

MECHANICAL AND CHEMICAL VALUES FOR:
SUPER DUPLEX UNS 32760 BUTT WELD

This class covers the class of WP, made up of 4 categories and meet the requirements of ANSI B16.9. Pressure ratings are the same compatibility of matching pipe.

The categories are

- WP-S = SEAMLESS CONSTRUCTION
 WP-W = WELDED CONSTRUCTION WHERE CONSTRUCTION WELDS ARE RADIOGRAPHED
 WP-WX = WELDED CONSTRUCTION WHERE ALL WELDS ARE RADIOGRAPHED
 WP-WU = WELDED CONSTRUCTION WHERE ALL WELDS ARE ULTRASONICLY TESTED

SUPER DUPLEX, AN AUSTENITIC FERRITIC IRON CHROMIUM-NICKEL ALLOY WITH MOLYBDENIM ADDITION. GOOD RESISTANCE TO PITTING, HAS A HIGH TENSILE STRENGTH AND HIGHER RESISTANCE TO STRESS CORROSION CRACKING AT MODERATE TEMPERATURES TO THAT OF CONVENTIONAL AUSTENITIC STAINLESS STEELS.

CHEMICAL COMPOSITION (All values are maximum unless otherwise stated)

%C	%Cr	%Ni	%Mo	%S	%P	%SI	%Mn	%N	%Cu	%W
0.03	24.0-26.0	6.0-8.0	3.0-4.0	0.01	0.03	1.0	1.0	0.2-0.3	0.5-1.0	0.5-1.0

UNS 32750

%C	%Cr	%Ni	%Mo	%S	%P	%SI	%Mn	%N	%Cu
0.03	24.0-26.0	6.0-8.0	3.0-5.0	0.02	0.035	0.80	1.20	0.24-0.32	0.5

MECHANICAL PROPERTIES

YEILD STRENGTH	TENSILE STRENGTH	ELONGATION (MIN)	REDUCTION OF ARE (MIN)	HARDNESS (MAXIMUM)	ASTM SPECIFICATION
(ksi) (mpa)	(ksi) (mpa)			(HB) (HRC)	ASTM a790
80 550	109 750	25	45	28	32760

UNS 32750 VALUES

80 550	116 800	15	-	310 32	ASTM A790 UNS 32750
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**PREn (PITTING RESISTANCE EQUIVALENT) (%Cr) + (3.3 x %Mo) + (16 x %N)
HEAT TREATMENT**

SOLUTION ANNEALED AT 1100 DEG C—1400 DEG C WATER QUENCH
EQUIVALENT GRADES

UNS	SB EN	SWEEDEN SS	GERMANY DIN	SANDVIK +
32760	1.4501	2377	X2 CrNiMoN 22.5.4	-
32750	1.4410	2328	X2 CrNiMoN 25.74	SAF 2507

Duplex is a material having an approximate equal amount of austenite and ferrite. These combine excellent corrosion resistance with high strength. Mechanical properties are approximately double those of singular austenitic steel and resistance to stress corrosion cracking is superior to type 316 stainless steel in chloride solutions. Duplex material has a ductile / brittle transition at approximately - 50 deg°C. High temperature use is usually restricted to a maximum temperature of 300deg°C for indefinite use due to embrittlement