



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

## Material - ASME SA-182 Grade F 12 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 12 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		
Manganese	Mn %	0.300 - 0.600		
Phosphorus	P %	0.045 max.		
Sulphur	S %	0.045 max.		
Silicon	Si %	0.500 max.		
Chromium	Cr %	0.800 - 1.250		
Molybdenum	Mo %	0.440 - 0.650		
Iron	Fe %	Balance		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
Mechanical Properties				
Tensile Strength in Mpa		415 min.		
Yield Strength in Mpa		220 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
K11562	UNS	USA	Steel
EN 10028-2 13CrMo4-5	DIN	Germany	Steel
17243 1.7335	DIN	Germany	Steel and Bars
A 213 Grade T12	ASTM	USA	Steel and Tubing
A 250 Grade T12	ASTM	USA	Steel and Tubing
A 335 Grade T12	ASTM	USA	Steel and Pipe
A 182 F 11	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)

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