



CERTIFICATE NUMBER  
EFFECTIVE DATE  
EXPIRY DATE  
ABS TECHNICAL OFFICE

21-2149981-PDA  
06-Sep-2021  
05-Sep-2026  
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:** CY-type, D-type, SA-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.**

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

JIANGSU

China

Telephone: +86-511-85212022

Fax: +86-511-85212022

Email: sales@tonlyrubber.com

Web: <http://tonly.cs-ex.com/>

**Tier: 5 - Unit Certification Required**

---

**Product:** Fender  
**Model:** CY-type, D-type, SA-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:**

CY-type (cylinder shape fender): the approved size refers to the attached size list.

D-type (semicircular shape fender): the approved size refers to the attached size list.

SA-type (super arch shape fender): the approved size refers to the attached size list.

**Material / Type / Manufacturer**

- Natural Rubber / SCR5 / XiShuangBanNa NanBo Co.,Ltd

**Rating:**

- Rubber material specification: Section 5.2 of HG/T 2866-2016  
- Fender mechanical properties: Section 5.1 of HG/T 2866-2016

**Service Restriction:**

1. Unit Certification is required for production testing as per Section 7 of HG/T 2866-2016. 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: 6

Drawing No. -, Test method for performance of rubber fender, Revision: -, Pages: 33

Drawing No. Test report by surveyor, Test report by surveyor, Revision: -, Pages: 13

**Terms of Validity:**

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

**ZHENJIANG TONLY RUBBER CO.**

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

JIANGSU

China

Telephone: +86-511-85212022

Fax: +86-511-85212022

Email: sales@tonlyrubber.com

Web: <http://tonly.cs-cx.com/>

---

**Tier: 5 - Unit Certification Required**

---

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.

**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:**

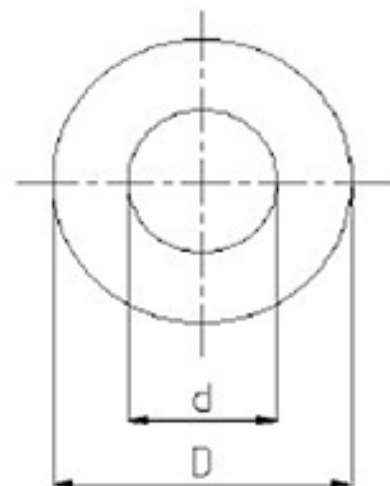
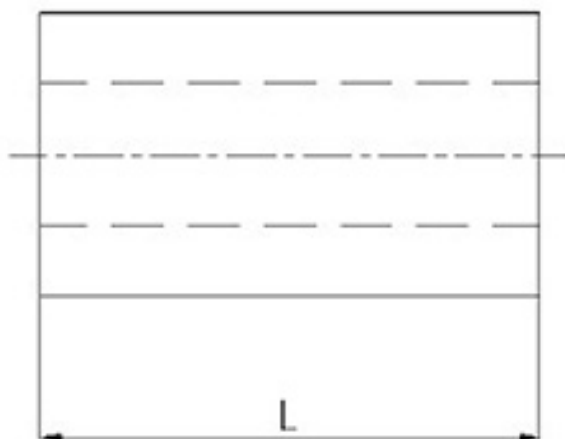
HG/T 2866-2016

**DA Certificate No.:** 21-2149981-PDA  
**Entry Date:** 6 September 2021  
**Expire Date:** 5 September 2026  
**Name of Manufacturer:** Zhenjiang Tonly Rubber Co., Ltd.  
**Product:** Fender  
**Model:** CY-type, D-type, SA-Type

**CY-type (Cylinder fenders):**

Type	Size (mm)	
	D	d
CY150XL	150	75
CY200XL	200	100
CY250XL	250	125
CY300XL	300	150
CY400XL	400	200
CY500XL	500	250
CY600XL	600	300
CY700XL	700	350
CY800XL	800	400
CY900XL	900	450
CY1000XL	1000	500
CY1100XL	1100	550
CY1200XL	1200	600

Note: This table shows the reaction force and energy absorption of different kinds of standard rubber fenders with one meter long, the required amount is standard value\*actual length.



d: inner diameter of fender

D: outer diameter of fender

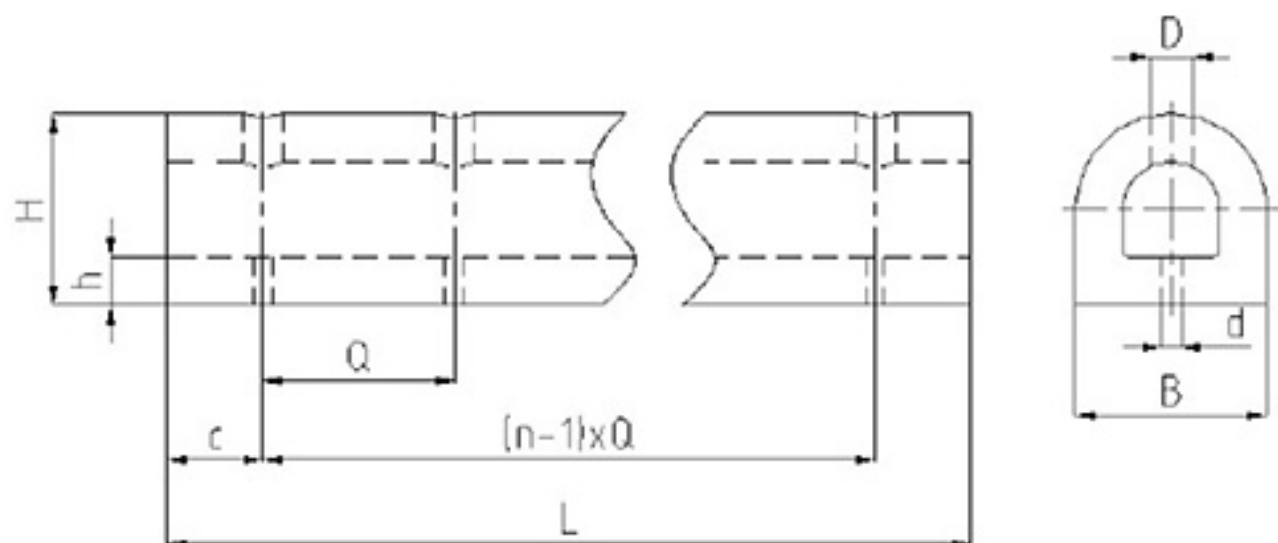
L: length of fender

**DA Certificate No.:** 21-2149981-PDA  
**Entry Date:** 6 September 2021  
**Expire Date:** 5 September 2026  
**Name of Manufacturer:** Zhenjiang Tonly Rubber Co., Ltd.  
**Product:** Fender  
**Model:** CY-type, D-type, SA-Type

**D-Type (Semi-circular fender):**

Type	Size (mm)								
	H	B	L	n	Q	C	h	D	d
D125X125XL	125	125	1000	3	350	150	30	60	24
D150X150XL	150	150	1000	3	350	150	37.5	60	27
D200X200XL	200	200	1000	3	350	150	50	60	30
D250X250XL	250	250	1000	3	350	150	62.5	65	33
D300X300XL	300	300	1000	3	350	150	75	65	35
D350X350XL	350	350	1000	3	350	150	87.5	80	38
D400X400XL	400	400	1000	3	350	150	100	80	40
D500X500XL	500	500	1000	3	350	150	125	95	45

Note: This table shows the reaction force and energy absorption of different kinds of standard rubber fenders with one meter long, the required amount is standard value\*actual length.



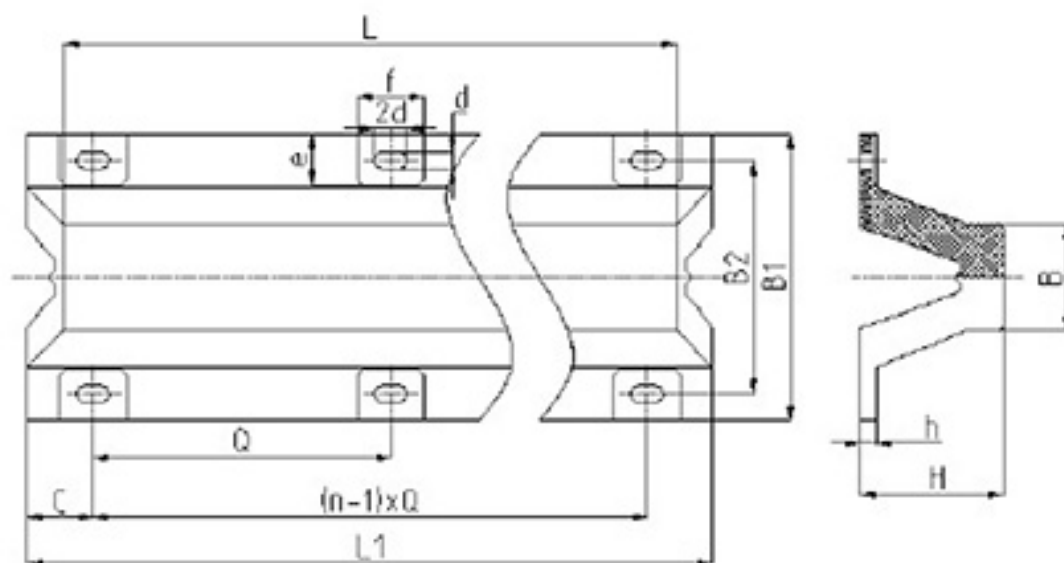
- B: Bottom Width of fender;
- L: Length of fender;
- h: Bottom thickness of fender;
- d: bottom mounting hole width of fender;
- Q: Distance between mounting holes of fender.
- D: Top mounting hole diameter of fender;
- C: Mounting hole edge distance of fender;
- n: hole numbers;
- H: height of fender;

**DA Certificate No.:** 21-2149981-PDA  
**Entry Date:** 6 September 2021  
**Expire Date:** 5 September 2026  
**Name of Manufacturer:** Zhenjiang Tonly Rubber Co., Ltd.  
**Product:** Fender  
**Model:** CY-type, D-type, SA-Type

**SA-type (Super arch fender):**

Type	Size(mm)										
	H	B	B1	B2	C	n	Q	d	e	f	h
SA250XL	250	164	500	410	70	2	620	32	90	125	27.5
SA250XL	250	164	500	410	70	4	620	32	90	125	27.5
SA300XL	300	225	600	490	140	2	870	35	105	140	33
SA300XL	300	225	600	490	140	4	625	35	105	140	33
SA500XL	500	375	1000	840	160	2	930	47	140	180	45
SA500XL	500	375	1000	840	160	4	810	47	140	180	45

Note: This table shows the reaction force and energy absorption of different kinds of standard rubber fenders with one meter long, the required amount is standard value\*actual length.



- B: Top width of fender;
- L1: Bottom length of fender;
- f: Washer mounting hole length;
- B2: Mounting width of fender;
- Q: Distance between mounting holes of fender;
- C: Mounting hole edge distance of fender;
- d: Mounting hole width of fender;
- e: Washer mounting hole width;
- B1: Bottom width of fender;
- n: Mounting hole numbers;
- h: Bottom thickness of fender;
- H: height of fender;
- L: Top length of fender.

**DA Certificate No.:** 21-2149981-PDA  
**Entry Date:** 6 September 2021  
**Expire Date:** 5 September 2026  
**Name of Manufacturer:** Zhenjiang Tonly Rubber Co., Ltd.  
**Product** Fender  
**Model:** CY-type, D-type, SA-Type

### 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 <sup>-8</sup> : 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	+4 -2	±2	±4