GRAVITY CAST PVT. LTD.
GRAVITY GROUP OF COMPANIES

Material - ASTM A182 FR

Standard Specification for Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service

Group - Ferrous Mild Steel Alloys

Sub Group - ASTM A182 FR Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service

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

Grade Belongs to the Industry - Pipe, Bars and Forging

Chemical Composition		
Carbon	C %	0.200 max.
Manganese	Mn %	0.400 - 1.060
Phosphorus	P %	0.045 max.
Sulphur	S %	0.050 max.
Nickel	Ni %	1.600 - 2.240
Copper	Cu %	0.750 - 1.250
Iron	Fe %	Balance
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

Heat Treatment
Annealing or Normalizing & Tempering

Mechanical Properties	
Tensile Strength in Mpa	435 min.
Yield Strength in Mpa	315 min.
Elongation in %	25 min.
Reduction of Area in %	38 min
Hardness in HB	197 max.
Impact in Joule	-

Cross Reference Table			
Material	**Standard**	**Country**	**Grade Belong to the Industry**
K22035	UNS	USA	Steel
SA-420 Grade WPL9	ASME	USA	Steel and Pipe
A 334 Grade 9	ASTM	USA	Steel
A 714 Grade V	ASTM	USA	Steel
A 333 Grade 9	ASTM	USA	Steel
A 234 Grade WPR	ASTM	USA	Steel
A 420 Grade WPL 9	ASTM	USA	Steel and Pipe

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.