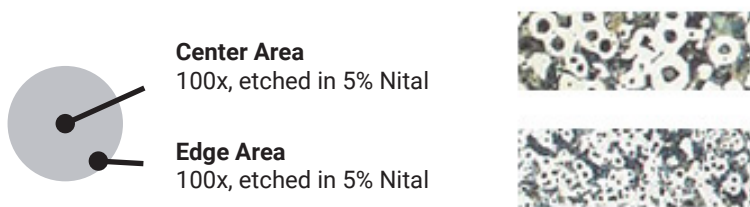


## 80-55-06X Ductile Iron

### General Description:

80-55-06X is a grade of ductile iron available in larger rounds and rectangles. This grade tends to contain more pearlite making the material a good fit in applications where considerations to wear resistance and surface finish are required. The additional pearlite also makes this material responsive to heat treating, like through-hardening and surface hardening.

### Microstructure:



The microstructure consists of Type I & Type II nodular graphite as defined in ASTM A247. The matrix is pearlite and ferrite. The edge or rim has a higher nodule count and a mixture of ferrite and pearlite. Chill carbides will be less than 5% in any field at 100x and will be well dispersed.

### Heat Treat Response:

Dura-Bar 80-55-06X can be heat treated by conventional methods. Hardening can be accomplished by heating and quenching the material from 1600° F resulting in Rockwell C hardness up to 50 HRC. Induction and flame hardening can be performed but may require an additional pre-heat treatment to accomplish the desired hardness and microstructure.

### Chemical Composition:

Element	Percentage
Carbon*	3.40 - 3.85%
Silicon*	2.30 - 3.10%
Manganese	0.10 - 0.40%
Sulfur	0.02% Max
Phosphorus	0.08% Max

\*Carbon and silicon targets are specified for each bar size in order to maintain mechanical properties. Magnesium is added as an inoculant to produce nodular graphite.

## Mechanical Properties:

Hardness properties listed are minimum and maximum across the bar. For rectangles and squares the hardness properties will depend on minimum and maximum section thickness and will be supplied on request. This specification conforms to ASTM A536 grade 80-55-06.

Size Range		BHN	
Inches	mm	Min	Max
01.000 – 28.000	25 – 711	187	255

Tensile strength of 80-55-06X is determined from a longitudinal test specimen taken from mid-radius of the as-cast bar.

Mechanical Properties	
Tensile strength psi (min)	80,000
Yield strength psi (min)	55,000
Elongation (min)	6%

## Typical Applications:

### Automotive:

Gears

### Fluid Power:

Cylinder blocks, End Caps, Gerotors, Glands, Manifolds, Pistons, Rotors, Valves

### Machinery:

Barrell Rollers, Bushings, Chain Sheave Rollers, Chuck Bodies, Die Blocks, Flywheels, Gear Racks, Gears, Housings, Pile Drivers, Press Rams, Pulleys, Rams, Rotary Tables, Tie Rod Nuts

### Miscellaneous:

Core Boxes, Dies, Disamatic Pouring Rails, Grinding Rolls, Mill Liners, Pattern Plates, Plunger Pin

### Power Transmission:

Gears, Pulleys

### Pump and Compressor:

Gears, Housings, Liners, Pistons, Rotary Screws, Rotors

### Steel Mill:

Guide Rolls, Pinch Rolls, Runout Table Rolls

### Transportation:

Gears, Motorcycle Disk Brake, Pulleys, Rail Spacers

Visit [www.dura-bar.com/applications/index.cfm](http://www.dura-bar.com/applications/index.cfm) to see successful applications being made from Dura-Bar, including their design and cost benefits.

Contact us today to discuss your application and how you can start saving with Dura-Bar..