DUPLEX STAINLESS STEEL

2205 Duplex UNS S32205 / 1.4462 / F51

Duplex stainless steel

≥450 MPa	PREN 34	22 % Cr, 3 % Mo	EN 10204 3.1
0.2 % proof	Pitting resistance	Duplex	Every lot

GRADE AND STANDARDS

Item	Detail
Designations	2205 / UNS S32205 / S31803 / 1.4462 / F51 / X2CrNiMoN22-5-3
Standards	ASTM A240, A790, A182; EN 10088-2; NORSOK M-630
Delivery condition	Solution annealed, water quenched
Melt route	EAF + AOD + VD; controlled rolling to balance ferrite and austenite
Typical use	Chemical tankers, process piping, desalination, pulp digesters, structural sections
Certificate	EN 10204 3.1 with chemistry, PREN and ferrite content

CHEMICAL COMPOSITION (% BY MASS)

C	Cr	Ni	Mo	N	Mn	Si
≤0.030	22.0–23.0	4.5–6.5	3.0–3.5	0.14–0.20	≤2.00	≤1.00

MECHANICAL PROPERTIES

Condition	Tensile MPa	0.2 % proof MPa	Elongation %	Hardness
Solution annealed	≥620	≥450	≥25	≤30 HRC
At 100 C	≥550	≥380	≥20	—
Ferrite content	40–60 %	—	—	—

SUPPLY RANGE

Form	Size range	Condition
Hot rolled plate	Thickness 3–80 mm × width up to 2500 mm	Solution annealed
Cold rolled sheet	Thickness 0.5–3.0 mm	2B / BA
Round bar	Ø12–300 mm	Solution annealed
Seamless tube	OD 6–219 mm × wall 1–20 mm	Annealed, pickled

INSPECTION AND CERTIFICATION

- EN 10204 3.1 with chemistry, PREN and ferrite content
- Corrosion test to ASTM G48 Method A on request
- Impact test for low-temperature service
- Microstructure / phase balance report
- Ultrasonic inspection to SEP 1921 for plate

ORDERING INFORMATION

- Grade and standard
- Form and size - thickness x width x length, or diameter and cut length
- Quantity in pieces or kilograms
- Delivery condition and hardness window
- Certificate and inspection requirements

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EN 10204 3.1 mill certificate with every shipment
Chemistry · mechanical properties · test results · heat number

Hardness map and ultrasonic inspection on request.
Values are typical for the grade; the certificate of the actual heat governs.