

NORSOK Approved Compounds



Originally developed by the Norwegian petroleum industry, the NORSOK M-710 specification has become an internationally recognised standard for non-metallic sealing materials. Conforming materials afford Oil and Gas companies, in particular, explicit assurance of quality, performance and durability

In today's Oil and Gas industry, the application environments are constantly changing with increasing demands to improve seal elastomer performance.

To meet the NORSOK M-710 standard, materials must achieve accepted criteria for both rapid gas decomposition (RGD)/explosive decomposition (ED), and sour gas ageing (H₂S). Both are proven indicators of long-term performance and life expectancy.

RGD TESTING

RGD is a structural failure caused by gas permeation into the seal material. Gas in contact with elastomer surfaces can be absorbed into the material.

At high pressures this gas is compressed within the elastomer. When the systems pressure is reduced or falls quickly, the gas expands within the elastomer. This causes degradation and blisters which appear on the surface of the elastomer seal.



The seal may exhibit many signs of degradation including blisters, cracks, voids or discoloration.

Figure 1.1 Explosive Decompression (ED / RGD)

RGD testing establishes a material's resistance to cracking and blistering under sudden changes in pressure and temperature. It conforms to M-710 providing measurable assurance of structural resilience and seal integrity in hostile sub-sea applications.

SOUR AND SWEET GAS TESTING

Sour gas testing (H₂S) relates to the potential degradation over an extended period of time. The tests quantify criteria such as tensile strength, hardness, swelling and elongation to ensure continuing predictable performance far beyond the practical life of a particular component.

We supply a wide range of NORSOK approved materials, including formulations within the HNBR, FKM, Viton GLT and FFKM materials that have passed the NORSOK M-710 requirements.

FEATURES AND BENEFITS

- High tensile properties
- Low compression set
- Good low temperature properties
- Excellent heat resistance
- Good resistance to aggressive / crude oils
- Good chemical compatibility
- Long life in aggressive media

“ Our range of formulations includes **HNBR, Viton B, Viton GLT and FFKM** materials. All have passed the strict **NORSOK M-710** requirements. ”

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ENGINEERED FOR DEMANDING APPLICATIONS AND EXTREME ENVIRONMENTS

Advanced elastomers developed for Oil and Gas applications

ES Ref	Colour	Temperature Range	Shore	Notes
V90 AED GLT	Black	-30°C to +250°C (Static) -40°C to +220°C (Dynamic)	90	NORSOK M-710 Approved.
V90 AED Type B	Black	-30°C to +250°C (Static) -15°C to +220°C (Dynamic)	90	NORSOK M-710 Approved. Provides low and stable compression set at high temperature.
FKM90 LT60 AED	Black	-60°C to +225°C (+250°C for short periods)	90	This compound is suitable for Ultralow temperature applications. It has good permeability to hydrocarbons ethane – propane). NORSOK M-710 Approved (Rev.2 October 2001). NACE TM0187 Tested – Sour Fluid test.
FKM90 LT50 AED	Black	-50°C to +225°C (+250°C for short periods)	90	NORSOK M-710 Approved (Rev.2 October 2001).
FFKM8717	Black	-10°C to +230°C continuous (260°C Peak)	90	NACE TM0187 Tested – Sour Fluid test.
FFKM8732	Black	-45°C to +250°C continuous	90	High chemical resistance and low temperature capability. Developed for the Oil & gas Industry. Explosive decompression resistant, tested to NORSOK M-710.
HNBR90 AED	Black	-30°C to +150°C	90	NORSOK M-710 Approved.
HNBR90 AED LT	Black	-55°C to +160°C	90	This peroxide cured compound has 19% ACN content, with carbon black reinforcement. It provides low temperature capability and rapid gas decompression (RGD) resistance. NACE TM0187 Tested – Sour Fluid test.