

**ZERON 100 Advantages**

- The main difference between ZERON 100 and 2507 is the addition of copper and tungsten. Copper gives ZERON 100 superior corrosion resistance in mineral acids. Tungsten increases corrosion resistance in a similar way to Molybdenum but does not promote sigma formation to the same extent.
- In seawater, the primary difference is repassivation behavior. During temperature excursions, if crevice corrosion initiates, ZERON 100 repassivates more readily than 2507 when normal operating temperatures are restored.
- ZERON 100 is the only superduplex grade that guarantees a minimum PRE<sub>N</sub> value of 40.
- ZERON 100 is tested to more rigorous acceptance criteria than 2507.
- Both ZERON 100 and 2507 are assigned to the same P group in ASME Section IX. This is P group 10H Group 1.
- ZERON 100 is welded with ZERON 100X, made to ER2594 and E2595-15 specifications and is available from Rolled Alloys.
- For fabrications that will be solution annealed, a matching chemistry ZERON 100M filler is available.
- ZERON 100 requires a minimum percent elongation value of 25% ensuring good formability. 2507 requires a 15% minimum elongation value.
- In both ASTM A479 (Round Bar) and ASTM A182 (Forgings) for two inch and larger product, 2507 allows a reduced strength level. ZERON 100 requires consistent minimum values of 109 ksi (UTS) and 80 ksi (Yield) for all cross sections.
- Rolled Alloys stocks a complete range of ZERON 100 products including plate, round bar, pipe, fittings, flanges and welding consumables assuring consistent quality.

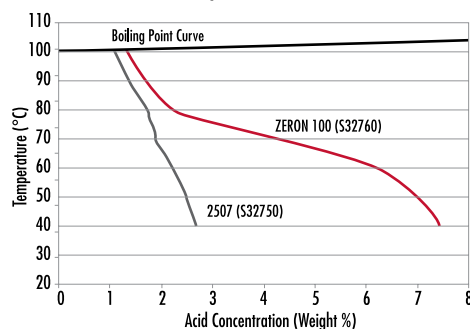
**Chemical Composition, %**

	Cr	Ni	Mo	N	Cu	W	Fe	PRE <sub>N</sub> *
ZERON® 100 UNS S32760	25.0	7.0	3.6	0.22	0.7	0.7	balance	41.5
2507 UNS S32750	25.0	7.0	3.8	0.27	—	—	balance	41.9

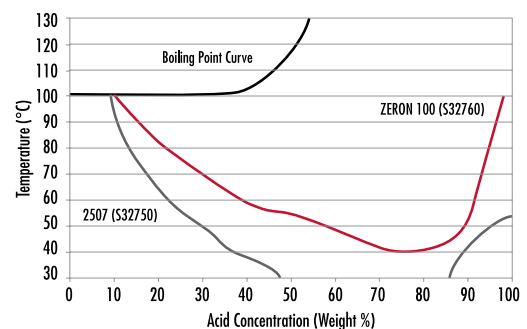
\*PRE<sub>N</sub> = CR + 3.3(Mo + 0.5 W) + (16N)

**Iso-corrosion Curves**

*Iso-corrosion curves 0.004 ipy (0.1 mm/y) for some stainless steels in Hydrochloric Acid*



*Iso-corrosion curves 0.004 ipy (0.1 mm/y) for some stainless steels in Sulfuric Acid*



**Minimum Tensile Properties**

		Plate	Sheet	Round Bar	Forgings	Butt Weld Fittings
ZERON 100	Ultimate Tensile Strength, ksi	109	109	109	109	109
	0.2% Offset Yield Strength, ksi	80	80	80	80	80
2507	Ultimate Tensile Strength, ksi	116	116	116 (110)	116 (106)	116
	0.2% Offset Yield Strength, ksi	80	80	80 (75)	80 (75)	80

2507 values in parenthesis for 2" thick cross-sections and above

ASME Section VIII Div 1  
Maximum Design  
Allowable Stresses

Temperature	°F	100	200	300	400	500
ZERON 100	ksi	31.1	31.0	29.4	29.0	29.0
2507	ksi	33.0	33.0	31.2	30.1	29.6

ZERON 100 Code Case 2245-1

ASME 31.1  
Basic Allowable Stresses

Temperature	°F	100	200	300	400	500	600
ZERON 100	ksi	36.3	35.9	34.4	34.0	34.0	34.0
2507	ksi	38.7	35.0	33.1	31.9	31.4	31.2

Material Testing

Microstructure Check	ZERON 100	500X Magnification
	2507	400X or 500X Magnification

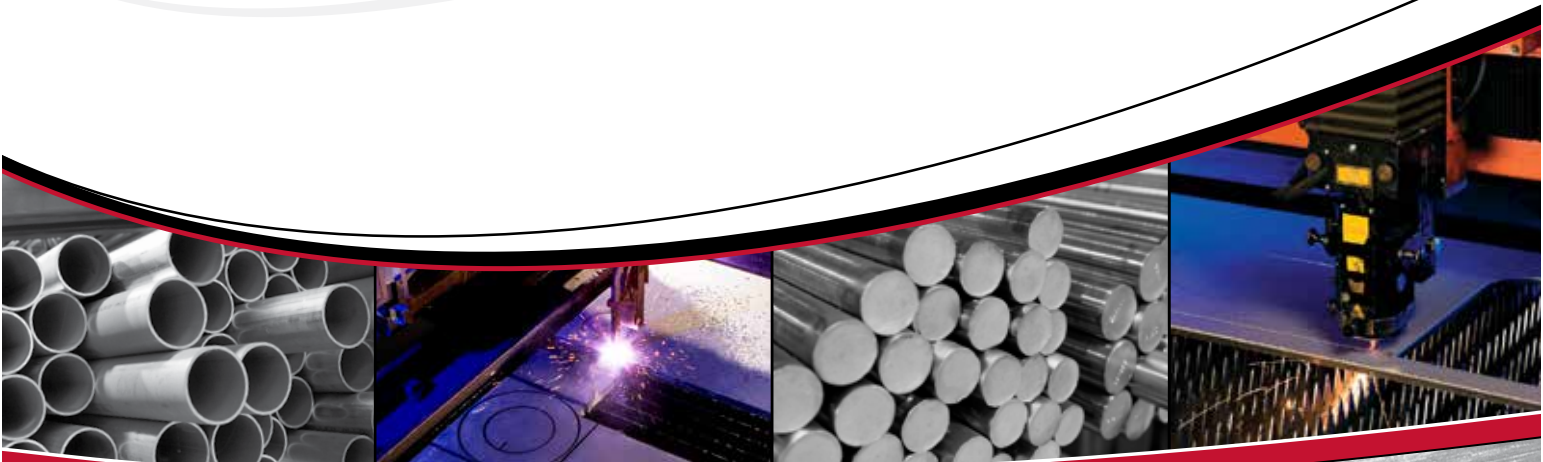
Pitting Corrosion Test - Minimum Acceptance Criteria

	Test Temperature	Test Method
ZERON 100	122°F	ASTM G48A
2507	104°F	ASTM A923 Practice C

Charpy V-Notch Impact Test

	Test Temperature	Minimum Accepted Values
ZERON 100	-58°F	70J Average / 65J Single
2507	-40°F	Not Specified

ZERON 100 testing for plate to MDS 12804/4. 2507 acceptance criteria for plate ASTM A923.



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