MATERIAL DATA SHEET · DUPLEX STAINLESS STEEL

ASTM A815 WPS31803 — Chemical Composition & Mechanical Properties

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ASTM A815 WPS31803 is a duplex stainless steel grade for wrought butt-weld fittings (UNS S31803, EN / W.Nr 1.4462). It is also known as 2205 / UNS S31803. This sheet summarises its chemical composition limits, minimum mechanical properties, heat treatment and typical service. Teshi Group manufactures flanges and fittings in this grade.

At a glance

Material family	Duplex stainless steel
Product form	Wrought butt-weld fittings
UNS	S31803
EN / W.Nr	1.4462
Also known as	2205 / UNS S31803
PREN (min values)	30.5

Mechanical properties

Tensile strength, min	620 MPa
Yield strength (0.2 % offset), min	450 MPa
Elongation, min	20 %
Hardness	290 HBW max

Chemical composition (weight %)

C 0.030 max	Mn 2.00 max	P 0.030 max	S 0.020 max	Si 1.00 max
Cr 21.0–23.0	Ni 4.5–6.5	Mo 2.5–3.5	N 0.08–0.20	

Single values are maximums unless shown as a range or "min".

Heat treatment

Solution annealed 1020–1100 °C, water quench

Typical service

Duplex butt-weld fittings for offshore and process piping

International equivalents (nearest)

USA — ASTM / ASME	ASTM A815 WPS31803 · ASME SA-815 WPS31803
USA — UNS	S31803
Europe — EN designation	X2CrNiMoN22-5-3
Europe — W.Nr	1.4462
Japan — JIS	SUS329J3L
China — GB / NB	S22253 / S22053 (022Cr22Ni5Mo3N / 022Cr23Ni5Mo3N)
China — old GB designation	00Cr22Ni5Mo3N
UK — BS (withdrawn)	318S13

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