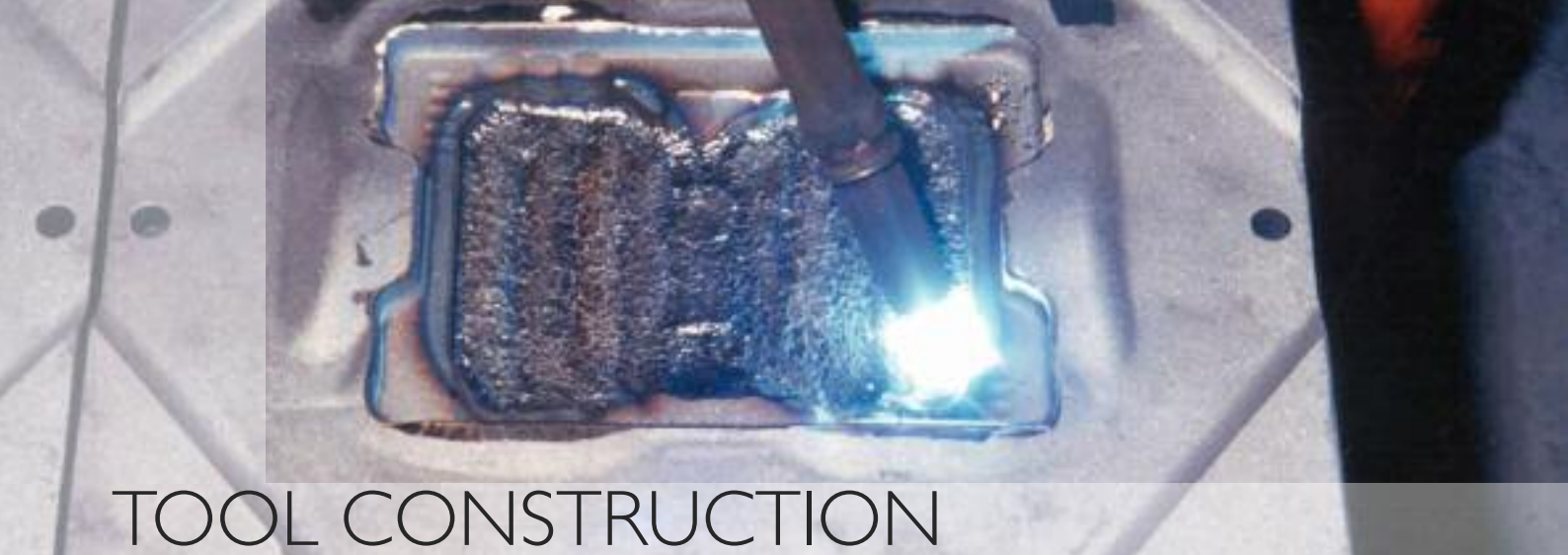




Your reliable partner in the tool welding construction



TOOL CONSTRUCTION

■ UTP Your reliable partner in the tool welding construction

Welding technology is used in many areas of the tool welding construction, such as:

- Production of new tools
- Build-up and repair welding of cracked or worn tools
- Renewal of worn or broken cutting edges, e.g. on cutting tools
- Correction of production errors
- Changes of pattern
- Partial reinforcing of the wearing areas

To produce new tools, UTP offers welding consumables for all applications and alloys, that are required in the area of tool construction.

UTP offers welding technology solutions, for tools that are subject to continuous high loads and hence wear and material fatigue, which are an economic alternative for procurement or manufacture of a new part.

This applies especially to large expensive tools, such as die-casting moulds, large forging dies, plastic moulds, car body tools, as well as cutting and forming tools.

This brochure contains UTP welding consumables for cold, warm and plastic mould steels, as well as for powder metallurgical steel manufactured for tool steel and covers a wide range of welding technology applications, that can appear in the area of tool construction.

■ Basic rules for welding in tool construction

- Cleaning of the work piece from impurities, such as grease, not to have a negative effect on the welding quality (smoke development, pore formation).
- Maintain constant pre-heating of the work piece and temperature during welding, to avoid the risk of hardening, crack formation and shrinkage.
- Select suitable welding consumables according to the alloy and dimensions, depending on the basic material and application. Try to weld as much as possible using the same way or method with comparable strength. The knowledge about the stress of the work piece is important, e.g.

Cutting edges ⇒ very hard (long cutting life)
Die block/ ⇒ lower hardness (risk of cracking during use)
Plastic mould

- Hammering of the weld layers while still warm from the welding heat prevents shrinkage during the cooling phase. Visible marks and weak points can show up after machining if hammering is not carried out.
- Reheating and slow cooling to prevent stress relief of sensitive materials that are susceptible to crack formation (chrome cutting steels, PM steels).



Changes of pattern of cutting jaws made from I.2382 with UTP 73 G 2



Edge coating on cutting jaws made from I.3343 with UTP 690



Build-up welding of an axial roller with UTP AF DUR 550 MP



TIG repair of a broaching tool with UTP A 696



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UTP-designation Standards	Welding process	Weld ma- terial ref. analysis	Hardness	Properties	Application
Welding consumables for cold work steels					
665 DIN 8555: E 5-UM-350-RS EN 14700: ~E ZFe7	SMAW	C 0.06 Mn 0.8 Si 0.6 Cr 17.0	35 – 40 HRC (untreated) 55 – 57 HRC (on Cr cutting tool steel, 1-2 layers)	High chrome alloy special electrode for repairing tools steels on 5 - 12% chrome cutting tools, quick repair.	Repairs and changes of patterns to tool steels, particularly cutting tools made from 12 % chrome cutting steel, like: 1.2601, 1.2080, 1.2436, 1.2376, 1.2379. Used for punching and pressing tools in the automotive industry.
73 G 2 DIN 8555: E 3-UM-55-ST EN 14700: E Fe8	SMAW	C 0.35 Si 0.5 Mn 1.3 Cr 7.0 Mo 2.5	55 – 58 HRC	Basic coated electrode for wear-resistant surfacings on hot and cold working steels.	Surfacing on machine parts and tools, that are subject to high abrasion and pressure at moderate impact loads and increased operating temperatures, such as back centres, gripping pliers, gliding and guiding surfaces, hot and cold punching tools.
A 73 G 2 DIN 8555: W/MSG 3-GZ-55-ST EN 14700: S Z Fe8	GMAW GTAW	C 0.35 Si 0.3 Mn 1.2 Cr 7.0 Mo 2.0 Ti 0.3 Fe Rest	53 – 58 HRC	Copper coated protective gas wire for highly wear- resistant build-ups on hot and cold working tools.	Highly wear-resistant build ups on machine parts and tools, that are subject to heavy abrasion and compression at moderate impact loads and increased operating temperatures, such as rolling mandrels, straightening rollers and axial rollers.
673 DIN 8555: E 3-UM-60-ST EN 14700: E Fe8	SMAW	C 0.3 Si 0.8 Mn 0.4 Cr 5.0 Mo 1.5 W 1.3 V 0.3	approx. 58 HRC	Rutile coated electrode for wear resistant surfacings.	Surfacings on cold and hot working tools, particularly on cutting edges, trimming tools and cold cutting tools, as well as for the manufacture of new cutting tools using non-alloy or low-alloy base materials.
67 S DIN 8555: E6-UM-60-S EN 14700: E Fe8	SMAW	C 0.5 Si 3.0 Mn 0.5 Cr 9.0	56 – 58 HRC	Basic coated hardfacing electrode for cold working steel.	Surfacing on work pieces made from steel, cast steel and hard manganese steel, such as stamping mills, plough blades, rope pulleys, baffle plates, particularly suitable for surfacing on cutting edges of cold working tools.
A DUR 600 DIN 8555: W/MSG 6-GZ-60-S EN 14700: S Z Fe8	GMAW GTAW	C 0.5 Si 3.0 Mn 0.5 Cr 9.5 Fe Rest	54 – 60 HRC	Copper coated protective gas wire for highly wear- resistant build-ups on impact and abrasion	TIG and MAG build-ups on structural parts, that are subject to high impact and medium abrasion. The main areas of application are in mining, steel works, cement works and for cutting and forming tools in the automotive industry.
750 DIN 8555: E 3-UM-50-CTZ EN 14700: E Z Fe6	SMAW	C 0.2 Si 0.5 Mn 0.2 Cr 11.5 Ni 1.0 Mo 4.5 Co 12.5 Fe Rest	48 – 52 HRC	Rutile coated electrode for heat resistant surfacings with high tempering resistance and rust-resistance.	Surfacings on cold and hot working tools, that are subject to metallic gliding wear and increased temperature change, such as die-casting moulds for brass, aluminium and magnesium, warm pressing mandrels, trimming tools.



TOOL CONSTRUCTION

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UTP-designation Standards	Welding process	Weld material ref. analysis	Mechanical grades of steel	Ap- provals	Properties	Application
Welding consumables for cold work steels						
64I Kb EN 1599: E CrMoI B 4 2 H5 AWS A5.5: E 8018 - B2	SMAW	C 0.7 Si 0.4 Mn 0.8 Cr 1.1 Mo 1.1	Tempered: 0.5 h 720°C / air: R _{p0.2} > 490 MPa R _m > 610 – 705 MPa A > 22 % Quenched and tempered: 0.5 h 930°C / air + 0.5 h 720°C R _{p0.2} > 375 MPa R _m > 470 – 570 MPa A > 25 %	-	Basic electrode for joinings and surfacings ; heat-resistant.	Welds on tempered steels up to a strength of 780 MPa and case-hardening steels with Cr content up to about 1.2 % as well as untreated nitride steels and tool steels.
A 64I EN 12070: G/W CrMoI Si AWS A5.25 : ER 80S-G	GMAW GTAW	C 0.1 Si 0.7 Mn 1.0 Cr 1.2 Mo 0.5	Tempered: 0.5 h 720°C / air: R _{p0.2} > 490 MPa R _m > 610 – 705 MPa A > 22 % Quenched and tempered: 0.5 h 930°C / air + 0.5 h 720°C R _{p0.2} > 375 MPa R _m > 470 – 570 MPa A > 25 %	TÜV	Protective gas wire for joinings and surfacings; heat-resistant.	Application like 64I Kb.

■ UTP Your reliable partner in the tool welding construction

UTP-designation Standards	Welding process	Weld material ref. analysis	Mechanical grades of steel	Hardness	Properties	Application
Welding consumables for high-speed steels						
65 D DIN 8555: ~E 9-UM-250-KR EN 1600: ~E 29 9 R 12 EN 14700: E Z Fe I I	SMAW	C 0.1 Si 1.0 Mn 1.0 Cr 30.0 Ni 9.5 Fe Rest	R _{p0.2} > 640 MPa R _m > 800 MPa A > 20 %	approx. 260 HB	Rutile coated austenitic-ferrite special electrode with high mechanical grades for joinings and surfacings on steels that are hard to weld. High risk of cracking.	Joinings and surfacings on hard manganese steel, tool steel, spring steel, high-speed steel and heterogeneous joints, can be used universally.
A 65I EN ISO 14343-A :W/G 29 9	GMAW GTAW	C 0.10 Si 0.4 Mn 1.6 Cr 30.0 Ni 9.0	R _{p0.2} > 650 MPa R _m > 750 MPa A > 25 %	approx. 240 HB	Protective gas wire for joinings and surfacings on steels that are hard to weld.	Repairs of cold and hot working steels, cushioning layers.



■ UTP Your reliable partner in the tool welding construction

UTP-designation Standards	Welding process	Weld ma- terial ref. analysis	Hardness	Ap- provals	Properties	Application
Welding consumables for high-speed steels						
690 DIN 8555: E 4-UM-60-ST EN 14700: E Fe4 AWS A 5.13: E Fe 5-B (mod.)	SMAW	C 0.9 Si 0.8 Mn 0.5 Cr 4.5 Mo 8.0 W 2.0 V 1.2	approx. 62 HRC soft annealed 800 – 840°C: approx. 25 HRC Hardened 1180 – 1240°C and tempered 2 x 550°C: approx. 64 – 66 HRC	ÖBB	Rutile coated high-speed steel high efficiency electrode for highly wear-resistant surfacings on cold and hot working steels.	Repair and production of new cutting tools, particularly for the coating of cutting edges and working surfaces for high resistance against abrasion, pressure and impact at high temperatures up to 550 °C, as well as the manufacture of cutting edges using non-alloy and low-alloy base material (cladding of cutting edges).
A 696 DIN 8555: W/MSG 4-GZ-60-S EN 14700: S Z Fe4 AWS A5.13: R Fe 5-A	GMAW GTAW	C 1.0 Si 0.2 Mn 0.2 Cr 4.0 Mo 8.5 W 1.8 V 2.0 Fe Rest	60 – 64 HRC soft annealed 800°C: approx. 250 HB Hardened 1230°C / oil and tempered 2 x 540°C: approx. 62 – 66 HRC	-	Protective gas wire with properties of high-speed steel.	Manufacture and repair of Mo alloyed high-speed steel tools, such as rotary and turning tools, formcutters, broaching tools, reamers and twist drills, Materials: 1.3343, 1.3316, 1.3333, 1.3344, 1.3346.

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UTP-designation Standards	Welding process	Weld ma- terial ref. analysis	Hardness	Ap- provals	Properties	Application
Welding consumables for iron based hot working steels						
73 G 3 DIN 8555: E 3-UM-45-T EN 14700: E Fe3	SMAW	C 0.3 Si 0.5 Mn 0.6 Cr 5.0 Mo 4.0	approx. 45 – 50 HRC heat-resistant up to 550°C	-	Basic coated electrode for wear-resistant surfacings against impact, pressure and abrasion on hot working steels.	Due to the higher tensile strength, toughness, and heat resistance for surfacings used on machine parts and tools, that are subject to impact, pressure and abrasion at high operating temperatures, such as aluminium die-casting moulds, guillotine shears, hammer.
A 73 G 3 DIN 8555: W/MSG 3-GZ-45-T EN 14700: S Z Fe3	GMAW GTAW	C 0.25 Si 0.5 Mn 0.7 Cr 5.0 Mo 4.0 Ti 0.6	42 – 46 HRC (untreated)	TÜV	Copper coated protective gas wire for the manufacture of new and / or repair of high quality hot working tools.	Application like 73 G 3.
73 G 4 DIN 8555: E 3-UM-40-PT EN 14700: E Z Fe3	SMAW	C 0.15 Si 0.5 Mn 0.6 Cr 6.5 Mo 3.5	38 – 42 HRC	-	Basic coated electrode for tough, crack-resistant surfacings against impact, pressure and abrasion on hot working steels.	Due to the higher toughness and heat resistance, used for surfacing on machine parts and tools, that are subject to impact, pressure and abrasion at high operating temperatures, such as forging dies, wobbler drives, hot-shear blades, rollers.



TOOL CONSTRUCTION

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UTP-designation Standards	Welding process	Weld ma- terial ref. analysis	Hardness	Ap- provals	Properties	Application
Welding consumables for iron based hot working steels						
A 73 G 4 DIN 8555:W/MSG 3-GZ-40-T EN 14700: S Z Fe3	GMAW GTAW	C 0.1 Si 0.4 Mn 0.6 Cr 6.5 Mo 3.3	38 – 42 HRC	TÜV	Copper coated protective gas wire for tough, wear resistant coatings on hot working tools.	Application like 73 G 4.
673 DIN 8555: E 3-UM-60-ST EN 14700: E Fe8	SMAW	C 0.3 Si 0.8 Mn 0.4 Cr 5.0 Mo 1.5 W 1.3 V 0.3	approx. 58 HRC	-	Rutile coated electrode for wear-resistant surfacings on cold and hot working tools.	Wear-resistant coatings on hot working tools, particularly for cutting edges on hot cutting tools, hot-shear blades, trimming tools and cold cutting knives, as well as for the manufacture of new cutting edges using non-alloy or low-alloy base materials (cladding of cutting edges).
A 673 DIN 8555:W/MSG 3-60-T EN 14700: S Z Fe3	GMAW GTAW	C 0.35 Si 1.0 Mn 0.4 Cr 5.0 Mo 1.5 W 1.3 V 0.3	57 – 60 HRC	-	Protective gas wire for wear-resistant surfacings on cold and hot working tools.	Used for repair and manufacturing of new hot working steels, such as die-cast tools, forging dies, hot cutting knives, hot-shear blades, axial rollers, rolling mandrels, upset plates and for the manufacture of working surfaces using non-alloy and low-alloy base material. Processing with hard metal is possible. Materials: I.2606
702 DIN 8555: E 3-UM-350-T EN 14700: E Fe5	SMAW	C 0.025 Si 0.2 Mn 0.6 Ni 20.0 Co 12.0 Mo 4.0 Fe Rest	34 – 37 HRC (untreated) 50 – 54 HRC 3 – 4h / 480°C quenched and artificially aged	-	Basic coated, age-hardenable martensitic electrode for wear-resistant hard facings on cold and warm working tools such as punching tools.	Due to the high structural arrangement for the repair, preventive repair and production of high tensile cold and hot working tools used, such as punching tools, cold-shear for thicker materials, drawing, stamping and trimming tools, hot cutting knives, aluminium die-casting moulds, plastic moulds cold forging dies. Material: I.6353
A 702 DIN 8555: MSG 3-GZ-350-T EN 14700: S Z Fe5	GMAW GTAW	C 0.02 Mo 4.0 Ni 18.0 Co 12.0 Ti 1.6 Al 0.1 Fe Rest	34 – 37 HRC (untreated) 50 – 54 HRC 3 – 4h / 480°C quenched and artificially aged	-	High-alloy, maraging protective gas wire for highly wear-resistant hardfacings on hot and cold working tools, drawing, stamping and trimming tools.	Application like 702.
694 DIN 8555: E 3-UM-45-T EN 14700: E Fe3	SMAW	C 0.27 Si 0.3 Mn 1.7 Cr 2.4 W 4.5 V 0.6	approx. 45 HRC	ÖBB	Basic coated electrode for wear-resistant surfacings on warm and cold working steels.	Hot wear-resistant surfacings on hot working tools, that are primarily subject to abrasion and pressure, such as hot cutting knives, filling engravings of forging tools, rolling mandrels, axial roller, die-casting tools, where materials such as I.2344, I.2365, I.2581 and I.2567 are used.
A 694 DIN 8555:W/MSG 3-45-T EN 14700: S Z Fe3	GMAW GTAW	C 0.3 Si 0.2 Mn 0.3 Cr 2.4 W 4.3 V 0.6	approx. 45 HRC	-	Copper coated protective gas wire for the manufacture of new and / or repair of high quality hot working tools.	Hot wear-resistant surfacings on highly stressed moulds and cuttings made from hot working steels, such as die-casting moulds, plastic moulds, forging dies, hot trimming tools, as well as for the manufacture of high-quality working surfaces using non-alloy or low-alloy base material. Material: I.2567

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UTP-designation Standards	Welding process	Weld ma- terial ref. analysis	Mechanical grades of steel	Hardness	Ap- provals	Properties	Application
Welding consumables for nickel based hot working steels							
700 EN 14700: E Ni2	SMAW	C 0.15 Si 1.0 Mn 1.0 Fe 5.5 Cr 17.0 Mo 18.0 W 4.5 Ni Rest	-	approx. 280 HB (untreated) approx. 450 HB (work hardened)	-	Rutile coated NiCrMoW based electrode for heat resistant hardfacings on hot working tools.	Wear-resistant hardfacings of highly stressed hot working tools such as forging dies, hot piercing plugs, hot cutting knives, extrusion die, hot trimming tools as well as for highly corrosion-resistant platings, such as flat faces of armatures.
7000 DIN 8555: E 23-UM-200-CKTZ EN 14700: EZ Ni2	SMAW	C 0.04 Si 0.3 Mn 0.9 Cr 16.0 Mo 17.0 W 5.0 Fe 5.0 Co 1.5 Ni Rest	-	approx. 220 HB (untreated) approx. 450 HB (work hardened)	-	Rutile basic NiCrMoW based high performance electrode for heat resistant hardfacings on hot working tools.	Application like 700.
A 776 EN ISO 18274: E Ni 6276 (NiCr15Mo16Fe6W4) AWS A5.14: ER NiCoMo-4	GMAW GTAW	C 0.1 Si 0.1 Cr 16.0 Mo 16.0 W 3.5 Fe 6.0 V 0.2 Ni Rest	R _{p0,2} > 450 MPa R _m > 750 MPa A > 30 % Kv > 90 J	approx. 220 HB (untreated) approx. 400 HB (work hardened)	TÜV	Protective gas wire for high-corrosion resistant NiCrMo alloys.	Is suitable for joint welding of similar types of base materials such as 2.4886, 2.4819 and build-up welding on low-alloy steels, welding of components in chemical processing plants with highly corrosive media, but also for coating of surfacing press tools, punches, that are subject to higher temperatures.
A 5519 Co DIN 8555: MSG 23-GZ-250-CKTZ EN 14700: SZ Ni2	GMAW GTAW	C 0.03 Cr 20.0 Co 14.0 Mo 4.5 Ti 3.0 Al 1.5 Fe < 2.0 Ni Rest	-	approx. 250 HB (untreated) approx. 400 HB (work hardened)	-	NiCrMoTiAl based protec- tive gas wire for hardfa- cings on hot working tools with extreme thermal load, age-hardenable.	Hardfacing of hot working tools subject to extreme thermal loads, that experience high pressure, impact and abrasion, such as die forge saddles, exponential areas on dies, hot-shear blades and impact extrusion mandrels.





TOOL CONSTRUCTION

■ UTP Your reliable partner in the tool welding construction

UTP-designation Standards	Welding process	Weld ma- terial ref. analysis	Hardness	Ap- provals	Properties	Application
Welding consumables for cobalt based hot working steels						
Celsit 706 DIN 8555: E 20-UM-40 CKTZ EN 14700: E Z Co2 AWS A5.13: E CoCr-A	SMAW	C 1.1 Cr 27.5 W 4.5 Co Rest	at 20°C: 40 – 42 HRC at 600°C: approx. 33 HRC	-	Rutile coated cobalt based electrode, core rod alloy	Hardfacings on components, that are subject to multiple stresses from erosion, corrosion, cavitation, pressure, impact, abrasion and high temperatures up to 900 °C, such as highly stressed hot working tools without thermal shock, milling, mixing and drilling tools, metal to metal gliding surfaces, machining tools for wood, paper and plastic, running, sealing and gliding surfaces on fittings and pumps.
Celsit 706 HL DIN 8555: E 20-UM-40-CSTZ EN 14700: E Z Co2 AWS A5.13: E CoCr-A	SMAW	C 1.1 Cr 27.5 W 4.5 Co Rest	40 – 42 HRC	-	Rutile coated cobalt based high performance electrode	Application like Celsit 706.
A Celsit 706V DIN 8555: G/WSG 20-G0-40 CSTZ EN 14700: R ZCo2 AWS A5.21: ER CoCr-A	GTAW	C 1.2 Cr 27.0 W 4.5 Co Rest	at 20°C: 40 – 42 HRC at 600°C: approx. 33 HRC	TÜV	CoCrW alloyed welding rod for TIG and gas welding	Application like Celsit 706.
AF Celsit 706 DIN 8555: MF 2F-GF-40 CSTZ EN 14700: T Z Co2 AWS A5.21: ER C CoCr-A	FCAW	C 0.8 Cr 26.5 W 4.7 Co Rest	at 20°C: 38 – 40 HRC at 600°C: approx. 33 HRC	-	CoCrW alloyed flux cored wire for wear, corrosion and heat-resistant buildups	Application like Celsit 706.
Celsit 721 DIN 8555: E 20-UM-300 CKTZ EN 14700: E Co3 AWS A5.13: E CoCr-B	SMAW	C 0.3 Cr 31.0 Mo 5.0 Ni 3.5 Co Rest	at 20°C: 30 – 32 HRC work hardened: approx. 45 HRC	-	Rutile coated electrode based on cobalt, core wire alloyed	Crack resistant hardfacings on components, that are subject to a combination of pressure, impact, abrasion, corrosion and high temperatures up to 900°C, such as valve seats and cones from combustion engines, hot working tools with varying thermal loading.
Celsit 721 HL DIN 8555: E 20-UM-300-CKTZ EN 14700: E Co1	GMAW GTAW	C 0.5 Si 3.0 Mn 0.5 Cr 9.5 Fe Rest	54 – 60 HRC	-	Rutile coated cobalt based high performance electrode	Application like Celsit 721.



■ UTP Your reliable partner in the tool welding construction

UTP-designation Standards	Welding process	Weld ma- terial ref. analysis	Hardness	Properties	Application
Welding consumables for cobalt based hot working steels					
A Celsit 721 DIN 8555: G/WSG 20-G0-300 CKTZ EN 14700: R Z CoI AWS A5.21: ~ER CoCr-B	GTAW	C 0.25 Cr 28.0 Mo 5.0 Ni 2.8 Co Rest	at 20°C: 30 – 32 HRC work hardened: approx. 45 HRC at 600°C: approx. 240 HB	CoCrW alloyed welding rod for TIG and gas welding	Application like Celsit 721.
AF Celsit 721 DIN 8555: MF 20-GF-300 CKTZ EN 14700: E CoI AWS A5.21: ER C CoCr-B	FCAW	C 0.25 Cr 28.0 Mo 5.5 Ni 2.8 Co Rest	at 20°C: 30 – 35 HRC work hardened: approx. 45 HRC	CoCrW alloyed flux cored wire for wear; corrosion and heat-resistant buildups	Application like Celsit 721.

■ UTP Your reliable partner in the tool welding construction

UTP-designation Standards	Welding process	Weld ma- terial ref. analysis	Mechanical grades of steel	Hardness	Properties	Application
Welding consumables for plastic mould steels						
A 641 EN 12070: G/W CrMo I Si AWS A5.28: ER 80S-G	GMAW GTAW	C 0.1 Si 0.7 Mn 1.0 Cr 1.2 Mo 0.5	Tempered: 0.5 h 720°C / air: R _{p0.2} > 490 Mpa R _m > 610-705 Mpa A > 22 % Quenched and tempered: 0.5 h 930°C / air + 0.5 h 720°C R _{p0.2} > 375 MPa R _m > 470-570 Mpa A > 25 %	-	Wire electrode for joining and surfacing; heat-resistant	Welds on tempered steels up to a strength of 780 MPa and case-hardening steels with Cr content up to about 1.2 % as well as untreated nitride steels and tool steels.
A 651 EN ISO 14343-A: W/G 29 9	GMAW GTAW	C 0.1 Si 0.4 Mn 1.6 Cr 30.0 Ni 9.0	R _{p0.2} > 650 MPa R _m > 750 MPa A > 25 %	approx. 240 HB	Protective gas wire for joinings and surfacings on steels that are hard to weld.	Repairs to cold and hot working steels, cushioning layers such as on material 1.4337.
A 73 G 2 DIN 8555: W/MSG 3-GZ-55-ST EN 14700: SZ Fe8	GMAW GTAW	C 0.35 Si 0.3 Mn 1.2 Cr 7.0 Mo 2.0 Ti 0.3	-	53 – 58 HRC	Copper coated protective gas wire for highly wear-resistant build-ups on hot and cold working tools	Surfacing on machine parts and tools, that are subject to high abrasion and pressure at moderate impact loads and increased operating temperatures, such as back cen- tres, gripping pliers, gliding and guiding sur- faces, hot and cold punching tools, valves, glides, extrusion press pistons.



TOOL CONSTRUCTION

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UTP-designation Standards	Welding process	Weld ma- terial ref. analysis	Hardness	Appro- vals	Properties	Application
Welding consumables for plastic mould steels						
A 73 G 3 DIN 8555:W/MSG 3-GZ-45-T EN 14700: S Z Fe3	GMAW GTAW	C 0.25 Si 0.5 Mn 0.7 Cr 5.0 Mo 4.0 Ti 0.6	42 – 46 HRC	-	Copper coated protective gas wire for the manufacture of new and / or repair of high quality hot working tools.	Due to the higher tensile strength, toughness, and heat resistance for surfacings used on machine parts and tools, that are subject to impact, pressure and abrasion at high operating temperatures, such as aluminium die-casting moulds, guillotine shears, hammer.
A 73 G 4 DIN 8555:W/MSG 3-GZ-40-T EN 14700: S Z Fe3	GMAW GTAW	C 0.1 Si 0.4 Mn 0.6 Cr 6.5 Mo 3.3	38 – 42 HRC	-	Copper coated protective gas wire for tough, wear resistant coatings on hot working tools.	Due to the higher toughness and heat resistance, used for surfacing on machine parts and tools, that are subject to impact, pressure and abrasion at high operating temperatures, such as forging dies, wobbler drives, hot-shear blades, rollers.
A 702 DIN 8555: MSG 3-GZ-350-T EN 14700: SZ Fe5	GMAW GTAW	C 0.02 Mo 4.0 Ni 18.0 Co 12.0 Ti 1.6 Al 0.1 Fe Rest	32 – 35 HRC (untreated) 50 – 54 HRC 4h / 480°C quenched and artificially aged	-	High alloyed, age-hardenable gas wire for high wear resistant hardfacings on warm and cold working tools	Is used for repair, preventive maintenance and production of new highly stressed cold and hot working tools, such as punching dies, cold shears, hot cutting knives, alu die casting dies, cold forging dies, drawing, stamping and chamfering tools.
A 661 DIN 8555:W/MSG 5-GZ-400-RZ EN 14700: S Fe7	GMAW GTAW	C 0.22 Si 0.7 Mn 0.7 Cr 17.5 Mo 1.2 Fe Rest	40 HRC (untreated)	TÜV	Protective gas wire for wear and corrosion resistant hardfacings	Wear-resistant hardfacings on components made from non-alloy and low-alloy steels and cast steels, Hot working steels and high alloyed steel and cast steels such as continuous casting rolls, dummy blocks and heat resistant components up to 900 °C.



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Sales Program

Welding consumables:

Stick electrodes for welding nickel and nickel alloys
Stick electrodes for hardfacing
Special stick electrodes for welding different kinds of steel
Stick electrodes for welding cast iron
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 and Plasma spraying powders:

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

UTP Schweissmaterial

Zweigniederlassung der
Böhler Schweisstechnik Deutschland GmbH
Elsässer Straße 10
D-79189 Bad Krozingen

Fon: +49 (0) 7633 - 409 - 01 (24 h Serviceline)
Fax: +49 (0) 7633 - 409 - 222
Email: info@utp-welding.com
Web: www.utp-welding.com

If it can be welded – we know how.



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