Marine & Offshore

Certificate number: 27601/B1 BV
File number: MAT 11240-2012
Product code: 9019I

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

SeAH Besteel Corporation

Jeollabuk-do - KOREA (REPUBLIC OF)

for the type of product

ROUND BARS FOR OFFSHORE MOORING CHAIN CABLE

Round bar in steel grades QR4S and QR5.

Requirements:
Bureau Veritas Rules on Materials and Welding for the Classification of Marine 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: 14 Dec 2022

For Bureau Veritas Marine & Offshore,
At BV PUSAN, on 19 Feb 2021,
Chang-Uk HONG

BUREAU VERITAS MARINE & OFFSHORE INTERNATIONAL REGISTER

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 :

Round bars for the manufacture of offshore anchor chain cables.

Steel grade	Maximum bar diameter	Deoxydation practice & refining	Delivery conditions
QR4S	190mm	Killed and fine grain treated with Al	As Rolled (AR)
QR5	190mm	Killed and fine grain treated with Al	As Rolled (AR)

Steelmaking by Electric Arc Furnace (EAF) , Ladle furnace (LF) and refining with VD or RH. Continuous Casting.

2. DOCUMENTS AND DRAWINGS :

2.1-Chemical composition specification on ladle for round bars grades QR4S and QR5:

Element	C %	Si %	Mn %	P %	S %	Ni %	Cr %	Mo %	Cu %	Al %	V%	Sn %	As%	Sb%
Min.	0.21	0.20	1.20	-	-	0.95	1.00	0.45	-	0.015	0.09	-	-	-
Max.	0.24	0.35	1.40	0.020	0.008	1.15	1.10	0.55	0.25	0.040	0.12	0.04	0.01	0.01

2.2-Documents issued by SeAH Besteel Corporation:
- "Test plan - Document N° SBC-B-1101" dated 2010.
-"Application for works approval - Document N° SBC-A-1101" dated 31/12/2010.
- Procedures Ref.SB-QM-1116-1 Rev.01, Ref.SB-QM-1116-2 Rev.01, Ref.SB-QM-1116-3 Rev.01.
- "Technical document" dated 20 January 2020.

3. TEST REPORTS :

3.1-Documents issued by SeAH Besteel Corporation:
- "Mooring chain steel [R5] raw test report" dated 12/10/2010.
- "Mooring chain steel [R4S] raw test report" dated 12/10/2010.
- "Report of works approval test- Document N° SBC-C-1101" dated 29/09/2010.
- "Report of ultrasonic inspection" dated 29/09/2010.
- "Report of works approval tests" submitted on 12 May 2020.

4. APPLICATION / LIMITATION :

As per Bureau Veritas Rules for Classification. Offshore round bars used for the manufacture of offshore mooring chain cables by Dai Han Anchor Chain Mfg. – Korea and Vicinay - Sestao.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The round bars are to be supplied by SeAH Besteel Corporation 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 approvals No.27601/A0 B, No.27601/B0 BV.

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