



Super Duplex — ASTM A890 3A

Standard Specification for Castings, Iron-Chromium-Nickel-Molybdenum Corrosion-Resistant, Duplex (Austenitic/Ferritic) for General Application

MATERIAL DATASHEET

GROUP
Ferrous Stainless Steel Alloys

SUB GROUP
ASTM A890 / A890M

INDUSTRY
Investment Casting

This iron-chromium-nickel-molybdenum duplex alloy delivers an outstanding balance of strength and corrosion resistance through its dual austenitic-ferritic microstructure. The elevated chromium content of up to 27% combined with nitrogen additions provides superior resistance to pitting, crevice corrosion, and stress corrosion cracking in aggressive environments. Its robust mechanical properties and solution annealed condition make it a trusted choice for valve, pump, and general engineering casting applications demanding long-term reliability.

CHEMICAL COMPOSITION

ELEMENT	SYMBOL	COMPOSITION
Carbon	C %	0.060 max.
Silicon	Si %	1.000 max.
Manganese	Mn %	1.000 max.
Phosphorus	P %	0.040 max.
Sulphur	S %	0.040 max.
Chromium	Cr %	24.000 – 27.000
Nickel	Ni %	4.000 – 6.000
Molybdenum	Mo %	1.750 – 2.500
Nitrogen	N %	0.150 – 0.250
Iron	Fe %	Balance

MECHANICAL PROPERTIES

PERFORMANCE SPECIFICATIONS

Tensile Strength Minimum Value	655 MPa
Yield Strength Minimum Value	450 MPa
Elongation Minimum Value	25 %

✓ **HEAT TREATMENT**
Solution Annealing

INDUSTRY APPLICATIONS

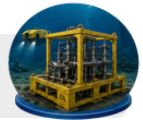
Offshore platforms



Seawater handling



Subsea equipment



Marine pumps



Desalination plants



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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