



DET NORSKE VERITAS

EC TYPE-EXAMINATION CERTIFICATE

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2009/26/EC, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This Certificate is issued by Det Norske Veritas under the authority of the Government of the Kingdom of Norway.

CERTIFICATE NO. **MED-B-7061**

This is to certify that the
Materials other than steel for pipes conveying oil or fuel oil

with type designation(s)
HI-PULSE, PERFORMER, BASTION, PROKOMP, THERMAL, ARMOUR, IMPETUS

Manufacturer
Pix Transmissions Limited
Nagpur MA, India

is found to comply with the requirements in the following Regulations/Standards:
Annex A.1, item No. A.1/3.15c and Annex B, Module B in the Directive. SOLAS 74 as amended, Regulation II-2/4.2.2.5.1, II-2/4.2.2.5.6 & X/3 and 2000 HSC Code 7.5.4.

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

Høvik, 2011-09-22
for **Det Norske Veritas AS**



This Certificate is valid until
2016-09-22

Notified Body No.: **0575**

Eivind Mykland
Head of Department

DNV local office:
Mumbai

Tom Berg-Nielsen
Surveyor



The Certificate is subject to terms and conditions overleaf. Any significant changes in design or construction of the product, or amendments to the Directive or Standards referenced above may render this Certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended. The Mark of Conformity may only be affixed to the product and a Declaration of Conformity may only be issued when the production/product assessment module referred to in the council directive, is fully complied with.

Product description

PIX-HI-PULSE® :

Tube of seamless, synthetic rubber, reinforced by 4 (4SP and 4SH) wire braids, cover of synthetic rubber

PIX-PERFORMER® :

Tube of seamless, synthetic rubber, reinforced by one (1SN) or two (2SN) wire braids, cover of synthetic rubber

PIX-BASTION® :

Tube of seamless, synthetic rubber, reinforced by 4 (EN856 4SP) or two (EN857 2SC) wire braids, cover of synthetic rubber

PIX-PROKOMP® :

Tube of seamless, synthetic rubber, reinforced by one (1SC) or two (2SC) wire braids, cover of synthetic rubber

PIX-THERMAL® :

Tube of seamless, synthetic rubber, reinforced by one (1SN) or two (2SN) wire braid, cover of synthetic rubber

PIX-ARMOUR® :

Tube of seamless, synthetic rubber, reinforced by one (1SN) or two (2SN) wire braids, cover of synthetic rubber

PIX-IMPETUS® :

Tube of seamless, synthetic rubber, reinforced by 4 (EN856 R12 or R13) or 4-6 (R13 and R15) wire braids, cover of synthetic rubber

Couplings:

For PIX-PERFORMER 1SN and 2SN: Ferrule PF 22 made of carbon steel, VPF 22 made of stainless steel.

For PIX-PROKOMP 1SC: PF23/VPF 23 up to and incl 1/2", PF22/VPF 23 above

For PIX-THERMAL 1SN and 2SN: PF22/VPF 22

For HI-PULSE, BASTION and IMPETUS:

Couplings:

Ferrule PF 12, MPF3 made of carbon steel, VPF 22 made of stainless steel.

Carbon steel DKR, MDKR or other inserts and Stainless steel VDKR, VMDKR or other inserts as per manufacturer's catalogue

For the other hoses:

Ferrule PF 12, MPF3 made of carbon steel, VPF 22 made of stainless steel.

Carbon steel DKR, MDKR or other inserts and Stainless steel VDKR, VMDKR or other inserts as per manufacturer's catalogue

Couplings:

Hose type	Carbon steel		Stainless steel	
	Insert	Ferrule	Insert	Ferrule
PIX-HI-PULSE® 4SP	DKR up to and incl ¾" MDKOR above.	PF12 up to and incl ¾" MPF3 for 1" MPF4 above	VDKR up to and incl ¾" VMDKOR above	VPF12 up to and incl ¾" VMPF3 for 1" VMPF4 above
PIX-PERFORMER®	DKR	PF22	VDKR	VPF
PIX-BASTION® 2SC	DKR	PF22	VDKR	VPF22
PIX-BASTION® 4SP	DKR 12 for ¾" MDKOR for 1"	PF12 for ¾" MPF3 for 1"	VDKR12 for ¾" VMKOR 16 for 1"	VPF12 for ¾" VMPF3 FOR 1"
PIX-PROKOMP®	DKR	PF23 up to and incl ½" for 1SC PF22 above and for 2SC	VDKR	VPF23 up to and incl. ½" for 1SC VPF 22 above and for 2SC
PIX-THERMAL®	DKR	PF22	VDKR	VPF22
PIX-ARMOUR®	DKR	PF22	VDKR	VPF22
PIX-IMPETUS® R12	DKR for 3/8" up to and incl 1" MDKOR above	PF12 for up to and incl 1" MPF3 for 1¼" and 1½" MPF4 above	VDF up to and incl. 1" VMDKOR above	VDKR for 3/8" up to and incl. ¾" VMPF3 for 1¼" and 1½" VMPF4 for 2"
PIX-IMPETUS® R13	DKR for 3/8" up to and incl. 5/8" MDKOR above	PF12 for 3/8" up to and incl. 5/8" MPF3 for ¾" and 1" MPF4 above	VDKR for 3/8" up to and incl. 5/8" VMDKOR above	VPF12 for 3/8" up to and incl. 5/8" VMPF3 for ¾" and 1" VMPF4 above
PIX-IMPETUS® R15	DKR for 3/8" up to and incl. 5/8" MPF3 for ¾" and 1" MPF4 above	VPF12 for 3/8" up to and incl 5/8" MDKOR above	VDKR for 3/8" up to and incl.5/8" VMDKOR above	VPF12 for 3/8" up to and incl. 5/8" VMPF3 for ¾" and 1" VMPF4 above

Application/Limitation

The hoses may be used for hydraulic, fuel oil and lubricating oil

PIX – HI-PULSE® EN 856 4SP and 4SH hoses

DASH/DN	Hose inner diameter		Max working pressure (bar), 4SP	Max working pressure (bar) 4SH
	Inch	mm		
-6 / 10	3/8"	9.5	460	-
-8 / 12	½"	12.7	430	-
-10 / 16	5/8"	15.9	350	450
-12 / 19	¾"	19.0	350	420
-16 / 25	1"	25.4	320	390
-20 / 31	1 ¼"	31.8	210	250
-24 / 38	1 ½"	38.1	190	290
-32 / 51	2"	50.8	180	250

PIX - PERFORMER® EN 853 1SN, SAE100 R1S-AT hoses

Product code	DASH/DN	Hose inner diameter		Max working pressure (bar)
		Inch	mm	
PE105	-3 / 5	3/16"	4.8	250
PE106	-4 / 6	¼"	6.4	225
PE108	-5 / 8	5/16"	7.9	215
PE110	-6 / 10	3/8"	9.5	180
PE112	-8 / 12	½"	12.7	160
PE116	-10 / 16	5/8"	15.9	130
PE119	-12 / 19	¾"	19.0	105
PE125	-16 / 25	1"	25.4	90
PE131	-20 / 31	1 ¼"	31.8	63
PE138	-24 / 38	1 ½"	38.1	50
PE151	-32 / 51	2"	50.8	40

PIX - PERFORMER® EN 853 2SN, SAE100 R2S-AT hoses

Product code	DASH/DN	Hose inner diameter		Max working pressure (bar)
		Inch	Mm	
PE205	-3 / 5	3/16"	4.8	450
PE206	-4 / 6	1/4"	6.4	400
PE208	-5 / 8	5/16"	7.9	350
PE210	-6 / 10	3/8"	9.5	330
PE212	-8 / 12	1/2"	12.7	275
PE216	-10 / 16	5/8"	15.9	250
PE219	-12 / 19	3/4"	19.0	215
PE225	-16 / 25	1"	25.4	165
PE231	-20 / 31	1 1/4"	31.8	125
PE238	-24 / 38	1 1/2"	38.1	90
PE251	-32 / 51	2"	50.8	80

PPIX - BASTION® EN 856 4SP AND 2SC hoses

DASH/DN	Hose inner diameter		Max working pressure (bar) 4SP	Max working pressure (bar) 2SC
	Inch	mm		
-4 / 6	1/4"	6.4	-	400
-5 / 8	5/16"	7.9	-	350
-6 / 10	3/8"	9.5	460	330
-8 / 12	1/2"	12.7	430	275
-10 / 16	5/8"	15.9	380	250
-12 / 19	3/4"	19.0	380	245
-16 / 25	1"	25.4	320	210
-20 / 31	1 3/4"	31.8	210	140
-24 / 38	1 1/2"	38.1	190	100
-32 / 51	2"	50.8	180	90

IX - PROKOMP® EN 857 1SC hoses

Product code	DASH/DN	Hose inner diameter		Max working pressure (bar)
		Inch	Mm	
PK106	-4 / 6	1/4"	6.4	225
PK108	-5 / 8	5/16"	7.9	215
PK110	-6 / 10	3/8"	9.5	180
PK112	-8 / 12	1/2"	12.7	160
PK116	-10 / 16	5/8"	15.9	130
PK119	-12 / 19	3/4"	19.0	105
PK125	-16 / 25	1"	25.4	90

PIX - PROKOMP® EN 857 2SC, SAE100 R16S hoses

Product code	DASH/DN	Hose inner diameter		Max working pressure (bar)
		Inch	Mm	
PK206	-4 / 6	1/4"	6.4	400
PK208	-5 / 8	5/16"	7.9	350
PK210	-6 / 10	3/8"	9.5	330
PK212	-8 / 12	1/2"	12.7	275
PK216	-10 / 16	5/8"	15.9	250
PK219	-12 / 19	3/4"	19.0	215
PK225	-16 / 25	1"	25.4	165
PK231	-20 / 31	1 1/4"	31.8	125

PIX - THERMAL® EN 853 1SN hoses

Product code	DASH/DN	Hose inner diameter		Max working pressure (bar)
		Inch	mm	
TH106	-4 / 6	¼"	6.4	225
TH108	-5 / 8	5/16"	7.9	215
TH110	-6 / 10	3/8"	9.5	180
TH112	-8 / 12	½"	12.7	160
TH116	-10 / 16	5/8"	15.9	130
TH119	-12 / 19	¾"	19.0	105
TH125	-16 / 25	1"	25.4	90
TH131	-20 / 31	1 ¼"	31.8	63
TH138	-24 / 38	1 ½"	38.1	50
TH151	-32 / 51	2"	50.8	40

PIX - THERMAL® EN 853 2SN hoses

Product code	DASH/DN	Hose inner diameter		Max working pressure (bar)
		Inch	Mm	
TH206	-4 / 6	¼"	6.4	400
TH208	-5 / 8	5/16"	7.9	350
TH210	-6 / 10	3/8"	9.5	330
TH212	-8 / 12	½"	12.7	275
TH216	-10 / 16	5/8"	15.9	250
TH219	-12 / 19	¾"	19.0	215
TH225	-16 / 25	1"	25.4	165
TH231	-20 / 31	1 ¼"	31.8	125
TH238	-24 / 38	1 ½"	38.1	90
TH251	-32 / 51	2"	50.8	80

PIX - ARMOUR® EN 853 1SN, SAE100 R1S-AT hoses

Product code	DASH/DN	Hose inner diameter		Max working pressure (bar)
		Inch	mm	
PE105AR	-3 / 5	3/16"	4.8	250
PE106AR	-4 / 6	¼"	6.4	225
PE108AR	-5 / 8	5/16"	7.9	215
PE110AR	-6 / 10	3/8"	9.5	180
PE112AR	-8 / 12	½"	12.7	160
PE116AR	-10 / 16	5/8"	15.9	130
PE119AR	-12 / 19	¾"	19.0	105
PE125AR	-16 / 25	1"	25.4	90
PE131AR	-20 / 31	1 ¼"	31.8	63
PE138AR	-24 / 38	1 ½"	38.1	50
PE151AR	-32 / 51	2"	50.8	40

PIX - ARMOUR® EN 853 2SN, SAE100 R2S-AT hoses

Product code	DASH/DN	Hose inner diameter		Max working pressure (bar)
		Inch	mm	
PE205AR	-3 / 5	3/16"	4.8	450
PE206AR	-4 / 6	¼"	6.4	400
PE208AR	-5 / 8	5/16"	7.9	350
PE210AR	-6 / 10	3/8"	9.5	330
PE212AR	-8 / 12	½"	12.7	275
PE216AR	-10 / 16	5/8"	15.9	250
PE219AR	-12 / 19	¾"	19.0	215
PE225AR	-16 / 25	1"	25.4	165
PE231AR	-20 / 31	1 ¼"	31.8	125
PE238AR	-24 / 38	1 ½"	38.1	90
PE251AR	-32 / 51	2"	50.8	80

PIX - IMPETUS® EN 856 R12 and R13 hoses

DASH/DN	Hose inner diameter		Max working pressure (bar) R12	Max working pressure (bar) R13	Max working pressure (bar) R15
	Inch	mm			
-6 / 10	3/8"	9.5	280	350	420
-8 / 12	1/2"	12.7	280	350	420
-6 / 16	5/8"	15.9	280	350	420
-8 / 19	3/4"	19.0	280	350	420
-10 / 25	1"	25.4	280	350	420
-12 / 31	1 1/4"	31.8	280	350	420
-16 / 38	1 1/2"	38.1	280	350	420
-32 / 51	2"	50.8	280	350	420

Type Examination documentation

Tests carried out

Fire test according to ISO15540/15441

Marking of product

As a minimum, the final products (hoses with couplings) are to be marked with:

- Manufacturers name or trademark
- Specification or hose name
- Hose size (inside diameter in inches)
- Data code (quarterly and daily production code)

Mark of Conformity

The manufacturer is allowed to affix the Mark of Conformity according to Article 11 in the Council Directive 96/98/EC on Marine Equipment and shall issue a Declaration of Conformity, only when the module D of Annex B in the same directive is fully complied with.

Module D: The quality system for production and testing shall be approved by the Notified Body.