



**GRAVITY CAST PVT. LTD.**  
GRAVITY GROUP OF COMPANIES

## Material - ASME SA-182 Grade F 11 Class 1

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

Group - Ferrous Mild Steel Alloys

Sub Group - ASME SA-182 Grade F 11 Class 1 Forged or Rolled Alloy and Stainless 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 and Forging

Chemical Composition			Heat Treatment	
Carbon	C %	0.050 - 0.150	Annealing or Normalising & Tempering	
Manganese	Mn %	0.300 - 0.600		
Phosphorus	P %	0.030 Max.		
Sulphur	S %	0.030 Max.		
Silicon	Si %	0.500 - 1.000		
Chromium	Cr %	1.000 - 1.500		
Molybdenum	Mo %	0.440 - 0.650		
Iron	Fe %	Balance		
-	-	-	Mechanical Properties	
-	-	-	Tensile Strength in Mpa	415 min.
-	-	-	Yield Strength in Mpa	205 min.
-	-	-	Elongation in %	20 min.
-	-	-	Reduction of Area in %	45 min.
-	-	-	Hardness in BHN	121 - 174
-	-	-	Impact in Joule	-

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Cross Reference Table			
Material	Standard	Country	Grade Belong to the Industry
K11597	UNS	USA	Steel
A 250 Grade T11	ASTM	USA	Steel and Tubing
A 335 Grade P11	ASTM	USA	Steel and Pipe
A 213 Grade T11	ASTM	USA	Steel and Tubing
A 369 Grade FP11	ASTM	USA	Steel and Pipe
A 182 F 11	ASTM	USA	Steel and Pipe
A 335 Grade P12	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](mailto: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.

**ONE STOP SOLUTION FOR METAL PARTS**