



# APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:  
**AMMM00000K5**  
Revision No:  
**2**

This is to certify:

That

**Acieries Hachette et Driout**  
11 Avenue du Général SARRAIL, Saint-Dizier,  
France

is an approved manufacturer of  
**Steel Castings**

in accordance with  
**DNV rules for classification – Ships**

and the following particulars:

|                                 |   |
|---------------------------------|---|
| <b>Application area</b>         | <b>Castings for hull structures and equipment<br/>Castings for machinery<br/>Castings for boilers, pressure vessels and piping systems<br/>Stainless steel castings</b> |
| <b>Steel type</b>               | <b>Carbon and carbon-manganese,<br/>Alloy,<br/>Austenitic stainless,<br/>Austenitic-ferritic (Duplex) stainless,<br/>Martensitic stainless</b>                          |
| <b>Casting method</b>           | <b>Sand casting</b>   |
| <b>Max. weight</b>              | <b>See page 2 ff.</b>   |
| <b>Heat treatment condition</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 **2022-08-22**

This Certificate is valid until **2025-04-02**.

DNV local station: **France CMC**

Approval Engineer: **Stefan Röhr**

for **DNV**



Digitally Signed By: Wildhagen, Christian  
Location: DNV Hamburg, Germany  
Signing Date: 22.08.2022, on behalf of

**Thorsten Lohmann**  
**Head of Section**

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.



## Particulars of the approval

### Castings for hull structure and equipment

| Steel type | Grade <sup>3)</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, NV C520UW, NV C560UW, NV C600UW | SC                           | 8 000            | N, NT, QT                              |
| Alloy      | NV C550AW, NV C620AW   | SC                           | 8 000            | QT                                     |

### Castings for machinery

| Steel type | Grade <sup>3)</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, NV C560U, NV C600U | SC                           | 8 000            | N, NT, QT                              |
| Alloy      | NV C550A, NV C600A, NV C690A                               | SC                           | 8 000            | QT                                     |

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

| Steel type | Grade <sup>3)</sup>                    | Casting method <sup>1)</sup> | Max. weight [kg] | Heat treatment condition <sup>2)</sup> |
|------------|--|------------------------------|------------------|--|
| C and C-Mn | NV C450H, NV C490H                     | SC                           | 8 000            | N, NT, QT                              |
| Alloy      | NV C0.5Mo, NV C1Cr0.5Mo, NV C2.25Cr1Mo | SC                           | 8 000            | QT                                     |

**Stainless steel castings**

| Steel type / grade | Casting method <sup>1)</sup> | Max. weight [kg] | Heat treatment condition <sup>2)</sup> |
|--------------------|------------------------------|------------------|--|
| Martensitic        | SC                           | 8 000            | QT                                     |
| Austenitic         | SC                           | 8 000            | SHT                                    |
| 22 Cr Duplex       | SC                           | 1 500            | SHT                                    |
| 25 Cr Duplex       | SC                           | 1 500            | SHT                                    |

Remarks:

- 1) SC: Sand Casting
- 2) SHT: Solution Heat Treated (Solution Annealing)  
N: Normalized;  
NT: Normalized and tempered  
QT: Quenched and tempered
- 3) Incl. equivalent grades in acc. to other standards