High Alloy Steel ASTM A351 Gr. CF8M

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 molybdenum-bearing austenitic stainless steel casting grade represents a significant upgrade over CF8, offering enhanced resistance to pitting, crevice corrosion, and reducing acids in harsh industrial environments. The 2–3% molybdenum addition makes it particularly well-suited for pump and valve components exposed to seawater, chlorides, and aggressive chemical media. Its robust mechanical properties combined with solution annealing heat treatment ensure dimensional accuracy and microstructural integrity for the most demanding pressure-containing casting applications.

CHEMICAL COMPOSITION

ELEMENT	SYMBOL	COMPOSITION
Carbon	C %	0.080 max.
Silicon	Si %	1.500 max.
Manganese	Mn %	1.500 max.
Phosphorus	P %	0.040 max.
Sulphur	S %	0.040 max.
Chromium	Cr %	18.000 - 21.000
Nickel	Ni %	9.000 - 12.000
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

- **Chemical reactors** 
- **Acid transfer systems** 
- **Offshore piping** 
- **Marine valves** 
- **Corrosive slurry pumps** 

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