



SPHEROIDAL GRAPHITE CAST IRON 420/12

(BS EN 1563:1997)

Spheroidal Graphite Iron, also known as Ductile Cast Iron, is a type of cast iron that has been treated while molten with an element such as Magnesium or Cerium to induce the formation of free Graphite as nodules or spherulites. The rounded shape of the nodules creates less stress points than the flat graphite flakes found in Grey Iron, this inhibits the creation of cracks and provides enhanced ductility. This nodular graphite structure inhibits the creation of linear cracks hence the ability to withstand distortion. In addition, Ductile Iron provides a unique combination of strength, wear resistance, fatigue resistance, and toughness. Products cast using ductile iron include valves, impellers, winch drums, separator body liners, etc.

Chemical Composition

A typical chemical analysis of this material:

Element		%
Carbon	C	3.2 - 3.6%
Silicon	Si	2.2 - 2.8%
Maganese	Mn	0.1 - 0.5%
Magnesium	Mg	0.03 - 0.05%
Phosphorus	P	0.005 - 0.04%
Sulphur	S	0.005 - 0.02%
Copper	Cu	0.40%
Iron	Fe	balance

Typical Mechanical Properties

Tensile Strength	420 MPa min.
Yield Strength	270 Mps min.
Elongation	12 % min.
Hardness	212 min

Comparative Specifications

Material	Country/Standards
5.3106	European Union / EN
EN-GJS-400-15	European Union / EN
EN-JS1030	European Union / EN
JS 350-22-LT/S	International / ISO
FCAD 1000-5	Japan / JIS
QT450-10	China
SA-395 60-40-18	USA / ASME

To discuss your requirements, call a member of NovaCast's team on **+44 (0) 1225 707466**, or email **sales@novacast.co.uk**

All information in our data sheets and website is indicative only and is not intended to be a substitute for the full specification from which it is extracted. It is intended to provide typical values to allow comparison between metal alloy options rather than a definitive statement of mechanical performance or suitability for a particular application as these will vary with temperature, product type and product application. It is presented apart from contractual obligations and does not constitute any guarantee of properties or of processing or application possibilities in individual cases. Our warranties and liabilities are stated exclusively in our terms of trading.

WWW.NOVACAST.CO.UK

A Single Source Solution for Precision Cast Components