

## Dura-Bar 65-45-12 HRDS Continuously Cast Ductile Iron Bar Stock ASTM A536

Category : Metal , Ferrous Metal , Cast Iron , Alloy Cast Iron , Ductile Iron , Ferritic

### Material Notes:

Dura-Bar 4512 HRDS is a high-silicon ductile iron intended for use at elevated temperatures or when a part is subjected to thermal cycling, such as permanent mold applications. The ferritic structure will remain stable so that no significant transformation takes place, thereby minimizing stresses that lead to cracks and distortion of the finished part. The microstructure will contain Type I and II nodules as defined in ASTM A247. The matrix will be predominantly ferrite with some pearlite. Chill carbides will be less than 5% in any field at 100x and will be well dispersed. 4512 HRDS is not intended for hardening. The matrix structure may be softened slightly by heating to 1400F (760C) and furnace cooling to 400F (205C). 4512 HRDS is most commonly used in high temperature applications where resistance to growth and oxidation is required. Composition: Typical chemical composition and ranges, actual values depend on cross section size. Information provided by Dura-Bar.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Dura-Bar-65-45-12-HRDS-Continuously-Cast-Ductile-Iron-Bar-Stock-ASTM-A536.php](http://www.lookpolymers.com/polymer_Dura-Bar-65-45-12-HRDS-Continuously-Cast-Ductile-Iron-Bar-Stock-ASTM-A536.php)

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	167 - 229	167 - 229	Depends on cast section size and location of test
Tensile Strength, Ultimate	448 MPa	65000 psi	
	37.9 MPa	5500 psi	
	@Temperature 788 °C	@Temperature 1450 °F	
	68.9 MPa	10000 psi	
	@Temperature 704 °C	@Temperature 1300 °F	
	186 MPa	27000 psi	
	@Temperature 593 °C	@Temperature 1100 °F	
	359 MPa	52000 psi	
Tensile Strength, Yield	@Temperature 482 °C	@Temperature 900 °F	
	310 MPa	45000 psi	
	31.0 MPa	4500 psi	
	@Temperature 788 °C	@Temperature 1450 °F	
	51.7 MPa	7500 psi	
	@Temperature 704 °C	@Temperature 1300 °F	
	159 MPa	23000 psi	
	@Temperature 593 °C	@Temperature 1100 °F	
	324 MPa	47000 psi	

Mechanical Properties	Metric @ Temperature 482 °C	English @ Temperature 900 °F	Comments
Elongation at Yield	12 %	12 %	

Component Elements Properties	Metric	English	Comments
Carbon, C	3.45 - 3.75 %	3.45 - 3.75 %	
Manganese, Mn	0.15 - 0.35 %	0.15 - 0.35 %	
Phosphorous, P	<= 0.050 %	<= 0.050 %	
Silicon, Si	3.45 - 3.75 %	3.45 - 3.75 %	
Sulfur, S	<= 0.02500 %	<= 0.02500 %	

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