



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

## Material - ASME SA-182 Grade F 22V

**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 22V 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 %	0.110 - 0.150	Annealing or Normalising or Quenching & Tempering	
Manganese	Mn %	0.300 - 0.600		
Phosphorus	P %	0.015 max.		
Sulphur	S %	0.010 max.		
Silicon	Si %	0.100 max.		
Nickel	Ni %	0.250 max.		
Chromium	Cr %	2.000 - 2.500		
Molybdenum	Mo %	0.900 - 1.100		
Niobium	Nb %	0.070 max.	Mechanical Properties	
Titanium	Ti %	0.030 max.	Tensile Strength in Mpa	585 - 780
Copper	Cu %	0.200 max.	Yield Strength in Mpa	415 min.
Vanadium	V %	0.250 - 0.350	Elongation in %	18 min.
Boron	B %	0.002 max.	Reduction of Area in %	45 min.
Calcium	Ca %	0.015 max.	Hardness in BHN	174 - 237
Iron	Fe %	Balance	Impact in Joule	-

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Cross Reference Table			
Material	Standard	Country	Grade Belong to the Industry
K31835	UNS	USA	Steel
A 542 Type D Class 1	ASTM	USA	Steel and Plates
541 Grade 22V	ASTM	USA	Steel and Forging
A 542 Type D Class 2	ASTM	USA	Steel and Plates
A 542 Type D Class 4a	ASTM	USA	Steel and Plates
A 542 Type D Class 4	ASTM	USA	Steel and Plates
A 182 F 22V	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**