



GX2CrNiMoN25-6-3 (EN 1.4468) Duplex Stainless Steel Casting Material

Introduction

GX2CrNiMoN25-6-3 (EN 1.4468) is a duplex stainless steel casting grade specified in EN 10283. The standard covers corrosion-resistant castings for general purposes and defines the applicable delivery conditions and engineering requirements. Casting process options include Investment Casting, Shell Molding Casting and Sand Casting, subject to the applicable specification and component requirements.

Manufacturing Process

Investment Casting
Shell Molding Casting
Sand Casting

Equivalent Grades

N/A

Reference Standards

Standard	Standard Title	Edition	Specification	Identifier
EN 10283	Corrosion resistant steel castings	2019	GX2CrNiMoN25-6-3	EN 1.4468
EN 10340	Steel castings for structural uses	2007	GX2CrNiMoN25-6-3	EN 1.4468
ISO 11972	Corrosion-resistant cast steels for general applications	2023	GX2CrNiMoN25-6-3	EN 1.4468

Physical Properties

EN 10283–2019

Property	Value	Note
Density	7.7 kg/dm ³	Test at 20 °C
Specific Heat	450 J/(kg·K)	Test at 20 °C
Thermal Conductivity	17 W/(m·K)	Test at 50 °C
Thermal Conductivity	18 W/(m·K)	Test at 100 °C
Thermal Expansion	13 ×10 ⁻⁶ /K	Temperature range: 20–100 °C
Thermal Expansion	14 ×10 ⁻⁶ /K	Temperature range: 20–300 °C



Chemical Composition

Element	EN 10283 Edition 2019 · wt.% Cast analysis	EN 10340 Edition 2007 · wt.% Cast analysis	ISO 11972 Edition 2023 · wt.%
C	≤ 0.030	≤ 0.030	≤ 0.03
Si	≤ 1.00	≤ 1.00	≤ 1.0
Mn	≤ 2.00	≤ 2.00	≤ 2.00
P	≤ 0.035	≤ 0.035	≤ 0.035
S	≤ 0.025	≤ 0.025	≤ 0.025
Cr	24.50–26.50	24.50–26.50	24.5–26.5
Ni	5.50–7.00	5.50–7.00	5.5–7.0
Mo	2.50–3.50	2.50–3.50	2.50–3.50
Cu	≤ 0.50 ^[1]	≤ 0.50	— / Not specified
N	0.12–0.25	0.12–0.25	0.12–0.25

Notes

EN 10283 · Edition 2019

^[1] Cu: Applies unless otherwise agreed; unspecified elements shall not be intentionally added without purchaser agreement except for finishing the heat.

Heat Treatment

EN 10283–2019 · +AT

Step	Operation	Temperature	Cooling
1	solution annealing	1120–1150 °C	water

EN 10340–2007 · +AT

Step	Operation	Temperature	Cooling
1	: solution annealing	1120–1150 °C	water

ISO 11972–2023 · Solution treated

Step	Operation	Temperature	Cooling
1	solution treatment	1120–1150 °C ^[1]	quench in water

Notes

**ISO 11972 · Edition 2023**

^[1] Solution treated: After high-temperature solution annealing, optional cooling from 1040 °C to 1010 °C before water quenching may prevent cracks in complex shapes.

Mechanical Properties

Property	EN 10283 Edition 2019 ^[1]	EN 10340 Edition 2007 ^[2]	ISO 11972 Edition 2023 ^[3]
Yield Strength (Rp0.2)	≥ 480 MPa	≥ 480 MPa	≥ 480 MPa
Tensile Strength	≥ 650 MPa	650–850 MPa	≥ 650 MPa
Elongation	≥ 22 %	≥ 22 %	≥ 22 %
Impact Energy	≥ 50 J ^[4]	≥ 50 J	≥ 50 J ^[5]

Notes**EN 10283 · Edition 2019**

^[1] All properties in this column: wall thickness ≤ 150 mm; Test block; maximum thickness 150 mm; Room temperature; Yield and tensile strength also apply to the casting up to the maximum specified wall thickness.

^[4] Impact Energy: KV2 as specified in

EN 10340 · Edition 2007

^[2] All properties in this column: wall thickness ≤ 150 mm; Test block of relevant thickness; maximum thickness 150 mm; Room temperature; Yield and tensile strength also apply to the casting up to the maximum relevant wall thickness.

ISO 11972 · Edition 2023

^[3] All properties in this column: wall thickness ≤ 150 mm; Room temperature; Test blocks used to verify mechanical properties shall not exceed 150 mm thickness. Properties for samples removed from castings shall be agreed between manufacturer and purchaser.

^[5] Impact Energy: Verification of impact tests is required only when indicated by the customer.

Welding Conditions**EN 10283–2019**

Requirement	Value
Preheat	20–100 °C ^[1]
Interpass Temperature	≤ 250 °C
Post-weld Heat Treatment	Solution annealing followed by water quenching ^[2]
Post-weld Heat Treatment	Solution annealing followed by water quenching ^[3]

EN 10340–2007

Requirement	Value
Preheat	20–100 °C ^[4]
Interpass Temperature	≤ 250 °C



Requirement	Value
Post-weld Heat Treatment	Solution annealing and water quenching ^[5]

Notes

EN 10283 · Edition 2019

^[1] Preheat: Preheat depends on casting geometry, thickness and climatic conditions.

^[2] Post-weld Heat Treatment: minor welds; Air quenching may be agreed for very small, thin castings according to corrosion conditions. With low preheat and interpass temperatures (≤ 150 °C), post-weld heat treatment may be suppressed by agreement.

^[3] Post-weld Heat Treatment: major welds; Air quenching may be agreed for very small, thin castings according to corrosion conditions.

EN 10340 · Edition 2007

^[4] Preheat: Preheat depends on casting geometry, thickness and climatic conditions.

^[5] Post-weld Heat Treatment: For minor welds, special arrangements may be agreed according to corrosion conditions; production welds are generally major when cavity depth exceeds 40% of wall thickness. With low preheat and interpass temperatures (≤ 150 °C), post-weld heat treatment may be suppressed by agreement. Air quenching may be agreed for very small, thin castings according to corrosion conditions. Special arrangements may be agreed according to corrosion conditions.

Applications

Typical applications for this corrosion-resistant steel casting family include components exposed to corrosive environments in general engineering service.

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Casting Quality Industrial

As a professional manufacturer in China, We Casting Quality focus on Metal Parts OEM industry, and provide solutions and services in Metal Casting field as following:

Sand Casting

Investment Casting, Lost Wax process

Shell Casting

Lost Form Casting

Permanent Mold Casting

CNC Machining

CAD Design

Tools/Mold Design

Material Supplied

Cast Iron Castings (Grey Iron, Malleable Iron, Ductile Iron)

Carbon Steel and Alloy Steel Castings

Stainless Steel and Duplex Stainless Steel Castings

Aluminum Castings

Bronze and Brass Castings

Titanium and Cobalt Alloy Castings

What We Can Do

Design Ability

Our engineers will help you to improve the designs based on casting technology, then The simulation software will be processed to verify the casting pouring system. Pro/E, Solidworks, AutoCAD and ProCast are available in Casting Quality Industrial.

Saving Cost

Some manufacture processes may lead high cost. We will analyses the designs and advise the suitable methods to our customers. The best solution will be adopted.

Quality Control

From the raw material selecting to bulk production processing, all procedures will follow PPAP program if necessary. The certificates will be provided including chemistry, hardness, mechanical property or NDT testing.

Production Capacity

The max iron/steel castings can reach 30tons in weight, meanwhile the minus casting is around 1gram only.

We also have prototyping and 3D scanning ability for sample plan.

Logistic Service

The products will be delivered directly to customer's workshop, which will save plenty of work for clients.

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