

FKM XploR™ V9T20

Explosive Decompression Resistant Materials



Fully approved to NORSOK M710

Your Partner for Sealing Technology

Explosive Decompression is a major concern to the oil and gas industry. It occurs when applied system pressure is released, causing absorbed gas to expand, potentially damaging elastomer seals.

Trelleborg Sealing Solutions has focused on this issue and presents the XploR™ range, an entire family of advanced elastomers especially developed for oil and gas applications. The portfolio includes compounds in HNBR, FKM, Aflas® and Isolast® Perfluoroelastomer, each of which demonstrates best-in-class Explosive Decompression Resistance (EDR) for its material type.

XploR™ V9T20 exhibits superior high pressure sealing performance in EDR situations, which is supported by independent institute approval to standard test protocols.

When the composition of the well or conditions of the application are known, FKM XploR™ V9T20 may prove the optimum and most cost-effective material for your application.

For further information on selecting the right compound and advice on seal specification for your individual application, consult your local Trelleborg Sealing Solutions marketing company. **Find contact details at www.tss.trelleborg.com.**

Features and benefits

- Fully approved to NORSOK M710
- Unrivalled Explosive Decompression Resistance (EDR) within its material type
- Temperature resistance from -20°C/-4°F to +200°C/+392°F
- Exceptional mechanical performance
- Low long-term compression set
- Very good chemical compatibility
- Extremely long life in aggressive media, including hydrocarbon and aqueous media, common within oil & gas applications
- High modulus, high strength

Applications

- Separation equipment
- Connector systems
- Valves
- Wellhead control equipment
- Tubing hangers
- Blowout Preventers (BOPs)
- Swivel stacks on Floating Production Storage and Offloading (FPSO) vessels
- Downhole Tools

XploR™ is available in all standard international O-Ring sizes and cross-sections along with custom-engineered solutions and specially designed seal profiles.

Explosive Decompression Facts

Inherently, elastomer seals contain voids. Gas or gas mixtures in contact with elastomer surfaces are absorbed and will saturate elastomer seals. At high-pressure this absorbed gas is in a compressed state. When external pressure is reduced, either rapidly or over a relatively short period of time, the compressed gas nucleates at the voids, expanding within the elastomer.

The voids inflate leading to high tensile stresses or strains in the void walls. Depending on the strength and hardness of the elastomer, this can cause the elastomer to break or crack.

No elastomer can be completely explosive decompression resistant; however, the XploR™ range demonstrates unrivalled EDR inline with limits set by NORSOK M710 Rev. 2. "Qualification of Non-metallic Sealing Materials and Manufacturers."

	Standard	V9T20
Elastomer base		FKM
NORSOK M710		Yes
Hardness	DIN 53505	90+/-5 Shore A
Color		Black
Specific Gravity	DIN EN ISO 1183-1	1.84+/-0.03
Tensile Strength	DIN 53 504	25.5 MPa/3,700 psi
Elongation at Break	DIN 53 504	120%
Modulus at 100%	DIN 53 504	13.2 MPa/1,910 psi
Compression Set 24 hrs/200 °C/392 °F	DIN ISO 815 Type B	20%
Compression Set 72 hrs/200 °C/392 °F	DIN ISO 815 Type B	30%
Air Aging 70 hrs @ 250 °C/482 °F	DIN 53508	+4 Shore A
Hardness Change		-15%
Tensile Strength Change		-10%
Fluid Immersion Testing: Oil ASTM No. 1 70 hrs @ 150 °C/302 °F	DIN ISO 1817	+2 Shore A
Change in Hardness		+2 Shore A
Change in Volume		+1.3%
Fluid Immersion Testing: Oil IRM 903 70 hrs @ 150 °C/302 °F	DIN ISO 1817	0 Shore A
Change in Hardness		0 Shore A
Change in Volume		+2.6%
Fluid Immersion Testing: Water 70 hrs @ 100 °C/212 °F	DIN ISO 1817	+1 Shore A
Change in Hardness		+1 Shore A
Change in Volume		1.4%
TR 10 Point	TBS 00036	-15 °C/+5 °F
Service Temperature		-20 °C to +200 °C/ -4 °F to +392 °F
Excursion Temperature		+210 °C/+410 °F

www.tss.trelleborg.com