Super Duplex — ASTM A995 1B

Standard Specification for Castings, Austenitic-Ferritic (Duplex) Stainless Steel, for Pressure-Containing Parts

MATERIAL DATASHEET

GROUP	SUB GROUP	INDUSTRY
Ferrous Stainless Steel Alloys	**ASTM A995 / A995M**	**Investment Casting**

This austenitic-ferritic duplex stainless steel casting grade is specifically engineered for pressure-containing parts, combining high chromium, copper, and nitrogen content to deliver exceptional resistance to corrosion, erosion, and stress corrosion cracking under elevated pressure conditions. The copper addition enhances resistance to reducing acid environments, while nitrogen strengthens the alloy and improves pitting resistance. Solution annealing ensures optimal dual-phase microstructure, making it a reliable choice for demanding valve, pump, and pressure-critical industrial casting applications.

CHEMICAL COMPOSITION

ELEMENT	SYMBOL	COMPOSITION
Carbon	C %	0.040 max.
Silicon	Si %	1.000 max.
Manganese	Mn %	1.000 max.
Phosphorus	P %	0.040 max.
Sulphur	S %	0.040 max.
Chromium	Cr %	24.500 – 26.500
Nickel	Ni %	4.700 – 6.000
Molybdenum	Mo %	1.700 – 2.300
Copper	Cu %	2.700 – 3.300
Nitrogen	N %	0.100 – 0.250
Iron	Fe %	Balance

MECHANICAL PROPERTIES

PERFORMANCE SPECIFICATIONS

Tensile Strength	Minimum Value	**690** MPa
Yield Strength	Minimum Value	**485** MPa
Elongation	Minimum Value	**16** %

✓ HEAT TREATMENT
Solution Annealing

INDUSTRY APPLICATIONS

- **Offshore oil & gas**

- **Chemical process industries**

- **Seawater systems**

- **Marine engineering**

- **Pressure-containing pump**

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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