



BRODER METALS GROUP Super Duplex F55

Super Duplex Alloy F55 (UNS S32760 and Werkstoffe 1.4501) has excellent corrosion resistance and very good resistance to pitting and crevice corrosion in seawater and other chloride containing environments, especially where critical pitting temperatures in excess of 50°C are required.

F55 has higher strength capabilities than both austenitic and 22% Cr Duplex Stainless Steels. F55 is covered in NACE MR 01 75 for sour service and suitable for pressure vessel applications.

Typical applications include chemical processing applications & equipment, propellers, shafts, pumps, bolts & fasteners for marine and oil & gas applications, valves & precipitators in the paper industry & sewage treatment plants.

F55 (UNS 32760) is normally supplied in the solution annealed condition. For cold environments we can also supply cold worked material to meet the FLT grade of F55 (charpy impact tested at -101°C) or FG grade (charpy impact tested at -46°C).

AI Materials stock the following sizes:

12.7 mm	15.87 mm	19.05 mm	22.23 mm	25.4 mm
28.575 mm	31.75 mm	34.93 mm	38.1 mm	41.275 mm
44.45 mm	47.625 mm	50.8 mm	57.15 mm	63.5 mm
69.85 mm	76.2 mm	88.9 mm	101.6 mm	127 mm

However, we can also obtain sizes outside of our core stock range so please enquire.

Properties:

F55 (UNS 32760) Chemical analysis

	C	Cr	Cu	Fe	Mo	Mn	N	Ni	P	S	Si	W
Min	-	24.0	0.5	Balance	3.0	-	0.20	6.00	-	-	-	0.50
Max	0.030	26.00	1.0		4.0	1.0	0.30	8.00	0.030	0.010	1.00	1.00

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F55 (UNS 32760) Mechanical Properties

Tensile Strength (MPa /N/mm ²) [ksi] minimum	< 90 mm dia – 800 (116) > 90 mm dia (750 (109) FLT & FG – 860 (125)
0.2% Proof Stress (MPa /N/mm ²) [ksi] minimum	550 [79.9] FLT & FG – 725 (105)
Elongation (%) minimum	25 FLT & FG - 16
Reduction of Area (%) minimum	50 FLT & FG - 50
Hardness (HBN)	270max
Charpy V-notch Impact at ambient Temp (J)	80 minimum
FG - Charpy V-notch Impact at -46°C (J)	35 individual min, 45 average min
FLT - Charpy V-notch Impact at -101°C (J)	35 individual min, 45 average min
ASTM G48A Corrosion test at 50°C	No pitting and weight loss <0.8g/m ²
Ultrasonic Testing	To ASTM A388
Ferrite Content	35%-55%
Microstructure	Microstructure certified free from grain boundary carbides, sigma, chi and laves phases
Density (Kg/m ³)	7810
Magnetic Permeability	33
Young's Modulus (N/mm ²)	199 x 10 ³
Specific Heat, 20°C (J/Kg-1.°K-1)	475
Specific Electrical Resistance, 20°C (μO.m)	0.80
Thermal conductivity, 20°C (W/m-1)°K-1	14.2
Mean coefficient of thermal expansion, 20-100°C (°K-1)	11.1 x 10 ⁻⁶

Super Duplex F55 is just one of a range of anti corrosive materials stocked by Broder Metals Group Ltd – please see our website for the full range stocked: www.broder-metals-group.com

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