



Marine & Offshore

Certificate number: 44326/B0 BV

File number: MAT 5302-2016

Product code: 6440I

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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APPROVAL CERTIFICATE for MATERIALS

This certificate is issued to

Jiangsu Asian Star Anchor Chain Co., Ltd.

Jingjiang (Jiangsu Province) - CHINA

for the type of product

OFFSHORE MOORING CHAIN CABLE

Common Stud and Studless links, End links in grade QR5

Requirements:

Bureau Veritas Rules on Materials and Welding for the Classification of Marine Units

Bureau Veritas Rules for the Classification of Offshore Units

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 28 Jan 2027

For Bureau Veritas Marine & Offshore,

At BV SHANGHAI, on 28 Jan 2022,

Jennifer Zhang



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

Offshore mooring chain cables.

Steel grade	Chain type	Nominal diameter	Round bar supplier
QR5	Stud link and studless	max. 137mm	Baoshan Iron & Steel Co., Ltd. (EAF+LF/VD, CC; Bar Ø up to 142mm)
	End link	max. 164mm	Baoshan Iron & Steel Co., Ltd. (BOF+LF/RH, IC; Bar Ø up to 170mm)

Chain cables manufactured by flash butt welding. Chain cables are heat treated by quenching and tempering. * CC = Continuous Casting; IC = Ingot Casting.

2. DOCUMENTS AND DRAWINGS :

2.1 Chemical composition(%) specification on ladle of steel grade QR5- Round bar from Baoshan Iron & Steel Co., Ltd.:

Element	C	Mn	Si	P	S	Ni	Mo	Cr	Alt(1)	Cu
min	0.18	0.30	0.15	-	-	0.60	0.20	0.90	0.015	-
max	0.25	1.80	0.45	0.020	0.008	1.20	0.55	2.00	0.040	0.50
Element	Nb(2)	V(3)	Ti	As	Sb	Sn	B	N	Others	
min	0.01	0.03	-	-	-	-	-	-	-	
max	0.05	0.10	0.02	0.020	0.020	0.020	0.001	0.012	n.s.*	

Following notes apply for steel made by BOF+LF-RH , Ingot process: (1) Alt content: 0.015-0.045%; (2)Nb content: 0.02%max.; (3)V content:0.04-0.11%; * n.s. means not specified.

2.2 As per documents issued by Jiangsu Asian Star Anchor Chain Co., Ltd.:

- Drawings Ref.ASAC201409-26Z01-137, Ref.ASAC201409-26Z02-137 dated 26/09/2014,
- "Approval information - R5 mooring chain" Ref.ASAC-AI-BV-TA1410-V1.
- "Work instruction for MT of mooring chain" DOC No.YX/WJ04-23 Rev.A.3 dated 12/08/2016.
- "Work instruction for UT of mooring chain" DOC No.YX/WJ04-24 Rev.A.3 dated 12/08/2016.

3. TEST REPORTS :

- "Test report of mooring chain Grade R5" dated 24/10/2015 issued by Jiangsu Asian Star Anchor Chain Co., Ltd.

4. APPLICATION / LIMITATION :

As per Bureau Veritas Rules for Classification. Round bars used for chain cables are to be manufactured by Baoshan Iron & Steel Co., Ltd. Round bars used for chain cables are to be supplied with Bureau Veritas Product Certificates.

5. PRODUCTION SURVEY REQUIREMENTS :

- 5.1 - The offshore mooring chain cables are to be supplied by Jiangsu Asian Star Anchor Chain Co., Ltd. in compliance with the type and the requirements described in this certificate.
- 5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.
- 5.3 - BV product certificate is required.

6. MARKING OF PRODUCT :

As per Bureau Veritas Rules for Classification.

7. OTHERS :

This certificate replaces approval No.44326/A0 BV.

***** END OF CERTIFICATE *****