

ArcelorMittal HSLA 460 High strength low alloy steel for cold forming, Hot Rolled

Category : Metal , Ferrous Metal , Alloy Steel

Material Notes:

Available in the following: S460MCDescription: Steels in the HSLA (High Strength Low Alloy) range are hardened by a combination of precipitation and grain size refining, resulting in high strength with low alloy content. This enhances weldability and choice of coatings, since these steels exhibit neither weld zone softening nor grain coarsening. These grades are particularly suitable for structural components such as suspension systems and chassis and reinforcement parts. For their respective yield strength levels, these steels all exhibit excellent cold forming and low-temperature brittle fracture strength (starting at grade 320). The entire range of HSLA steels offers good fatigue strength (suspension arm, shock tower) and impact strength (longitudinal beams, cross members, reinforcements, etc.). Because of their mechanical strength, the weight of reinforcement and structural components can be reduced. The HSLA range of products is available in hot and cold rolled grades. The various grades are identified by their yield strength. Hot rolled HSLA grades can be given a Class 1 hot-dip galvanized coating according to the EN 36503 standard (post-galvanizing). Applications: The steels in the HSLA range are suitable for structural parts such as suspension systems, reinforcements, cross members, longitudinal beams, chassis components, etc. The mechanical properties of hot rolled HSLA steels and their excellent cold forming performance and low-temperature brittle fracture resistance support cost-effective solutions for many parts and sub-assemblies for which weight, thickness and size reduction are sought, such as:chassis components;wheels;slide rails;cross members.Information provided by ArcelorMittal

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http://www.lookpolymers.com/polymer_ArcelorMittal-HSLA-460-High-strength-low-alloy-steel-for-cold-forming-Hot-Rolled.php

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	550 - 650 MPa	79800 - 94300 psi	
Tensile Strength, Yield	460 - 550 MPa	66700 - 79800 psi	
Elongation at Break	>= 17 %	>= 17 %	L₀=80 mm, th<3 mm
	>= 21 %	>= 21 %	L₀=5.65v ₀ mm, th<3 mm
Fatigue Strength	<= 490 MPa	<= 71100 psi	
	@# of Cycles 2.00e+6	@# of Cycles 2.00e+6	
	<= 490 MPa	<= 71100 psi	
	@# of Cycles 1.00e+7	@# of Cycles 1.00e+7	
	<= 530 MPa	<= 76900 psi	
	@# of Cycles 100000	@# of Cycles 100000	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.12 %	<= 0.12 %	

Iron, Fe Component Elements Properties	$\geq 97.88\%$ Metric	$\geq 97.88\%$ English	as balance Comments
Manganese, Mn	$\leq 1.6\%$	$\leq 1.6\%$	
Silicon, Si	$\leq 0.40\%$	$\leq 0.40\%$	

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China