



# APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:  
**AMMM0000256**  
Revision No:  
**2**

This is to certify:

That

**LES BRONZES D'INDUSTRIE S.A.**  
26 rue de la République, Amneville les Thermes,  
France

is an approved manufacturer of  
**Steel Castings**

in accordance with

**DNV rules for classification – Ships**  
**DNV class programme – DNV-CP-0246 Steel castings**

and the following particulars:

<b>Application area</b>	<b>Castings for hull structures and equipment</b> <b>Casting for machinery</b> <b>Castings for boilers, pressure vessels and piping systems</b> <b>Ferritic steel castings for low temperature service</b> <b>Stainless steel castings</b>
<b>Steel type(s)</b>	<b>Carbon, Carbon-manganese,</b> <b>Austenitic stainless,</b> <b>Austenitic-ferritic (Duplex) stainless,</b> <b>Martensitic stainless,</b>
<b>Casting method</b>	<b>Centrifugal casting</b>
<b>Max. weight</b>	<b>20 000 kg</b>
<b>Heat treatment condition</b>	<b>See page 2 ff.</b>
<b>Additional approval conditions</b>	<b>See page 2 ff.</b>

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 classed object shall fulfill the material requirements in the applicable DNV class rules.

Issued at **Hamburg** on **2024-08-20**

This Certificate is valid until **2027-07-31**.

DNV local unit: **France CMC**

Approval Engineer: **Enno Brück**



for **DNV**

This document has been digitally signed and will  
therefore not have handwritten signature  
Christian Wildhagen

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: AM 311

Revision: 2022-12

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## Particulars of the approval

### Castings for hull structure and equipment

Steel type	Grade <sup>3) 4)</sup>	Casting method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
C and C-Mn	NV C400UW, NV C440UW, NV C480UW	CC	20 000	N, NT, QT

### Castings for machinery

Steel type	Grade <sup>3) 4)</sup>	Casting method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
C and C-Mn	NV C400U, NV C440U, NV C480U, NV C520U	CC	20 000	N, NT, QT

### Castings for boilers, pressure vessels and piping systems

Steel type	Grade <sup>3) 4)</sup>	Casting method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
C and C-Mn	NV C450H	CC	20 000	N, NT, QT
	NV C490H	CC	20 000	N, NT, QT

### Ferritic steel castings for low temperature service

Steel type	Grade <sup>3) 4)</sup>	Casting method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
C and C-Mn	NV C450L	CC	20 000	N, NT, QT
	NV C490L	CC	20 000	N, NT, QT

**Stainless steel castings**

Steel type	Grade <sup>3) 4)</sup>	Casting method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
Austenitic	GX 2 CrNi 18 10 (304L) GX 5 CrNi 19 9 (304) GX 6 CrNiNb 19 10 (347) GX 2 CrNiMo 19 11 2 (316L) GX 5 CrNiMo 19 11 2 (316) GX 5 CrNiMo 19 11 3 (317)	CC	20 000	SHT
Austenitic	GX2CrNi19-1 <sup>5)</sup> GX2CrNiMo28-20-2 <sup>5)</sup> X2NiCrMoCu25-20-5 <sup>5)</sup>	CC	20 000	SHT
22 Cr Duplex	GX 2 CrNiMoN 22 5 3	CC	20 000	SHT
25 Cr Duplex	GX 2 CrNiMoCuN 25 6 3 3	CC	20 000	SHT

Remarks:

- 1) CC: Centrifugal Casting
- 2) N: Normalized  
NT: Normalized and Tempered  
QT: Quenched and Tempered  
SHT: Solution Heat Treated (Solution Annealing)
- 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
- 5) Possible application and certification to classed object is subject to case by case approval

**Additional approval conditions:**

Including austenitic stainless steel for low temperature service;  
 Including martensitic stainless steel castings subject to special approval