
TEST REPORT

This document certifies that

J9513

from

TRELLEBORG SEALING SOLUTIONS

has been tested according to the requirements of

**ISO 10423 Appendix F.1.13.5.2 in respect of sour fluid (FF/HH)
resistance**

Test fluid: 10% Hydrogen sulphide/hydrocarbon oil/water

Test pressure: 1000 psi

Passed by: Dr Michael Lewan

Date: 24th September 2015

Element Hitchin verify that tensile specimens of J9513 by TRELLEBORG SEALING SOLUTIONS have been tested according to ISO 10423:2009, annex F.1.13.5.2 (immersion).

Test Conditions

Five replicate tensile specimens of J9513 were exposed in the hydrocarbon liquid phase to the following conditions for 160 hours.

Temperature	175 °C
Pressure	69 barg (1,000 psi)
Gas phase (35%)	FF/HH: 10/80/10 _{mol%} H ₂ S/CO ₂ /CH ₄
Liquid phases (65%)	60% vessel volume 70/20/10 heptane/cyclohexane/toluene 5% vessel volume water

Changes in physical and mechanical property levels were measured at room temperature, with non-exposed material serving as the point of reference. The material was not visibly altered by the exposure conditions.

The acceptance criteria given in section 8.2.2 of the NORSOK M-710 standard¹ were applied. The results are tabulated below.

PROPERTY	ACCEPTABLE CHANGE RANGE	ACTUAL CHANGE (%)
Volume change (swelling)	-5%/+25%	+10.5
50% modulus	±50%	-41
100% modulus	±50%	-39
Tensile strength	±50%	-44
Elongation at break	±50%	-8.6
Hardness	+10/-20 IRHD	-8

¹ NORSOK M-710, “Qualification of Non-Metallic Sealing Materials and Manufacturers”, Edition 3, September 2014.