



CERTIFICATE NUMBER 21-2149980-PDA
EFFECTIVE DATE 06-Sep-2021
EXPIRY DATE 05-Sep-2026
ABS TECHNICAL OFFICE CN Shanghai OSED

CERTIFICATE OF Product Design Assessment

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

ZHENJIANG TONLY RUBBER CO., LTD.

located at

**NO. 79 SONGLINSHAN ROAD, ZHENJIANG NEW DISTRICT,
ZHENJIANG CITY, JIANGSU PROVINCE, CHINA, JIANGSU, China**

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: Fender
Model: W-type
Endorsements:
Tier: 5 - Unit Certification Required

This Product Design Assessment (PDA) Certificate remains valid until 05/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

Xiao-Ming Deng,Engineer/Consultant

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)

ZHENJIANG TONLY RUBBER CO.

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China
Telephone: +86-511-85212022
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Email: sales@tonlyrubber.com
Web: http://tonly.cs-cx.com/

Tier: 5 - Unit Certification Required

Product: Fender
Model: W-type
Endorsements:

Intended Service:

Marine and Offshore Application - Dock Fendering for Mooring and Berthing of Marine Vessels.
To protect pilings in commercial ports with medium to large, flat sided vessels.

Description:

W-type (W shape fender):
W320×200, W480×300, W500×330, W500×400, W500×450, W600×300 & W600×400
Material / Type / Manufacturer
- Natural Rubber / SCR5 / XiShuangBanNa NanBo Co.,Ltd

Rating:

- Rubber material specification: Section 5.2 of Q/321100 XJ005—2019
- Fender mechanical properties: Section 5.1 of Q/321100 XJ005—2019

Service Restriction:

1. Unit Certification is required for production testing as per Section 7 of Q/321100 XJ005—2019. 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. Unless specially directed by Administration, this approval is not to be construed as a substitute for Flag Administration's approval for the purpose of SOLAS (Consolidated Edition 2020), as amended.
3. This certificate may not be used for EU and US flagged vessels (MED and/or USCG have their own specific/requirements).
4. Each fender type is certified for one meter length as prototype tested.

Comments:

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

Notes/Drawing/Documentation:

Drawing No. -, Fender drawings and types & sizes of ABS certificate, Revision: -, Pages: 2
Drawing No. -, Test method for performance of rubber fender, Revision: -, Pages: 10
Drawing No. Test report by surveyor, Test report by surveyor, Revision: -, Pages: 13

Terms of Validity:

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STANDARDS

ABS Rules:

- Marine Vessels Rules (2021): 1-1-4/7.7, 1-1-A3, 1-1-A4;
- Mobile Offshore Units Rules (2021): 1-1-4/9.7, 1-1-A2, 1-1-A3;
- Facilities on Offshore Installations Rules (2021): 1-1-4/9.7, 1-1-A2, 1-1-A3;
- High-Speed Craft Rules (2021): 1-1-4/11.9, 1-1-A2, 1-1-A3;
- Steel Barge Rules (2021): 1-1-4/7.7, 1-1-A3, 1-1-A4;
- Steel Vessels for Service on Rivers and Intracoastal Waterways (2021): 1-1-4/7.7, 1-1-A3, 1-1-A4.
- Bulk Carriers for Service on the Great Lakes Rules (2021): 1-1-4/7.7, 1-1-A3, 1-1-A4

National:

NA

International:

NA

Government:

NA

EUMED:

NA

OTHERS:

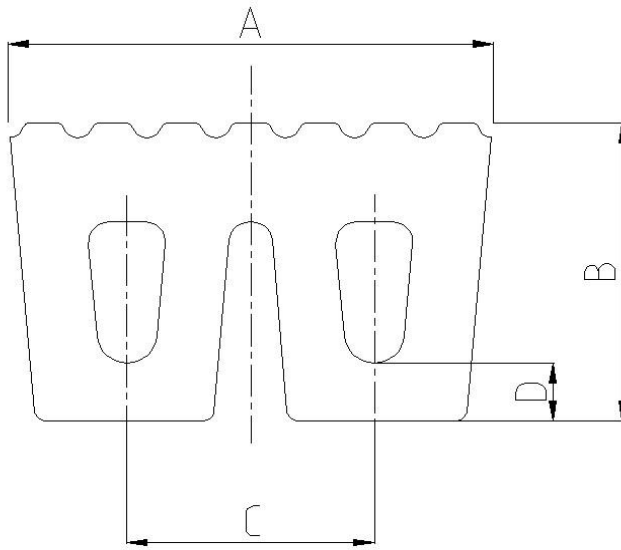
Q/321100 XJ005—2019

DA Certificate No.: 21-2149980-PDA
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Name of Manufacturer: Zhenjiang Tonly Rubber Co., Ltd.
Product Fender
Model: W-type

W-type fender

The structure of W-type fender is shown in figure 1. Sizes follow Table 1.

Figure 1 The structure of W-type fender



A--Width of fender;

B--Hight of fender;

C--Distance between mounting holes of fender;

D--Bottom thickness of fender.

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Table 1 Type and size of W-type fender

Units: mm

Type	Size (mm)			
	A	B	C	D
W320X200	320	200	180	50
W480X300	480	300	245	58
W500X330	500	330	248	65
W500X400	500	400	270	74
W500X450	500	450	255	75
W600X300	600	300	230	43
W600X400	600	400	203	58

Notes: Other specifications shall be determined by both parties through negotiation.

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Physical properties of rubber material

The physical properties of the fender			
Item		index	Applicable test items
hardness (Shore A) / degree ≤		84	GB/T 531.1 idt ISO 7619:1986
Tensile strength / MPa ≥		16	GB/T 528-2009/ ISO 37:2005
Elongation at break/ % ≥		300	
compression set/(70°C×22h, 25%)/% ≤		30	GB/T 7759
Ozone aging[50×10 ⁻⁸ : 20%,(40±2)°C×48h]		No cracking	GB/T 7762
Thermal aging (70°C×96 h)	Tensile strength change rate/% ≤	20	GB/T 3512
	Elongation at break change rate/% ≤	20	
	hardness (Shore A) /degree	At most add 8°	

Specifications, dimensions and limit deviations			
Position Name and Size	Length, width, height, thickness/%	diameter of mounting recess /mm	installation hole center distance/mm
Limit deviations/mm	±2	±2	±4