High Alloy Steel ASTM A351 Gr. CF3M

Standard Specification for Castings, Austenitic, for Pressure-Containing Parts

MATERIAL DATASHEET

GROUP	SUB GROUP	INDUSTRY
Ferrous Stainless Steel Alloys	**ASTM A351 / 351M Castings**	**Investment Casting**

This low-carbon molybdenum-enhanced austenitic casting alloy combines the sensitization resistance of ultra-low carbon content with superior pitting and crevice corrosion resistance in chloride-bearing environments. The addition of 2–3% molybdenum significantly elevates its performance in aggressive chemical, pharmaceutical, and marine applications compared to standard CF3. Solution annealing ensures microstructural stability, making it a preferred grade for critical pressure-containing components demanding both corrosion resistance and long-term reliability.

CHEMICAL COMPOSITION

ELEMENT	SYMBOL	COMPOSITION
Carbon	C %	0.030 max.
Silicon	Si %	1.500 max.
Manganese	Mn %	1.500 max.
Phosphorus	P %	0.040 max.
Sulphur	S %	0.040 max.
Chromium	Cr %	17.000 - 21.000
Nickel	Ni %	9.000 - 13.000
Molybdenum	Mo %	2.000 - 3.000
Iron	Fe %	Balance

MECHANICAL PROPERTIES

PERFORMANCE SPECIFICATIONS

Tensile Strength	Minimum Value	**485** MPa
Yield Strength	Minimum Value	**205** MPa
Elongation	Minimum Value	**30** %

✓ HEAT TREATMENT
Solution Annealing

INDUSTRY APPLICATIONS

- **Offshore valves** 
- **Seawater pumps** 
- **Pharma reactors** 
- **Desalination systems** 

Tamboli Castings Limited
Bhavnagar, Gujarat, India

Phone: +91 278 2541000
Email: info@tambolicastingslimited.com