Certificate number: 52706/C0 BV
File number: MAT 113667-2018
Product code: 8153I

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

REINOSA FORGINGS & CASTINGS S.L.

REINOSA - SPAIN

for the type of product

STEEL FORGINGS

Forgings for offshore mooring accessories in steel grades QR3, QR3S, QR4 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: 11 May 2031

For Bureau Veritas Marine & Offshore,
At BV MADRID, on 11 May 2026,
Laura Gutierrez Cruz

This certificate was created electronically and is valid without signature

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 :

Forgings for offshore mooring accessories.

Steel grade	Forging type and dimension	Delivery condition
QR3	Block 460×450mm from ingots	As forged
QR3S	Block 642×512 mm from ingots	As forged
QR4	Block 675×478 mm from ingots	As forged
QR5	Block 784×556 mm from ingots	As forged

Steelmaking in Electric Arc Furnace, LF Refining and Vacuum Degassing. Ingot Casting.
Forgings manufactured by upsetting operations. Minimum reduction ratio is 8,5 for QR3 forging block; 7,3 for QR3S forging block; 5.6 for QR4 forging block and 6.1 for QR5 forging block.

2. DOCUMENTS AND DRAWINGS :

2.1 - Chemical composition on ladle of grade QR3/QR3S as per specification given hereafter by Reinosa Forgings and Castings, S.L.

Element (%)	C	Mn	Si	P	S	Ni	Mo	Cr	Al
min.	0.18	0.85	0.15	-	-	0.50	0.20	0.90	0.015
max.	0.24	1.20	0.35	0.020	0.015	0.70	0.35	1.25	0.040
Element (%)	**Cu**	**V**	**As**	**Sn**	**Sb**	**Ti**	**H2 (ppm)**	**O**	**N**
min.	-	0.04	-	-	-	-	-	-	-
max.	0.25	0.10	0.025	0.030	0.005	0.015	1.1	0.0025	0.015

2.2 - Chemical composition on ladle of grade QR4 as per specification given hereafter by Reinosa Forgings and Castings, S.L.

Element (%)	C	Mn	Si	P	S	Ni	Mo	Cr	Al
min.	0.21	1.20	0.20	-	-	0.95	0.50	1.00	0.010
max.	0.24	1.40	0.35	0.020	0.008	1.15	0.65	1.10	0.040
Element (%)	**Cu**	**V**	**As**	**Sn**	**Sb**	**Ti**	**H2 (ppm)**	**O**	**N**
min.	-	0.09	-	-	-	-	-	-	-
max.	0.25	0.12	0.025	0.030	0.005	0.015	1.1	0.0025	0.015

2.3 - Chemical composition on ladle of grade QR5 as per specification given hereafter by Reinosa Forgings and Castings, S.L.

Element (%)	C	Mn	Si	P	S	Ni	Mo	Cr	Al
min.	0.21	0.50	0.15	-	-	2.50	0.40	1.40	-
max.	0.25	0.80	0.35	0.015	0.015	3.00	0.60	1.80	0.035
Element (%)	**Cu**	**V**	**As**	**Sn**	**Sb**	**Ti**	**H2 (ppm)**	**O**	**N**
min.	-	0.08	-	-	-	-	-	-	0.007
max.	0.25	0.12	0.025	0.030	0.005	0.015	1.1	0.0025	0.01

3. TEST REPORTS :

3.1 - Test reports issued by Vicinay Cadenas SA.
- Ref. 007.011.055 dated May 2013 and Ref.007.011.042 dated March 2012.
- Ref. 007.011.065 dated July 2015.
- "Approval of offshore shackles in R4 grade up to 240mm" dated 30 July 2020.

4. APPLICATION / LIMITATION :

4.1 - As per Bureau Veritas Rules on Materials and Welding for the Classification of Marine Units.
4.2 - Forgings used for the fabrication of offshore mooring accessories at Vicinay Mooring Connectors, S.A.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The forgings are to be supplied by Reinosa Forgings and Castings S.L. 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.
5.4 - Reinosa Forgings and Castings S.L. has to make the necessary arrangements to have its works recognized by Bureau Veritas in compliance with the requirements of NR320.
5.5 - Reinosa Forgings and Castings S.L. has to make the necessary arrangements to have its works recognized by Bureau Veritas in compliance with the requirements of NR320.
5.6 - For information, Reinosa Forgings and Castings S.L. has declared to Bureau Veritas the following production site:

Reinosa Forgings and Castings S.L.
Paseo Alejandro Calonge nº 1
REINOSA
SPAIN

6. MARKING OF PRODUCT :

6.1 - Each steel forgings are that has been tested with satisfactory results are to be marked with the following information:
- Manufacturer's name or trademark
- Bureau Veritas' Mark
- Identification marking enabling traceability, such as cast number, heat number, or batch number
- Material grade and classification
- Additional markings where applicable, such as test pressure or specific inspection references

Additional marking requirements specific to steel forging shall be in accordance with the "Marking" article in the relevant section of Bureau Veritas NR216 Rules on Materials and Welding for the Classification of Marine Units.

7. OTHERS :

7.1 - It is Reinosa Forgings and Castings S.L.'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.
7.2 - This certificate supersedes the Type Approval Certificate N° 52706/B1 BV issued by the Society.

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