

APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM0000024
Revision No:
4

This is to certify:

That

SeAH Changwon Integrated Special Steel Corporation
147, Jeokhyeon-ro, Seongsan-gu, Changwon-Si,
Gyeongsangnam-do,
Republic of Korea

is an approved manufacturer of
Steelmaking and Rolled Steel Products

in accordance with

DNV rules for classification – Ships
DNV class programme – DNV-CP-0242 Semi-finished steel products
DNV class programme – DNV-CP-0243 Rolled steel products – non stainless steel
DNV class programme – DNV-CP-0351 Manufacture of heat treated products - heat treatment workshop

and the following particulars:

Product	Semi-finished products; Ingots and billets for rolling or forging stock
Steel type	Carbon and carbon-manganese, Alloy, Austenitic stainless, 22Cr duplex stainless, 25Cr duplex stainless
Steelmaking	Electric arc furnace or vacuum induction melting, Ingot casting
Deoxidation	Killed
Heat treatment condition	See page 2
Max. diameter	See page 2
Remarks	1. Including rolled round bars as substitute for forgings, see page 2 2. Approved as independent Heat Treatment Company, see page 3

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 **2024-12-13**

This Certificate is valid until **2025-06-30**.

DNV local unit: **Busan, CMC Korea**

Approval Engineer: **Christian Wildhagen**



for **DNV**

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

Stefan Röhr

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

Semi-finished products for rolling or forging stock

Steel type	Steelmaking ¹⁾	Fine grain treatment	Max. weight [kg]
Carbon and carbon-manganese	EAF, IC	AI	150 000
Alloy	EAF, IC	-	150 000
Austenitic stainless	EAF, IC	-	10 000
22Cr and 25Cr duplex stainless	EAF, IC	-	10 000
Ni-base alloys (Alloy713LC)	VIM, IC	-	2 000

Rolled round bars^{3) 4)} intended to be machined into components (as a substitute for forged bars)

Steel type	Steelmaking ¹⁾	Heat treatment condition ²⁾	Max. diameter [mm]
Austenitic stainless	EAF, IC	SHT	320

Remarks:

- ¹⁾ EAF: electric arc furnace
 IC: ingot casting
 VIM: vacuum induction melting
- ²⁾ SHT: solution heat treated (solution annealed)
- ³⁾ Minimum rolling reduction ratio 6:1
- ⁴⁾ Sampling, inspection and testing requirements shall be according to DNV Rules for Ships Pt.2 Ch.2 Sec.6

Approval scope for Independent Heat Treatment Company

Item	Description
Product type	Rolled Steel Products
Steel Type	Carbon and carbon-manganese, Alloy, Austenitic stainless, 22Cr duplex stainless, 25Cr duplex stainless
Furnace I.D. No.	No.2 Solution Furnace
Maximum Loading Weight	15 tons
Max. Thickness	110 mm
Heat Treatment Type	Solution heat treated (solution annealed)
Furnace Details	Batch type, Working zone (mm): Length 4 160, Width 700, Height 240
Heat Treatment Procedure	Doc. No. SC-E-1A02 Rev.25 dated 2019-06-19
Temperature Uniformity Survey Procedure	Doc. No. NORSOK-B-20-09 Rev.0 dtd. 2016-04-25