

**TYPE APPROVAL CERTIFICATE**

**This is to certify:**

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

with type designation(s)  
**FlexIT 3T, FlexIT SHP, FlexIT H4, FlexIT 5000, FlexIT 6000**

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 3T	Hydraulic -40°C to + 100°C, For polyglycol base oils, water-oil emulsions and water: max. +85°C	310 to 500 bar	3/8", 1/2", 3/4", 1"
FlexIT SHP	Hydraulic -40°C to + 100°C, For polyglycol base oils, water-oil emulsions and water: max. +85°C	280 to 450 bar	3/8", 1/2", 5/8", 3/4", 1"
FlexIT H4	Hydraulic -40°C to + 100°C, For polyglycol base oils, water-oil emulsions and water: max. +85°C	250 to 420 bar	3/4", 1", 1 1/4", 1 1/2", 2"
FlexIT 5000	Hydraulic -40°C to + 121°C, For polyglycol base oils, water-oil emulsions and water: max. +85°C	350 bar	3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3"
FlexIT 6000	Hydraulic -40°C to + 121°C, For polyglycol base oils, water-oil emulsions and water: max. +85°C	420 bar	3/4", 1", 1 1/4", 1 1/2", 2"

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-15135**  
File No: **791.70**  
Job Id: **262.1-008007-2**

## Product description

### FlexIT 3T:

Proprietary hose. Synthetic rubber inner tube reinforced by 3 steel wire braid, synthetic rubber cover  
Intertraco coupling types:  
J, B+S0420, B+S312T

### FlexIT SHP:

EN 856 4SP type, exceeds SAE 100R12. Synthetic rubber inner tube reinforced by 4 steel wire spirals, synthetic rubber cover.  
Intertraco coupling types:  
J, B+S312T, B+S0420

### FlexIT H4:

EN856 4SH type. Synthetic rubber tube reinforced by 4 steel wire spirals, synthetic rubber cover.  
Intertraco coupling types:  
J, X, B+S0420, I+S004I

### FlexIT 5000:

EN 856 R13, SAE 100 R13 type. Synthetic rubber inner tube reinforced by 4 (sizes 12 and 16) or 6 (all other sizes) steel wire spirals, synthetic rubber cover

### FlexIT 6000:

SAE 100 R15 type. Synthetic rubber inner tube reinforced by 4 (sizes 12 and 16) or 6 (all other sizes) steel wire spirals, synthetic rubber cover  
Intertraco coupling types:  
X, XLZ, I+S004I-S006I, Z+SZ06I

Couplings materials: carbon steel and stainless steel.

## Application/Limitation

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

Dimension, inch	Max working pressure, bar				
	FlexIT 3T	FlexIT SHP	FlexIT H4	FlexIT 5000	FlexIT 6000
3/8"	500	450	-	-	-
1/2"	470	420	-	-	-
5/8"	-	350	-	-	-
3/4"	375	350	420	350	420
1"	310	280	380	350	420

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1 1/4"	-	-	350	350	420
1 1/2"	-	-	300	350	420
2"	-	-	250	350	420
2 1/2"	-	.	-	350	-
3"	-	-	-	210	-

Temperature range:

FlexIT 3T, FlexIT SHP, FlexIT H4:

For hydraulics: -40°C to +100°C, for Polyglycol base oils, Water-oil emulsions and fresh water, max +85°C.

FlexIT 5000, FlexIT 6000:

For hydraulics: -40°C to +121°C, for Polyglycol base oils, Water-oil emulsions and fresh water, max +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**


### **Tests carried out**

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

### **Marking of product**

For traceability to this type approval the hoses are marked:

- Intertraco



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- 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