



Welding Consumables



■ About UTP

UTP - Over five decades of experience in **production development** and **distribution** of high quality welding consumables. UTP's wide product range offers welding consumables for applications in all branches of industry worldwide. Specialising in **maintenance and repair**, and **nickel base alloys**.

Why UTP

- Cost reduction due to increased productivity
- Research and development in close collaboration with the customers
- World wide operating sales network
- High quality welding consumables for virtually every application
- Professional technical support
- Special welding solutions guarantee less down-time

Field of activity

High quality welding consumables for:

- Maintenance and repair
- Nickel base applications
- Manufacturing and production
- High demanding industries
- Special applications

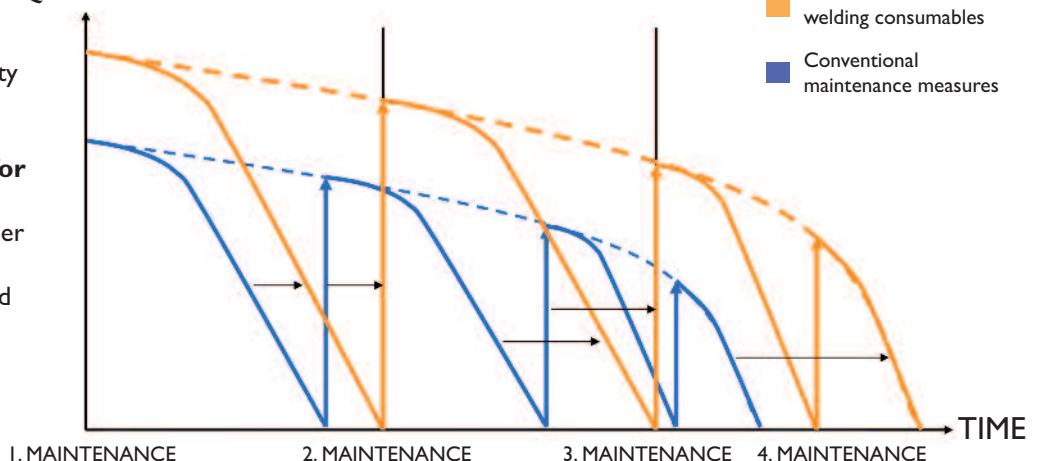
Product range

- Stick electrodes
- MIG MAG wires
- TIG rods
- Flux cored wires
- Submerged arc welding wires and fluxes
- Flame spraying and Plasma powders

■ Decrease LCC (Life Cycle Costs) with UTP maintenance welding

Due to the high quality of UTP's welding consumables and **welding solutions for maintenance** the LCC of tools and other parts can be reduced and **productivity** and **lifetime** increased.

QUALITY





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If it can be welded – we know how.



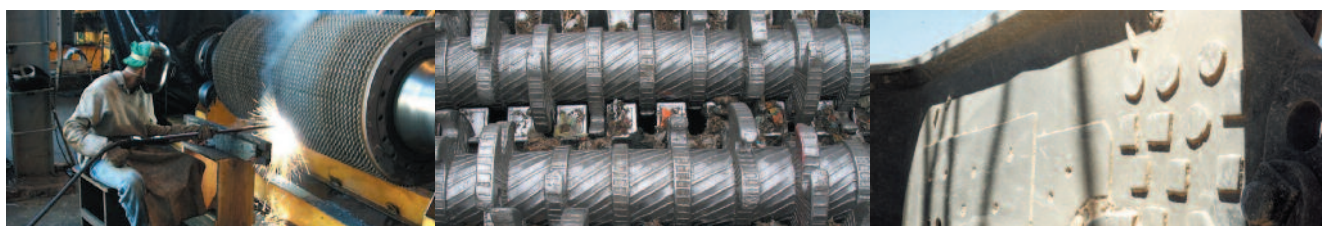
■ Surfacing and hardfacing

UTP-Product Welding process	Standards	Hardness of the pure weld deposit	Characteristics and applications
CHRONOS SMAW	DIN 8555 : E 7-UM-200-KP EN 14700 : E Fe 9	After welding: approx. 220 HB After work hardening: 50 - 55 HRC	Basic coated high Mn-steel stick electrode for cladding exposed compression and shock. Used for buildups on high Mn-steels of the same and of similar nature and on C-steels.
7200 SMAW	DIN 8555 : ~E 7-UM-250-KP EN 14700 : EZ Fe9 AWS A5.13 : ~E FeMn-A	After welding: 200 - 250 HB After work hardening: 48 - 53 HRC	Basic coated, CrNi alloyed, Mn-hard-steel stick electrode against compression and shock. Used for tough and crack resistant joinings and surfacings on parts of high Mn-steel.
BMC SMAW	DIN 8555 : E 7-UM-250-KPR EN 14700 : E Fe 9	After welding: approx. 260 HB After work hardening: 48 - 53 HRC	Basic coated Cr-alloyed Mn-steel stick electrode for high wear resistant claddings. Stainless. Used for surfacings on ferritic steels as well as austenitic hard Mn-steel and joints of hard Mn-steel.
SK AP-O FCAW	DIN 8555 : MF 7-GF-250-KP EN 14700 : T Z Fe9	approx. 205 HB	Open-arc flux cored wire for wear resistant buildups exposed to compressive and impact stresses. Used for buildups on non-alloyed and low-alloyed steels as well as on high Mn-steel.
SK 402-O FCAW	DIN 8555 : MF 8-GF-200-ZRKN EN 14700 : T Z Fe10	160 HB	Open-arc CrNiMn flux cored wire for buffer layers and crack resistant joints. Used for high tensile steels and on cast steel and joints on Mn-steel as well as on wear plates.
718 S SMAW	DIN 8555 : E 10-UM-60-G EN 14700 : E Fe14	60 HRC	High efficiency stick electrode for arcing in the sugar cane industry.
LEDURIT 60 SMAW	DIN 8555 : E 10-UM-60-GRZ EN 14700 : E Fe14	60 HRC	Rutil coated high efficiency stick electrode for high wear resistant claddings against mineral abrasion.
LEDURIT 61 SMAW	DIN 8555 : E 10-UM-60-GRZ EN 14700 : E Fe14 AWS A5.13 : ~ E FeCr-A I	60 HRC	Rutil-basic coated hardfacing stick electrode for high abrasion and medium impact. Recovery 160 %.
LEDURIT 65 SMAW	DIN 8555 : E 10-UM-65-G EN 14700 : E Fe16	65 HRC	High efficiency stick electrode without slag for claddings on parts subject to extreme sliding mineral abrasion, also at elevated temperatures up to 550 °C
SK 255-O* SK 866-O** FCAW	DIN 8555 : MF 10-GF-60-GR EN 14700 : T Z Fe14	60 HRC	Open-arc flux cored wire for highly wear resistant claddings against abrasion. Used for buildups on structural parts which are subject to strong mineral abrasion but little impact stress.

* Ø 1,2 - 2,0 mm

** Ø 2,4 - 2,8 mm

UTP-Product Welding process	Standards	Hardness of the pure weld deposit	Characteristics and applications
SK A 43-O FCAW	DIN 8555 : MF 10-GF-65-GR EN 14700 : T Z Fe15	64 HRC	Open-arc flux cored wire for highly wear resistant hardfacings against abrasion. Used for surfacings on structural parts subject to extremely high abrasive wear by dust, sand, gravel, ore, coal, chamotte, cement and slag.
SK 299-O FCAW	DIN 8555 : MF 10-GF-70-GRTZ EN 14700 : T Z Fe16	64 HRC	Open-arc flux cored wire for heat resistant hardfacings against mineral abrasion. Used on parts subject to extremely high abrasive wear at relevant working temperatures up to 700°C.



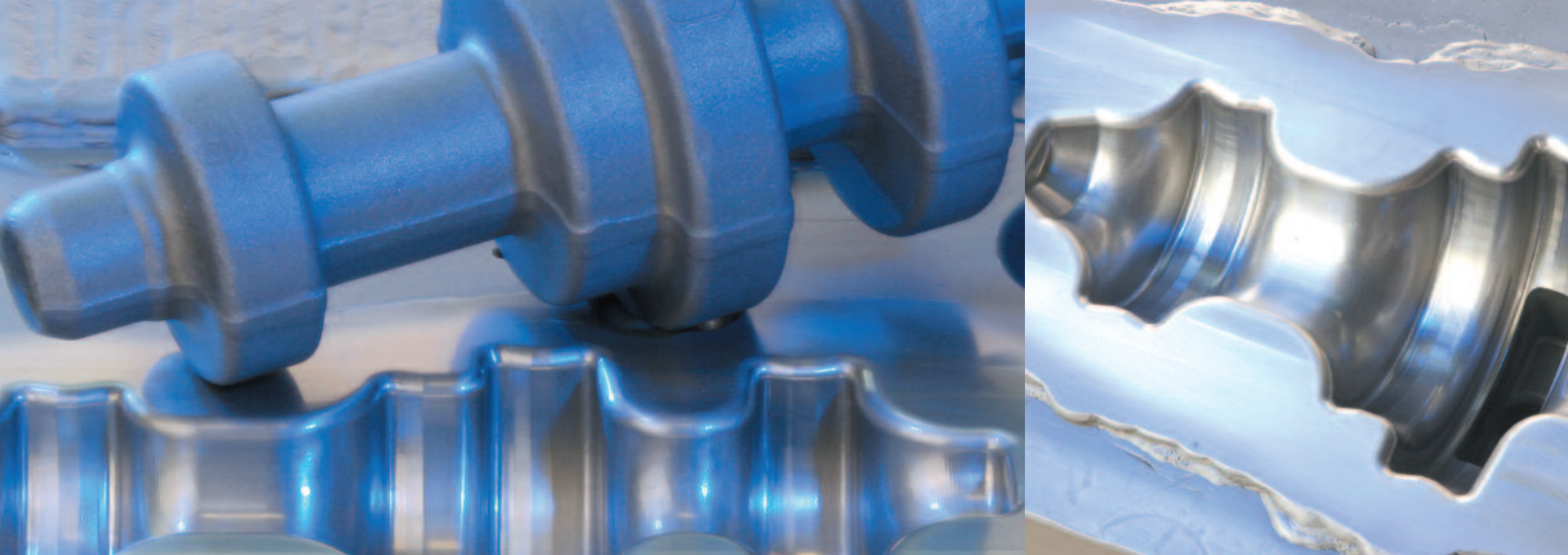
UTP-Product Welding process	Standards	Hardness of the pure weld deposit	Characteristics and applications
DUR 250 SMAW	DIN 8555 : E I-UM-250 EN 14700 : E FeI	approx. 270 HB	Basic coated stick electrode for tough, easily machinable buildups against rolling wear.
A DUR 250 GMAW	DIN 8555 : MSG 1-GZ-250 EN 14700 : SZ FeI	approx. 250 HB	Copper coated MAG wire for tough but machinable buildups exposed to rolling wear.
SK 300-O FCAW	DIN 8555 : MF 1-GF-250 EN 14700 : TZ FeI	approx. 285 HB	Open-arc flux cored wire for tough, easily machinable buildups against rolling wear.
DUR 350 SMAW	DIN 8555 : E I-UM-350 EN 14700 : E FeI	approx. 370 HB	Basic coated stick electrode for crack and wear resistant surfacings on Mn-Cr-V-alloyed parts.
A DUR 350 GMAW	DIN 8555 : MSG 2-GZ-400 EN 14700 : SZ Fe2	approx. 450 HB	Copper coated MAG wire for medium hard, wear resistant surfacings against compression, impact and abrasion.
SK 400-O FCAW	DIN 8555 : MF 1-GF-350 EN 14700 : TZ FeI	approx. 390 HB	Open-arc flux cored wire for tough, medium hard buildups against high pressure in combination with rolling and gliding wear.



UTP-Product Welding process	Standards	Hardness of the pure weld deposit	Characteristics and applications
DUR 400 SMAW	DIN 8555 : E I-UM-400 EN 14700 : E Z FeI	approx. 450 HB	Basic coated high efficiency stick electrode for crack and wear resistant surfacings. Recovery 200%. Used for parts of non-alloyed steel, low-alloyed steel and cast steel.
DUR 600 SMAW	DIN 8555 : E 6-UM-60 EN 14700 : E Fe 8	56 - 58 HRC	Basic coated hardfacing stick electrode resisting impact and abrasion. Used for parts of steel, cast steel and high Mn-steel.
A DUR 600 GMAW / GTAW	DIN 8555 : W/MSG 6-GZ-60-S EN 14700 : SZ Fe8	54 - 60 HRC	Copper coated MAG/TIG wire for highly wear resistant surfacings exposed to impact and abrasion.
SK 258-O FCAW	DIN 8555 : MF 4-GF-55-ST EN 14700 : T Fe8	55 HRC	Open-arc flux cored wire for highly wear resistant surfacings. Used on parts subject to a combination of pressure, impact and abrasion.
SK 600-G FCAW	DIN 8555 : MF 6-GF-60 EN 14700 : T Fe8	55 - 60 HRC	MAG flux cored wire for tough-hard and highly wear resistant surfacings. Used on construction parts subject to combined stresses of compression, impact and friction.
CELSIT 70I SMAW	DIN 8555 : E 20-UM-55-CSTZ EN 14700 : E Co3 AWS A5.13 : E CoCr-C	54 - 56 HRC	Welding consumables on Cobalt base used for highly wear resistant hardfacings on parts subject to severe abrasion in combination with corrosion and high temperatures up to 900°C such as running and sealing faces on fittings, valve seats and cones for combustion engines, cutting and crushing tools, hot working tools exposed to severe stresses without thermal shock, milling, mixing and drilling tools.
A CELSIT 70I N GTAW / OFW	DIN 8555 : G/WSG 20-G0-55-CSTZ EN 14700 : R Co3 AWS A5.13 : ER CoCr-C	54 - 56 HRC	
SK Stelkay I-G FCAW	DIN 8555 : MF 20-GF-55-CSTZ	54 HRC	
CELSIT 706 SMAW	DIN 8555 : E 20-UM-40-CSTZ EN 14700 : E Z Co2 AWS A5.13 : E CoCr-A	40 - 42 HRC	Welding consumables on Cobalt base used for high-grade hardfacings on parts subject to a combination of erosion, corrosion, cavitation, impact, pressure, abrasion and high temperatures up to 900°C such as tight surfaces on fittings, valve seats and cones for combustion engines, cutting and crushing tools, hot working tools exposed to severe stresses without thermal shock, milling, mixing and drilling tools.
A CELSIT 706 V GTAW / OFW	DIN 8555 : G/WSG 20-G0-40-CSTZ EN 14700 : R Z Co2 AWS A5.21 : ER CoCr-A	40 - 42 HRC	
SK Stelkay 6-G FCAW	DIN 8555 : MF 20-GF-40-CSTZ	40 HRC	

UTP-Product Welding process Current type	Standards	Hardness of the pure weld deposit	Characteristics and applications
CELSIT 712 SMAW	DIN 8555 : E 20-UM-50-CSTZ EN 14700 : E Co3 AWS A5.13 : ~E CoCr-B	48 - 50 HRC	Welding consumables on Cobalt base used for highly wear resistant hardfacings on parts subject to a combination of abrasion, erosion, cavitation, pressure and high temperatures up to 900°C, such as running, sealing and gliding faces on fittings and pumps, tools for wood, paper, plastic, shredding tools and highly stressed hot working tools without thermal shock.
A CELSIT 712 SN GTAW / OFW	DIN 8555 : G/WSG 20-G0-50- CSTZ EN 14700 : R Co3 AWS A5.21 : ~ER CoCr-B	48 - 50 HRC	
SK Stelkay 12-G FCAW	DIN 8555 : MF 20-GF-50- CSTZ	48 HRC	
CELSIT 721 SMAW	DIN 8555 : E 20-UM-300- CKTZ EN 14700 : E CoI AWS A5.13 : E CoCr-E	30 - 32 HRC	Welding consumables on Cobalt base used for crack resistant hardfacings on parts subject to a combination of impact, pressure, abrasion, corrosion and high temperatures up to 900°C, such as running and sealing faces on gas, water, steam and acid fittings and pumps, valve seats and cones for combustion engines, working parts in gas and power plants, hot working tools with changing thermal load.
A CELSIT 721 GTAW / OFW	DIN 8555 : G/WSG 20-G0- 300-CKTZ EN 14700 : R Z CoI AWS A5.21 : ER CoCr-E	30 - 32 HRC	
SK Stelkay 21-G FCAW	DIN 8555 : MF 20-GF-300- CKTZ EN 14700 : T CoI	30 HRC	
CELSIT V SMAW	DIN 8555 : E 20-UM-40-CSTZ EN 14700 : E Z Co2 AWS A5.13 : E CoCr-A	40 - 42 HRC	Basic coated stick electrode on Cobalt base, core wire alloyed. Used for high-grade hardfacings on parts subject to a combination of impact, pressure, abrasion, erosion, corrosion, cavitation, and high temperatures up to 900 °C.





UTP-Product Welding process	Standards	Hardness of the pure weld deposit	Characteristics and applications
73 G 2 SMAW	DIN 8555 : E 3-UM-55-ST EN 14700 : E Fe8	55 - 58 HRC	Welding consumables with very good welding properties for wear resistant surfacings on hot and cold working steels with high hardness, toughness and heat resistance. Suited for back centers, gripping pliers, gliding and guiding surfaces, hot and cold punching tools, hot trimming knives, mangle and axial rolls.
A 73 G 2 GMAW / GTAW	DIN 8555 : W/MSG 3-GZ-55-ST EN 14700 : S Z Fe8	53 - 58 HRC	
73 G 3 SMAW	DIN 8555 : E 3-UM-45-T EN 14700 : E Z Fe6	approx. 45 - 50 HRC	Welding consumables with very good welding properties for wear resistant surfacings on hot and cold working steels with high hardness, toughness and heat resistance. Suited for hot shear blades, gate shears, forging saddles, hammers, forging dies, Al-die cast moulds, plastic moulds and for filling engravings.
A 73 G 3 GMAW / GTAW	DIN 8555 : W/MSG 3-GZ-45-T EN 14700 : S Z Fe3	42 - 46 HRC	
73 G 4 SMAW	DIN 8555 : E 3-UM-40-PT EN 14700 : E Z Fe3	approx. 38 - 42 HRC	Welding consumables with very good welding properties for wear resistant surfacings on hot and cold working steels with high hardness, toughness and heat resistance. Suited for buildups on forging dies, die cast moulds, rollers, wobbler drives, hot shear blades, boiler tubes in coal burning power stations, continuous casting rolls.
A 73 G 4 GMAW / GTAW	DIN 8555 : W/MSG 3-GZ-40-T EN 14700 : S Z Fe3	38 - 42 HRC	
690 SMAW	DIN 8555 : E 4-UM-60-ST EN 14700 : E Fe4 AWS A5.13 : E Fe 5-B (mod.)	approx. 62 HRC	Rutile coated high efficiency stick electrode for high wear resistant surfacings on cold and hot working steels as well as on high speed steels.
67 S SMAW	DIN 8555 : E 6-UM-60-S EN 14700 : E Fe8	56 - 58 HRC	Basic coated hardfacing stick electrode for cold working steels, core wire alloyed. Used for workpieces of steel, cast steel or hard Mn-steel.
673 SMAW	DIN 8555 : E 3-UM-60-ST EN 14700 : E Fe8	approx. 58 HRC	Rutile coated stick electrode for wear resistant surfacings on cold and hot working steels. Particularly on cutting-edges on hot cutting tools.

■ Cast iron alloys

UTP-Product Welding process	Standards	Hardness	Yield strength R _{p0,2}	Elongation A	Characteristics and applications
8 SMAW	EN ISO 1071 : E C Ni-CI I AWS A5.15 : E Ni-CI	180 HB	220 MPa	25 %	Graphite-basic coated stick electrode for cast iron cold welding. Universally applicable. Excellent welding properties.
8 C SMAW	EN ISO 1071 : E C Ni-CI I AWS A5.15 : E Ni-CI	180 HB	220 MPa	25 %	Cast iron cold-welding stick electrode with graphite lime-type coating and pure nickel core wire.
88 H SMAW	EN ISO 1071 : E C Ni-CI AWS A5.15 : E Ni-CI	180 HB	250 MPa	25 %	Graphite-basic coated stick electrode with high recovery for cast iron cold welding.
83 FN SMAW	EN ISO 1071 : E C NiFe-I I AWS A5.15 : E NiFe-CI	190 HB	320 MPa	18 %	Graphite-basic coated ferro-nickel stick electrodes with high deposition rates for joining and surfacing all grades of cast iron such as lamellar cast iron and nodular cast iron, malleable cast iron and for joining these materials with each other or to steel or cast steel. Suited for repair welds, fabrication welding and surfacing work.
85 FN SMAW	EN ISO 1071 : E C NiFe-I 3 AWS A5.15 : E NiFe-CI	200 HB	320 MPa	18 %	
GNX-HD SMAW	EN ISO 1071 : E NiFe-I 3 AWS A5.15 : E NiFe-CI	220 HB	340 MPa	18 %	
86 FN SMAW	EN ISO 1071 : E C NiFe-I 3 AWS A5.15 : E NiFe-CI	220 HB	340 MPa	18 %	
A 805 I Ti GMAW / GTAW	EN ISO 1071 : S C NiFe-2	200 HB	300 MPa	25 %	Ferro-nickel rod and wire for joining and surfacing on cast iron.
5 OFW	EN ISO 1071 : R FeC-I AWS A5.15 : R CI	200 HB	-	-	Welding rod for oxy-acetylene hot welding of cast iron qualities when a weld deposit of the same colour and structure as grey cast iron is required.
SK FNM-G FCAW	EN ISO 1071 : TC NiFeT3-CI	145 HB	320 MPa	25 %	Ferro-nickel flux cored wire for MAG-welding for joining and surfacing all common cast iron types.

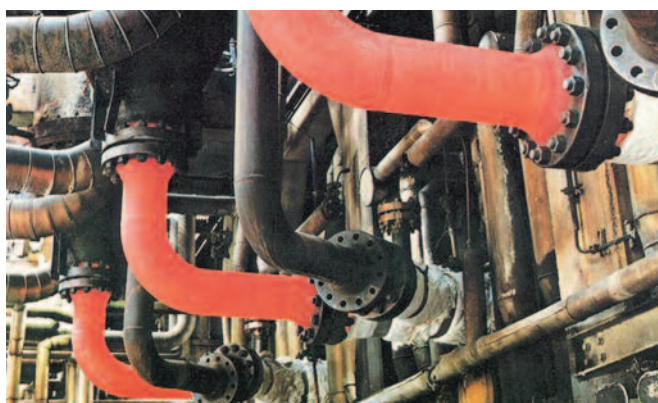




■ High alloyed consumables

UTP-Product Welding process	Standards	Yield strength R _{p0,2}	Tensile strength R _m	Elong- ation A	Impact strength K _v	Hard- ness	Characteristics and applications
63 SMAW	DIN 8555 : E 8-UM-200-KRZ EN 1600 : E 18 8 Mn R 32 EN 14700 : E Fe10	> 350 MPa	> 600 MPa	> 40 %	> 60 Joule	approx. 200 HB	CrNiMn-Welding consumables for joints and surfacings on non-alloyed, heat-treatable steels also in combination with austenitic CrNi-steels.
A 63 GMAW / GTAW	EN ISO 14343-A : W/G 18 8 Mn AWS A5.9 : ER 307 (mod.)	> 370 MPa	> 600 MPa	> 30 %	-	approx. 200 HB	
630 SMAW	DIN 8555 : E 8-UM-200-KRZ EN 1600 : E 18 8Mn R 53 EN 14700 : E Fe10	> 350 MPa	> 600 MPa	> 40 %	> 60 Joule	approx. 200 HB	Synthetic rutile coated stick electrode . Universally applicable.
65 SMAW	DIN 8555 : ~E 9-UM-250-KR EN 1600 : ~E 29 9 R 32 EN 14700 : E Z Fe11	> 620 MPa	> 800 MPa	> 22 %	-	approx. 240 HB	Rutile-coated austenitic-ferritic special stick electrode with highest strength values .
65 D SMAW	DIN 8555 : ~E 9-UM-250-KR EN 1600 : ~E 29 9 R 12 EN 14700 : E Z Fe11	> 640 MPa	> 800 MPa	> 20 %	-	approx. 260 HB	Rutile coated austenitic-ferritic special stick electrode. Particularly used for repairs.
A 65 I GMAW / GTAW	EN ISO 14343-A : W/G 29 9	> 650 MPa	> 750 MPa	> 25 %	> 27 Joule	approx. 240 HB	Austenitic-ferritic CrNi-welding wire.
68 HH SMAW	EN ISO 14172 : E Ni 6082 (NiCr20Mn3Nb) AWS A5.11 : E NiCrFe-3 (mod.)	> 390 MPa	> 620 MPa	> 35 %	> 80 Joule	approx. 180 HB	Basic coated, fully austenitic NiCr-stick electrode, universally applicable.
68 LC SMAW	EN 1600 : E 19 9 L R 3 2 AWS A5.4 : E 308 L - 17	> 350 MPa	> 520 MPa	35 %	> 47 Joule	-	Low-carbon welding consumables for joining and buildups on identical low carbon, austenitic CrNi-steels and CrNi-cast-steels. High resistance to intercrystalline corrosion. Applicable for working temperatures up to 350 °C.
A 68 LC GMAW / GTAW	EN ISO 14343-A : G/W 19 9 L AWS A5.9 : ER 308 L (Si)	400 MPa	600 MPa	35 %	100 Joule	-	
AF 68 LC FCAW	EN 17633-A : T 19 9 L RM3 T 19 9 L RC3 AWS A5.22 : E 308 LT0-1 E 308 LT0-4	380 MPa	560 MPa	35 %	70 Joule	-	Applicable for working temperatures up to 350 °C.
68 MoLC SMAW	EN 1600 : E 19 12 3 L R 3 2 AWS A5.4 : E 316 L-17	380 MPa	560 MPa	30 %	60 Joule	-	Welding consumables for stabilized and non-stabilized CrNiMo-steels and CrNiMo-cast steels. For working temperatures up to 350°C / 400°C.
A 68 MoLC GMAW / GTAW	EN ISO 14343-A : G/W 19 12 3 L AWS A5.9 : ER 316 L (Si)	420 MPa	600 MPa	35 %	100 Joule	-	
AF 68 MoLC FCAW	EN 17633-A : T 19 12 3 L RM3 T 19 12 3 L RC3 AWS A5.22 : E 316 LT0-1 E 316 LT0-4	400 MPa	560 MPa	35 %	55 Joule	-	Applicable in chemical apparatuses and vessels construction.

UTP-Product Welding process	Standards	Yield strength R _{p0,2}	Tensile strength R _m	Elong- ation A	Impact strength K _v	Hard- ness	Characteristics and applications
6824 MoLC SMAW	EN 1600 : E 23 12 2 L R 3 2 AWS A5.4 : ~E 309 MoL-17	> 490 MPa	> 670 MPa	> 25 %	> 47 Joule	-	Low-carbon CrNiMo welding consumables for joining and surfacing of steels of difficult weldability and for dissimilar welding joints.
A 6824 MoLC GMAW / GTAW	EN ISO 14343-A : G/W Z 23 12 2 L AWS A5.9 : ~ER 309 L Mo	> 500 MPa	> 700 MPa	25 %	60 Joule	approx. 220 HB	



■ High temperature CrNi-alloys

UTP-Product Welding process	Standards	Tensile strength R _m	Elong- ation A	Impact strength K _v	Working tempera- ture	Characteristics and applications
68 H SMAW	EN 1600 : E 25 20 R AWS A5.4 : E 310-16	> 550 MPa	> 30 %	> 47 Joule	1100 °C	CrNi-welding consumables for heat and scale resistant joints and surfacings on 25/20 CrNi-steels and cast steels.
A 68 H GMAW / GTAW	EN ISO 14343-A : W/G 25 20 AWS A5.9 : ~ER 310 (Si)	> 650 MPa	> 30 %	> 60 Joule	1100 °C	
2133 Mn SMAW	EN 1600 : EZ 21 33 B 4 2	> 600 MPa	> 25 %	> 70 Joule	1050 °C	Fully austenitic welding consumables for high temperature applications. Used for heat-resistant steels and cast steels of the same or of similar nature.
A 2133 Mn GMAW / GTAW	EN ISO 14343-A : W/GZ 21 33 MnNb	> 600 MPa	> 25 %	> 70 Joule	1050 °C	
2535 Nb SMAW	EN 1600 : EZ 25 35 Nb B 6 2	> 700 MPa	> 8 %	-	1100 °C	Welding consumables for high temperature cast steels with high carbon content.
A 2535 Nb GMAW / GTAW	EN ISO 14343-A : G/WZ 25 35 Zr	> 680 MPa	> 8 %	-	1150 °C	



■ Nickel alloys

UTP-Product Welding process	Standards	Tensile strength R_m	Elong- ation A	Impact strength K_v +20°C	Characteristics and applications
068 HH SMAW	EN ISO 14172 : E Ni 6082 (NiCr20Mn3Nb) AWS A5.11 : E NiCrFe-3 (mod.)	680 MPa	40 %	120 Joule	Fully austenitic NiCrFe-Welding consumables for joining and surfacing on high temperature nickel alloys, heat resistant austenites, cold-tough Ni-steels and heat-resistant austenitic-ferritic materials. Particularly used for petrochemical installations with working temperatures up to 900°C.
A 068 HH GMAW / GTAW	EN ISO 18274 : S Ni 6082 (NiCr20Mn3Nb) AWS A5.14 : E R NiCr-3	680 MPa	40 %	160 Joule	
AF 068 HH Mn FCAW	EN ISO 14172 : E Ni 6082 (NiCr20Mn3Nb) AWS A5.34 : E NiCr 3 T0-4 (mod.)	650 MPa	35 %	120 Joule	
80 M SMAW	EN ISO 14172 : E Ni 4060 (NiCu30Mn3Ti) AWS A5.11 : E NiCu-7	> 450 MPa	> 30 %	> 80 Joule	NiCu-Welding consumables for joining and surfacing of nickel-copper-alloys and nickel-copper-clad steels. Primarily used for materials in the chemical and petrochemical industry.
A 80 M GMAW / GTAW	EN ISO 18274 : S Ni 4060 (NiCu30Mn3Ti) AWS A5.14 : ER NiCu-7	> 450 MPa	> 30 %	> 80 Joule	
6222 Mo SMAW	EN ISO 14172 : E Ni 6625 (NiCr22Mo9Nb) AWS A5.11 : E NiCrMo-3	> 760 MPa	> 30 %	> 75 Joule	NiCrMo-Welding consumables for high corrosion resistant NiCrMo-alloys. It can be used for joining ferritic steel to austenitic steel as well as surfacing on steel. Its wide range of uses is of particularly significance in aviation, chemical industry and in applications involving seawater.
A 6222 Mo GMAW / GTAW	EN ISO 18274 : S Ni 6625 (NiCr22Mo9Nb) AWS A5.11 : ER NiCrMo-3	> 740 MPa	> 30 %	> 100 Joule	
AF 6222 Mo PW FCAW	EN ISO 14172 : E Ni 6625 (NiCr22Mo9Nb) AWS A5.34 : ER NiCrMo-3 T1-4	750 MPa	30 %	70 Joule	
7015 SMAW	EN ISO 14172 : E Ni 6182 (NiCr15Fe6Mn) AWS A5.11 : E NiCrFe-3	670 MPa	40 %	120 Joule	NiCr-Welding consumables for for joining and surfacing of nickel alloys of the same nature, heterogeneous joints with C- and CrNi-steels, claddings on C-steels. Typical applications are high temperature components.
7015 Mo SMAW	EN ISO 14172 : E Ni 6093 (NiCr15Fe8NbMo) AWS A5.11 : E NiCrFe-2	> 620 MPa	> 35 %	> 80 Joule	
AF 7015 FCAW	EN ISO 14172 : E Ni 6182 (NiCr15Fe6Mn) AWS A5.34 : E NiCrFe-3 T0-4	610 MPa	35 %	120 Joule	

■ Copper and copper alloys

UTP-Product Welding process	Standards	Tensile strength R _m	Elong- ation A	Impact strength K _V +20°C	Hardness	Elec. conduct- ivity	Characteristics and applications
39 SMAW	DIN 1733 : EL-CuMn2 AWS A5.6 : E Cu (mod.)	200 MPa	> 35 %	> 80 Joule	approx. 60 HB	approx. 15 - 20 $\frac{S \cdot m}{mm^2}$	Basic coated pure copper stick electrode for joining and surfacing all commercial pure copper grades.
A 381 GMAW / GTAW	EN ISO 24373 : S Cu 1898 (CuSn1) AWS A5.7 : ER Cu	200 MPa	30 %	-	approx. 60 HB	15 - 20 $\frac{S \cdot m}{mm^2}$	CuSn-alloyed inert gas welding wire for oxygen-free copper types.
34 N SMAW	DIN 1733 : EL-CuMn14Al AWS A5.6 : E CuMnNiAl	approx. 650 MPa	> 20 %	-	approx. 220 HB	approx. 3 $\frac{S \cdot m}{mm^2}$	Basic coated complex aluminiumbronze stick electrode with 13% Mn Used in the shipbuilding and chemical industry.
A 34 N GMAW / GTAW	EN ISO 24373 : S Cu 6338 (CuMn13Al8Fe3Ni2) AWS A5.7 : Er CuMnNiAl	650 MPa	20 %	-	220 HB	3 - 5 $\frac{S \cdot m}{mm^2}$	Manganese mutiple material bronze gas-shielded welding wire with 13% Mn for joining and surfacing.
343 SMAW	DIN 1733 : E 31-UM-300-CN AWS A5.6 : ~ECuAl C	-	-	-	approx. 300 HB	-	Basic coated bronze buildup stick electrode for surfacings.
387 SMAW	DIN 1733 : EL-CuNi30Mn AWS A5.6 : E CuNi	> 390 MPa	> 30 %	> 80 Joule	-	-	CuNi-Welding consumables for copper-nickel-alloys with up to 30% Ni. Particularly used in the chemical industry, seawater desalination plants, ship building, offshore technique.
A 387 GMAW / GTAW	EN ISO 24373 : S Cu 7158 (CuNi30Mn1FeTi) AWS A5.7 : ER CuNi	> 360 MPa	> 30 %	> 100 Joule	120 HB	3 $\frac{S \cdot m}{mm^2}$	





■ Aluminium and aluminium alloys

UTP-Product Welding process	Standards	Tensile strength R_m	Elong- ation A	Melting- range	Characteristics and applications
485 SMAW	DIN 1732 : EL-AISi5 AWS A5.3 : E 4043	160 MPa	15 %	573 - 625 °C	Aluminium welding consumables with 5 % Si for joining and surfacing different Al-alloys with a Si content up to 7 %.
A 485 GMAW / GTAW	EN ISO 18273 : S Al 4043 (AISi5) AWS A5.10 : ER 4043	160 MPa	15 %	573 - 625 °C	
48 SMAW	DIN 1732 : EL-AISi12	180 MPa	5 %	573 - 585 °C	Aluminium Welding consumables with 12 % Si for joining and surfacing different Al-alloys with a Si content up to 12 %.
A 48 GMAW / GTAW	EN ISO 18273 : S Al 4047 A (AISi12(A)) AWS A5.10 : ER 4047	170 MPa	8 %	573 - 585 °C	
49 SMAW	DIN 1732 : EL-AIMnI AWS A5.3 : E 3003	110 MPa	20 %	648 - 657 °C	Aluminium stick electrode with 1,5 % Mn and special coating for joining and surfacing on aluminium-manganese alloys.
A 495 GMAW / GTAW	EN ISO 18273 : S Al 5356 A (AlMg5Cr(A)) AWS A5.10 : ER 5356	250 MPa	25 %	575 - 633 °C	Aluminium-magnesium alloy with 5% Mg for joining and surfacing of AlMg-alloys with a Mg content of up to 3 %.
4 OFW	EN 1044 : Al 104 DIN 8513 : L-AISi 12 EN ISO 3677 : BA188Si575-585	100 MPa	-	575 - 583 °C	AlSi-brazing alloy with low melting point for all commercial aluminium casting and forging alloys, except alloys with more than 3 % Mg content.

■ Bronze brazing

UTP-Product Type	Standards	Working temp- erature	Tensile strength R_m	Characteristics and applications
I BARE ROD	EN 1044 : CU 304	890 °C	420 MPa (St50)	Special brass brazing alloy. Used for joints and surfacings on steel, copper, brass, bronzes and grey cast iron. Suited for pipe constructions, sanitary installations, locksmith work and repair work.
I M FLUX COATED ROD	DIN 8513 : L-CuZn39Sn			
I MR ROD GROOVED AND FLUX COATED ROD	EN ISO 3677: BCu60Zn(Sn)870-900			
6 BARE ROD	EN 1044 : CU 305 (mod.)	890 °C	785 MPa	Silver-containing CuNiZn-brazing alloy for high strength brazing joints on unalloyed and low alloyed steels. Suited for joints on heavily stressed components and sleeveless pipe construction assembling in vehicle construction.
6 M FLUX COATED ROD	DIN 8513 : L-CuNi10Zn42+Ag			

■ Silver alloys for soldering and brazing

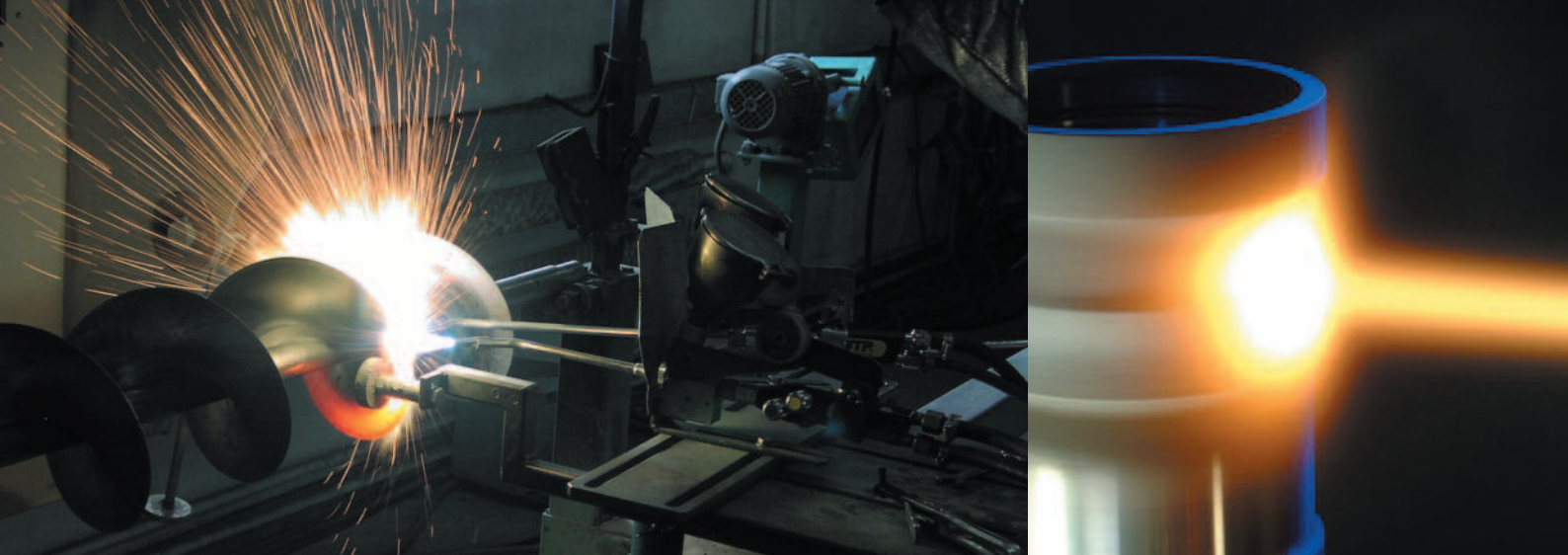
UTP-Product Type	Standards	Working temp- erature	Tensile strength	Characteristics and applications
306 BARE ROD	EN 1044 :AG 103	650 °C	430 MPa (St50)	Cadmium-free high-strength silver-solder with excellent mechanical properties for joining steels, stainless steels, nickel and nickel-alloys, hard metals as well as joining these materials with each other.
306 M FLUX COATED ROD	DIN 8513 : L-Ag 55 Sn EN ISO 3677 : BAg55CuZnSn620-655			
3040 BARE ROD	EN 1044 :AG 105	690 °C	430 (St50)	Cadmium-free silver alloy with 40 % Ag with good flowing characteristics. Suited for solder joints on steel, stainless steels, nickel and nickel-alloys as well as on copper and copper-alloys. Mainly used in the food industry (cadmium-free), household goods and refrigerator industry.
3040 M FLUX COATED ROD	DIN 8513 : L-Ag 40 Sn EN ISO 3677 :			
3040 MD THIN FLUX COATED ROD	BAg40CuZnSn650-710			
7 BARE ROD	EN 1044 :AG 206	810 °C	450 MPa (St50)	Cadmium-free silver alloy with 20 % Ag with good capillary action. Suited for joining steels, stainless steels, nickel and nickel-alloys, copper and copper alloys, hard metals. Applicable for sanitary installations, apparatus construction, precision mechanics and tool manufacture.
7 M FLUX COATED ROD	DIN 8513 : L-Ag 20 EN ISO 3677 : B Cu44ZnAg690-810			

■ Low alloyed consumables

UTP-Product Welding process	Standards	Tensile strength R _m	Elong- ation A	Impact strength K _V	Characteristics and applications
611 SMAW	EN ISO 2560-A : E 38 0 RR 12 AWS A5.1 : ~E 6013	> 510 MPa	> 22 %	> 47 Joule	Rutile, strongly coated stick electrode, universally applicable for all kinds of steel construction.
614 Kb SMAW	EN ISO 2560-A : E 42 3 B32 H10 AWS A5.1 : E 7018	> 510 MPa	> 22 %	80 Joule	Basic double-coated AC-weldable stick electrode for steel constructions with high-stressed joints. Very good welding properties.

■ Cutting and gouging

UTP-Product Welding process	Characteristics and applications
82 AS SMAW	Strongly coated chamfering electrode for all steel grades with ferritic and austenitic structure, as well as cast iron, cast steel and non-ferrous metals. It enables workpieces to be grooved out in a simple fashion. UTP 82 AS is also suitable for removing corroded metal layers and for fusion-cutting metallic materials.



■ Flame spraying and Plasma welding powders

UTP-Product	Standards EN 1274	Grain size	Hardness	Characteristics and applications
EB-1001	5.1 - 106/36	- 106 + 36 µm	150 - 190 HB	Bond coat, NiAl-base powder for initial layer under further coats of wear resistant CrNi- and Cu-alloys.
EB-1025	-	- 125 µm	23 HB	Zn-powder for active corrosion protection under atmospheric stresses.
EB-2001	~3.2 - 125/45	- 125 + 45 µm	160 - 230 HV	CrNi-powder of moderate hardness subject to sliding friction wear; shaft journals, gland seats, cams of brake shafts, seal rings, impellers, valve stems, bearings.
EB-2003	~8.1 - 120/36	- 120 + 36 µm	130 HB	CuAl-bronze with good sliding and emergency running properties; rollers, bearing, journals, slideways.
UB 5-2540	2.7 - 125/45	- 125 + 45 µm	38 - 42 HRC	NiCrBSi-powder with good resistance to corrosion and wear even at high operating temperatures; valve discs, conveyour chains, mixer parts, friction bearings, moduls in the glass industry, feed screws.
UB 5-2760	2.9 - 125/45	- 125 + 45 µm	60 HRC	NiCrBSi-powder with excellent resistance to wear and corrosion, high level of hardness with moderate dynamic compression stress; feed screws, running and sealing surfaces in valves, fittings and bearing seats.
UB 5-2864	-	- 125 + 45 µm	60 HRC (matrix)	NiCrBSi-powder with tungsten carbides for highest abrasion resistance; mandrels, cylinder, screw shafts, excavator parts.



UTP-Product	Standards EN 1274	Grain size	Hardness	Characteristics and applications
HA-3	2.2 - 106/20	- 106 + 20 µm	205 - 260 HV	NiSiB-powder for repair surfacing, high impact resistance; press moulds, bearings, pump vanes.
HA-5	2.7 - 106/20	- 106 + 20 µm	40 HRC	NiCrBSi-powder with good resistance to corrosion and wear even at high operating temperatures; drawing dies, forging dies, plastic form tools.
HA-7	2.9 - 106/20	- 106 + 20 µm	60 HRC	NiCrBSi-powder with good resistance to corrosion and wear even at high operating temperatures; pump rings, friction bearing surfaces, knife edges, press moulds, camshafts.
HA-8	-	- 106 + 20 µm	60 HRC (matrix)	NiCrBSi powder with tungsten carbides for a high level of protection against abrasive wear; slicing machine blades, conveyor chains, kneader parts.
HA-8 SS	-	- 106 + 20 µm	60 HRC (matrix)	NiCrBSi-powder for highest abrasion resistance; mixer-settler parts and kneaders in the ceramics industry; die drawing tools, chopping blades, scrapers.
PTA 2-706.10 PTA 2-706.11	~7.2 - 150/50 ~7.2 - 200/63	- 150 + 50 µm - 200 + 63 µm	41 HRC	CoCrWC-powder for protection against adhesive and abrasive wear; heat-resistant; hardsurfacings of running and sealing surfaces in valves carrying gas, water and acid, hot-working tools subject to high stresses, valve seats, valve collets for combustion engines, grinding, mixing, carrying and drilling tools, dies and press moulds.
PTA 2-712.10 PTA 2-712.11	7.3 - 150/50 7.3 - 200/63	- 150 + 50 µm - 200 + 63 µm	48 HRC	
PTA 3-73G2.7 PTA 3-73G2.10	-	- 125 + 45 µm - 150 + 50 µm	53 - 58 HRC	FeCrMo-powder for build-ups on machine parts and tools subject to heavy abrasion and compression combined with moderate impact at elevated temperatures.

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■ Place for drawings





Sales Program

Welding consumables:

Stick electrodes for welding nickel alloys
Stick electrodes for hardfacing
Special stick electrodes for welding different kinds of steel
Stick electrodes for welding cast iron alloys
Stick electrodes for chamfering and cutting
Stick electrodes for welding non-ferrous metals
Stick electrodes for welding stainless, acid- and heat resistant steels
Silver solders, brazing alloys, soft solders
Fluxes
Stick electrodes for welding low- and medium-alloyed steels
MIG/MAG wires and TIG rods
Flux-cored wires
Submerged arc welding wires and fluxes

Flame spraying and Plasma welding powders:

Metal powders
EXOBOND powders
UNIBOND powders
HABOND powders
PTA powders (Plasma)

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If it can be welded – we know how.



UTP is a certificated company.
TÜV Certification according to DIN EN ISO 9001
DIN EN ISO 14001