FOUNDED 1862

CERTIFICATE NUMBER
12-GE917484-PDA

DATE
31 July 2012

ABS TECHNICAL OFFICE
Genoa Engineering

CERTIFICATE OF DESIGN ASSESSMENT

This is to Certify that a representative of this Bureau did, at the request of

INTERTRACO (ITALIA) S.P.A. - SUZZARA, MANTOVA

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

PRODUCT: **Flexible Hose**

MODEL: **DIN4SP, DIN4SH, IT4ST, SAER13, SAER15, R2C, C21, R1S, R2S, PC25, PC35**

This Product Design Assessment (PDA) Certificate 12-GE917484-PDA, dated 31/Jul/2012 remains valid until 30/Jul/2017 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING

Lucio Trevisan
Engineer

INTERTRACO (ITALIA) S.P.A.
VIA E. AMALDI, 1/A-B
SUZZARA, MANTOVA
46029
Italy
Telephone: +39 0376 539742
Email: fabio.covri@intertraco.it
Web: www.intertraco.it

Product: **Flexible Hose**

Model: **DIN4SP, DIN4SH, IT4ST, SAER13, SAER15, R2C, C21, R1S, R2S, PC25, PC35**

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:
See attachment

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.

Comments:
1) Hoses are to be complete 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 limitations of the Rules for the intended service (e.g. 4-6-7/3.5.1) 3) 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. 4) Not to be installed in applications where large amount of repeated flexing is expected in combination with pressure pulses.

Notes / Drawings / Documentation:
This Product Design Assessment (PDA) is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product. Use in a non-classed vessel, MODU or Facility is to be to the satisfaction of the manufacturer and purchaser.

Term of Validity:
This Product Design Assessment (PDA) Certificate 12-GE917484-PDA, dated 31/Jul/2012 remains valid until 30/Jul/2017 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

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STANDARDS

ABS Rules:
Steel Vessel Rules Ed. 2012 1-1-4/Appendix 3, 4-6-2/5.7

National:
NA

International:

INTERTRACO (ITALIA) S.P.A.
VIA E. AMALDI, 1/A-B
SUZZARA, MANTOVA
46029
Italy
Telephone: +39 0376 539742
Email: fabio.covri@intertraco.it
Web: www.intertraco.it

NA

Government Authority:
NA

EUMED:
NA

Others:
NA

ATTACHMENT TO PDA CERTIFICATE No. 12-GE917484-PDA

HOSES

BORE			STANDARD	REINF.	WP	BP	TEMPERAT.	INTERTRACO	INTERTRACO	PIRTEK	INTERTRACO FITTINGS SERIES			
DN	INCH	SIZE	REFERENCE	TYPE	bar	bar	RANGE	MARKING	MARKING	MARKING				
10	3/8"	06	EN 856 TYPE 4SP	4 SPIR	445	1780	-40°C/+100C°	DIN4SP- 06						B+S0420
12	1/2"	08		4 SPIR	415	1660	-40°C/+100C°	DIN4SP- 08						B+S0420
16	5/8"	10		4 SPIR	350	1400	-40°C/+100C°	DIN4SP- 10						B+S0420
19	3/4"	12		4 SPIR	350	1400	-40°C/+100C°	DIN4SP- 12			X12			B+S0420
25	1"	16		4 SPIR	280	1120	-40°C/+100C°	DIN4SP- 16			X16			B+S0420
19	3/4"	12	EN 856 TYPE 4SH	4 SPIR	420	1680	-40°C/+100C°	DIN4SH- 12				X12	B+S0420	I+S004I
25	1"	16		4 SPIR	380	1520	-40°C/+100C°	DIN4SH- 16			J16	X16	B+S0420	I+S004I
31	1.1/4"	20		4 SPIR	325	1300	-40°C/+100C°	DIN4SH- 20			J20	X20	B+S0420	I+S004I
38	1.1/2"	24		4 SPIR	290	1160	-40°C/+100C°	DIN4SH- 24		C25- 24	J24	X24	B+S0420	I+S004I
51	2"	32		4 SPIR	250	1000	-40°C/+100C°	DIN4SH- 32			J32	X32	B+S0420	I+S004I
12	1/2"	08	PROPRIETARY	4 SPIR	420	1680	-40°C/+100C°	IT4ST- 08			K08	J08	B+S312T	B+S0420
16	5/8"	10		4 SPIR	350	1400	-40°C/+100C°	IT4ST- 10			K10	J10	B+S312T	B+S0420
19	3/4"	12		4 SPIR	350	1400	-40°C/+100C°	IT4ST- 12			K12	J12	B+S312T	B+S0420
25	1"	16		4 SPIR	350	1400	-40°C/+100C°	IT4ST- 16			K16	J16	B+S312T	B+S0420
16	5/8"	10	EN 856 TYPE R13 SAE J517 100R13	4 SPIR	350	1400	-40°C/+121C°	SAER13- 10		C35- 10	K10			
19	3/4"	12		4 SPIR	350	1400	-40°C/+121C°	SAER13- 12		C35- 12	J12			I+S004I
25	1"	16		4 SPIR	350	1400	-40°C/+121C°	SAER13- 16		C35- 16	J16		X16	I+S004I
31	1.1/4"	20		6 SPIR	350	1400	-40°C/+121C°	SAER13- 20		C35- 20	H20		X20	I+S006I
38	1.1/2"	24		6 SPIR	350	1400	-40°C/+121C°	SAER13- 24		C35- 24	H24		X24	I+S006I
51	2"	32		6 SPIR	350	1400	-40°C/+121C°	SAER13- 32		C35- 32	H32	HLZ32	X32	I+S006I
10	3/8"	06	SAE J517 100R15	4 SPIR	420	1680	-40°C/+121C°	SAER15- 06		C42- 06	K06	J06		
12	1/2"	08		4 SPIR	420	1680	-40°C/+121C°	SAER15- 08		C42- 08	K08	J08	H08	
19	3/4"	12		4 SPIR	420	1680	-40°C/+121C°	SAER15- 12	IT4ST+- 12	C42- 12		X12	I+S004I	
25	1"	16		4 SPIR	420	1680	-40°C/+121C°	SAER15- 16		C42- 16	J16	X16	I+S004I	
31	1.1/4"	20		6 SPIR	420	1680	-40°C/+121C°	SAER15- 20		C42- 20	H20	X20	I+S006I	
38	1.1/2"	24		6 SPIR	420	1680	-40°C/+121C°	SAER15- 24		C42- 24	H24	X24	I+S006I	
51	2"	32		6 SPIR	420	1680	-40°C/+121C°	SAER15- 32		C42- 32		XLZ32	Z+SZ06I	
6	1/4"	04	PROPRIETARY	2 WIRE	420	1680	-40°C/+100C°	R2C- 04		C42- 04	K04		B+SN03T	
8	5/16"	05		2 WIRE	380	1520	-40°C/+100C°	R2C- 05		C35- 05	K05			
10	3/8"	06		2 WIRE	350	1400	-40°C/+100C°	R2C- 06		C35- 06	K06	J06	B+SN03T	
12	1/2"	08		2 WIRE	350	1400	-40°C/+100C°	R2C- 08		C35- 08	K08	J08	B+SN03T	
16	5/8"	10		2 WIRE	280	1120	-40°C/+100C°	R2C- 10		C25- 10	K10		B+SN03T	
19	3/4"	12		2 WIRE	250	1000	-40°C/+100C°	R2C- 12		C25- 12	K12	J12	B+SN03T	
25	1"	16		2 WIRE	250	1000	-40°C/+100C°	R2C- 16		C25- 16	K16	J16	B+SN03T	
31	1.1/4"	20		4 SPIR	250	1000	-40°C/+120C°	R2C- 20		C25- 20	J20	X20		
51	2"	32	PROPRIETARY	4 SPIR	210	840	-40°C/+120C°			C21- 32	J32	X32		
6	1/4"	04	EN 853 TYPE 1SN SAE J517 100R1S	1 WIRE	225	900	-40°C/+100C°	R1S 04		R1AT- 04	K04		B+SN03T	
10	3/8"	06		1 WIRE	180	720	-40°C/+100C°	R1S 06		R1AT- 06	K06	J06	B+SN03T	
12	1/2"	08		1 WIRE	160	640	-40°C/+100C°	R1S 08		R1AT- 08	K08	J08	B+SN03T	
16	5/8"	10		1 WIRE	130	520	-40°C/+100C°	R1S 10		R1AT- 10	K10	J10	B+SN03T	
19	3/4"	12		1 WIRE	105	420	-40°C/+100C°	R1S 12		R1AT- 12	K12	J12	B+SN03T	
25	1"	16		1 WIRE	88	352	-40°C/+100C°	R1S 16		R1AT- 16	K16	J16	B+SN03T	
31	11/4"	20		1 WIRE	63	252	-40°C/+100C°	R1S 20		R1AT- 20		J20		
38	11/2"	24		1 WIRE	50	200	-40°C/+100C°	R1S 24		R1AT- 24		J24		
51	2"	32		1 WIRE	40	160	-40°C/+100C°	R1S 32		R1AT- 32		J32		
6	1/4"	04	EN 853 TYPE 2SN SAE J517 100R2S	2 WIRE	400	1600	-40°C/+100C°	R2S 04		R2AT- 04	K04		B+SN03T	B+S0420
10	3/8"	06		2 WIRE	330	1320	-40°C/+100C°	R2S 06		R2AT- 06	K06	J06	B+SN03T	B+S0420
12	1/2"	08		2 WIRE	275	1100	-40°C/+100C°	R2S 08		R2AT- 08	K08	J08	B+SN03T	B+S0420
16	5/8"	10		2 WIRE	250	1000	-40°C/+100C°	R2S 10		R2AT- 10	K10	J10	B+SN03T	B+S0420
19	3/4"	12		2 WIRE	215	860	-40°C/+100C°	R2S 12		R2AT- 12	K12	J12	B+SN03T	B+S0420
25	1"	16		2 WIRE	165	660	-40°C/+100C°	R2S 16		R2AT- 16	K16	J16	B+SN03T	B+S0420
31	11/4"	20		2 WIRE	125	500	-40°C/+100C°	R2S 20		R2AT- 20		J20		
38	11/2"	24		2 WIRE	90	360	-40°C/+100C°	R2S 24		R2AT- 24		J24		
51	2"	32		2 WIRE	80	320	-40°C/+100C°	R2S 32		R2AT- 32		J32		
16	5/8"	10	PROPRIETARY	2 WIRE	250	1000	-40°C/+100C°			PC25- 10	K10			
19	3/4"	12		2 WIRE	250	1000	-40°C/+100C°			PC25- 12		J12		
31	1.1/4"	20		4 SPIR	250	1000	-40°C/+120C°			PC25- 20		J20	X20	
38	1.1/2"	24		4 SPIR	250	1000	-40°C/+120C°			PC25- 24		J24	X24	
6	1/4"	04	PROPRIETARY	2 WIRE	420	1680	-40°C/+100C°			PC42- 04	K04			
10	3/8"	06		2 WIRE	350	1400	-40°C/+100C°			PC35- 06	K06	J06		
12	1/2"	08		4 SPIR	350	1400	-40°C/+120C°			PC35- 08	K08	J08		
16	5/8"	10		4 SPIR	420	1680	-40°C/+120C°		IT4ST+- 10	PC35- 10	K10			
19	3/4"	12		4 SPIR	350	1400	-40°C/+120C°			PC35- 12		J12	H12	
25	1"	16		4 SPIR	420	1680	-40°C/+120C°		IT4ST+- 16	PC35- 16		J16	X16	I+S004I
31	1.1/4"	20		6 SPIR	350	1400	-40°C/+120C°			PC35- 20		X20		I+S006I
38	1.1/2"	24		6 SPIR	350	1400	-40°C/+120C°			PC35- 24		X24		I+S006I

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