



G18NiMoCr3-6 (EN 1.6759) Low-Alloy Steel Casting Material

Introduction

G18NiMoCr3-6 (EN 1.6759) is a low-alloy steel casting grade specified in EN 10340. The standard covers steel castings for structural uses 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 10340	Steel castings for structural uses	2007	G18NiMoCr3-6	—

Physical Properties

N/A

Chemical Composition

Element	EN 10340 Edition 2007 · wt.% Cast analysis
C	0.17–0.22
Si	≤ 0.60
Mn	0.80–1.20
P	≤ 0.020
S	≤ 0.015
Cr	0.40–0.90
Ni	0.60–1.00
Mo	0.40–0.70
Cu	≤ 0.30
V	≤ 0.05



Heat Treatment

EN 10340–2007 · +QT1

Step	Operation	Temperature	Cooling
1	: quenching	900–980 °C	liquid
2	: tempering	580–620 °C	—

EN 10340–2007 · +QT2

Step	Operation	Temperature	Cooling
1	: quenching	900–980 °C	liquid
2	: tempering	590–630 °C	—

Mechanical Properties

Conditions are not identical. Compare each stated condition and applicability separately.

Property	EN 10340 Edition 2007 +QT1 ^[1]	EN 10340 Edition 2007 +QT2 ^[2]
Yield Strength (Rp0.2)	$\geq 700 \text{ MPa}^{[3]}$	$\geq 630 \text{ MPa}^{[4]}$
Tensile Strength	830–980 MPa ^[3]	780–930 MPa ^[4]
Elongation	$\geq 12 \%^{[3]}$	$\geq 12 \%^{[4]}$
Impact Energy	$\geq 27 \text{ J}^{[5]}$	$\geq 27 \text{ J}^{[6]}$

Notes

EN 10340 · Edition 2007

^[1] All properties in this column; +QT1: wall thickness $\leq 80 \text{ mm}$; Test block of relevant thickness; maximum thickness 150 mm; Yield and tensile strength also apply to the casting up to the maximum relevant wall thickness.

^[2] All properties in this column; +QT2: wall thickness $\leq 150 \text{ mm}$; Test block of relevant thickness; maximum thickness 150 mm; Yield and tensile strength also apply to the casting up to the maximum relevant wall thickness.

^[3] Yield Strength (Rp0.2)/Tensile Strength/Elongation; +QT1: Room temperature

^[4] Yield Strength (Rp0.2)/Tensile Strength/Elongation; +QT2: Room temperature

^[5] Impact Energy; +QT1: Test at -40 °C

^[6] Impact Energy; +QT2: Test at -40 °C

Welding Conditions

EN 10340–2007

Requirement	Value
Preheat	20–200 °C ^[1]



Requirement	Value
Interpass Temperature	$\leq 350\text{ }^{\circ}\text{C}$
Post-weld Heat Treatment	Post-weld temperature 20–50 °C below the base-material tempering temperature

Notes

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

Applications

Typical applications for this structural steel casting family include components for buildings, bridges and other civil engineering works.

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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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