

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Flexible Hoses of Non-Metallic Material with Permanently Fitted Couplings

with type designation(s)

FlexIT 1T, FlexIT 2T, FlexIT R5, FlexIT SK117, FlexIT SK216, FlexIT SC216

Issued to

INTERTRACO ITALIA SPA
Suzzara MN, Italy

is found to comply with

DNV Classification of Ships & HSLC Pt.4 Ch. 6 "Piping Systems"
Offshore Standard DNV-OS-D101, Marine and Machinery Systems and Equipment
Det Norske Veritas' Standards for Certification 2.9 No. 5-791.70
ISO 15540 / 15541 - Fire resistance of hose assemblies

Application :

Type:	Temperature range:	Max. working press.:	Sizes:
FlexIT 1T	-40°C to +100°C	40 to 225 bar	1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 1", 1 1/4", 1 1/2", 2"
FlexIT 2T	-40°C to +100°C	80 to 400 bar	1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 1", 1 1/4", 1 1/2", 2"
FlexIT R5	-40°C to +100°C	24 to 210 bar	3/16", 1/4", 5/16", 13/32", 1/2", 5/8", 7/8", 1 1/8", 1 3/8", 1 13/16"
FlexIT SK117	-40°C to +100°C	88 to 290 bar	1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 1", 1 1/4"
FlexIT SK216	-40°C to +100°C	230 to 450 bar	1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 1"
FlexIT SC216	-40°C to +100°C	70 to 400 bar	1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 1", 2 1/2", 3"

This Certificate is valid until **2018-06-30**.

Issued at **Høvik** on **2015-05-26**

DNV GL local station: **Milan**

Approval Engineer: **Tom Berg-Nielsen**

for **DNV GL**



Digitally Signed By: Marveng, Marianne Spæren
 Location: DNV GL Høvik, Norway
 Signing Date: 26.05.2015

Marianne Spæren Marveng
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.

Certificate No: **P-15136**
File No: **791.70**
Job Id: **262.1-008007-2**

Product description

FlexIT 1T:

EN 853 1SN type. Synthetic rubber inner tube reinforced by 1 steel wire braid, flame retardant synthetic rubber cover

Couplings:

Intertraco. Coupling types K and J and B+SN03T

FlexIT 2T:

EN 853 2SN type. Synthetic rubber inner tube reinforced by 2 steel wire braids, flame retardant synthetic rubber cover.

Couplings:

Intertraco types K and J and B+SN03T and B+S0420

FlexIT R5:

SAE 100 R5 type. Synthetic rubber inner tube reinforced by 1 synthetic textile braid and 1 steel wire braid, polyester textile braid cover

Coupling:

Intertraco type R

FlexIT SK117:

EN857 1SC type. Synthetic rubber tube reinforced by 1 steel wire braid, synthetic rubber cover.

Couplings:

Intertraco. Coupling types: K and J and B+SCX0T and B+SN03T

FlexIT SK216:

EN 857 2SC type. Synthetic rubber inner tube reinforced by 2 steel wire braids, flame retardant synthetic rubber cover.

Couplings:

Intertraco types K and J and B+SN03T

FlexIT SC216:

EN 857 2SC - SAE 100 R16 type:

Synthetic rubber inner tube reinforced by 2 steel wire braids, MSHA approved synthetic rubber cover.

Couplings:

Intertraco. Coupling types: K (one piece) and J (one piece) and B (insert) + SN03T, SCX0T ferrules.

Coupling material: carbon steel, stainless steel.

Application/Limitation

The hoses can be used for the following systems: Hydraulic, Polyglycol base oils, Water-oil emulsions and fresh water

Dimension, inch	Max working pressure, bar					
	FlexIT 1T	FlexIT 2T	FlexIT R5	FlexIT SK117	FlexIT SC216	FlexIT SK216
3/16"	-	-	210	-	-	-
1/4"	225	400	210	290	400	450
5/16"	215	350	155	250	350	420
3/8"	180	330	-	230	330	385
13/32"	-	-	140	-	-	-

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1/2"	160	275	122	210	275	345
5/8"	130	250	105	130	250	290
3/4"	105	215	-	105	215	280
7/8"	-	-	56	-	-	-
1"	88	165	-	88	165	230
1 1/8"	-	-	43	-	-	-
1 1/4"	63	125	-	100	-	-
1 3/8"	-	-	35	-	-	-
1 1/2"	50	90	-	-	-	-
1 13/16"	-	-	24	-	-	-
2"	40	80	-	-	-	-
2 1/2"	-	-	-	-	70	-
3"	-	-	-	-	70	-

Temperature range:

For hydraulics : -40°C to +100°C

For polyglycol base oils, Water-oil emulsions and fresh water: up to +85°C

The hoses shall not replace/be used where permanent piping is possible/required.

The hoses must only be fitted in places where they are always accessible.

Flexible hoses of these types are not to be used on boiler fronts.

The hoses are to be mounted in accordance with the manufacturer's instructions.

The Rules Pt.4 Ch.1 Sec.6D and the respective Government Authorities Regulations to be complied with.

This approval does not cover hydraulic and/or pneumatic power and control systems for steering gears.

It must be possible to shut off from the system all flexible hoses used in systems for compressed air, lub. oil, fuel oil and petroleum base hydraulic oil.

Each hose is to be hydraulic pressure tested to 1.5 times the working pressure.

No product certificate will be required.

Hose assemblies with couplings made of carbon steel are not to be used at temperatures below -10°C unless the material is normalized.

Type Approval documentation

- Intertraco hose catalogue dated January 2014
- Test reports received 13.05.2009
- Fire test from LAPI on all hose designations received 02.02.2010

Tests carried out

Dimensional check, Change in length, Burst test, Impulse test, Oil Resistance, Ozone Resistance, Cold Flexibility, Fire test

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Marking of product

For traceability to this type approval the hoses are marked:

- Intertraco
- Hose type designation

Periodical assessment

For retention of the Type Approval, DNV Surveyor shall perform a survey every second year, to verify that the conditions for the type approval are complied with and to witness the following tests on a selection of sizes:

- Dimensional check.
- Change in length
- Leakage test
- Burst test

The tests shall be performed in accordance with procedures given in Det Norske Veritas' Standard for Certification no. 2.9, Program 5-791.70 "Type Approval of Flexible Hoses of Non-Metallic Material", or another recognised standard.

The tests are to be performed with the type of couplings fitted that are Type Approved with the hoses.

END OF CERTIFICATE