

Thru Hull Skin Fittings

Technical Information

Duplex 2205 Stainless Steel

Australian Stainless Steel Development Association¹ recommends the following general rules:

- 304 may be used for fully exposed components, frequently washed with fresh water
- 316 may be used for all hull and deck fitting applications above the water line
- 2205 offers higher strength and therefore lighter weight components for the same applications as 316 and can additionally be used up to 60°C for wet exhaust systems and fully submersed applications

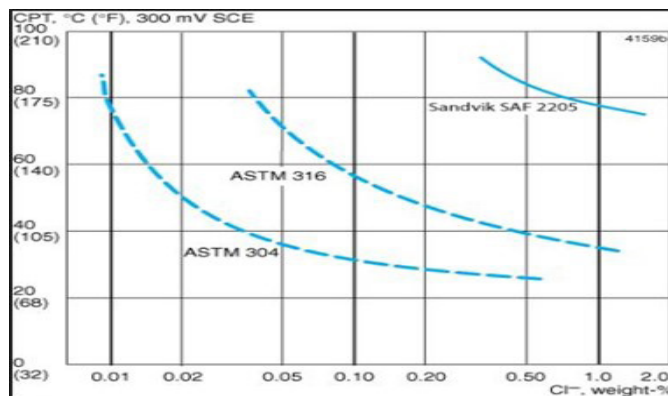
Duplex stainless steels consist of a microstructure of approximately 50% austenite and 50% ferrite grains - the most common is 2205.

The following properties of 2205 make it a better choice of stainless steel for Thru Hull fittings:

- Yield strength, twice that of 304 or 316 - offering added security for critical hull penetration fittings
- Much higher resistance to pitting and crevice corrosion in seawater than 316 (see PREN table below)
- Twice the fatigue and corrosion strength of 316

Metal Performance Chart²

Graph shows metal performance in relation to Temperature and chloride concentration (seawater salinity)



Pitting Resistance Table³

Table shows metal resistant to pitting in a saline or seawater environment

Grade	EN No/UNS	Type	Typical PREN
430	1.4016/ S43000	Ferritic	18
304	1.4301/ S30400	Austenitic	19
441	1.4509/ S43932	Ferritic	19
RDN 903	1.4482/ S32001	Duplex	22
316	1.4401/ S31600	Austenitic	24
444	1.4521/ S44400	Ferritic	24
316L 2.5 Mo	1.4435	Austenitic	26
2101 LDX	1.4162/ S32101	Duplex	26
2304	1.4362/ S32304	Duplex	26
DX2202	1.4062/ S32202	Duplex	27
904L	1.4539/ N08904	Austenitic	34
2205	1.4462/ S31803/ S32205	Duplex	35
Zeron 100	1.4501/ S32760	Duplex	41
2507	1.4410/ S32750	Super Duplex	43

¹ www.assda.asn.au/43-applications/marine/170-corrosion-resistance-in-marine-environments

² www.materials.sandvik/en-au/materials-center/material-datasheets/

³ British Stainless Steel Association - www.bssa.org.uk/

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