

APPROVAL OF MANUFACTURER CERTIFICATE

This is to certify:

That

EBROACERO, S.A.
Calle de Argualas, 20,
50012 Zaragoza, Spain

is an approved manufacturer of
Steel Castings

in accordance with
DNV GL rules for classification – Ships
DNV GL-OS-B101

and the following particulars:

Application area	Castings for hull structures and equipment
	Castings for machinery
Steel type	Carbon and carbon-manganese,
	Alloy
Casting method	Sand casting
Max. weight	14 000 kg
Heat treatment condition	See page 2
Additional approval conditions	See page 2

Manufacturer(s) approved by this certificate is/are accepted to deliver according to DNV GL, DNV and GL rules. Materials to be applied to DNV GL classed object shall fulfill the material requirements in the applicable DNV GL class rules.

Issued at **Hamburg** on **2018-11-29**

for **DNV GL**

This Certificate is valid until **2021-06-30**.

DNV GL local station: **Bilbao**

Approval Engineer: **Christian Wildhagen**

Thorsten Lohmann
Head of Section



Job Id: **263.11-004195-2**
Certificate No: **AMMM00002C0**

Particulars of the approval

Castings for hull structure and equipment

Steel type	Grade ³⁾⁴⁾	Casting method ¹⁾	Max. weight [kg]	Delivery condition ²⁾
C and C-Mn	VL C400UW, VL C440UW, VL C480UW, VL C520UW, VL C560UW, VL C600UW	SC	14 000	N, NT, QT
Alloy	VL C550AW, VL C620AW	SC	14 000	QT

Castings for machinery

Steel type	Grade ³⁾⁴⁾	Casting method ¹⁾	Max. weight [kg]	Delivery condition ²⁾
C and C-Mn	VL C400U, VL C440U, VL C480U, VL C520U, VL C560U, VL C600U	SC	14 000	N, NT, QT
Alloy	VL C550A, VL C600A, VL C690A	SC	14 000	QT

Remarks:

- 1) SC: Sand Casting
- 2) N: Normalised
QT: Quenched and tempered
NT: Normalised and tempered
- 3) Certification of any material applied to classed object shall fulfill the applicable material requirements in the DNV GL class rules
- 4) Incl. equivalent grades in acc. to other standards