

Approvals



Approvals

GSIAPR220

Approvals Catalogue

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The data reported in this catalogue are not binding. Intertraco (Italia) S.p.A. reserves the right to change specifications without notice.

QUALITY SYSTEM CERTIFICATION

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ISO 9001

Quality system
certification



IQNet, the association of the world's first class certification bodies, is the largest provider of management System Certification in the world. IQNet is composed of more than 30 bodies and counts over 150 subsidiaries all over the globe.

CERTIFICATO N. 1718/7
CERTIFICATE No. _____

SI CERTIFICA CHE IL SISTEMA DI GESTIONE PER LA QUALITÀ DI
WE HEREBY CERTIFY THAT THE QUALITY MANAGEMENT SYSTEM OPERATED BY

INTERTRACO (ITALIA) S.p.A.

Sede e Unità Operativa

Via Amaldi, 1/A-B - 46029 Suzzara (MN) – Italia
Direzione e uffici amministrativi, progettazione, produzione.

Unità Operative

Via Pinfari, 8/A - 46029 Suzzara (MN) – Italia
Produzione di tubi flessibili assemblati.
Via Fratelli Cervi, 3/A - 46023 Gonzaga Fraz. Palidano (MN) - Italia
Magazzino e logistica.

È CONFORME ALLA NORMA / IS IN COMPLIANCE WITH THE STANDARD

UNI EN ISO 9001:2015

Sistema di Gestione per la Qualità / Quality Management System

PER LE SEGUENTI ATTIVITÀ / FOR THE FOLLOWING ACTIVITIES

EA: 17 - 29

Progettazione e produzione di: tubi flessibili assemblati, raccordi per tubi flessibili, innesti rapidi, giunti girevoli e adattatori. Commercializzazione di tubi flessibili.

Design and production of: flexible hoses, fittings for flexible hoses, quick-release couplings, rotating couplings and adapters. Trading of flexible hoses.

Riferirsi alla documentazione del Sistema di Gestione per la Qualità aziendale per l'applicabilità dei requisiti della norma di riferimento.
Refer to the documentation of the Quality Management System for details of application to reference standard requirements.

Il presente certificato è soggetto al rispetto del documento ICIM "Regolamento per la certificazione dei sistemi di gestione" e al relativo Schema specifico.
The use and the validity of this certificate shall satisfy the requirements of the ICIM document "Rules for the certification of company management systems" and specific Scheme.

Per informazioni puntuali e aggiornate circa eventuali variazioni intervenute nello stato della certificazione di cui al presente certificato, si prega di contattare il n° telefonico +39 02 725341 o indirizzo e-mail info@icim.it.
For timely and updated information about any changes in the certification status referred to in this certificate, please contact the number +39 02 725341 or email address info@icim.it.

DATA EMISSIONE
FIRST ISSUE
19/10/2000

EMISSIONE CORRENTE
CURRENT ISSUE
15/09/2021

DATA DI SCADENZA
EXPIRING DATE
14/09/2024


Vincenzo Delacqua
Rappresentante Direzione / Management Representative
ICIM S.p.A.
Piazza Don Enrico Mapelli, 75 – 20099 Sesto San Giovanni (MI)
www.icim.it



SGQ N° 004A



www.cisq.com

CISQ è la Federazione Italiana di Organismi di Certificazione dei sistemi di gestione aziendale.
CISQ is the Italian Federation of management system Certification Bodies.

0449Cim_03_IT



THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

CISQ/ICIM SPA has issued an IQNet recognized certificate that the organization:

INTERTRACO (ITALIA) S.p.A.

Head Office and Operative Unit

Via Amaldi, 1/A-B - I-46029 Suzzara (MN)

Operative Units

Via Pinfari, 8/A - I-46029 Suzzara (MN)

Via Fratelli Cervi, 3/A - I-46023 Gonzaga Fraz. Palidano (MN)

has implemented and maintains a

Quality Management System

for the following scope:

Design and production of: flexible hoses, fittings for flexible hoses, quick-release couplings, rotating couplings and adapters. Trading of flexible hoses.

which fulfils the requirements of the following standard:

ISO 9001:2015

Issued on: 2021-09-15

First issued on: 2000-10-19

Expires on: 2024-09-14

This attestation is directly linked to the IQNet Partner's original certificate and shall not be used as a stand-alone document.

Registration Number: IT-11884



Alex Stoichitoiu
President of IQNET



Ing. Mario Romersi
President of CISQ

IQNet Partners*:

AENOR Spain AFNOR Certification France APCER Portugal CCC Cyprus CISQ Italy
CQC China CQM China CQS Czech Republic Cro Cert Croatia DQS Holding GmbH Germany EAGLE Certification Group USA
FCAV Brazil FONDONORMA Venezuela ICONTEC Colombia Inspecta Sertifiointi Oy Finland INTECO Costa Rica
IRAM Argentina JQA Japan KFQ Korea MIRTEC Greece MSZT Hungary Nemko AS Norway NSAI Ireland
NYCE-SIGE Mexico PCBC Poland Quality Austria Austria RR Russia SII Israel SIQ Slovenia
SIRIM QAS International Malaysia SQS Switzerland SRAC Romania TEST St Petersburg Russia TSE Turkey YUQS Serbia

* The list of IQNet partners is valid at the time of issue of this certificate. Updated information is available under www.iqnet-certification.com

0774CM_03_EN

MED B

**Quality system
certification**

Fire testing according to
ISO 15540 - ISO 15541

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

This is to certify:

That the Materials other than steel for pipes conveying oil or fuel oil: flexible pipe assemblies

with type designation(s)

FlexIT 1T, FlexIT 2T, FlexIT SK117, FlexIT SK216, FlexIT SC216, FlexIT SHP, FlexIT H4, FlexIT 5000, FlexIT 6000

Issued to

Intertraco (Italia) S.p.a.
Suzzara MN, Italy

is found to comply with the requirements in the following Regulations/Standards:

Regulation **(EU) 2018/773,**
item No. MED/3.15c. SOLAS 74 as amended, Regulation II-2/4 & X/3 and 2000 HSC Code 7 & 10 and IMO MSC/Circ.1120

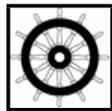
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2024-07-18.**

Issued at **Høvik** on **2019-07-19**

DNV GL local station:
Milan

Approval Engineer:
Adel Samiei



Notified Body
No.: **0575**

for **DNV GL AS**

.....
Roald Vårheim
Head of Notified Body



The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled. Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

Job Id: **344.1-009296-1**
 Certificate No: **MEDB00005AW**

Product description

Nine types of hose assemblies with synthetic rubber inner tube, reinforced by steel wires spirals or braids and synthetic rubber cover.

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					
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			
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	-	-		

Hose size			FlexIT SHP		FlexIT H4		FlexIT 5000		FlexIT 6000		
inch	DN	Dash	One piece	Two pieces	One piece	Two pieces	One piece	Two pieces	One piece	Two pieces	
3/8	10	-6	J series	B+S312T & B+S0420T	-	-	-	-	-	-	
½	12	-8			-	-	-	-	-	-	-
5/8	16	-10			-	B+S0420	-	-	-	-	-
¾	19	-12					J series	I+S004I	J & X series	I+S004I	
1	25	-16			J & X series	B+S0420 & I+S004I	H & X series	H & X series	X series & HLZ	I+S006I	
1 ¼	31	-20	-	-							
1 ½	38	-24	-	-							
2	51	-32	-	-							
2 ½	63	-40	-	-	-	-	-	-	-	-	
3	76	-48	-	-	-	-	-	I+S008I	-	-	

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)

Job Id: **344.1-009296-1**
Certificate No: **MEDB00005AW**

Couplings Manufacturer: INTERTRACO ITALIA SPA, Suzzara MN, Italy

Application/Limitation

Hose assemblies covered by this certificate are tested according to:

- 1) EN ISO 15540: Fire resistance of hose assemblies- Test methods
- 2) EN ISO 15541: Fire resistance of hose assemblies - Requirements for the test bench

Maximum working pressure

Hose size			1T	2T	SK117	SK216	SC216	FlexIT SHP	FlexIT H4	FlexIT 5000	FlexIT 6000
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	450	-	-	-
½	12	-8	160	275	210	345	280	420	-	-	-
5/8	16	-10	130	250	130	290	250	350	450	-	-
¾	19	-12	105	215	105	280	250	350	420	350	420
1	25	-16	88	165	88	230	165	320	380	350	420
1 ¼	31	-20	63	125	100	175	-	-	350	350	420
1 ½	38	-24	50	90	-	-	-	-	300	350	420
2	51	-32	40	80	-	-	-	-	250	350	420
2 ½	63	-40	-	-	-	-	70	-	-	350	-
3	76	-48	-	-	-	-	70	-	-	350	-

Type Examination documentation

Tests carried out

Fire testing according to ISO 15540 and ISO 15541

Marking of product

For traceability to this certificate, each hose is marked with:

- Hose manufacturer's name or trademark;
- Date of manufacture (month/year);
- Designation type reference;
- Nominal diameter;
- Pressure rating;
- Temperature rating.

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

This is to certify:

That the Materials other than steel for pipes conveying oil or fuel oil: flexible pipe assemblies

with type designation(s)
R1K, R2K, 4ST, 4ST+, 6ST, HST

Issued to
Intertraco (Italia) S.p.a.
Suzzara MN, Italy

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2018/773**,
item No. **MED/3.15c. SOLAS 74 as amended, Regulation II-2/4 & X/3 and 2000 HSC Code 7 & 10 and IMO MSC/Circ.1120**

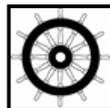
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2024-07-18**.

Issued at **Høvik** on **2019-07-19**

DNV GL local station:
Milan

Approval Engineer:
Adel Samiei



Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
Head of Notified Body



The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled. Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.



Job Id: **344.1-009297-1**
 Certificate No: **MEDB00005AX**

Product description

Six types of hose assemblies with synthetic rubber inner tube, reinforced by steel wires braids (one or two) or spirals (four or six) and synthetic rubber cover

Coupling designations:

Hose size			R1K		R2K		4ST+	
inch	DN	Dash	One piece	Two pieces	One piece	Two pieces	One Piece	Two Pieces
¼	6	-04	K series	B+SCX0T	K series	B+SN03T	-	-
5/16	8	-05	-	-	K series	B+SN03T	-	-
3/8	10	-06	K series	B+SCX0T	K & J series	B+SN03T	J Series	B+S312T B+S0420
½	12	-08	K series	B+SCX0T	K & J series	B+SN03T	J Series	
5/8	16	-10	K series	B+SCX0T	K & J series	B+SN03T	J Series	B+S312T B+S0420/ I+S004I
¾	19	-12	K series	B+SCX0T	K & J series	B+SN03T	J Series	
1	25	-16	K series	B+SCX0T	K & J series	B+SN03T	J Series	B+S0420/ I+S004I
1 ¼	31	-20	-	-	-	-	J Series	

Hose size			4ST		6ST		HST
inch	DN	Dash	One Piece	Two Pieces	One Piece	Two Pieces	Two Pieces
5/8	16	-10	J Series	B+S3212T	-	-	-
¾	19	-12	J Series	B+S0420	-	-	S+S004I
1	25	-16	J Series	B+S3212T B+S0420 I+S004I	-	-	S+S004I
1 ¼	31	-20	J Series		H Series	I+S006I	S+S006I
1 ½	38	-24	J Series		H Series	I+S006I	-
2	51	-32	J Series	-	H & HLZ Series	I+S006I	-
2 ½	63	-40	J Series		-	I+S006I	-

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

Hose assemblies covered by this certificate are tested according to:

- 1) EN ISO 15540: Fire resistance of hose assemblies- Test methods
- 2) EN ISO 15541: Fire resistance of hose assemblies - Requirements for the test bench

Maximum working pressure (in bar):

Hose size			R1K	R2K	4ST	4ST+	6ST	HST
inch	DN	Dash						
¼	6	-04	250	420				
5/16	8	-05	-	380				
3/8	10	-6	210	350	-	450	-	-
½	12	-8	180	350	-	420	-	-
5/8	16	-10	150	250	350	420	-	-
¾	19	-12	140	250	350	420	-	500
1	25	-16	120	210	350	420	-	500
1 ¼	31	-20	-	-	350	420	450	500
1 ½	38	-24	-	-	300	-	420	-
2	51	-32	-	-	250	-	420	-
2 ½	63	-40	-	-	140	-	350	-

Job Id: **344.1-009297-1**
Certificate No: **MEDB00005AX**

Type Examination documentation

Tests carried out

Fire testing according to ISO 15540 and ISO 15541

Marking of product

For traceability to this certificate, each hose is marked with:

- Hose manufacturer's name or trademark;
- Date of manufacture (month/year);
- Designation type reference;
- Nominal diameter;
- Pressure rating;
- Temperature rating.

MED D

Quality system
certification



QS - CERTIFICATE OF ASSESSMENT - EC (MODULE D)

Certificate No:
MEDD00000JN
Revision No:
2

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV AS under the authority of the Government of Norway.

This is to certify:

That the Quality System for the products

with type designation(s) as specified in the Appendix to this Certificate

Issued to

Intertraco (Italia) S.p.a.
Suzzara MN, Italy

is found to comply with the applicable requirements.

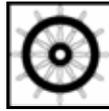
The quality system has been assessed with respect to the procedure of conformity assessment described in Annex II, Module D in the directive 2014/90/EU and regulation (EU) 2020/1170.

This Certificate is valid until **2026-08-22**.

Issued at **Høvik** on **2021-08-23**

DNV local station:
Italy/Malta CMC

Approval Engineer:
Sinisa Sedlan



Notified Body
No.: **0575**



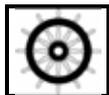
for **DNV AS**

Digitally Signed By: Zeinab, Sharif

Location: DNV Høvik, Norway

on behalf of

Sverre Olav Bergli
Head of Notified Body



0575/yyyy

0575: Notified Body number undertaking quality surveillance
yyyy: The year in which the mark is affixed



The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate authorizes the manufacturer in conjunction with the valid EC Type Examination (Module B) Certificate(s) of the equipment listed before to affix the Mark of Conformity (wheelmark) to the product described herein.
This certificate loses its validity if the manufacturer makes any changes to the approved quality system which have not been notified to and agreed with the notified body named on this certificate.
This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
The Manufacturer has to apply for periodical audits to verify the maintenance and application of the quality system every 12 months.

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.



Form code: MED 211.NOR

Revision: 2021-03

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Page 1 of 2



Job Id: 344.1-002601-9
Certificate No: MEDD00000JN
Revision No: 2

APPENDIX

Item no. MED/3.15c Materials other than steel for pipes conveying oil or fuel oil: flexible pipe assemblies

Type designation	EC Type-Examination Certificate No.	Expiry date	Notified Body No.	USCG approval number
FlexIT 1T, FlexIT 2T, FlexIT SK117, FlexIT SK216, FlexIT SC216, FlexIT SHP, FlexIT H4, FlexIT 5000, FlexIT 6000 ¹	MEDB00005AW	2024-07-18	0575	N/A
R1K, R2K, 4ST, 4ST+, 6ST, HST ¹	MEDB00005AX	2024-07-18	0575	N/A

Places of production

1. Intertraco (Italia) S.p.a., Via Edoardo Amaldi 1/A, Suzzara MN, Italy

QS - CERTIFICATE OF ASSESSMENT - EC (MODULE D)

Certificate No:
MEDD00001V4
Revision No:
1

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

This is to certify:

That the Quality System for the products

with type designation(s) as specified in the Appendix to this Certificate

Issued to

Intertraco (Italia) S.p.a.
Suzzara MN, Italy

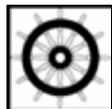
is found to comply with the applicable requirements.

The quality system has been assessed with respect to the procedure of conformity assessment described in Annex II, Module D in the directive 2014/90/EU and regulation (EU) 2020/1170.

This Certificate is valid until **2025-10-11**.

Issued at **Høvik** on **2020-10-12**

DNV GL local station:
Italy/Malta CMC

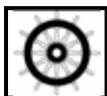


for **DNV GL AS**
Digitally Signed By: Zeinab Sharifi
Location: DNV GL Høvik, Norway
Signing Date: 13.10.2020 behalf of

Approval Engineer:
Maheshraja Venkatesan

Notified Body
No.: **0575**

Roald Vårheim
Head of Notified Body



0575/yyyy

0575: Notified Body number undertaking quality surveillance
yyyy: The year in which the mark is affixed



The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU. This certificate authorizes the manufacturer in conjunction with the valid EC Type Examination (Module B) Certificate(s) of the equipment listed before to affix the Mark of Conformity (wheelmark) to the product described herein. This certificate loses its validity if the manufacturer makes any changes to the approved quality system which have not been notified to and agreed with the notified body named on this certificate. This certificate remains valid unless suspended, withdrawn, recalled or cancelled. The Manufacturer has to apply for periodical audits to verify the maintenance and application of the quality system every 12 months.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.



Form code: MED 211.NOR

Revision: 2020-01

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Page 1 of 2

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Job Id: **344.1-004533-3**
Certificate No: **MEDD00001V4**
Revision No: **1**

APPENDIX

Item no. MED/3.15c Materials other than steel for pipes conveying oil or fuel oil: flexible pipe assemblies

Type designation	EC Type-Examination Certificate No.	Expiry date	Notified Body No.	USCG approval number
R1K, R2K, 4ST, 4ST+, 6ST, HST ¹	MEDB00005AX	2024-07-18	0575	N/A

Places of production

1. Intertraco (Italia) S.p.a., Via Edoardo Amaldi 1/A, Suzzara MN, Italy

DNV

Products type approvals

TYPE APPROVAL CERTIFICATE

This is to certify:

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

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

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 SHP	-40°C to + 100°C	320 to 450 bar	DN10,12,16,19,25
FlexIT H4	-40°C to + 100°C	250 to 450 bar	DN16,19,25,31,38,51
FlexIT 5000	-40°C to + 120°C	350 bar	DN19,25,31,38,51,63,76
FlexIT 6000	-40°C to + 120°C	420 bar	DN19,25,31,38,51

Issued at **Høvik** on **2019-01-25**

This Certificate is valid until **2023-06-30**.
DNV GL local station: **Milan**

Approval Engineer: **Adel Samiei**

for **DNV GL**



Digitally Signed By: **Marveng, Marianne Spæren**
Location: **DNV GL Høvik, Norway**

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.



Form code: TA 251

Revision: 2016-12

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Product description

Four types of hose assemblies with synthetic rubber inner tube, reinforced by steel wires spirals and synthetic rubber cover.

- FlexIT SHP constructed according to EN856 4SP
- FlexIT H4 constructed according to EN856 4SH
- FlexIT 5000 constructed according to EN856 R13
- FlexIT 6000 constructed according to EN856 R15

Coupling designations:

Hose size			FlexIT SHP		FlexIT H4		FlexIT 5000		FlexIT 6000					
inch	DN	Dash	One piece	Two pieces	One piece	Two pieces	One piece	Two pieces	One piece	Two pieces				
3/8	10	-6	J series	B+S312T & B+S0420T	-	-	-	-	-	-				
1/2	12	-8			-	-	-	-	-	-	-			
5/8	16	-10			-	B+S0420	-	-	-	-	-			
3/4	19	-12			-	-	J series	I+S004I	J & X series	I+S004I	-			
1	25	-16	-	-	J & X series	B+S0420 & I+S004I	H & X series	I+S006I	H & X series	I+S006I				
1 1/4	31	-20	-	-							H & X series	-	-	-
1 1/2	38	-24	-	-							H & X series & HLZ	-	-	-
2	51	-32	-	-	-	-	-	-	X series & HLZ	-				
2 1/2	63	-40	-	-	-	-	-	-	-	-				
3	76	-48	-	-	-	-	-	I+S008I	-	-				

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.

Maximum working pressure

Hose size			FlexIT SHP	FlexIT H4	FlexIT 5000	FlexIT 6000
inch	DN	Dash				
3/8	10	-6	450	-	-	-
1/2	12	-8	420	-	-	-
5/8	16	-10	350	450	-	-
3/4	19	-12	350	420	350	420
1	25	-16	320	380	350	420
1 1/4	31	-20	-	350	350	420
1 1/2	38	-24	-	300	350	420
2	51	-32	-	250	350	420
2 1/2	63	-40	-	-	350	-
3	76	-48	-	-	350	-

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

Medium	FlexIT SHP, H4	FlexIT 5000 & 6000
petroleum based hydraulic fluid	-40°C to +100°C	-40°C to +120°C
water based Hydraulic fluids and air	-40°C to +70°C	-40°C to +70°C
water	0°C to +70°C	0°C to +70°C

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.

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.

Hose assemblies covered by this certificate shall not be used in system subject to pressure below atmospheric or vacuum condition.

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 the 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, Oil 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.

Where a flexible hose assembly is made up of items from different manufacturers, the components are to be clearly identified and traceable to evidence of prototype testing.

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 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**



Digitally Signed By: **Marveng, Marianne Spæren**

Location: **DNV GL Høvik, Norway**

Marianne Spæren Marveng
Head of Section

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Form code: **TA 251**

Revision: **2016-12**

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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							
½	12	-8							
5/8	16	-10							
¾	19	-12	K&J	B+SN03T B+SCX0T	K&J	B+SN03T B+S0420	K	B+SCX0T	
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				
½	12	-8				
5/8	16	-10				
¾	19	-12	K&J	B+SN03T B+SCX0T	K&J	B+SN03T B+SCX0T
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.

TYPE APPROVAL CERTIFICATE

This is to certify:

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

with type designation(s)
R1K, R2K

Issued to
Intertraco (Italia) S.p.a.
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:
R1K	-40°C to +100°C	120 to 250 bar	DN6,10,12,16,19,25
R2K	-40°C to +100°C	210 to 420 bar	DN6,8,10,12,16,19,25

Issued at **Høvik** on **2019-03-20**

for **DNV GL**

This Certificate is valid until **2023-12-31**.
DNV GL local station: **Milan**

Approval Engineer: **Adel Samiei**

.....
Marianne Spæren Marveng
Head of Section

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Form code: TA 251

Revision: 2016-12

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Job Id: **262.1-016592-2**
 Certificate No: **TAP00001RC**

Product description

Two types of hose assemblies with synthetic rubber inner tube, reinforced by steel wires braids (one for R1K and two for R2K) and synthetic rubber cover
 Hose manufacturer: Bridgestone Corporation

Coupling designations:

Hose size			R1K		R2K	
inch	DN	Dash	One piece	Two pieces	One piece	Two pieces
¼	6	-04	K series	B+SCX0T	K series	B+SN03T
5/16	8	-05	-	-	K series	B+SN03T
3/8	10	-06	K series	B+SCX0T	K & J series	B+SN03T
½	12	-08	K series	B+SCX0T	K & J series	B+SN03T
5/8	16	-10	K series	B+SCX0T	K & J series	B+SN03T
¾	19	-12	K series	B+SCX0T	K & J series	B+SN03T
1	25	-16	K series	B+SCX0T	K & J series	B+SN03T

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.

Maximum working pressure (in bar):

Hose size			R1K	R2K
inch	DN	Dash		
¼	6	-04	250	420
5/16	8	-05	-	380
3/8	10	-06	210	350
½	12	-08	180	350
5/8	16	-10	150	250
¾	19	-12	140	250
1	25	-16	120	210

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

Medium	R1K & R2K
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

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.

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 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 the type approval certificate.

Type Approval documentation

Job Id: **262.1-016592-2**
Certificate No: **TAP00001RC**

Manufacturer's datasheet for R1K and R2K
Burst pressure test reports witnessed by DNV GL dated 2018-12-11
Impulse test report numbers: D15-099, D15-100, D16-112, D16-111, D15-201, D15-152, D15-151, D16-068, D17-070, D15-207, D17-072, D15-208, D17-074, D17-004, D17-003, D17-008, D17-007, D17-012, D17-011
Hose test reports dated 2018-12-06
LAPI fire test reports: 2642,2643,2644,2645,2646,2674.0IS0110/18

Tests carried out

Dimensional Check Test, Change in Length Test, Burst Test, Cold Flexibility Test, Ozone Resistance Test, Impulse Test, vacuum test, Oil 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.

Where a flexible hose assembly is made up of items from different manufacturers, the components are to be clearly identified and traceable to evidence of prototype testing.

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 APPROVAL CERTIFICATE

This is to certify:

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

with type designation(s)
4ST, 4ST+, 6ST, HST

Issued to

Intertraco (Italia) S.p.a.
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:
4ST	-40°C to +100°C	140 to 350 bar	DN16,19,25,31,38,51,63
4ST+	-40°C to +100°C	420 to 450 bar	DN10,12,16,19,25,31
6ST	-40°C to +100°C	350 to 450 bar	DN31,38,51,63
HST	-40°C to +100°C	500 bar	DN19,25,31

Issued at **Høvik** on **2019-03-20**

for **DNV GL**

This Certificate is valid until **2023-12-31**.

DNV GL local station: **Milan**

Approval Engineer: **Adel Samiei**

.....
Marianne Spæren Marveng
Head of Section

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Form code: TA 251

Revision: 2016-12

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Job Id: **262.1-016592-3**
 Certificate No: **TAP00001RD**

Product description

Four types of hose assemblies with synthetic rubber inner tube, reinforced by steel wires spirals (four or six) and synthetic rubber cover
 Hose manufacturer: Bridgestone Corporation

Coupling designations:

Hose size			4ST		4ST+		6ST		HST
inch	DN	Dash	One Piece	Two Pieces	One Piece	Two Pieces	One Piece	Two Pieces	Two Pieces
3/8	10	-6	-	-	J Series	B+S312T B+S0420	-	-	-
1/2	12	-8	-	-	J Series		-	-	-
5/8	16	-10	J Series	B+S3212T B+S0420	J Series	B+S312T B+S0420 I+S004I	-	-	-
3/4	19	-12	J Series		J Series		-	-	S+S004I
1	25	-16	J Series	B+S3212T B+S0420 I+S004I	J Series	B+S0420 I+S004I	-	-	S+S004I
1 1/4	31	-20	J Series		J Series		H Series	I+S006I	S+S006I
1 1/2	38	-24	J Series		-		H Series	I+S006I	-
2	51	-32	J Series		-		H & HLZ Series	I+S006I	-
2 1/2	63	-40	J Series	-	-	-	I+S006I	-	

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.

Maximum working pressure (in bar):

Hose size			4ST	4ST+	6ST	HST
inch	DN	Dash				
3/8	10	-6	-	450	-	-
1/2	12	-8	-	420	-	-
5/8	16	-10	350	420	-	-
3/4	19	-12	350	420	-	500
1	25	-16	350	420	-	500
1 1/4	31	-20	350	420	450	500
1 1/2	38	-24	300	-	420	-
2	51	-32	250	-	420	-
2 1/2	63	-40	140	-	350	-

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

Medium	4ST, 4ST+, 6ST, HST
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

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.

Job Id: **262.1-016592-3**
Certificate No: **TAP00001RD**

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 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 the type approval certificate.

Type Approval documentation

Manufacturer catalogue for couplings

Manufacturer datasheets for hoses

Hose test reports dated 2018-12-06 & 2018-12-11

Burst pressure test reports witnessed by DNV GL dated 2018-12-11

Impulse test report numbers D16-251, D16-252, D16-253, D17-034, D15-175, D16-006, D15-184, D16-223, D15-142, D17-022, D14-190

Fire test reports: 2627,2628,2629,2630,2631,2632,2634,2635,2637,2638,2639,2640,2641.OIS0110/18 and 356,357,358.OIS0110/19

Tests carried out

Dimensional Check Test, Change in Length Test, Burst Test, Cold Flexibility Test, Ozone Resistance Test, Impulse Test, vacuum test, Oil 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.

Where a flexible hose assembly is made up of items from different manufacturers, the components are to be clearly identified and traceable to evidence of prototype testing.

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.

ABS

Products type approvals



Confirmation of Product Type Approval

Company Name: INTERTRACO (ITALIA) S.P.A.

Address: VIA E. AMALDI, 1/A-B, SUZZARA, MANTOVA, Italy, 46029

Product: Flexible Hose

Model(s): FlexIT 1T, FlexIT 2T, FlexIT SK117, FlexIT SC216, FlexIT SK216, FlexIT H4, FlexIT SHP, FlexIT 5000, FlexIT 6000

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	20-2008447-1-PDA	31-JUL-2020	30-JUL-2025
Manufacturing Assessment (MA)	21-4889778	06-AUG-2021	17-AUG-2026
Product Quality Assurance (PQA)	NA	NA	NA

Tier

3 - Type Approved, unit certification not required

Intended Service

Hydraulic Systems (mineral and vegetable oils, polyglycol base oils, water/oil emulsions and water)

Description

Oil resistant synthetic rubber hoses reinforced with one, two, three or four high tensile steel wire braids or spirals, covered with a synthetic rubber. For details see Manufacturer's data sheets.

Ratings

Pressure ratings, sizes and temperatures and approved end fittings for each family are listed in the attachment to this PDA Certificate.

Service Restrictions

1) Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

2) Hoses are to be completed with factory assembled end fittings or factory supplied end fittings installed in accordance with manufacturer's specifications.

3) End connections are to comply with applicable requirements and limitations of the Rules for the intended service (e.g. Marine Vessel Rules 4-6-7/3.5.1)

4) Hose assemblies are to be installed only where flexibility is required and are not to be subject to torsional deflection under normal conditions; hose length is to be limited to that required by flexibility only.

5) Not to be installed in applications where large amount of repeated flexing is expected in combination with pressure pulses.

6) Flexible hoses are to be permanently marked by the manufacturer with the following details: Hose manufacturer's name or trademark, Date of manufacture (month/year), Designation type reference, Nominal diameter, Pressure rating, Temperature rating.

Comments

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Manufacturer recommended fittings: see attached Table

Notes, Drawings and Documentation

Drawing No. APPLICATION LIST FOR ABS - 15.06.2020, APPLICATION LIST FOR ABS - 15.06.2020, Revision: 0, Pages: 1

Drawing No. BURST TEST REPORT - WITNESSED 1T, BURST TEST REPORT - WITNESSED 1T at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Drawing No. FlexIT 2T - BURST TEST REPORT - WITNESSED, FlexIT 2T - BURST TEST REPORT - WITNESSED at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Drawing No. FlexIT 2T - HOSE REPORT, FlexIT 2T - HOSE REPORT at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Drawing No. FlexIT 5000 BURST TEST REPORT - WITNESSED, FlexIT 5000 BURST TEST REPORT - WITNESSED at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Drawing No. FlexIT 5000 HOSE REPORT, FlexIT 5000 HOSE REPORT at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Drawing No. FlexIT 5000 IMPULSE TEST, FlexIT 5000 IMPULSE TEST at Intertraco Plant dated 24 Oct 2017, Revision: 0, Pages: 1

Drawing No. FlexIT 5000 IMPULSE TEST F500040 - S006I, FlexIT 5000 IMPULSE TEST F500040 - S006I at Intertraco Plant dated 11 July 2019, Revision: 0, Pages: 1

Drawing No. FlexIT 5000 IMPULSE TEST F500048 - S008I, FlexIT 5000 IMPULSE TEST F500048 - S008I at Intertraco Plant dated 04 Jan 2018, Revision: 0, Pages: 1

Drawing No. FlexIT 5000-40 HOSE REPORT, FlexIT 5000-40 HOSE REPORT at Intertraco Plant dated 08 Jan 2019, Revision: 0, Pages: 1

Drawing No. FlexIT 6000 BURST TEST REPORT - WITNESSED, FlexIT 6000 BURST TEST REPORT - WITNESSED at Intertraco Plant dated 31 Jul 2019 , Revision: 0, Pages: 1

Drawing No. FlexIT 6000 HOSE REPORT, FlexIT 6000 HOSE REPORT at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Drawing No. FlexIT 6000 IMPULSE TEST, FlexIT 6000 IMPULSE TEST at Intertraco Plant dated 12 Jul 2016, Revision: 0, Pages: 1

Drawing No. FlexIT H4 BURST TEST REPORT - WITNESSED, FlexIT H4 BURST TEST REPORT - WITNESSED at Intertraco Plant dated 31 Jul 2019 , Revision: 0, Pages: 1

Drawing No. FlexIT H4 HOSE REPORT, FlexIT H4 HOSE REPORT at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Drawing No. FlexIT H4 IMPULSE TEST, FlexIT H4 IMPULSE TEST at Intertraco Plant dated 21 Aug 2018, Revision: 0, Pages: 1

Drawing No. FlexIT SC216 BURST TEST REPORT - WITNESSED, FlexIT SC216 BURST TEST

REPORT - WITNESSED at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Drawing No. FlexIT SC216 HOSE REPORT, FlexIT SC216 HOSE REPORT at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Drawing No. FlexIT SC216 HOSE REPORT SC216-40, FlexIT SC216 HOSE REPORT SC216-40 at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Drawing No. FlexIT SC216 IMPULSE TEST, FlexIT SC216 IMPULSE TEST at Intertraco Plant dated 28 Jun 2016, Revision: 0, Pages: 1

Drawing No. FlexIT SHP BURST TEST REPORT - WITNESSED, FlexIT SHP BURST TEST REPORT - WITNESSED at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Drawing No. FlexIT SHP HOSE REPORT, FlexIT SHP HOSE REPORT at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Drawing No. FlexIT SHP IMPULSE TEST, FlexIT SHP IMPULSE TEST at Intertraco Plant dated 07 Apr 2016, Revision: 0, Pages: 1

Drawing No. FlexIT SK117 BURST TEST REPORT - WITNESSED, FlexIT SK117 BURST TEST REPORT - WITNESSED at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Drawing No. FlexIT SK117 HOSE REPORT, FlexIT SK117 HOSE REPORT at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Drawing No. FlexIT SK216 BURST TEST REPORT - WITNESSED, FlexIT SK216 BURST TEST REPORT - WITNESSED at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Drawing No. FlexIT SK216 HOSE REPORT, FlexIT SK216 HOSE REPORT at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Drawing No. FlexIT SK216 IMPULSE TEST, FlexIT SK216 IMPULSE TEST at Intertraco Plant dated 10 Nov 2016, Revision: 0, Pages: 1

Drawing No. HOSE REPORT - FlexIT 1T, HOSE REPORT - FlexIT 1T at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Drawing No. Hydraulic Hoses FlexIT 018_1T, Hose data sheet, Revision: 0, Pages: 1

Drawing No. Hydraulic Hoses FlexIT 018_2T, Hose data sheet, Revision: 0, Pages: 1

Drawing No. Hydraulic Hoses FlexIT 018_5000, Hose data sheet, Revision: 0, Pages: 1

Drawing No. Hydraulic Hoses FlexIT 018_6000, Hose data sheet, Revision: 0, Pages: 1

Drawing No. Hydraulic Hoses FlexIT 018_H4, Hose data sheet, Revision: 0, Pages: 1

Drawing No. Hydraulic Hoses FlexIT 018_SC216, Hose data sheet, Revision: 0, Pages: 1

Drawing No. Hydraulic Hoses FlexIT 018_SHP, Hose data sheet, Revision: 0, Pages: 1

Drawing No. Hydraulic Hoses FlexIT 018_SK117, Hose data sheet, Revision: 0, Pages: 1

Drawing No. Hydraulic Hoses FlexIT 018_SK216, Hose data sheet, Revision: 0, Pages: 1

Drawing No. Hydraulic Hoses FlexIT F500048 DRAFT, Hose data sheet, Revision: 0, Pages: 1

Drawing No. IMPULSE TEST - FlexIT 1T, IMPULSE TEST - FlexIT 1T at Intertraco Plant dated 31 Jul 2019, Revision: 0, Pages: 1

Term of Validity

This Product Design Assessment (PDA) Certificate remains valid until 30/Jul/2025 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting

design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

ABS Rules

Rules for Condition of Classification (2020): 1-1-4/7.7, 1-1-A3 and A4, which covers the following:

- Rules for Building and Classing Marine Vessels (2020): 4-6-2/5.7

Rules for Conditions of Classifications – Offshore Units and Structures (2020): 1.1.4/9.7, 1-1-A2 and A3, which covers the following:

- Rules for Building and Classing Mobile Offshore Drilling Units (2020): 4-2-1/11.29
- Rules for Building and Classing Mobile Offshore Units - (2020): 4-2-1/11.29

International Standards

NA

EU-MED Standards

NA

National Standards

NA

Government Standards

NA

Other Standards

NA



A handwritten signature in blue ink, appearing to read "Joseph W. K.".

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 10-Sep-2021 9:47

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.



Confirmation of Product Type Approval

Company Name: INTERTRACO (ITALIA) S.P.A.

Address: VIA E. AMALDI, 1/A-B 46029 Italy

Product: Flexible Hose

Model(s): R1K, R2K & R2K+, 4ST, 4ST+ & 6ST, HST

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	21-2176600-PDA	19-NOV-2021	18-NOV-2026
Manufacturing Assessment (MA)	21-4889778	06-AUG-2021	17-AUG-2026
Product Quality Assurance (PQA)	NA	NA	NA

Tier

3 - Type Approved, unit certification not required

Intended Service

Hydraulic Oils, both Mineral and Biological, Polyglycol Base Oils, Water-Oil Emulsion and Water

Description

R1K: Synthetic rubber tube with one high tensile steel wire braid covered with synthetic rubber cover abrasion resistant type, MSHA flame retardant approved.

R2K & R2K+: Synthetic rubber tube with two high tensile steel wire braids covered with synthetic rubber cover abrasion resistant type, MSHA flame retardant approved.

4ST: Synthetic rubber tube with four high tensile steel wire spirals covered with synthetic rubber cover abrasion resistant type, MSHA flame retardant approved.

4ST+ & 6ST: Synthetic rubber tube with four/six high tensile steel wire spirals covered with synthetic rubber cover abrasion resistant type, MSHA flame retardant approved.

HST: Synthetic rubber tube with four/six high tensile steel wire spirals covered with synthetic rubber cover abrasion resistant type, MSHA flame retardant approved.

Ratings

R1K: from DN 06 to DN 25, pressure from 250 bar to 120 bar.

R2K & R2K+: from DN 06 to DN 25, pressure from 420 bar to 210 bar.

4ST: from DN 16 to DN 63, pressure from 350 bar to 140 bar.

4ST+ & 6ST: from DN10 to DN 63, pressure from 450 bar to 350 bar.

HST: from DN 19 to DN 31, pressure 500 bar.

For additional details see attached table.

Service Restrictions

Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

- 1) Hoses are to be completed with factory assembled end fittings or factory supplied end fittings installed in accordance with manufacturer's specifications.
- 2) End connections are to comply with applicable requirements and limitation of Rules (4-6-2/5.5.4, 4-6-2/5.5.5, 4-6-7/3.5.1, 4-6-7/5.3.2).
- 3) Hose assemblies are to be installed only where flexibility is required, in clearly visible and readily accessible locations, and are not to be subject to torsional deflection under normal conditions; hose length is to be limited to that required by flexibility only.
- 4) Not to be used in high pressure fuel oil injection systems, steam systems or oil supply lines to boilers.
- 5) Not to be used for installations where repeated and/or frequent flexing is expected.
- 6) Flexible Hoses are to be permanently marked by the manufacturer with the following details: Hose manufacturer's name or trademark, date of manufacturer (month/year), designation type reference, nominal diameter, pressure and temperature rating in accordance with Marine Vessel Rules 4-6-2/5.7.6.
- 7) The scope of Type Approval is to comply with MSC.1/Circ.1221 dated 11 December 2006.

Comments

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes, Drawings and Documentation

- Test report No. 4ST - BURST TEST REPORT - WITNESSED (Mantova, Italy, 11-dec-2018)
- Test report No. 4ST - HOSE REPORT (Mantova, Italy, 11-dec-2018)
- Drawing No. 4ST - Hose data sheet - Hydraulic Hoses Europe 018
- Test report No. 4ST - IMPULSE TEST (Mantova, Italy, 17-mar-2017)
- Test report No. 4ST+ & 6ST - BURST TEST REPORT - WITNESSED (Mantova, Italy, 11-dec-2018)
- Test report No. 4ST+ & 6ST - HOSE REPORT (Mantova, Italy, 11-dec-2018)
- Test report No. 4ST+ & 6ST - IMPULSE TEST REPORT (MANTOVA, ITALY, 17-MAR-2017)
- Drawing No. 4ST+ - HOSE DATA SHEET - Hydraulic Hoses Europe 018
- Drawing No. 6ST - HOSE DATA SHEET - Hydraulic Hoses Europe 019
- Drawing No. APPLICATION LIST FOR TYPE APPROVAL RENEW 2021
- Drawing No. BRIDGESTONE RECAP ABS 2021
- Drawing No. MEDB00005AX-Bridgestone
- Test report No. HST - BURST TEST REPORT - WITNESSED (Mantova, Italy, 11-dec-2018)
- Test report No. HST - HOSE DATA SHEET - Hydraulic Hoses Europe 019

Test report No. HST - HOSE REPORT (MANTOVA, ITALY, 11-DEC-2018)

Test report No. HST - IMPULSE TEST REPORT (MANTOVA, ITALY, 17-MAR-2017)

Drawing No. HST COMPLETE RANGE

Test report No. R1K - BURST TEST REPORT - WITNESSED (Mantova, Italy, 11-dec-2018)

Drawing No. R1K - HOSE DATA SHEET - Hydraulic Hoses Europe 018

Test report No. R1K - HOSE REPORT (MANTOVA, ITALY, 11-DEC-2018)

Test report No. R1K - IMPULSE TEST REPORT (MANTOVA, ITALY, 17-MAR-2017)

Test report No. R2K - BURST TEST REPORT - WITNESSED (Mantova, Italy, 11-dec-2018)

Drawing No. R2K - HOSE DATA SHEET - Hydraulic Hoses Europe 018

Test report No. R2K - HOSE REPORT (MANTOVA, ITALY, 11-DEC-2018)

Test report No. R2K - IMPULSE TEST REPORT (MANTOVA, ITALY, 17-MAR-2017)

Term of Validity

This Product Design Assessment (PDA) Certificate remains valid until 18/Nov/2026 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

ABS Rules

2021 Rules for Conditions of Classification, 1-1-4/7.7 & 1-1 Appendix 3 and 4, which covers the following:

2021 Rules for Building and Classing Marine Vessels Rules: 4-6-2/5.7

2021 Guide for Building and Classing Yachts: 4-1-1/3.3, 4-4-1/9.19

2021 Rules for Conditions of Classification - Mobile Offshore Units, 1-1-4/9.7 & 1-1 Appendix 2 and 3, which covers the following:

2021 Guide for Classification of Drilling Systems: 4-2-1/11.29

2021 Rules for Conditions of Classification - High-Speed Crafts 2021 1-1-4/11.9, 1-1-Appendix 2 & 3, which covers the following:

2021 Rules for Conditions of Classification - High-Speed Crafts: 4-4-1/9.19

International Standards

NA

EU-MED Standards

NA

National Standards

NA

Government Standards

NA

Other Standards

NA



A handwritten signature in black ink, appearing to read "James W. White".

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 26-Nov-2021 7:20

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.

USCG

Products type approvals

8. Intertraco (Italia) S.p.A.
Via E.Amaldi 1/A-B
46029 Suzzara (MN) Italy
P.O. Box N 7/C
Ph: +39 0376 539 711
Fax: +39 0376 521 722

Table 11 - Intertraco (Italia) S.p.A. listing

Hose Number	Applic. Code	Hose ID	MAWP (PSI)	Fittings	Fire Sleeve	Listing Date
C25-16	HF Type B	1	3625	J	-	11NOV15
C35-08	HF Type B	½	5076	K	-	11NOV15
C35-32	HF Type B	2	5076	H	-	11NOV15
PC25-10	HF Type B	5/8	3625	K	-	11NOV15
PC25-12	HF Type B	¾	3625	J	-	11NOV15
PC25-20	HF Type B	1-1/4	3625	J	-	11NOV15
PC25-24	HF Type B	1-1/2	3625	J	-	11NOV15
PC35-06	HF Type B	3/8	5076	K	-	11NOV15
PC35-08	HF Type B	½	5076	K	-	11NOV15
PC35-10	HF Type B	5/8	5076	K	-	11NOV15
PC35-12	HF Type B	¾	5076	J	-	11NOV15
PC35-16	HF Type B	1	5076	J	-	11NOV15
PC35-20	HF Type B	1-1/4	5076	H	-	11NOV15
PC35-24	HF Type B	1-1/2	5076	H	-	11NOV15
PC42-04	HF Type B	¼	6091	K	-	11NOV15
R1AT-04	HF Type B	¼	3263	K	-	11NOV15
R2AT-04	HF Type B	¼	5801	K	-	11NOV15
R2AT-06	HF Type B	3/8	4786	K	-	11NOV15
R2AT-08	HF Type B	½	3988	K	-	11NOV15
R2AT-10	HF Type B	5/8	3625	K	-	11NOV15
R2AT-12	HF Type B	¾	3118	J	-	11NOV15
R2AT-16	HF Type B	1	2393	J	-	11NOV15
R2AT-20	HF Type B	1-1/4	1812	J	-	11NOV15
R2AT-24	HF Type B	1-1/2	1305	J	-	11NOV15
R2AT-32	HF Type B	2	1160	J	-	11NOV15
R2K-04	HF Type B	1/4	6000	K	-	12JUL16
R2K-06	HF Type B	3/8	5000	K	-	12JUL16
R2K-08	HF Type B	1/2	5000	K	-	12JUL16
R2K-10	HF Type B	5/8	3600	K	-	12JUL16
R2K-12	HF Type B	3/4	3600	K	-	12JUL16
R2K-16	HF Type B	1	3000	K	-	12JUL16
SK117-04	HF Type B	1/4	4200	K	-	12JUL16
SK117-05	HF Type B	5/16	3600	K	-	12JUL16
SK117-06	HF Type B	3/8	3300	K	-	12JUL16
SK117-08	HF Type B	1/2	3000	K	-	12JUL16
SC216-04	HF Type B	1/4	5800	K	-	12JUL16
SC216-05	HF Type B	5/16	5000	K	-	12JUL16
SC216-06	HF Type B	3/8	4800	K	-	12JUL16
SC216-08	HF Type B	1/2	4000	K	-	12JUL16

Table 11 - Intertraco (Italia) S.p.A. listing (continued)

Hose Number	Applic. Code	Hose ID	MAWP (PSI)	Fittings	Fire Sleeve	Listing Date
SC216-10	HF Type B	5/8	3600	K	-	12JUL16
SC216-16	HF Type B	1	2400	K	-	12JUL16
SC216-06	HF Type B	3/8	4800	J	-	12JUL16
SC216-08	HF Type B	1/2	4000	J	-	12JUL16
SC216-10	HF Type B	5/8	3600	J	-	12JUL16
SC216-12	HF Type B	3/4	3100	J	-	12JUL16
SC216-16	HF Type B	1	2400	J	-	12JUL16
SC216-40	HF Type B	2 - 1/2	1000	J	-	12JUL16
SC216-48	HF Type B	3	1000	J	-	12JUL16
SK216-04	HF Type B	1/4	6500	K	-	12JUL16
SK216-05	HF Type B	5/16	6000	K	-	12JUL16
SK216-06	HF Type B	3/8	5500	K	-	12JUL16
SK216-08	HF Type B	1/2	5000	K	-	12JUL16
SK216-10	HF Type B	5/8	4200	K	-	12JUL16
SK216-12	HF Type B	3/4	4000	K	-	12JUL16
SK216-16	HF Type B	1	3300	K	-	12JUL16
SK216-06	HF Type B	3/8	5500	J	-	12JUL16
SK216-08	HF Type B	1/2	5000	J	-	12JUL16
SK216-10	HF Type B	5/8	4200	J	-	12JUL16
SK216-12	HF Type B	3/4	4000	J	-	12JUL16
SK216-16	HF Type B	1	3300	J	-	12JUL16
1T-04	HF Type B	1/4	3250	K	-	12JUL16
1T-05	HF Type B	5/16	3100	K	-	12JUL16
1T-06	HF Type B	3/8	2600	K	-	12JUL16
1T-08	HF Type B	1/2	2300	K	-	12JUL16
1T-10	HF Type B	5/8	1900	K	-	12JUL16
1T-12	HF Type B	3/4	1500	K	-	12JUL16
1T-16	HF Type B	1	1250	K	-	12JUL16
1T-12	HF Type B	3/4	1500	J	-	12JUL16
1T-16	HF Type B	1	1250	J	-	12JUL16
1T-20	HF Type B	1 - 1/4	920	J	-	12JUL16
1T-24	HF Type B	1 - 1/2	725	J	-	12JUL16
1T-32	HF Type B	2	580	J	-	12JUL16
2T-04	HF Type B	1/4	5800	K	-	12JUL16
2T-05	HF Type B	5/16	5000	K	-	12JUL16
2T-06	HF Type B	3/8	4800	K	-	12JUL16
2T-08	HF Type B	1/2	4000	K	-	12JUL16
2T-10	HF Type B	5/8	3600	K	-	12JUL16
2T-12	HF Type B	3/4	3100	K	-	12JUL16
2T-16	HF Type B	1	2400	K	-	12JUL16
2T-12	HF Type B	3/4	3100	J	-	12JUL16
2T-16	HF Type B	1	2400	J	-	12JUL16
2T-20	HF Type B	1 - 1/4	1800	J	-	12JUL16
2T-24	HF Type B	1 - 1/2	1300	J	-	12JUL16
2T-32	HF Type B	2	1150	J	-	12JUL16
4SH-12	HF Type B	3/4	6000	X	-	12JUL16
4SH-16	HF Type B	1	6000	J	-	12JUL16

Table 11 - Intertraco (Italia) S.p.A. listing (continued)

Hose Number	Applic. Code	Hose ID	MAWP (PSI)	Fittings	Fire Sleeve	Listing Date
4ST 10	HF Type B	5/8	5000	J	-	12JUL16
4ST 12	HF Type B	3/4	5000	J	-	12JUL16
4ST 16	HF Type B	1	5000	J	-	12JUL16
4ST 20	HF Type B	1 - 1/4	5000	J	-	12JUL16
4ST 24	HF Type B	1 - 1/2	4350	J	-	12JUL16
4ST 32	HF Type B	2	3600	J	-	12JUL16
4ST+ 06	HF Type B	3/8	6500	J	-	12JUL16
4ST+ 08	HF Type B	1/2	6000	J	-	12JUL16
4ST+ 10	HF Type B	5/8	6000	J	-	12JUL16
4ST+ 12	HF Type B	3/4	6000	J	-	12JUL16
4ST+ 16	HF Type B	1	6000	J	-	12JUL16
4ST+ 20	HF Type B	1 - 1/4	6000	J	-	12JUL16
6ST 20	HF Type B	1 - 1/4	6500	H	-	12JUL16
6ST 24	HF Type B	1 - 1/2	6000	H	-	12JUL16
6ST 32	HF Type B	2	6000	H	-	12JUL16
6ST 32	HF Type B	2	6000	HLZ	-	12JUL16

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