DNV·GL

Certificate No:
TAP00001NB

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 SK117, FlexIT SK216, FlexIT SC216

Issued to
INTERTRACO ITALIA SPA
Suzzara MN, Italy

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018
DNV GL class programme DNVGL-CP-0183 – Type approval – Flexible hoses

Application :

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV GL.

Type:	Temperature range:	Max. working press.:	Sizes:
FlexIT 1T	-40°C to +100°C	40 to 225 bar	DN6 to DN51
FlexIT 2T	-40°C to +100°C	80 to 400 bar	DN6 to DN51
FlexIT SK117	-40°C to +100°C	88 to 290 bar	DN6 to DN31
FlexIT SK216	-40°C to +100°C	175 to 450 bar	DN6 to DN31
FlexIT SC216	-40°C to +100°C	70 to 400 bar	DN6 to DN76

Issued at **Høvik** on **2019-01-11**
This Certificate is valid until **2023-12-31**.
DNV GL local station: **Milan**

Approval Engineer: **Adel Samiei**

for **DNV GL**

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.

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Job Id: **262.1-008007-6**
Certificate No: **TAP00001NB**

Product description

Five types of flexible hose assemblies:
Hose design:

Hose type - FlexIT	1T	2T	SK117	SK216	SC216
Tube	Synthetic Rubber				
Number of high tensile wire braids as reinforcement	One	Two	One	Two	Two
Cover	Synthetic rubber cover - MSHA flame retardant				

Coupling designations:

Hose size			1T		2T		SK117	
inch	DN	Dash	One Piece	Two Pieces	One Piece	Two Pieces	One Piece	Two Pieces
¼	6	-4	K	B+SN03T B+SCX0T	K	B+SN03T B+S0420	K	B+SCX0T
5/16	8	-5						
3/8	10	-6	K&J		K&J			
½	12	-8						
5/8	16	-10						
¾	19	-12						
1	25	-16						
1 ¼	31	-20	J	B+SN03T	J		-	B+SN03T
1 ½	38	-24					-	-
2	51	-32					-	-

Hose size			SK216		SC216	
inch	DN	Dash	One Piece	Two Pieces	One Piece	Two Pieces
¼	6	-4	K	B+SN03T B+SCX0T	K	B+SN03T B+SCX0T
5/16	8	-5				
3/8	10	-6	K&J		K&J	
½	12	-8				
5/8	16	-10				
¾	19	-12				
1	25	-16				
1 ¼	31	-20	J	B+SN03T	-	-
1 ½	38	-24	-	-	-	-
2	51	-32	-	-	-	-
2 ½	63	-40	-	-	J	B+SN03T
3	76	-48	-	-		

Coupling Material: 11SMnPb30 EN 10277-3, 11SMnPb37 EN 10277-3, 36SMnPb14 EN 10277-3, C45 EN 10277-2, S355J2 EN 10277-2, X2CrNiMo 17-12-2 EN 10088-3 (AISI 316)
Couplings Manufacturer: INTERTRACO ITALIA SPA, Suzzara MN, Italy

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.

Flexible hoses are only to be used in short lengths where it is necessary due to vibrations or flexible mounting of the machinery. The hoses shall not replace/be used where permanent piping is possible/required.

Hose assemblies covered by this certificate may be used in systems conveying petroleum based hydraulic fluid, water based Hydraulic fluids, fresh water and air in the below temperature range:

- petroleum based hydraulic fluid: -40°C to +100°C
- Water based Hydraulic fluids and air: -40°C to +70°C
- Water 0°C to +70°C

Maximum working pressure

Hose size			1T	2T	SK117	SK216	SC216
inch	DN	Dash					
¼	6	-4	225	400	290	450	400
5/16	8	-5	215	350	250	420	350
3/8	10	-6	180	330	230	385	350
½	12	-8	160	275	210	345	280
5/8	16	-10	130	250	130	290	250
¾	19	-12	105	215	105	280	250
1	25	-16	88	165	88	230	165
1 ¼	31	-20	63	125	100	175	-
1 ½	38	-24	50	90	-	-	-
2	51	-32	40	80	-	-	-
2 ½	63	-40	-	-	-	-	70
3	76	-48	-	-	-	-	70

The hose assemblies 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 cover of hoses for gaseous applications shall be pin-pricked.

Production testing

All hose assemblies delivered under the DNV GL type approval scheme shall be subject to a pressure test at 1.5 times the maximum working pressure and shall be delivered with the pressure test report with reference to this type approval certificate.

Type Approval documentation

Tests carried out

Dimensional Check Test, Change in Length Test, Burst Test, Cold Flexibility Test, Ozone Resistance Test, Impulse Test, fluid resistance Test and Fire Test.

Marking of product

For traceability to this Type Approval, the products are at least to be marked with:

- hose manufacturer's name or trademark;
- date of manufacture (month/year);
- designation type reference;
- nominal diameter;
- pressure rating;
- temperature rating.

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.