



High Alloy Steel ASTM A351 Gr. CF8

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

MATERIAL DATASHEET

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

This classic austenitic chromium-nickel stainless steel casting grade delivers well-balanced mechanical properties and broad corrosion resistance across a wide range of industrial environments. With chromium content up to 21% and controlled nickel levels, it performs reliably in oxidizing acids, food-grade, and general engineering applications. Its solution-annealed microstructure provides excellent dimensional stability and weldability, making it one of the most widely used and versatile grades for pressure-containing cast components globally.



CHEMICAL COMPOSITION

ELEMENT	SYMBOL	COMPOSITION
Carbon	C %	0.080 max.
Silicon	Si %	2.000 max.
Manganese	Mn %	1.500 max.
Phosphorus	P %	0.040 max.
Sulphur	S %	0.040 max.
Chromium	Cr %	18.000 - 21.000
Nickel	Ni %	8.000 - 11.000
Molybdenum	Mo %	0.500 max.
Iron	Fe %	Balance



MECHANICAL PROPERTIES

PERFORMANCE SPECIFICATIONS

Tensile Strength **485**
Minimum Value MPa**Yield Strength** **205**
Minimum Value MPa**Elongation** **35**
Minimum Value %**HEAT TREATMENT**
Solution Annealing

INDUSTRY APPLICATIONS

Industrial valves**Pump casings****Petrochemical plants****Steam service****Piping**

DISCLAIMER: All information in this datasheet is indicative only and is not intended to be a substitute for the full specification. It provides typical values for comparison between metal alloy options rather than a definitive statement of mechanical performance. Values may vary with temperature, product type, and application. This data does not constitute any guarantee of properties.

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