

EN 1.4462

UNS S31803

UNS S32205

F51 / F60

Duplex UNS S31803/ S32205 are the most common duplex grades in the market. They have very good resistance to localized corrosion and stress corrosion cracking in combination with high mechanical strength.

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Approvals: NACE MR0175, NORSOK M650, NORSOK M630 MDS D41/D43/ D44/ D45/ D47

Product Standards: EN 10088-2, EN 10088-3, EN 100088-4, EN 10028-7, ASTM A240, ASTM A276, ASTM A479, ASTM A182-11A

APPLICATIONS

They are widely used in oil & gas, hydro power, pressure vessels, pulp & paper, structural components and chemical tankers. The alloys are not intended to be used at temperatures above 300°C due to embrittlement.

Heat Treatment

Solution annealing at 1020 – 1100°C followed by water quenching.

Weldability

Very good.

The main applications are for details with special requirements for high corrosion resistance. S31803/ S32205 are characterized by: High resistance to stress corrosion cracking in halide containing environments. High resistance to pitting and crevice corrosion. High resistance to general corrosion. High mechanical strength.

CHEMICAL COMPOSITION

Weight %	C	Si	Mn	S	P	Cr	Ni	Mo	N
Min.						21,00	4,50	2,50	0,10
Max.	0,030	1,00	2,00	0,015	0,030	23,00	6,50	3,50	0,22

MECHANICAL PROPERTIES

	Yield strength Rp0.2, MPa	Tensile strength Rm, MPa	Elongation [%]	Hardness [HB]	Impact, Charpy-V, -46°C [J]	Pre
BAR	≥ 450	650 - 880	≥ 25	≤ 270	≥ 45	≥ 34
PLATE CR (Coil)	≥ 500	700 - 950	≥ 25		≥ 45	≥ 34
PLATE HR (Coil)	≥ 480	700 - 950	≥ 25		≥ 45	≥ 34
PLATE (Quarto)	≥ 480	680 - 840	≥ 25		≥ 45	≥ 34

ROUND BAR (STOCK)

6 mm	45 mm	130 mm	210 mm	310 mm
8 mm	50 mm	140 mm	220 mm	320 mm
10 mm	60 mm	150 mm	225 mm	330 mm
12 mm	70 mm	160 mm	230 mm	350 mm
16 mm	80 mm	170 mm	240 mm	355,6 mm
20 mm	90 mm	180 mm	250 mm	365 mm
25 mm	100 mm	185 mm	265 mm	375 mm
30 mm	110 mm	190 mm	275 mm	380 mm
35 mm	120 mm	200 mm	280 mm	400 mm
40 mm	125 mm	202 mm	300 mm	410 mm

HOLLOW BAR (STOCK)

OD	ID	OD	ID
32 mm	20, 16 mm	118 mm	90, 80, 71, 63 mm
36 mm	25, 20, 16 mm	125 mm	100, 90, 80, 71 mm
40 mm	28, 25, 20 mm	132 mm	106, 90, 80, 71 mm
45 mm	32, 28, 20 mm	140 mm	118, 112, 100, 90, 80
50 mm	36, 32, 25 mm	143,3 mm	110,1 mm
56 mm	40, 36, 28 mm	150 mm	125, 106, 95, 80 mm
63 mm	50, 45, 40, 36, 32 mm	160 mm	132, 122, 112, 90 mm
71 mm	56, 45, 40, 36 mm	170 mm	140, 130, 118, 106, 100 mm
75 mm	60, 50, 40 mm	180 mm	150, 140, 125, 100 mm
80 mm	63, 50, 45, 40 mm	190 mm	160, 150, 132 mm
85 mm	67, 55, 45 mm	200 mm	170, 160, 150, 140 mm
90 mm	71, 63, 56, 50 mm	212 mm	170, 150, 130 mm
95 mm	75, 67, 50 mm	224 mm	180, 140 mm
100 mm	80, 71, 63, 56 mm	236 mm	190, 150 mm
106 mm	80, 71, 63, 56 mm	250 mm	200 mm
112 mm	90, 80, 71, 63 mm		

PLATE (STOCK)

1 x 1000 x 2000 mm	5 x 2000 x 6000 mm	15 x 1500 x 3000 mm	30 x 1500 x 6000 mm
1 x 1500 x 3000 mm	6 x 1500 x 3000 mm	15 x 1500 x 6000 mm	30 x 2000 x 6000 mm
1,5 x 1500 x 3000 mm	6 x 1500 x 6000 mm	15 x 2000 x 6000 mm	35 x 2000 x 6000 mm
2 x 1000 x 2000 mm	6 x 2000 x 6000 mm	16 x 1500 x 6000 mm	40 x 1500 x 3000 mm
2 x 1500 x 3000 mm	8 x 1500 x 3000 mm	16 x 2000 x 6000 mm	40 x 1500 x 6000 mm
3 x 1500 x 3000 mm	8 x 1500 x 6000 mm	20 x 1500 x 3000 mm	40 x 2000 x 6000 mm
3 x 1500 x 6000 mm	8 x 2000 x 6000 mm	20 x 1500 x 6000 mm	45 x 2000 x 4000 mm
3 x 2000 x 6000 mm	10 x 1500 x 3000 mm	20 x 2000 x 6000 mm	50 x 1500 x 3000 mm
4 x 1500 x 3000 mm	10 x 1500 x 6000 mm	22 x 2000 x 6000 mm	50 x 1500 x 6000 mm
4 x 1500 x 6000 mm	10 x 2000 x 6000 mm	25 x 1500 x 3000 mm	50 x 2000 x 6000 mm
4 x 2000 x 6000 mm	12 x 1500 x 3000 mm	25 x 1500 x 6000 mm	
5 x 1500 x 3000 mm	12 x 1500 x 6000 mm	25 x 2000 x 6000 mm	
5 x 1500 x 6000 mm	12 x 2000 x 6000 mm	30 x 1500 x 3000 mm	

GOIL (STOCK)

1300 mm	1500 mm	2000 mm
0,4 mm	3 mm	3 mm
0,5 mm	4 mm	4 mm
1 mm	5 mm	5 mm
	6 mm	6 mm