



CERTIFICATE NUMBER 21-2168168-PDA
EFFECTIVE DATE 28-Sep-2021
EXPIRATION DATE 27-Sep-2026
ABS TECHNICAL OFFICE Singapore Ship Engineering

CERTIFICATE OF Product Design Assessment

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

USHA MARTIN LIMITED (WIRE ROPES & SPECIALITY PRODUCTS DIVISION)

located at

TATISILWAI, RANCHI, JHARKHAND, INDIA, 835103

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 Wire Rope

Model Nominal Rope Dia 2mm to 152mm

This Product Design Assessment (PDA) Certificate remains valid until 27/Sep/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.

American Bureau of Shipping

Ramendra Kumar Pandey, Principal Engineer

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

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Tier: 2 - PDA Issued

Product: Wire Rope
Model: Nominal Rope Dia 2mm to 152mm
Endorsements:

Intended Service:

General purpose wire ropes

Description:

Stranded Steel Wire Ropes. Refer to the attachment (Document Title "PDA Attachment (21-2168168-PDA)") for details.

Rating:

- 1) 6x7-FC, 6x7-WSC/IWRC (Dia. 2.0 - 40.0 mm, Grade 1770 N/mm² & 1960 N/mm²), Minimum Breaking Force refers to Table 5 of DIN EN 12385-4:2008-06/EN 12385-4:2002+A1:2008 (E);
- 2) 8x7-FC, 8x7-WSC/IWRC (Dia. 2.0 - 40.0 mm, Grade 1770 N/mm² & 1960 N/mm²), Minimum Breaking Force refers to Table 6 of DIN EN 12385-4:2008-06/EN 12385-4:2002+A1:2008 (E);
- 3) 6x19S-FC, 6x25F-FC, 6x19W-FC, 6x26WS-FC, 6x19S-IWRC, 6x25F-IWRC, 6x19W-IWRC, 6x26WS-IWRC (Dia. 6.0 - 60.0 mm, Grade 1770 N/mm², 1960 N/mm² & 2160 N/mm²), Minimum Breaking Force refers to Table 7 of DIN EN 12385-4:2008-06/EN 12385-4:2002+A1:2008 (E);
- 4) 8x19S-FC, 8x25F-FC, 8x19W-FC, 8x26WS-FC, 8x19S-IWRC, 8x25F-IWRC, 8x19W-IWRC, 8x26WS-IWRC (Dia. 8.0 - 60.0 mm, Grade 1770 N/mm², 1960 N/mm² & 2160 N/mm²), Minimum Breaking Force refers to Table 8 of DIN EN 12385-4:2008-06/EN 12385-4:2002+A1:2008 (E);
- 5) 6x29F-FC, 6x31WS-FC, 6x36WS-FC, 6x41WS-FC, 6x46WS-FC, 6x47WS-FC, 6x49WS-FC, 6x52WS-FC (Dia. 8.0 - 60.0 mm, Grade 1770 N/mm², 1960 N/mm² & 2160 N/mm²), Minimum Breaking Force refers to Table 9 of DIN EN 12385-4:2008-06/EN 12385-4:2002+A1:2008 (E);
- 6) 6x29F-IWRC, 6x31WS-IWRC, 6x36WS-IWRC, 6x41WS-IWRC, 6x46WS-IWRC, 6x47WS-IWRC, 6x49WS-IWRC, 6x52WS-IWRC (Dia. 8.0 - 60.0 mm, Grade 1770 N/mm², 1960 N/mm² & 2160 N/mm²), Minimum Breaking Force refers to Table 9 of DIN EN 12385-4:2008-06/EN 12385-4:2002+A1:2008 (E);
- 7) 8x29F-FC, 8x31WS-FC, 8x36WS-FC, 8x41WS-FC, 8x46WS-FC, 8x47WS-FC, 8x49WS-FC, 8x52WS-FC, 8x29F-IWRC, 8x31WS-IWRC, 8x36WS-IWRC, 8x41WS-IWRC, 8x46WS-IWRC, 8x47WS-IWRC, 8x49WS-IWRC, 8x52WS-IWRC (Dia. 8.0 - 60.0 mm, Grade 1770 N/mm², 1960 N/mm² & 2160 N/mm²): Minimum Breaking Force refers to Table 10 of DIN EN 12385-4:2008-06/EN 12385-4:2002+A1:2008 (E);
- 8) 6x19M-FC, 6x19M-WSC/IWRC (Dia. 3.0 - 40.0 mm, Grade 1770 N/mm² & 1960 N/mm²), Minimum Breaking Force refers to Table 12 of DIN EN 12385-4:2008-06/EN 12385-4:2002+A1:2008 (E);
- 9) 6x37M-FC, 6x37M-WSC/IWRC (Dia. 5.0 - 40.0 mm, Grade 1770 N/mm² & 1960 N/mm²), Minimum Breaking Force refers to Table 13 of DIN EN 12385-4:2008-06/EN 12385-4:2002+A1:2008 (E);
- 10) 17x7-FC, 18x7-FC, 17x7-WSC, 18x7-WSC (Dia. 6.0 - 38.0 mm, Grade 1770 N/mm², 1960 N/mm² & 2160 N/mm²), Minimum Breaking Force refers to Table 14 of DIN EN 12385-4:2008-06/EN 12385-4:2002+A1:2008 (E);
- 11) 34(M)x7-FC, 36(M)x7-FC, 34(M)x7-WSC, 36(M)x7-WSC (Dia. 10.0 - 60.0 mm, Grade 1770 N/mm², 1960 N/mm² & 2160 N/mm²), Minimum Breaking Force refers to Table 15 of DIN EN 12385-4:2008-06/EN 12385-4:2002+A1:2008 (E);
- 12) 4x36-FC, 4x39-FC (Dia. 10.0 - 60.0 mm, Grade 1770 N/mm², 1960 N/mm² & 2160 N/mm²), Minimum Breaking Force refers to Introduction para-4 & 5 of DIN EN 12385-4:2008-06/EN 12385-4:2002+A1:2008 (E);
- 13) 35x7S-FC, 28x7-FC (Dia. 8.0 - 18.0 mm, Grade 1770 N/mm², 1960 N/mm² & 2160 N/mm²), Minimum Breaking Force refers to Table 16 of DIN EN 12385-4:2008-06/EN 12385-4:2002+A1:2008 (E);
- 14) 35x7-WSC, 40x7-WSC, 35x19S-WSC (Dia. 8.0 - 70.0 mm, Grade 1770 N/mm², 1960 N/mm² & 2160 N/mm²), Minimum Breaking Force refers to Table 16 of DIN EN 12385-4:2008-06/EN 12385-4:2002+A1:2008 (E);
- 15) 6x26WS-IWRC, 6x61WS-IWRC, 8x26WS-IWRC, 6x31WS-IWRC, 6x36WS-IWRC, 6x41WS-IWRC, 6x46WS-IWRC, 6x47WS-IWRC, 6x49WS-IWRC, 6x52WS-IWRC, 8x29F-IWRC, 8x31WS-IWRC, 8x36WS-IWRC, 8x41WS-IWRC, 8x46WS-IWRC, 8x47WS-IWRC, 8x49WS-IWRC, 8x52WS-IWRC, 8x61WS-IWRC (Dia. 60.30 - 152.0 mm, Grade 1770 N/mm², 1960 N/mm² & 2160 N/mm²), Minimum Breaking Force refers to Table 17 of DIN

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Tier: 2 - PDA Issued

EN 12385-4:2008-06/EN 12385-4:2002+A1:2008 (E).

Service Restriction:

- (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) If the type approved wire ropes are intended for use as towline wire or rope, and hawsers on ABS Classed Vessels, the breaking strength of the rope is to be in accordance with 3-5-1 of ABS Rules for Building & Classing Marine Vessels 2021/Steel Vessels for Service on Rivers and Intracoastal Waterways 2021/High Speed Crafts 2021 or 3-3-1 of ABS Rules for Building & Classing Steel Barges 2021/Bulk Carriers for Service on the Great Lakes 2021 (as applicable), which is not covered under this PDA.
- (3) If the wire ropes are intended for use on ABS certified lifting appliances, they must also comply with the ABS Guide for Certification of Lifting Appliances, December 2020. ABS Form "Certificate for Examination and Test of Wire Rope Before Being Taken into Use" must NOT be endorsed by ABS unless the Surveyor confirms the requirements of ABS Guide for Certification of Lifting Appliances, December 2020 are complied with and also witnesses the breaking tests. If USHA MARTIN LIMITED as the manufacturer chooses to endorse this form, the type approval audit would include confirmation that all requirements of ABS Guide for Certification of Lifting Appliances, December 2020 and DIN EN 12385-4:2008-06 / EN 12385-4:2002+A1 2008 (E) are being followed.
- (4) In those instances where flag Administration may have their own specific requirements e.g. USCG, specific flag Administration's approval may be required.

Comments:

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

Notes/Drawing/Documentation:

- (a) Document "EN 12385-4:2002" (Ref: 242128). Also refer ABS Letter Ref. FFC/gt/247861 dated 30 May 2007.
- (b) Document Title: Sample Design of Rope (Cross Sectional View), Specification: DIN EN 12385-4:2008-06 / EN 12385-4:2002+A1 2008 (E) / BS EN 12385-4:2002+A1:2008.
- (c) Document "Inspection Certificate, Dated 25-July-2016".
- (d) Survey Report by ABS Surveyor (Report Number CC3178591).
- (e) Document Title: Test Reports & Inspection Certificates_EN 12385-4.

Terms of Validity:

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STANDARDS

ABS Rules:

- (1) ABS Rules For Building And Classing Marine Vessels Rules (2021): 1-1-4/7.7, 1-1-A3, 1-1-A4;
- (2) ABS Rules For Building And Classing Steel Vessels for Service on Rivers and Intracoastal Waterways (2021): 1-1-4/7.7, 1-1-A3, 1-1-A4;

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Tier: 2 - PDA Issued

- (3) ABS Rules For Building And Classing Bulk Carriers for Service on the Great Lakes (2021): 1-1-4/7.7, 1-1-A3, 1-1-A4;
(4) ABS Rules For Building And Classing Steel Barges (2021): 1-1-4/7.7, 1-1-A3, 1-1-A4;
(5) ABS Rules For Building And Classing High Speed Crafts (2021): 1-1-4/11.9, 1-1-A2, 1-1-A3;
(6) ABS Rules For Building And Classing Mobile Offshore Units (2021): 1-1-4/9.7, 1-1-A2, 1-1-A3;
(7) ABS Rules For Building And Classing Facilities on Offshore Installations (2021): 1-1-4/9.7, 1-1-A2, 1-1-A3.

National:

DIN EN 12385-4:2008-06 / EN 12385-4:2002+A1 2008 (E)

International:

NA

Government:

NA

EUMED:

NA

OTHERS:

NA

APPLICABLE STANDARD : DIN EN 12385-4:2008-06/EN-12385-4:2002+A1:2008 (E) / BS EN 12385-4:2002+A1:2008										
			Applied For							
Classification (Compacted & Non Compacted Rope)	Construction	Core	Diameter Range		Grade					
			(min.)	(max.)	1	2	3	4	5	6
Class 6x7	6x7	FC	2.00	60.00	1770	1960	2160			
		WSC / IWRC	2.00	60.00	1770	1960	2160			
Class 8x7	8x7	FC	2.00	60.00	1770	1960	2160			
		WSC / IWRC	2.00	60.00	1770	1960	2160			
Class 6x19	6x19S	FC	6.00	60.00	1770	1960	2160			
	6x25F									
	6x19W									
	6x26WS									
	6x19S	WSC / IWRC	6.00	60.00	1770	1960	2160			
	6x25F									
	6x19W									
	6x26WS									
Class 8x19	8x19S	FC	8.00	60.00	1770	1960	2160			
	8x25F									
	8x19W									
	8x26WS									
	8x19S	WSC / IWRC	8.00	60.00	1770	1960	2160			
	8x25F									
	8x19W									
	8x26WS									
Class 6x36	6x29F	FC	8.00	60.00	1770	1960	2160			
	6x31WS									
	6x36WS									
	6x37SF									
	6x41WS									
	6x41F									
	6x43SF									
	6x46WS									
	6x47WS									
	6x49WS									
	6x49SF									
	6x52WS									
	6x55SF									
	6x29F	WSC / IWRC	7.00	60.00	1770	1960	2160			
	6x31WS									
	6x36WS									
	6x37SF									
	6x41WS									
	6x41F									
	6x43SF									
	6x46WS									
	6x47WS									
	6x49WS									
	6x49SF									
	6x52WS									
	6x55SF									
Class 8x36	8x29F	FC	8.00	60.00	1770	1960	2160			
	8x31WS									
	8x36WS									
	8x37SF									
	8x43SF									
	8x49SF									
	8x55SF									

Class 8x36	8x41WS							
	8x49WS							
	8x46WS							
	8x47WS							
	8x52WS							
	8x29F							
	8x31WS							
	8x36WS							
	8x37SF							
	8x43SF							
	8x49SF							
	8x55SF							
	8x41WS	WSC / IWRC	8.00	60.00	1770	1960	2160	
	8x49WS							
	8x46WS							
	8x47WS							
8x52WS								
Class 6x19M	6x19M	FC	3.00	40.00	1570	1770	1960	
		WSC / IWRC	3.00	40.00	1570	1770	1960	
Class 6x37M	6x37M	FC	5.00	60.00	1570	1770	1960	
		WSC / IWRC	5.00	60.00	1570	1770	1960	
Class 18x7	17x7	FC	6.00	60.00	1770	1960	2160	
	18x7							
	17x7	WSC	6.00	60.00	1770	1960	2160	
	18x7							
Class 34(M)x7	34(M)x7	FC	10.00	60.00	1770	1960	2160	
	36(M)x7							
	34(M)x7	WSC	10.00	60.00	1770	1960	2160	
	36(M)x7							
Class 4x36	4x36	FC	10.00	60.00	1770	1960	2160	
	4x39							
Class 35(W)x7	35x7S	FC	8.00	18.00	1770	1960	2160	
	28x7							
	35x7	WSC	8.00	70.00	1770	1960	2160	
	40x7							
	35x19S							
**Class 6x12	6x12	FC	6.00	30.00	1570	1770	1960	
**Class 6x24	6x24	FC	6.00	40.00	1570	1770	1960	
Large Diameter Ropes								
Class 6x19	6x26WS	IWRC	60.30	152.00	1770	1960	2160	
Class 6x36	6x31WS	IWRC	60.30	152.00	1770	1960	2160	
	6x36WS							
	6x37SF							
	6x41WS							
	6x41F							
	6x43SF							
	6x46WS							
	6x47WS							
	6x49WS							
	6x49SF							
	6x46WS							
	6x52WS							
	6x55SF							
	6x57SF							
Class 6x61	6x61WS	IWRC	60.30	152.00	1770	1960	2160	

Class 8x19	8x26WS	IWRC	60.30	152.00	1770	1960	2160	
Class 8x36	8x29F	IWRC	60.30	152.00	1770	1960	2160	
	8x31WS							
	8x36WS							
	8x37SF							
	8x41WS							
	8x43SF							
	8x46WS							
	8x47WS							
	8x49WS							
	8x49SF							
	8x52WS							
8x55SF								
Class 8x61	8x61WS	IWRC	60.30	152.00	1770	1960	2160	

*Refer Table 5, 6 & 7 of EN 12385 -2 for construction of rope

For MBF refer to table of DIN EN 12385-4:2008-06/EN-12385-4:2002+A1:2008 (E) / BS EN 12385-4:2002+A1:2008 or as agreed between the customer and manufacturer