GRAVITY CAST PVT. LTD.
GRAVITY GROUP OF COMPANIES

Material - ASTM A336 Grade F21 Class 1

Standard Specification for Alloy Steel Forgings for Pressure and High-Temperature Parts

Group - Ferrous Mild Steel Alloys

Sub Group - ASTM A336 Grade F21 Class 1 Steel Forgings for Pressure and High-Temperature Parts

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

Grade Belongs to the Industry - Forging

Chemical Composition		
Carbon	C %	0.050 - 0.150
Manganese	Mn %	0.300 - 0.600
Phosphorus	P %	0.025 max.
Sulphur	S %	0.025 max.
Silicon	Si %	0.500 max.
Chromium	Cr %	2.700 - 3.300
Molybdenum	Mo %	0.800 - 1.060
Iron	Fe %	Balance
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

Heat Treatment
As-Raw or Normalizing or Quenching & Tempering

Mechanical Properties	
Tensile Strength in Mpa	415 - 585
Yield Strength in Mpa	205 min.
Elongation in %	20 min.
Reduction of Area in %	45 min.
Hardness in HB	-
Impact in Joule	-

www.gravitycastindia.com

Cross Reference Table			
Material	**Standard**	**Country**	**Grade Belong to the Industry**
K31545	UNS	USA	Steel
A 182 F 21	ASTM	USA	Steel and Pipe
A 989 K31545	ASTM	USA	Steel
A 369 Grade FP21	ASTM	USA	Steel and Forging
A 213 Grade T21	ASTM	USA	Tubing
A 335 Grade P21	ASTM	USA	Steel and Pipe
SA-336 Grade F21 Class 1	ASME	USA	Forging

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.