Super Duplex — ASTM A890 3A

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

MATERIAL DATASHEET

GROUP	SUB GROUP	INDUSTRY
Ferrous Stainless Steel Alloys	**ASTM A890 / A890M**	**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**

Tamboli Castings Limited
Bhavnagar, Gujarat, India

Phone: +91 278 2541000
Email: info@tambolicastingslimited.com