

Solid wire, low alloyed

Brand Standard AWS Standard EN ISO	Chemical Composition (%) Typical Values	Mechanical Properties Typical Values	Ø (mm)	Approvals	Characteristics and Applications
THERMANIT MTS 616 AWS A5.28: ER90S-G / ER90S-B9(mod.) EN ISO 21952-A: GZ CrMoWVNb 9 0.5 1.5	C: 0.1 Si: 0.25 Mn: 0.5 Cr: 8.5 Mo: 0.4 Ni: 0.5 W: 1.6 V: 0.2 Nb: 0.06 N: 0.04	Heat treatment: 760°C / ≥ 2h Shielding Gas: M12, (M13) UTS: 720 MPa YS: 560 MPa El: 15% CVN Impact: 41J	0.8 1.0 1.2 1.6	-	High temperature resistant. Suited for joining and surfacing applications with matching high temperature resistant parent metal P92 according to ASTM A 335.
UNION NiMoCr AWS A5.28: ER100S-G / [ER100S-1(mod.)] EN ISO 16834-A: G 69 6 M21 Mn4Ni1, 5CrMo	C: 0.08 Si: 0.60 Mn: 1.70 Cr: 0.20 Mo: 0.50 Ni: 1.50	Heat treatment: As welded Shielding Gas: M21 UTS: 780 MPa YS: 720 MPa El: 16% CVN Impact: +20°C: 100J -60°C: 47J	0.8 1.0 1.2	TÜV, DB, ABS, BV, DNV, GL, LR, VG 95132- 1, CE	Low-alloyed solid wire electrode for shielded arc welding of quenched and tempered and thermomechanically treated fine grained structural steels; for joint welding of wear resistant steels. For use with CO ₂ and gas mixture. Outstanding toughness of the weld metal at low temperatures. For use in crane and vehicle manufacturing.
BOHLER X 70-IG AWS A5.28: ER110S-G EN ISO 16834-A: G 69 5 M Mn3Ni1CrMo	C: 0.1 Si: 0.6 Mn: 1.6 Cr: 0.25 Ni: 1.3 Mo: 0.25 V: 0.1	Heat treatment: As welded Shielding Gas: Ar+15 – 25% CO ₂ UTS : 900 MPa (770 – 940) YS: 800 MPa (≥690) El: 19% (≥17) CVN Impact: +20°C: 190J -50°C: ≥47J	0.8 1.0 1.2 1.6	TÜV (05547), DB 42.132.77), ABS, BV, DNV, LR (Suppl. List), CE	GMAW wire for the welding of high-strength, heat treated, fine-grained constructional steels with a minimum yield strength of 690 MPa. Due to the precise addition of micro-alloying elements X 70-IG wire features excellent ductility and crack resistance in spite of its high strength. Good cryogenic impact energy down to -50°C.

Solid wire, high alloyed

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BOHLER FOX A 7 (THERMANIT X) AWS A5.9: ER307(mod.) EN ISO 14343-A: G 18 8 Mn	C: 0.08 Si: 0.8 Mn: 7.0 Cr: 19.0 Ni: 9.0	Shielding Gas: Ar + 2.5% CO ₂ UTS: 600 MPa YS: 370 MPa El: 35% CVN Impact: +20°C: 100J	0.8 1.0 1.2 1.6	TÜV, DB, DNV-GL, VG 95132- 1, CE	Solid wire of G 18 8 Mn / ER307 (mod.) type for joining and surfacing applications with heat resistant Cr-steels and heat resistant austenitic steels. Well-suited for fabricating dissimilar austenitic-ferritic joints for a max. application temperature of 300°C. For joining unalloyed / low-alloyed or Cr-steels to austenitic steels. Low heat input required in order to avoid brittle martensitic transition zones. Max. service temperature 850 °C.
BOHLER Q NG 308L-Si AWS A5.9: ER308LSi EN ISO 14343-A: G 19 9 L Si	C: ≤0.02 Si: 0.8 Mn: 1.7 Cr: 20.0 Ni: 10.2	Shielding Gas: Ar + 2.5% CO ₂ UTS : 540 MPa (≥ 510) YS: 390 MPa (≥ 320) El: 38% (≥35) CVN Impact: +20°C: 110J (≥47) -196°C: >32J	0.8 1.0 1.2	-	GMAW solid wire of type G 19 9 L Si / ER308LSi designed for first class welding, wetting and feeding characteristics and excellent weld metal CVN values down to -196 °C. Resistance to intergranular corrosion up to +350 °C.
BOHLER Q NG 316L-Si AWS A5.9: ER316LSi EN ISO 14343-A: G 19 12 3 L Si	C: ≤0.02 Si: 0.9 Mn: 1.7 Cr: 18.5 Ni: 11.5 Mo: 2.7	Shielding Gas: Ar + 2.5% CO ₂ UTS : 580 MPa (≥ 510) YS: 430 MPa (≥ 320) El: 38% (≥30) CVN Impact: +20°C: 120J (≥47) -196°C: 45J (>32)	0.8 1.0 1.2	-	GMAW solid wire of type G 19 12 3 L / ER316L designed for first class welding, good wetting and feeding characteristics as well as reliable corrosion resistance up to +400 °C. Low temperature service down to -196 °C.

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BOHLER Q NG 309L-Si AWS A5.9: ER309LSi EN ISO 14343-A: G 23 12 L Si	C: ≤ 0.03 Si: 0.9 Mn: 2.0 Cr: 24.0 Ni: 13.0	Shielding Gas: Ar + 2.5% CO ₂ UTS: 550 MPa (≥ 510) YS: 400 MPa (≥ 320) El: 33% (≥ 30) CVN Impact: +20°C: 55J (≥ 47) -60°C: >32J	0.8 1.0 1.2	-	GMAW solid wire of type G 23 12 L Si / ER309LSi designed for first class welding, good wetting and feeding characteristics. For joining austenitic stainless steels and castings to unalloyed/ low-alloy steels/cast steel grades, stainless heat resistant Cr steels as well as depositing intermediate layers when welding clad materials. Favorably high Cr and Ni contents, low C content. Application temperature max. 300°C (572 °F).
THERMANIT 22/09 AWS A5.9: ER2209 EN ISO 14343-A: G 22 9 3 N L	C: 0.025 Si: 0.5 Mn: 1.6 Cr: 23.0 Mo: 3.0 Ni: 9.0 N: 0.14	Shielding Gas: M12, M13 Ar + 20% He + 2% CO ₂ UTS: 700 MPa YS: 510 MPa El: 25% CVN Impact: +20°C: 70J	0.8 1.0 1.2	TÜV, DB, GL, DNV, CE	Duplex stainless steel; resistant to intercrystalline corrosion and wet corrosion up to 250°C (482°F). Good resistance to stress corrosion cracking in chlorine- and hydrogen sulphide-bearing environment. High Cr- and Mo-contents provide resistance to pitting corrosion. For joining and surfacing work with matching and similar austenitic steels / cast steel grades. Attention must be paid to embrittlement susceptibility of the parent metal.

Solid wire, nickel-base

Brand Standard AWS Standard EN ISO	Chemical Composition (%) Typical Values	Mechanical Properties Typical Values	Ø (mm)	Approvals	Characteristics and Applications
THERMANIT 625 AWS A5.14: ERNiCrMo-3 EN ISO 18274: S Ni 6625 (NiCr22Mo9Nb)	C: 0.03 Si: 0.25 Mn: 0.20 Cr: 22.0 Ni: Bal. Mo: 9.0 Nb: 3.6 Fe: <0.5	Shielding Gas: I1, M12 (ArHeC-30/0.5) UTS: 740 MPa YS: 460 MPa El: 30% CVN Impact: +20°C: 60J -196°C: 40J	0.8 1.0 1.2 1.6	TÜV, DB, CE	High resistance to corrosive environment. Resistant to stress corrosion cracking. Resistant to scaling up to 1000°C (1832 °F). Temperature limit: 500°C (932°F) max. in sulphurous atmospheres. High temperature resistant up to 900 °C (1652°F). Good toughness at subzero temperatures as low as -196°C (-321°F). For joining and surfacing work with matching / similar corrosion resistant materials as well as with matching and similar heat resistant, high temperature resistant steels and alloys. For joining and surfacing work on cryogenic austenitic CrNi(N) steels / cast steel grades and on cryogenic Ni steels suitable for quenching and tempering.
THERMANIT NICRO 82 AWS A5.14: ERNiCr-3 EN ISO 18274: S Ni 6082 (NiCr20Mn3Nb)	C: 0.02 Si: 0.2 Mn: 2.8 Cr: 19.5 Ni: >67 Nb: 2.5 Fe: <2.0	Shielding Gas: I1, Z (ArHeHC -30/2/-0, 1) UTS: 620 MPa YS: 380 MPa El: 35% CVN Impact: +20°C: 90J	0.8 1.0 1.2 1.6	TÜV, DNV GL, CE	Nickel alloy; heat and high temperature resistant. Good toughness at subzero temperatures as low as -269°C (-452°F). Good for welding austenitic ferritic joints. No Cr-carbide zone that become brittle in the ferrite weld deposit transition zone, even as a result of heat treatments above 300 °C (572°F). Good for fabricating tough joints and surfacing with heat resistant Cr and CrNi steels and Ni alloys.