



materials engineering research
laboratory

TEST CERTIFICATE

This document certifies that

O-rings in the Greene Tweed compound **FKM 938**¹

meet the requirements of the Norsok M-710 standard

with respect to rapid gas depressurization resistance, under

the following test conditions

Test gas:	90/10 mol% CH ₄ /CO ₂
Test temperature:	100°C
Test pressure:	150 bar (15 MPa)
Decompression rate:	20 bar/minute
No. of cycles	10
Tested by:	Barry Thomson, Mike Lewan
Date:	29 th January 2008

¹ Tested by MERL as FKM 935, but since re-badged FKM 938 by Greene Tweed.

Test seal details

Elastomer: FKM 938
Seal size: 312
Section diameter: 5.33 mm, nominal

Test Gas

10% CO₂ in methane; certification available on request.

Procedure

The procedures outlined in the NORSOK M-710 standard², section 7 and Annex B, were followed. The test O-rings were housed in fixtures which replicated a groove; the squeeze was applied in the radial direction.

Inspection and rating of test seals

The four test seals were evaluated according to the system described in Annex B of the M-710 standard. Results are summarised in the grid below.

Test seal	External description	NORSOK rating	OVERALL RATING	PASS/FAIL
1	Intact	0000	0000	PASS
2	Intact	0000		
3	Intact	0000		
4	Intact	0000		

MERL verify that O-rings manufactured by Greene Tweed from their elastomer compound 938³ have been subjected to a multi-cycle rapid gas decompression (RGD) test under the conditions outlined above. After 10 cycles all test seals were intact (undamaged). The results indicate that the FKM 938 compound can be considered for service at the same or less severe conditions.

² "Qualification of non-metallic sealing materials and manufacturers", M-710, Rev. 2, October 2001.

³ Tested by MERL as FKM 935, but since re-badged FKM 938 by Greene Tweed; GT have indicated that 938 is identical to 935.