ISO 185/JL/275 Grey Cast Iron Casting Material

Introduction

ISO 185/JL/275 is a grey cast iron grade. Typical family applications include machine-tool bases, gearbox cases, bearing housings, pump bodies, compressor bodies and stationary frames.

Manufacturing Process

Sand Casting
Shell Molding Casting
Lost Foam Casting

Equivalent Materials

Standard	Material Grade
AS 1830	275
ASTM A48M	275
SAE J431	G13H19
SAE J431	G12H21
GB/T 9439	HT275

Reference Standards

Standard	Standard Title	Edition	Specification	Identifier
ISO 185	Grey cast irons — Classification	2020	ISO 185/JL/275	—

Physical Properties

N/A

Chemical Composition

No specified chemical composition limits in ISO 185

Heat Treatment

ISO 185–2020

Heat treatment is subject to agreement. Castings not ordered with heat treatment specified shall not be heat-treated unless agreed by the purchaser before shipment (10.4).. Only if ordered with heat treatment specified or subsequently agreed by purchaser before shipment; no temperature/cycle invented.; If castings are heat-treated, representative samples shall be heat-treated in the same way.

Mechanical Properties

Core Mechanical Properties

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

ISO 185 — 2020 · Table 1 — Normative

Property	Cast-on samples	Separately cast or side-by-side cast samples
Tensile Strength	>= 230 MPa[1] >= 210 MPa[2] >= 190 MPa[3] >= 180 MPa[4]	275–375 MPa[5] 275–375 MPa[1] 275–375 MPa[2] 275–375 MPa[3] 275–375 MPa[4]

Cast-on samples: Cast-on sample, type and representative wall thickness agreed with purchaser; Mandatory Table 1 cast-on sample minimum; sample type, size, position and relevant wall thickness agreed. Source shared boundaries retained; no exclusive boundary inferred.

Separately cast or side-by-side cast samples: Separately cast or side-by-side cast sample; grade relates to 30 mm as-cast sample; Table 1 lower/upper headings are >= and <=, retained verbatim. Shared exact boundaries are not reassigned. Sand moulds or moulds with comparable thermal behaviour; other methods require agreement.

ISO 185 — 2020 · Table A.1 — Informative

Property	Informative 30 mm sample data
Tensile Strength	275–375 MPa[6]
Compressive Strength	900 MPa[7]
Shear Strength	320 MPa[7]

Separately cast test piece with 30 mm as-cast diameter; Informative reference value; not an acceptance requirement

ISO 185 — 2020 · Table C.1 — Informative

Property	Informative casting tensile guidance
Tensile Strength	>= 250 MPa[5] >= 215 MPa[1] >= 190 MPa[2] >= 180 MPa[3] >= 170 MPa[4]

Casting; anticipated value, not a guaranteed test-piece acceptance limit; Informative Annex C; sample-cut location and any acceptance requirement must be separately agreed.; Informative reference value; not an acceptance requirement

Additional Mechanical Properties

Other Mechanical Properties

ISO 185 — 2020 · Table A.1 — Informative

Property	Informative 30 mm sample data
Torsional Strength	320 MPa[7]

Separately cast test piece with 30 mm as-cast diameter; Informative reference value; not an acceptance requirement

Notes

ISO 185 · Edition 2020

[1] Tensile Strength: wall thickness <= 40 mm

[2] Tensile Strength: wall thickness <= 80 mm

[3] Tensile Strength: wall thickness <= 150 mm

[4] Tensile Strength: wall thickness <= 300 mm

[5] Tensile Strength: wall thickness <= 20 mm

[6] Tensile Strength: Informative reference range, separately preserved from normative

[7] Compressive Strength/Shear Strength/Torsional Strength: Informative; reference values only, not acceptance limits. Proof strength is 0.1 percent, not Rp0.2.

Welding Conditions

N/A

Applications

For grey cast iron ISO 185 JL/275, typical cast components in this material family include machine-tool bases, gearbox cases, bearing housings, pump bodies, compressor bodies and stationary frames. Typical settings include industrial and agricultural machinery, equipment manufacture and maintenance replacement. Component duty and casting section govern the choice of grade.

CASTING QUALITY

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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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