



Ductile Iron Benefits

- ✓ 25 YEAR WARRANTY AVAILABLE
- ✓ QUICKLY REPLACING CAST STEEL IN STRUCTURAL APPLICATIONS
- ✓ STRONGER THAN CAST IRON AND CAST ALUMINUM
- ✓ HIGH IMPACT STRENGTH
- ✓ DOES NOT BECOME BRITTLE UNLIKE ALUMINUM
- ✓ EXCELLENT DAMPENING QUALITIES - PERFECT FOR BRIDGE APPLICATIONS
- ✓ SERVICE LIFE IS 3 TIMES AS LONG AS THAT OF CAST ALUMINUM

WHAT IS DUCTILE IRON?

Ductile iron, also called ductile cast iron or nodular cast iron, is a type of cast iron invented in 1942. Ductile iron is composed of spherical graphite instead of flakes which appear in grey iron (shown to the right) and is made by treating molten iron with magnesium. While most varieties of cast iron are brittle, ductile iron is much more ductile, as the name implies. This is achieved through complex metallurgy and foundry process control. Ductile Iron has been successful because it offers a combination of versatility and properties not available in any of its rivals. Its castability, machinability, dampening properties, and economy of production are almost equal to those for which Gray Iron is famous, but its mechanical properties - strength, wear resistance, fatigue strength, toughness and ductility are competitive with many cast, forged and fabricated steel components.

The American Association of State Highway and Transportation Officials (AASHTO) is a nationally recognized standards organization for the analysis of lighting structures. They acknowledge the bending strength of ductile iron to be 3 to 4 times that of cast aluminum and grey iron. If your application requires or may require some time in the future, banner arms, signage, flags, or other significant load requirements ductile iron will probably be the only material that will meet the AASHTO wind loading requirements. Please be sure to require the manufacturer of your chosen light standard to supply calculations for your specific application.

Pictured Top: In ductile iron, spheres of graphite strengthen the material and reduce cracking.

Pictured Bottom: The micrograph illustrates the flake composition of grey iron. The first image shows the micrographic of the nodular graphite in ductile iron.

