



materials engineering research
laboratory

Test Certificate

This document certifies that

compound T128 from

Gapi Group

meets the requirements of

**NORSOK M710 [Rev. 2, October 2001] in respect of
rapid gas decompression resistance in 10% carbon
dioxide at 150 bar and 100°C**

Test gas:	90/10 mol% CH ₄ / CO ₂
Test temperature:	100 °C
Test pressure:	150 bar
Decompression rate:	20.2 bar/minute
Passed by:	Keyur Somani and Barry Thomson
Date:	21 st September 2011

MERL has been assessed to BS EN ISO 9001 by the British Standards Institution (BSI) and is a registered firm under the BSI Quality Assurance scheme for the provision of professional and technical services.



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MERL verify that O-rings manufactured by Gapi Group, in compound **T128** have been subjected to a multi-cycle RGD test under the conditions detailed below.

Seal Conditions

O-rings details: - Compound T128
Size BS 1806 size 312
Section diameter 5.33 mm, nominal; 5.25 mm, actual (radial)
Groove fill 85%, calculated

Test Gas

10% CO₂ in methane; certified.

Procedure and Test Conditions

For each test cycle the following procedure and conditions applied:

- 1) the assembly was heated to 100°C and this temperature maintained throughout
- 2) a pressure of 150 bar, using the test gas, was applied
- 3) this pressure was maintained for 72 hours minimum (cycle 1)
- 4) gas was vented in 7.5 minutes from 150 bar to atmospheric
- 5) after 1 hour, test pressure was re-applied, for 24 hours (cycle 2)
- 6) Subsequent cycles (3-10) were of duration 24 hours.

After the test, each of the three replicate test O-rings was quartered and the exposed surfaces rated according to the NORSOK M 710 Rev 2 standard (Table B.2).

NORSOK Ratings for Gapi Group test seal

Compound	Summary rating (average of three)	PASS/FAIL
T128	1000	PASS

Summary

T128 O-rings (size 312) meet the RGD acceptance requirement given in the NORSOK M-710 standard [Rev. 2, October 2001]. This acceptance applies at all pressure and temperature combinations up to the levels employed above, and only for the groove geometry employed in testing.

