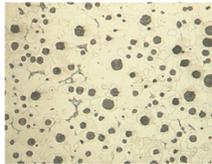


## ASTM A536 Ductile Iron Grades

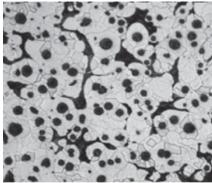
Dura-Bar ductile iron is a cost-saving alternative to low-medium carbon steels and has similar strengths with excellent free machining properties. The nodular graphite provides the same free machining benefits as lead, without creating the machining and waste disposal problems. Ductile grades will conform to ASTM A536, with the primary difference being the high nodule count and fine grain size inherent to the Dura-Bar continuous casting process. The different grades are produced by controlling the matrix structure around the graphite nodules.

60-40-18  
(heat-treated  
65-45-12  
subcritical annealed)  
143 – 187 BHN



60-40-18 contains nodular graphite in a matrix of all ferrite and is the softest ductile iron grade. There is very little difference in machinability between this grade and 65-45-12, and it is rarely used because of the added cost of heat-treating.

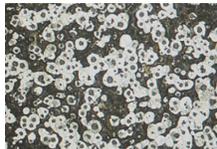
65-45-12  
131 – 217 BHN



65-45-12 has a ferritic matrix structure with small amounts of pearlite and is very similar to low-carbon steel grades. In bar form, it is an excellent replacement for low-carbon leaded steels as well as rephosphorized and resulfurized free machining grades including:

1010, 1018, 1020, 12L14, 1212, 1215

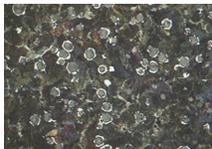
80-55-06  
187 – 255 BHN



80-55-06 contains approximately 50% ferrite/50% pearlite, although the composition can vary depending on the producer. This grade is slightly less machinable than 65-45-12 and is used when better wear resistance and higher strengths are required. It is a good replacement for medium carbon steels including:

1040, 1060, 1045, 1141, 1144

100-70-03  
255– 302 BHN



100-70-03 is highly pearlitic with only small amounts of ferrite. This grade has the best wear resistance of the as-cast ductile irons and is used in applications requiring good strength and high wear resistance. It is also the least machinable grade and normally used as an alternative to heat-treated steels requiring hardness values below 302BHN.

Dura-Bar standard grades – color code identification system

- Brown = 60-40-18
- Yellow = 65-45-12
- Blue = 80-55-06
- Red = 100-70-03