



Material - ASTM A216 Gr. WCB

Standard Specification for Steel Castings, Carbon, Suitable for Fusion Welding, for High Temperature Service

MATERIAL DATASHEET

GROUP

Ferrous Mild Steel Alloys

SUB GROUP

ASTM A216 / A216M Steel 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 0.5 Max 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 %	0.300 max.
Silicon	Si %	0.600 max.
Manganese	Mn %	1.000 max.
Phosphorus	P %	0.035 max.
Sulphur	S %	0.035 max.
Chromium	Cr %	0.500 max.
Nickel	Ni %	0.500 max.
Molybdenum	Mo %	0.200 max.
Copper	Cu %	0.300 max.
Vanadium	V %	0.030 max.
Iron	Fe %	Balance



MECHANICAL PROPERTIES

PERFORMANCE SPECIFICATIONS

Tensile Strength 485 - 655
Minimum Value MPa

Yield Strength 250
Minimum Value MPa

Elongation 22
Minimum Value %

Reduction of Area 35
Minimum Value %



HEAT TREATMENT

Normalising & Tempering

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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