



Certificate number: 09668/E1 BV

File number: MAT 23470/01

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*

**SIDENOR ACEROS ESPECIALES, S.L.U**

Basauri (Vizcaya) - SPAIN

*for the type of product*

### ROUND BARS FOR OFFSHORE MOORING CHAIN CABLE

Round bars in steel grade QR4 for offshore mooring chain cables

**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: 23 Dec 2027**

**For Bureau Veritas Marine & Offshore,**

At BV BILBAO, on 03 Mar 2026,

Ignacio EGUILUZ BERNAL

***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 :

Hot rolled round bars in steel grade QR4 for offshore mooring chain cables made by Vicinay Sestao SLU.

Steel grade	Delivery condition	Bar Diameter
QR4 (1)	As Rolled	Maximum 86mm
QR4 (34CrNiMo6 ) (2)	As Rolled	Maximum 120mm

(1) Steelmaking by Electric arc furnace. LF Refining and Vacuum Degassing. Continuous Casting, billets size 240mmx240mm. Reduction ratio min 9,7:1. Approval tests performed on round bars quenched and tempered.

(2) Steelmaking by Electric arc furnace. LF Refining and Vacuum Degassing. Continuous Casting, billets size 240mmx240mm. Reduction ratio min 5.09. Approval tests performed on round bars quenched and tempered.

### 2. DOCUMENTS AND DRAWINGS :

2.1- Chemical composition (wt%) specification on ladle of steel grade QR4 for chains diameter 84mm max(as per MPSR4 Rev.2 28/03/2015).

Element (%)	C	Mn	Si	P	S	Ni	Mo	Cr	Al	Cu
min.	0.21	0.95	0.15	-	-	0.50	0.20	0.90	0.015	-
max.	0.24	1.10	0.35	0.020	0.020	0.80	0.40	1.25	0.040	0.25
Element (%)	V	As	Sn	Sb	Ti	O2(ppm)	B(ppm)	N2 (ppm)	H2 (ppm)	
min.	-	-	-	-	-	-	-	-	-	
max.	0.010	0.025	0.030	0.005	0.015	25	15	150	1.1	

2.2 - Chemical composition(wt%) specification on ladle of steel grade 34CrNiMo6 (QR4) for mooring chains equipment :

Element	C	Mn	Si	P	S	Ni	Mo	Cr	Cu	Al	N
min	0.30	0.50	0.10	-	-	1.30	0.22	1.30	-	0.020	-
max	0.38	0.80	0.40	0.025	0.035	1.70	0.30	1.70	0.40	0.060	0.015

2.3- Documents issued by Sidenor Aceros Especiales, S.L. (Basauri):

- "R4 grade manufacturing process for round bars (78mm) at basauri plant" and flow chart R4-78-189980 dated 11/03/2014.
- "Manufacturing data for control round bar" submitted on July 2022.
- Sidenor Basauri - GN Rope fittings - BV approval dated 31/03/2025.

### 3. TEST REPORTS :

3.1- Document issued by SIDENOR Basauri Plant:

- "Approval Report for R4 Chain Steel Bar" dated 23/10/1998.
- Test certificate Ref.2098388 dated 23/11/2019.
- Request for revision of certificate to include R4 grade without Vanadium (sensitivity study and temper embrittlement) dated 25/02/2019.
- Report Ref.B0435-BB0-2025 dated 15/01/2026.

### 4. APPLICATION / LIMITATION :

- 4.1 - As per Bureau Veritas Rules on Materials and Welding for the Classification of Marine Units.
- 4.2 - Chemical composition and mechanical properties requirements are to be as per Bureau Veritas Rules on Materials and Welding for the Classification of Marine Units, and/or alternative specification mentioned on reviewed drawings, as applicable.
- 4.3 - Round bars made of steel grades QR4 are used for the manufacture of mooring chain cables manufactured by Vicinay Sestao.
- 4.4 - Round bars made of steel grade QR4 (34CrNiMo6 ) is used for the manufacture of mooring chain cables manufactured by GN Rope Fittings - Grofsmederij Nieuwkoop B.V.

### 5. PRODUCTION SURVEY REQUIREMENTS :

- 5.1-The round bars are to be supplied by Sidenor Aceros Especiales, S.L. (Basauri) 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 - Sidenor Aceros Especiales, S.L. (Basauri) has to make the necessary arrangements to have its works recognized by Bureau Veritas in compliance with the requirements of NR320.

5.5 - For information, Sidenor Aceros Especiales, S.L. (Basauri) has declared to Bureau Veritas the following production site:

**Sidenor Aceros Especiales, S.L. (Basauri)**

Barrio Ugarte s/n  
Apartado. 76  
48970 Basauri (Vizcaya)  
SPAIN

**6. MARKING OF PRODUCT :**

6.1 - Each round bar for offshore mooring chain cables 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 round bar for offshore mooring chain cables 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 Sidenor Aceros Especiales, S.L. (Basauri)'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° 09668/E0 BV issued by the Society.

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