



DET NORSKE VERITAS

CERTIFICATE OF FITNESS FOR SERVICE

This is to confirm that qualification of the

CRYOFLEX®

- A CORRUGATED PIPE SYSTEM FOR CRYOGENIC LIQUIDS

has been conducted in accordance with DNV RP-A203, Qualification Procedure for New Technology /1/ Sections 5, 6, 7, 8, 9 and 10, as reported in DNV Technical Report 2010-0503, rev 01/3/. DNV considers the technology documented as fit for service, as defined in /2/.

Technology owner:	Nexans Deutschland GmbH
Name of technology:	CRYOFLEX®
Description:	Vacuum insulated flexible pipe system for cryogenic liquids
Application:	Transfer of liquid nitrogen, natural gas, helium and other hydrocarbon gases in a static application
Involvement:	DNV has taken active part in and verified the design basis formulation, technology assessment, failure mode identification and risk ranking, planning and execution of the qualification programme and reliability assessment of the PoS of the above technology as reported in /3/.
Limitations:	Cryoflex is design according to requirements in ASME B31.3, 304.7.2 a) and c). Main limitations and reference are specified in DNV Technical Report 2010-0503 /3/.
Reference documents:	/1/ DNV-RP-A203 , Qualification Procedure for New Technology, September 2001. /2/ DNV-OSS-401, Technology Qualification Management, December 2003 (Draft) /3/ DNV Technical Report No. 2010-0503 Rev.01 "Technology Qualification for CRYOFLEX®, a corrugated pipe system for cryogenic liquids", 2010-04-09.

Høvik, 2010-04-12

for Det Norske Veritas

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