQUIPMENT FAILURE OR DAMAGE, PERSONAL INJURY OR DEATH.

For safe and trouble-free use of these products, it is important that you read and follow the Parker Seal Group Product Safety Guide. This Safety Guide can be referenced and downloaded free of charge at www.parkerseals.com. It is also printed in major Seal Group product catalogs, and can be ordered by telephone without charge as Parker Publication No. PSG 5004 by calling 1-800-4-PARKER.

