Certificate No:
TAP00002BW

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Bulk Loading Hoses with Permanently Fitted Couplings

with type designation(s)
ROTTERDAM

Issued to
Ivg Colbachini S.P.A.
Cervarese Santa Croce, PD, Italy

is found to comply with
EN 1765:2016 Rubber hose assemblies for oil suction and discharge services – Specification for the assemblies

Application :

Hose assemblies for Oil suction and discharge applications.

This certificate is not valid for hose assemblies which are subject to Classification by DNV.

Temperature range:	**-20°C to 82°C**
Max. working press.:	**15 bar(g)**
Sizes:	**Internal dia. (mm): 51, 60, 70, 76, 80, 102, 127, 152, 203, 254 and 305**

Issued at **Høvik** on **2021-05-07**
This Certificate is valid until **2026-05-06**.
DNV local station: **Italy/Malta CMC**

for **DNV**

Approval Engineer: **Maheshraja Venkatesan**

Zeinab Sharifi
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

Hose assembly with type designation ROTTERDAM for oil suction and discharge services designed and tested according to EN 1765:2016 Type S15 smooth Bore - Electrically bonded hose assembly with the following constructional features:

Inner layer elastomer	:	NBR
Outer layer elastomer	:	CR (Chloroprene)
Reinforcement	:	High tensile textile cords
Breaker plies	:	Nylon
Helical steel wires	:	According to EN 10270-1
Fittings	:	Crimped (or) Built-in hose fittings with end flanges according to technical drawing 6T-62-19; Material of construction for Nipples and ferrules: E355(+N) EN 10297-1 or ASTM A106 Gr. B or S355J2 (+N) EN 10210-1 or P245GH EN 10222-2

Application/Limitation

This certificate is valid for the specific assembly of hose and coupling type as specified, assembled and delivered by the holder (named as manufacturer) of this certificate.

This certificate is not valid for designs, components, equipment, systems or products which are subject to classification by DNV GL.

Hose assemblies are approved to be used for oil suction and discharge services for the conveyance of petroleum, including crude oils and other liquid petroleum products containing a maximum aromatics content of 50 % (*v/v*). It is not approved for liquefied petroleum gas and natural gas.

Internal diameter	Minimum bend radius	Maximum allowable pressure	
		Crimped fittings	Built-in hose fittings
51 mm	300 mm	15 bar(g)	15 bar(g)
60 mm	360 mm	15 bar(g)	15 bar(g)
70 mm	420 mm	15 bar(g)	15 bar(g)
76 mm	420 mm	15 bar(g)	15 bar(g)
80 mm	500 mm	15 bar(g)	15 bar(g)
102 mm	560 mm	15 bar(g)	15 bar(g)
127 mm	720 mm	15 bar(g)	15 bar(g)
152 mm	850 mm	15 bar(g)	15 bar(g)
203 mm	1100 mm	15 bar(g)	15 bar(g)
254 mm	1350 mm	-	15 bar(g)
305 mm	1600 mm	-	15 bar(g)

Hose assemblies are not fire tested; therefore, they shall not to be used in applications where fire resistance is required.

Flanges shall be normalized carbon steel forgings with a maximum carbon content of 0,25 % and, where fitted, shall be drilled in accordance with a standard drilling table relating to the purchaser's requirements and the pressure designation of the hose.

Where built-in nipples are used for electrically bonded hose assemblies, end of the wire helix shall be electrically bonded to the nipples by brazing, welding or by soldering a short of flexible bonding wire to the end of the helical wire and the nipple.

Type Approval documentation

Tests carried out

Liquid resistance, Abrasion resistance, Ozone resistance, Dimensional check, Adhesion (wet and dry), Proof pressure, Vacuum resistance, Bending resistance, Vacuum, Electrical properties, Burst pressure

Production testing

Production or Routine Testing for the actual intended application shall follow the latest applicable edition of the Standard (as mentioned on the front page of this certificate).

Marking of product

Minimum marking requirements shall be as outlined under Clause 12 of EN 1765:2016.

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNVGL-CP-0338.

Type tests shall be repeated during renewal, and the results recorded as described in EN1765 Annex H.