Solid wire, unalloyed

Brand Standard AWS Standard EN ISO	Chemical Composition (%) Typical Values	Mechanical Properties Typical Values	Ø (mm)	Approvals	Characteristics and Applications
BOHLER N ER 70 S-6 AWS A5.18: ER70S-6 EN ISO 14341-A: G42 4 M21 3Si1/G 42 4 C1 3Si1	C: 0.09 Si: 0.80 Mn: 1.49 P: 0.01 S: 0.01 Cr: 0.01 Mo: 0.01 Ni: 0.01	As welded: Shielding Gas: CO_2 UTS: 600 MPa YS: 510 MPa El: 28% CVN Impact: -30°C: >50J	0.8 1.0 1.2	-	Universally applicable copper coated wire electrode with a largely spatter free material transfer using CO_2. The wire electrode is suitable for joint welding in the construction of boilers, containers and building structures. This wire has been designed to provide X-ray quality porosity free welds. High tensile strength in as welded condition. High arc stability at high welding current amperage. Designed to feed ideally even at high wire feed rates. Suitable for robotic applications. It is a great choice for welding light to moderately scaled, oily or rusty plates due to the presence of balanced amount of de-oxidizers.
BOHLER SG 2 AWS A5.18: ER70S-6 EN ISO 14341-A: G 42 3 M21 3Si1/G 42 3 C1 3Si1	C: 0.08 Si: 0.85 Mn: 1.5	As welded: Shielding Gas: Ar + 15-25% CO_2 UTS : 575 MPa (500-640) YS: 450 MPa (≥420) El: 30% (≥22) CVN Impact: -30°C: 110J (≥47) Shielding Gas: 100% CO_2 UTS : 555 MPa (500-640) YS: 430 MPa (≥380) El: 29% (≥24) CVN Impact: -30°C: 90J (≥47)	0.8 0.9 1.0 1.2 1.6	TUV, DB, CE, ABS, CWB	Solid wire electrode for welding unalloyed and low alloy steels with CO_2 or gas mixture. Low spatter transfer in short and spray arc range. High arc stability also at high welding current amperage. Large application range; used in boiler and pipeline construction. Shipbuilding, vehicle manufacturing and structural engineering.
BOHLER EMK 8 NC AWS A5.18: ER70S-6 EN ISO 14341-A: G 46 4 M21 4Si1/G 46 4 C1 4Si1	C: 0.1 Si: 1.0 Mn: 1.7	As welded: Shielding Gas: CO_2 UTS: 620 MPa (530-680) YS: 480 MPa (≥460) El: 26% CVN Impact: +20°C: 150J -40°C: 80J (≥47)	1.0 1.2 1.6	TUV, DB, CE	Non coppered solid wire designed for extremely low spatter formation and excellent feeding properties at high wire feed rates. The non coppered welding wires of the EMK NC series are characterised by very good feeding properties at high wire feeding rates, by a very stable arc performance and significant lower oxide / silicate forming on the weld surface. This makes them especially suited for fully mechanised processes where the wire comes in BASEdrum or the environmental friendly ECOdrum bulk package.

Solid wire, low alloyed

Brand Standard AWS Standard EN ISO	Chemical Composition (%) Typical Values	Mechanical Properties Typical Values	Ø (mm)	Approvals	Characteristics and Applications
UNION MoNi AWS A5.28: ER90S-G EN ISO 16834-A: G 62 5 M21 Mn3Ni1Mo	C: 0.10 Si: 0.65 Mn: 1.55 Mo: 0.40 Ni: 1.10	Heat treatment: As welded Shielding Gas: M21 UTS: 700 MPa YS: 620 MPa El: 18% CVN Impact: +20°C: 100J -50°C: 47J	0.8 1.0 1.2	TÜV, DB, DNV, GL, WIWEB, VG 95132-1, CE	Medium alloy solid wire electrode for shielded arc welding of quenched and tempered and thermomechanically treated fine grained structural steels; creep resistant structural steels with higher yield strength. Outstanding toughness values of the weld metal at low temperatures when deposited with CO_2 and gas mixture.
THERMANIT MTS 3 AWS A5.28: ER90S-B9 EN ISO 21952-A: G CrMo91	C: 0.1 Si: 0.3 Mn: 0.5 Cr: 9.0 Mo: 1.0 Ni: 0.5 Nb: 0.06 V: 0.2	Heat treatment: 760°C/2 h Shielding Gas: M12, (M13) UTS: 620 MPa YS: 520 MPa El: 16% CVN Impact: 50J	1.0 1.2	-	High temperature resistant, resistant to scaling up to 600°C. Suited for joining and surfacing applications with quenched and tempered 9 % Cr steels, particularly for matching high temperature resistant parent metal like T91 / P91 according to ASTM.

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 toughnesss 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

Brand Standard AWS Standard EN ISO	Chemical Composition (%) Typical Values	Mechanical Properties Typical Values	Ø (mm)	Approvals	Characteristics and Applications
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.