

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Flexible Hoses for CO2 Systems**with type designation(s)
050(X)

Issued to

TRANSFER OIL S.P.A.
Colorno PR, Italy

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems**DNV GL class programme DNVGL-CP-0183 – Type approval – Flexible hoses****Application :****Product approved by this certificate is accepted for installation on all vessels classed by DNV GL.****Temperature range:** -60°C up to +90°C**Max. working press.:** 140bar up to 300bar (Refer to certificate)**Sizes:** DN 5, 6, 8, 10, 12 and 16Issued at **Hamburg** on **2017-08-01**This Certificate is valid until **2022-07-31**.DNV GL local station: **Milan**for **DNV GL**Approval Engineer: **Hagen Markus**

Olaf Drews
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.



Job Id: **262.1-008002-6**
Certificate No: **TAP000010X**

Product description

Hose

Manufacturer: Transfer Oil S.P.A
Hose type: 050 Steel braid CO2 Fire Extinguishing
Inner tube: Polyester elastomer
Reinforcement: One braid of steel wire
Cover: Polyurethane, black, pin pricked, white INK-JET branding.
Hose design: Meets or exceed pressure specification of SAE 100R7

Hose end fitting

1/4" BSP FEMALE FOR 3/16"			
1/4" BSP FEMALE FOR 1/4"			
3/8" BSP FEMALE FOR 1/4"			
3/8" BSP FEMALE FOR 5/16"			
3/8" BSP FEMALE FOR 3/8"			
3/8" BSP FEMALE FOR 1/2"			
1/2" BSP FEMALE FOR 3/8"			
1/2" BSP FEMALE FOR 1/2"			
5/8" BSP FEMALE FOR 1/2"			
5/8" BSP FEMALE FOR 5/8"			
3/4" BSP FEMALE FOR 1/2"			
1/4" BSP FEMALE 90° FOR 1/4"	H1220893-040400	1202367	SC3A22
3/8" BSP FEMALE 90° FOR 1/4"	H1220893-040600	1202353	SC3A42
3/8" BSP FEMALE 90° FOR 3/8"	H1220893-060600	1202355	SC3A44
1/2" BSP FEMALE 90° FOR 3/8"	H1220893-060800	1202356	SC3A54
1/2" BSP FEMALE 90° FOR 1/2"	H1220893-080800	1202357	SC3A55
5/8" BSP FEMALE 90° FOR 1/2"	H1220893-081000	1202358	SC6A65
3/4" BSP FEMALE 90° FOR 1/2"	H1220893-081200	1202359	SC3A75
1/4" BSP FEMALE 45° FOR 1/4"	H1220843-040400	1202341	SC4A22
3/8" BSP FEMALE 45° FOR 1/4"	H1220843-040600	1202342	SC4A42
3/8" BSP FEMALE 45° FOR 3/8"	H1220843-060600	1202344	SC4A44
1/2" BSP FEMALE 45° FOR 3/8"	H1220843-060800	1202345	SC4A54
1/2" BSP FEMALE 45° FOR 1/2"	H1220843-080800	1202346	SC4A55
5/8" BSP FEMALE 45° FOR 1/2"	H1220843-081000	1202347	SC4A65
1/4" BSP MALE FOR 1/4"	H1210510-040400	1200507	SD3A22
3/8" BSP MALE FOR 1/4"	H1210510-040600	1200508	SD3A42
3/8" BSP MALE FOR 3/8"	H1210510-060600	1200341	SD3A44
1/2" BSP MALE FOR 1/4"	H1210510-040800	1201098	SD3A52
1/2" BSP MALE FOR 3/8"	H1210510-060800	1200339	SD3A54
1/2" BSP MALE FOR 1/2"	H1210510-080800	1200384	SD3A55
5/8" BSP MALE FOR 1/2"	H1210510-081000	1201096	SD3A65
3/4" BSP MALE FOR 1/2"	H1210510-081200	1200385	SD3A75
1/4" BSP FEMALE FLAT FACE FOR 1/4"	H1220613-040400	1202226	SB5A22
3/8" BSP FEMALE FLAT FACE FOR 3/8"	H1220613-060600	1202227	SB5A44
1/2" BSP FEMALE FLAT FACE FOR 3/8"	H1220613-060800	1202140	SB5A54
1/2" BSP FEMALE FLAT FACE FOR 1/2"	H1220613-080800	1202228	SB5A55
3/4" BSP FEMALE FLAT FACE FOR 1/2"	H1220613-081200	1202229	SB5A75

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CO2 FEMALE INCL.NUT FOR 3/8"	H1224413-06210Z	1201466	SB6A45
CO2 FEMALE INCL.NUT FOR 1/2"	H1224413-08210Z	1201293	SB6A55
CO2 MALE FOR 1/2"	H1213F10-080800	1217195	SD4A55

Application/Limitation

The non-metallic hose assemblies of type **050(X)** are type approved for connection of CO2 gas cylinders to CO2 fire extinguishing system manifold or similar applications.

Maximum working pressures (M.A.W.P)

Nominal size		M.A.W.P.	
DN	Inches	Bar	psi
5	3/16	300	4347
6	¼	275	3985
8	5/16	212	3072
10	3/8	212	3072
12	½	175	2536
16	5/8	140	2029

Remarks

This certificate is valid for the specific assembly of hose and hose end coupling types as specified, exclusively assembled by the holder of this type approval certificate, named as manufacturer.

For installation of the hose assemblies the instruction of the manufacturer is to be observed, especially the minimum bend radius.

Production testing

Each hose assembly is to be hydraulic pressure tested up to 1.5 times the M.A.W.P.

Appropriate manufacturer test certificate to be issued with reference to this type approval certificate.

Type Approval documentation

Tests carried out

Marking of product

For traceability to this type approval certificate each hose assembly is to be marked at least with:

Hose	
Manufacturer code	TO Industrial - 0501
Product designation	Steel Braid Fire Extinguishing Systems
Hose size	3/16
Working pressure WP	300bar / 4300psi
Burst pressure BP	1200bar / 17200 psi
Further marking	MSHA IC-305
	MADE IN ITALY
	www.transferoil.com
Ferrules	
Manufacturer Code	TO SAB111
Month / Year	01/12

Periodical assessment

For retention of the type approval certificate periodical assessments shall be carried out at production places by DNVGL surveyor. The objective of the periodical assessment is to verify that the design and production conditions for the type approval have not been altered.

Main scope of the assessment:

- verification of the production and quality control system
- review of quality control documentation of recent deliveries
- review of drawings in production to verify any design changes which may have an impact on data specified in the type approval certificate, performance and range of application
- verification of the product marking

In connection with the renewal assessment, a surveyor shall witness / review test reports with respect to the following tests on every 3rd size:

- visual inspection, dimensional check and marking
- pressure test with 1.5 times M.A.W.P. and burst test

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.