ISO1083/JS/400-18-LT Ductile Cast Iron Casting Material

Introduction

ISO1083/JS/400-18-LT is an ISO 1083 ductile iron for castings. Its graphite is mainly spheroidal, in forms V and VI. The wider ductile-iron family is used for pump casings and machinery housings. Impact properties apply when testing is specified at order acceptance.

Manufacturing Process

Sand Casting
Shell Molding Casting
Lost Foam Casting

Equivalent Materials

Standard	Material Grade
EN 1563	EN-GJS-400-18-LT
GB/T 1348	QT400-18L

Approximate materials; not guaranteed interchangeable.

Reference Standards

Standard	Standard Title	Edition	Specification
ISO 1083	Spheroidal graphite cast irons — Classification	2018	ISO1083/JS/400-18-LT

Physical Properties

Not Available

Chemical Composition

Not Available

Heat Treatment

ISO 1083–2018

Not Available

Mechanical Properties

Primary Mechanical Properties

ISO 1083 — 2018

Property	t <= 30 mm	30 < t <= 60 mm	60 < t <= 200 mm
Yield Strength (Rp0.2)	>= 240 MPa	>= 230 MPa	>= 220 MPa
Tensile Strength	>= 400 MPa	>= 380 MPa	>= 360 MPa
Elongation	>= 18 %	>= 15 %	>= 12 %

Separately cast, cast-on or side-by-side cast samples

Values apply to sand moulds or moulds of comparable thermal behaviour

alternative processes are subject to amendments agreed in the order.

Elongation: Elongation values determined from L0 = 5 d

Elongation: other gauge lengths see 9.1 and Annex B.

Yield Strength (Rp0.2) [60 < t <= 200 mm]; Tensile Strength [60 < t <= 200 mm]; Elongation [60 < t <= 200 mm]: wall thickness: 60 < t <=200 mm

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Informative

Property	t <= 30 mm	30 < t <= 60 mm	60 < t <= 200 mm
Yield Strength (Rp0.2)	>= 240 MPa	>= 230 MPa	>= 220 MPa
Tensile Strength	>= 390 MPa	>= 370 MPa	>= 340 MPa
Elongation	>= 15 %	>= 12 %	>= 10 %

test pieces machined from samples cut from castings

Informative reference value

not an acceptance requirement

Elongation: For elongation results, the reference gauge length is L0 = 5 d.

Additional Mechanical Properties

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Low-Temperature Properties

Condition: mean of three: -20 ± 2 °C

Property	t <= 30 mm	30 < t <= 60 mm	60 < t <= 200 mm
Impact Energy	>= 12 J	>= 12 J	>= 10 J

V-notched

machined from cast samples

Mean of three

Values apply to sand moulds or moulds of comparable thermal behaviour

alternative processes are subject to amendments agreed in the order.

Impact energy is determined only if specified by the purchaser by acceptance of the order.

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Low-Temperature Properties

Condition: individual minimum: -20 ± 2 °C

Property	t <= 30 mm	30 < t <= 60 mm	60 < t <= 200 mm
Impact Energy	>= 9 J	>= 9 J	>= 7 J

V-notched

machined from cast samples

Individual minimum

Values apply to sand moulds or moulds of comparable thermal behaviour

alternative processes are subject to amendments agreed in the order.

Impact energy is determined only if specified by the purchaser by acceptance of the order.

Welding Conditions

Not Available

Applications

Ductile iron ISO1083/JS/400-18-LT belongs to the spheroidal graphite iron casting family. In this casting family, components include pump and valve bodies, bearing housings, cover plates and parts for power transmission. These types of components occur in agricultural machinery, construction equipment and industrial fluid-handling systems.

ISO 1083 notes that this grade can be suitable for some pressure-vessel applications; the relevant component requirements still apply.

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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