

Zeron 100 (UNS S32760) Bolting

Super duplex (ferritic-austenitic) stainless steel stud bolts, bolts, nuts and threaded bar to ASTM A1082/A1082M.
Requirements below are from ASTM A1082 Tables 1, 4 and 5 for UNS S32760.

UNS S32760	WERKSTOFF NR. 1.4501	BOLTING SPECIFICATION ASTM A1082	GRADE MARKING 32760
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CHEMICAL COMPOSITION % by weight · A1082 Table 1

Element	Requirement
Carbon, C	0.030 max
Manganese, Mn	1.00 max
Phosphorus, P	0.030 max
Sulfur, S	0.010 max
Silicon, Si	1.00 max
Chromium, Cr	24.0 to 26.0
Nickel, Ni	6.0 to 8.0
Molybdenum, Mo	3.0 to 4.0
Nitrogen, N	0.20 to 0.30
Copper, Cu	0.50 to 1.00
Tungsten, W	0.50 to 1.00
PREN = %Cr + 3.3 × %Mo + 16 × %N ≥ 40	

MECHANICAL PROPERTIES minimum unless max · A1082 Table 4

Property	ksi	MPa
Tensile strength	109	750
Yield strength (0.2% offset)	80	550
Elongation in 2 in. [50 mm] or 4D		25%
Hardness, Rockwell	30 HRC max	
Hardness, Brinell	290 HBW max	
- Rockwell or Brinell testing is permitted; below ½ in. [12.7 mm] thickness Rockwell is preferred. - Bar 2 in. [50 mm] and over: one hardness test per mill-treated length. Under 2 in.: at least 10% of lengths. Tested after all heat treatment.		
HEAT TREATMENT A1082 Table 4		
Condition	Solution annealed	
Solution temperature	2010 °F [1100 °C] ± 25 °F [15 °C]	
Quench	Water	

MARKING, CERTIFICATION AND ORDERING A1082 sections 3, 10, 11 and S2

Grade symbol	32760, on one end of studs and on the heads of bolts; if space is short, grade symbol on one end and manufacturer's symbol on the other
Certification	Required: chemical analysis, mechanical test results and the heat treatment method, plus ASTM A962/A962M requirements
Ordering information	Quantity, item (studs, bolts, nuts, bar), UNS S32760, heat-treat condition, dimensions and threads, supplementary requirements
General requirements	ASTM A962/A962M (A1082 prevails in case of conflict)

SUPPLEMENTARY REQUIREMENTS apply only when named in the purchase order

S3 Stress relief	Required after straightening that follows heat treatment
S4 Non-destructive examination	Each bar or blank after final heat treatment by ET, MT, PT, UT or VT. PT/MT: linear indications over 1/16 in. [1.5 mm] rejected. UT/ET: notch 0.012 in. [0.30 mm] max depth
S5 · S6 Nuts	Proof load testing; cross-sectional hardness per ASTM A370 Annex A3 (number of tests by agreement)
NORSOK M-630	MDS D59 and D60: studs, bolts and nuts to ASTM A1082 UNS S32760