

# CRA GUIDE TO SELECTION OF STAINLESS STEELS

Alloy Family	Alloy Type	API Category	Trade Names	UNS Number	Chemical Composition									PREN	API Grade	0.2% Yield Str. (ksi)		Tensile Str. (ksi)	Elong. (%)		CVN Impact (ft-lbs)	Hardness	NACE MR0175/ISO 15156		Alloy Family							
					max. wt % or range, unless otherwise indicated											long. at room temperature				trans. at 14F	(HRC)	H <sub>2</sub> S Limits										
					C	CR	Ni	Mo	Cu	Ti	V	W	N			min.	max.	min.	min.		min.	max.	Tables	Sour Service Limits								
Duplex Stainless Steel	22 Chrome Duplex	5CRA Group 2 22-5-3 PSL 1 & 2	22Cr 2205	S31803	0.03	21.0	4.5	2.5	—	—	—	—	0.08	31 to 38	65 75 110	65	90	90	25%	function of strength and wall thickness	26	26	A.24 (annealed)	H <sub>2</sub> S ≤ 1.5 psi, Temps ≤ 450F								
						to 23.0	to 6.5	to 3.5	—	—	—	—	to 0.20										125		140	125	12%		A.25 (cold worked)	H <sub>2</sub> S ≤ 0.3 psi 140 Gr. not recommended for sour service		
	25 Chrome Duplex	5CRA Group 2 25-7-3 PSL 1 & 2	25Cr 2507	S31260	0.03	24.0	5.5	2.5	0.2	—	—	0.10	0.10	34 to 43	125 140	125	150	130	10%	function of strength and wall thickness	36	36	A.25 (cold worked)	H <sub>2</sub> S ≤ 0.3 psi 140 Gr. not recommended for sour service								
						to 26.0	to 7.5	to 3.5	to 0.8	—	—	to 0.50	to 0.30												140	160	145	9%				
	Super Duplex	5CRA Group 2 25-7-4 PSL 1 & 2	SAF 2507	S32750	0.03	24.0	6.0	3.0	—	—	—	—	0.24	38 to 44	80	80	105	110	20%	function of strength and wall thickness	28	30	A.24 (annealed)	H <sub>2</sub> S ≤ 3.0 psi, Temps ≤ 450F								
			25CRS Z 100	S32760		0.03	24.0	6.0	3.0	0.5	—	—	0.50										0.20		38	90	110	105	115	12%	A.25 (cold worked)	H <sub>2</sub> S ≤ 3.0 psi, Cl ≤ 120g/l 140 Gr. not recommended for sour service
			25CRW	S39274		0.03	24.0	6.0	2.5	0.2	—	—	1.5										0.24		39	140	125	150	130			
	to 26.0	to 8.0	to 3.5	to 0.8	—	—	to 2.5	to 0.32	46	140	140	160	145	9%																		

