

RISHI[®]

Ductile Iron Manhole Cover

Ductile iron is a ferrous alloy with a carbon content higher than 2% approximately, either loose as graphite or as iron carbide Fe₃C (cementite). The former is called Grey Iron and the latter White Iron. While grey iron is to be preferred to make manhole covers and gratings, White iron is Very fragile and hard, so it is not suitable to make utensils.

Grey cast iron is made up of thousands of plates which interrupt the continuity of the metal matrix and consequently jeopardise its mechanical resistance and make it subject to possible cracking or braking.

Ductile iron is made up of spheroids achieved by introducing a suitable quantity of magnesium into the bath before the casting. This gives the product a high breaking load as well as remarkable elasticity.

Ductile iron is typically thrice as strong as many grey cast irons, and nearly as strong as steel

A Comparison between Grey cast iron and ductile iron shows that :

- ductile iron has a higher breakage safety coefficient, since it follows any deformation due to loads without breaking (unlike Grey cast iron), then returning to the original condition after the stress.
- to manufacture a product in Grey cast iron the same load class as a ductile iron product, you need more mass. So the product will be heavier with higher shipment and handling costs.

Ductile iron is therefore a very valuable building material: it has as many benefits as Grey cast iron but it does not have some of its defects. Its mechanical characteristics are similar to those of good-quality steel.



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