GRAVITY CAST PVT. LTD.
GRAVITY GROUP OF COMPANIES

Material - ASTM A1011 HSLAS Grade 45 [310] Class 1

Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability

Group - Ferrous Mild Steel Alloys

Sub Group - ASTM A1011 HSLAS Grade 45 [310] Class 1 Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability

Application - Intended for Valve, Pump, General Engineering, Automotive and other Industries

Grade Belongs to the Industry - Sheet and Strip

Chemical Composition		
Carbon	C %	0.220 max.
Manganese	Mn %	1.350 max.
Phosphorus	P %	0.040 max.
Sulphur	S %	0.040 max.
Copper	Cu %	0.200 max.
Nickel	Ni %	0.200 max.
Chromium	Cr %	0.150 max.
Molybdenum	Mo %	0.060 max.
Vanadium	V %	0.010 min.
Niobium	Nb %	0.005 min.
Cr + Cu + Mo + Ni	Cr% + Cu% + Mo% + Ni%	0.500 max.
Iron	Fe %	Balance
-	-	-
-	-	-
-	-	-

Heat Treatment
As-Raw or Annealing or Normalizing or Normalizing & Tempering or Quenching & Tempering

Mechanical Properties	
Tensile Strength in Mpa	410 min.
Yield Strength in Mpa	310 min.
Elongation in %	25 min.
Reduction of Area in %	-
Hardness in HB	-
Impact in Joule	-

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Cross Reference Table

Material	Standard	Country	Grade Belong to the Industry
A 591 A607-HSLAS Grade 45 Class 1	ASTM	USA	Steel and Sheet
A 1008 HSLAS Grade 45 [310] Class 1	ASTM	USA	Steel and Sheet
A 1018 HSLAS Grade 45 [310] Class 1	ASTM	USA	Steel
A 1011 HSLAS Grade 50 [340] Class 1	ASTM	USA	Sheet and Strip
SA-1011 HSLAS Grade 50 [340] Class 1	ASME	USA	Sheet and Strip
SA-1008 HSLAS Grade 45 [310] Class 1	ASME	USA	Steel and Sheet
SA-1011 HSLAS Grade 45 [310] Class 1	ASME	USA	Sheet and Strip

Further any inquiry to discuss with Gravity Cast Pvt. Ltd. – Gravity Group of Companies team member Call on +918469160029, or email marketing@gravitycastindia.com

All information in our data sheets and website is indicative only and is not intended to be a substitute for the full specification from which it is extracted. It is intended to provide typical values to allow comparison between metal alloy option rather than a definitive statement of mechanical performance or suitability for a particular application as these will vary with temperature, product type and product application. It is presented apart from contractual obligations and does not constitute any guarantee of properties or of processing or application possibilities in individual cases. Our warranties and liabilities are stated exclusively in our terms of business.