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A CRA AFFILIATE

SUPER 25 CHROME

UNS S32750 • UNS S32760 • UNS S39274

Super Duplex 25 Chrome grades, 25CRW & 25CRS (UNS S32750/S32760/S39274), are cold-hardened duplex stainless steels intended for corrosion resistance in sweet (CO_2) and moderately sour (H_2S) environments with high chloride content, requiring high strength up to 450°F. The "Super" designation indicates that it has a Pitting Resistance Equivalence (PREN) ≥40. This provides increased resistance to H_2S and localized corrosion from high chlorides and/or oxygen relative to standard 25 Chrome.

It is therefore a common choice for use as tubing and liner in seawater and water injection wells. However, all environmental factors, including H_2S, CO_2, temperature, pH, and chloride concentration, should be considered before final material selection.

These alloys are classified in MR0175/ISO15156 as duplex stainless steels having a Pitting Resistance Equivalent Number ≥40, suitable for H_2S partial pressure ≤3.0 psi.

NOMINAL COMPOSITION

S32750	Chromium 25%	Nickel 7.0%	Molybdenum 3.5%	-	Iron Balance
S32760	Chromium 25%	Nickel 7.0%	Molybdenum 3.5%	Tungsten 0.75%	Iron Balance
S39274	Chromium 25%	Nickel 7.0%	Molybdenum 3.0%	Tungsten 2.0%	Iron Balance

SPECIFIED MECHANICAL PROPERTIES - API 5CRA / ISO 13680 Group 2 Category 25-7-4

Grade	Yield Strength min. (ksi)	Tensile Strength min. (ksi)	Elongation min. (%)	NACE MR0175/ISO 15156 Environmental Limits
80	80	110	20	Table A.25
110	110	115	12	Table A.25
125	125	130	10	Table A.25
140	140	145	9	Not recommended for sour service.

TYPICAL PHYSICAL PROPERTIES

		70°F	200°F	400°F
Density	lbs/in^3	0.28	-	-
Thermal Expansion	$X10^{-6}$/ °F	7.5	7.5	7.5
Elastic Modulus	psi x 10^6	29.0	28.2	27.0
Poisson Ratio		0.24	0.24	0.24
Thermal Conductivity	Btu/ft h °F	8	9	10
Specific Heat	Btu/lb °F	0.12	0.12	0.12

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