UTP 47

Pure aluminium stick electrode

Standard :

Material-No.	:	3.0286
DIN 1732	:	EL-Al99,8
AWS A5.3	:	~ E 1100

Application field

UTP 47 is a pure aluminium stick electrode with a special coating for joining and surfacing

Welding properties

UTP 47 is good weldable on sheets with > 2 mm wall-thickness. The soft flow produces a flat, finely rippled weld seam. Good slag removal.

Mechanical properties of the weld metal

Yield strength Rp0,2 MPa	Tensile strength Rm MPa	Elongation A5 %
> 40	80	30

Weld metal analysis in %

Al	Others
99,8	0,2 (max.)

Welding instruction

Weld stick electrode in the vertical position with a short arc. Preheat bigger work pieces with wall thicknesses > 6 mm to 100 - 250°C in order to contain a good fusion with the base metal. Raised weld seams indicate to low preheating temperatures. Re-drying: 1 - 1,5 h at 100°C.

Current type = +

Welding positions

Availability / Current adjustments

Stick electrodes	Ø mm x L	2,5* x 355	3,2* x 355
Amperage	A	50 - 70	80 - 100

* available on request

Available in 2,0 kg boxes

UTP 49

Aluminium stick electrode with 1,5 % Si and special coating

Standard :

Material-No.	:	3.0516
DIN 1732	:	EL-AlMn1
AWS A5.3	:	E 3003

Application field

UTP 49 is a aluminium stick electrode with 1,5 % Mn and a special coating for joining and surfacing on aluminium-manganese alloys and aluminium-magnesium alloys with a Mg content of approx. 3 % according to DIN 1725, e.g.

3.0506	AlMn0,6
3.0515	AlMn1
3.0525	AlMn1Mg0,5
3.0526	AlMn1Mg1
3.3535	AlMg3

Welding properties

UTP 49 is good weldable on sheets with > 2 mm wall-thickness. The soft flow produces a flat, finely rippled weld seam. Good slag removal.

Mechanical properties of the weld metal

Yield strength Rp0,2 MPa	Tensile strength Rm MPa	Elongation A5 %	Melting range ° C
40	110	20	648 - 657

Weld metal analysis in %

Mn	Al	Mg
1,5	balance	0,2

Welding instruction

Weld stick electrode in the vertical position with a short arc. Preheat bigger work pieces with wall thicknesses > 6 mm to 100 - 250°C in order to contain a good fusion with the base metal. Raised weld seams indicate to low preheating temperatures. Re-drying: 1 - 1,5 h at 100°C.

Current type = +

Welding positions

Availability / Current adjustments

Stick electrodes	Ø mm x L	2,5* x 355	3,2* x 355
Amperage	A	50 - 70	80 - 100

* available on request

Available in 2,0 kg boxes

UTP 485

Aluminium stick electrode with 5 % Si and special coating

Standard :

Material-No.	:	3.2245
DIN 1732	:	EL-AlSi 5
AWS A5.3	:	E 4043

Application field

UTP 485 is a aluminium stick electrode with 5 % Si and a special coating for joining and surfacing aluminium-silicon alloys with a Si content of up to 7 % Si and for joining different Al alloys, e. g.

3.3206	AlMgSi0,5
3.3210	AlMgSi0,7
3.2315	AlMgSi1
3.3211	AlMg1SiCu
3.2371	G- AlSi7Mg
3.2341	G- AlSi5Mg
3.2151	G- AlSi6Cu4

Welding properties

UTP 485 is good weldable on sheets with > 2 mm wall-thickness. The soft flow produces a flat, finely rippled weld seam. Good slag removal.

Mechanical properties of the weld metal

Yield strength Rp0,2 MPa	Tensile strength Rm MPa	Elongation A5 %	Melting range ° C
90	160	15	573 - 625

Weld metal analysis in %

Si	Al
5,0	95,0

Welding instruction

Weld stick electrode in the vertical position with a short arc. Preheat bigger work pieces with wall thicknesses > 6 mm to 100 - 250°C in order to contain a good fusion with the base metal. Raised weld seams indicate to low preheating temperatures. Re-drying: 1 - 1,5 h at 100°C.

Current type = +

Welding positions

Availability / Current adjustments

Stick electrodes	Ø mm x L	2,5 x 355*	3,2 x 355*	4,0 x 350
Amperage	A	50 - 70	80 - 100	90 - 130

* available on request

UTP 48

Aluminium stick electrode with 12 % Si and special coating

Standard :
Material-No. : 3.2585
DIN 1732 : EL-AlSi12

Application field

UTP 48 is a aluminium stick electrode with 12 % Si and a special coating for joining and surfacing on aluminium-silicon casting alloys with a Si-content up to 12 % Si according to DIN 1725 e.g.

3.2581	G- AlSi12
3.2583	G- AlSi12(Cu)
3.2383	G- AlSi10Mg(Cu)
3.2381	G- AlSi10Mg
3.2373	G- AlSi9Mg

Welding properties

UTP 48 is good weldable on sheets with > 2 mm wall-thickness. The soft flow produces a flat, finely rippled weld seam. Good slag removal.

Mechanical properties of the weld metal

Yield strength Rp0,2 MPa	Tensile strength Rm MPa	Elongation A %	Melting range ° C
80	180	5	573 - 585

Weld metal analysis in %

Si	Al
12,0	88,0

Welding instruction

Weld stick electrode in the vertical position with a short arc. Preheat bigger work pieces with wall thicknesses > 6 mm to 100 - 250°C in order to contain a good fusion with the base metal. Raised weld seams indicate to low preheating temperatures. Re-drying: 1 - 1,5 h at 100°C.

Current type = +

Welding positions

Availability / Current adjustments

Stick electrodes	Ø mm x L	2,5 x 355*	3,2 x 355*	4,0 x 355*
Amperage	A	50 - 70	80 - 100	90 - 130

* available on request

UTP A 47

Pure aluminium welding wire with 99,5 % Al

Standard :
Material-No. : 3.0259
EN ISO 18273 : S Al Z (Al 99,5)
AWS A5.10 : ER 1100

Application field

UTP A 47 is a pure aluminium welding wire for pure aluminium materials according to DIN 1712, e. g.

3.0255	Al99,5
3.0275	Al99,7
3.0285	Al99,8
3.0257	E Al
3.0205	Al99,0

as well as aluminium alloys with a Mg-content up to approx. 2 % and a Si-content of 0,5 %.

Welding properties

Good flowing aluminium welding wire. Weldable in all positions.

Mechanical properties of the weld metal

Yield strength Rp0,2 MPa	Tensile strength Rm MPa	Elongation A %	Melting range ° C
40	80	30	647 - 658

Weld metal analysis in %

Si	Al	Fe
< 0,3	99,5	< 0,4

Welding instruction

Clean weld area thoroughly. Thick walled weldments > 15 mm must be preheated up to 200°C.

Welding procedure and availability

Ø (mm)	Current type	Shielding gas EN ISO 14175		Availability	
				Spools	Rods
		I 1	I 3	EN ISO 544	EN ISO 544
1,6 *	DC (+)	x	x	x	
2,4 *	AC	x			x
3,2 *	AC	x			x

* available on request

UTP A 47 Ti

Ti-alloyed pure aluminium welding wire

Standard :
Material-No. : 3.0805
DIN 1732 : SG Al99,5Ti

Application field

UTP A 47 Ti is a pure aluminium welding wire for joining and surfacing of aluminium materials according to DIN 1712, e.g.

3.0255	Al99,5
3.0275	Al99,7
3.0285	Al99,8
	Al Mn
	E Al Mg Si

Welding properties

UTP A 47 Ti is a welding consumable with Ti for grain refinement. Weldable in all positions.

Mechanical properties of the weld metal

Yield strength Rp0,2 MPa	Tensile strength Rm MPa	Elongation A %	Melting range ° C
> 40	> 70	> 30	674 - 658

Weld metal analysis in %

Si	Al + Ti	Fe
< 0,3	99,5	< 0,4

Welding instruction

Clean weld area thoroughly. Thick walled weldments > 15 mm must be preheated to 200°C.

Welding procedure and availability

Ø (mm)	Current type	Shielding gas EN ISO 14175		Availability	
				Spools	Rods
		I 1	I 3	EN ISO 544	EN ISO 544
1,0 *	DC (+)	x	x	x	
1,2 *	DC (+)	x	x	x	
1,6 *	AC	x			x
2,0 *	AC	x			x
3,2 *	AC	x			x

* available on request

Approvals

TÜV (No. 00913;00914), DB (No. 61.138.01)

UTP A 485

Aluminium-silicon welding wire with 5% Si

Standard :
Material-No. : 3.2245
EN ISO 18273 : S Al4043 (AlSi5)
AWS A5.10 : ER 4043

Application field

UTP A 485 is a aluminium-silicon alloy with a Si-content up to 7 % Si also for joining different Al-alloys, e. g.

3.3206 AlMgSi0,5
3.3210 AlMgSi1,0
3.2371 G-AlSi7Mg
3.2341 G-AlSi5Mg

Welding properties

During welding of hardened AlMgSi1,0 the strength of the base metal next to the weld seam is decreasing. Weld seams should not be put in high stressed areas. Not applicable for eloxal materials because of the weld metals discoloration.

Mechanical properties of the weld metal

Yield strength Rp0,2 MPa	Tensile strength Rm MPa	Elongation A %	Melting range ° C
100	160	15	573 - 625

Weld metal analysis in %

Si	Mn	Al	Fe
5,0	< 0,2	balance	< 0,4

Welding instruction

Clean weld area thoroughly. Thick walled weldments > 15 mm must be preheated to 150°C.

Welding procedure and availability

Ø (mm)	Current type	Shielding gas EN ISO 14175		Availability	
				Spools	Rods
		I 1	I 3	EN ISO 544	EN ISO 544
1,2	DC (+)	x	x	x	
1,6 *	DC (+)	x	x	x	
1,6 *	AC	x			x
2,0	AC	x			x
2,4	AC	x			x
3,2	AC	x			x

* available on request

Approvals

DB (No. 61.138.03)

UTP A 48

Aluminium-silicon casting alloy with 7 % Si

Standard :

Material-No.	:	3.2585
EN ISO 18273	:	S Al 4047 A (AlSi12(A))
AWS A5.10	:	ER 4047

Application field

UTP A 48 is used for aluminium-silicon casting alloy with a Si-content up to 7 %, e. g.

3.2581	G-AlSi12
3.2383	G-AlSi10Mg(Cu)
3.2373	G-AlSi5Mg

Welding properties

Good flowing Al-alloy. Not suited for eloxal materials because of discoloration of the weld metal.

Mechanical properties of the weld metal

Yield strength Rp0,2 MPa	Tensile strength Rm MPa	Elongation A %	Melting range ° C
80	170	8	573 - 585

Weld metal analysis in %

Si	Mn	Al	Fe
12,0	< 0,3	balance	< 0,5

Welding instruction

Clean weld area thoroughly. Thick walled weldments > 15 mm must be preheated to 150 - 200°C.

Welding procedure and availability

Ø (mm)	Current type	Shielding gas EN ISO 14175		Availability	
				Spools	Rods
		I 1	I 3	EN ISO 544	EN ISO 544
1,0	DC (+)	x	x	x	
1,2	DC (+)	x	x	x	
1,6	DC (+)	x	x	x	
1,6 *	AC	x			x
2,0	AC	x			x
2,4	AC	x			x
3,2	AC	x			x
4,0 *	AC	x			x

* available on request

Approvals

DB (No. 61.138.02)

UTP A 493

Aluminium-magnesium alloy with 3 % Mg

Standard :
Material-No. : 3.3536
EN ISO 18273 : S Al 5754 (AlMg3)
AWS A5.10 : ~ ER 5554

Application field

UTP A 493 is used for aluminium-magnesium alloys with a Mg-content of 3 % according to DIN 1725, e.g.

3.3315	AlMg1
3.3523	AlMg2,5
3.3535	AlMg3
3.3537	AlMg2,7Mn
3.3206	AlMgSi0,5

Welding properties

Corrosion and seawater resistant alloy. Weldable in all positions. Good eloxadizing ability.

Mechanical properties of the weld metal

Yield strength Rp0,2 MPa	Tensile strength Rm MPa	Elongation A %	Melting range ° C
100	200	20	610 - 642

Weld metal analysis in %

Si	Mn	Al	Fe	Mg
< 0,25	0,3	balance	< 0,4	3,0

Welding instruction

Clean weld area thoroughly. Thick walled weldments > 15 mm must be preheated to 150°C.

Welding procedure and availability

Ø (mm)	Current type	Shielding gas EN ISO 14175		Availability	
				Spools	Rods
		I 1	I 3	EN ISO 544	EN ISO 544
1,0 *	DC (+)	x	x	x	
1,2	DC (+)	x	x	x	
1,6 *	AC	x			x
2,0 *	AC	x			x
2,4	AC	x			x
3,2 *	AC	x			x

* available on request

Approvals

TÜV (No. 07362; 07363), DB (No. 61.138.04)

UTP A 495

Aluminium-magnesium alloy with 5 % Mg

Standard :
Material-No. : 3.3556
EN ISO 18273 : S Al 5356A (AlMg5Cr(A))
AWS A5.10 : ER 5356

Application field

UTP A 495 isused for aluminium-magnesium alloys with a Mg-content up to 3 % according to DIN 1725, e. g.

3.3555 AlMg5
3.3345 AlMg4,5

also for highly loaded joints of lower alloyed Al-Mg-alloys.

Welding properties

Corrosion and seawater resistant alloy. Weldable in all positions. Good eloxadizing ability.

Mechanical properties of the weld metal

Yield strength Rp0,2 MPa	Tensile strength Rm MPa	Elongation A %	Melting range ° C
120	250	25	575 - 633

Weld metal analysis in %

Si	Mn	Al	Fe	Mg
< 0,25	0,3	balance	< 0,4	5,0

Welding instruction

Clean weld area thoroughly. Thick walled weldments > 15 mm must be preheated to 150°C.

Welding procedure and availability

Ø (mm)	Current type	Shielding gas EN ISO 14175		Availability	
				Spools	Rods
		I 1	I 3	EN ISO 544	EN ISO 544
0,8 *	DC (+)	x	x	x	
1,0	DC (+)	x	x	x	
1,2	DC (+)	x	x	x	
1,6	DC (+)	x			x
1,6	AC	x	x		x
2,0	AC	x			x
2,4	AC	x			x
3,2	AC	x			x

* available on request

Approvals

TÜV (No. 00915; 00916), DB (No. 61.138.05)

UTP A 495 Mn

Aluminium-magnesium alloy with 4,5 % Mg + Mn

Standard :

Material-No.	:	3.3548
EN ISO 18273	:	S Al 5183 A (AlMg4,5Mn0,7(A))
AWS A5.10	:	ER 5183

Application field

UTP A 495 Mn is used for high strength aluminium-magnesium alloys, e. g.

3.3547	AlMg4,5Mn
3.3545	AlMg4Mn
3.3261	G-AlMg5Si

Welding properties

Good resistance against climatic conditions and seawater. For joints with high demands on strength resistance.

Mechanical properties of the weld metal

Yield strength Rp0,2 MPa	Tensile strength Rm MPa	Elongation A %	Melting range ° C
140	300	20	574 - 638

Weld metal analysis in %

Si	Mn	Al	Fe	Mg
< 0,25	0,8	balance	< 0,4	4,5

Welding instruction

Clean weld area thoroughly. Thick walled weldments > 15 mm must be preheated to 150°C.

Welding procedure and availability

Ø (mm)	Current type	Shielding gas EN ISO 14175		Availability	
				Spools	Rods
		I 1	I 3	EN ISO 544	EN ISO 544
1,2	DC (+)	x	x	x	
2,4 *	AC	x			x
3,2 *	AC	x			x

* available on request

Approvals

TÜV (No. 00917; 00918), DB (No. 61.138.06), DNV

UTP A 495 MnZr

Aluminium- magnesium alloy with 4,5 % Mg + Mn, Zr-alloyed

Standard :

Material-No.	:	3.3546
EN ISO 18273	:	S Al 5087 (AlMg4,5MnZr)
AWS A5.10	:	ER 5087

Application field

UTP A 495 MnZr is used for aluminium-magnesium alloys with high strength properties for welding

3.3547	AlMg4,5Mn
3.3545	AlMg4Mn
3.3261	G-AlMg5Si

Welding properties

Good resistance against climatic conditions and seawater. Zirconium increases the hot chracking resistance.

Mechanical properties of the weld metal

Yield strength Rp0,2 MPa	Tensile strength Rm MPa	Elongation A %
125	275	17

Weld metal analysis in %

Mn	Cr	Zr	Al	Mg
0,8	0,25	0,2	balance	4,5

Welding instruction

Clean weld area thoroughly. Thick walled weldments > 10 mm must be preheated to min. 200°C.

Welding procedure and availability

Ø (mm)	Current type	Shielding gas EN ISO 14175	Availability Rods
		I 1	EN ISO 544
2,0 *	AC	x	x
2,4 *	AC	x	x
3,2 *	AC	x	x

* available on request

Approvals

DB (No. 61.138.07), DNV

Standard :
Sonderlegierung

UTP A 403

Magnesium welding wire

Application field

UTP A 403 is used for maintenance and repair of weldments consisting of magnesium and magnesium alloys

Welding properties

UTP A 403 has a good weldability. The fusion will be obtained without partial melting of the base metal. The weld deposit is crack- and pore-free, corrosion resistant and has equal colours as Mg-alloys.

Mechanical properties of the weld metal

Yield strength Rp0,2 MPa	Tensile strength Rm MPa	Elongation A %
150	230	7

Weld metal analysis in %

Mn	Al	Mg	Zn
0,6	3,0	balance	1,0

Welding instruction

Clean weld area thoroughly. Thick walled weldments must be preheated.

Welding procedure and availability

Ø (mm)	Current type	Shielding gas EN ISO 14175	Availability
			Rods
		11	EN ISO 544
2,5	AC	x	x

Standard :
Special alloy

UTP A 404

Magnesium welding wire

Application field

UTP A 404 is used for maintenance and repair of weldments consisting of magnesium and magnesium alloys

Welding properties

UTP A 404 has a good weldability. The fusion will be obtained without partial melting of the base metal. The weld deposit is crack- and pore-free, corrosion resistant and has equal colours as Mg-alloys.

Mechanical properties of the weld metal

Yield strength Rp0,2 MPa	Tensile strength Rm MPa	Elongation A %
120	230	10

Weld metal analysis in %

Mn	Al	Mg	Zn
0,4	5,0	balance	0,2

Welding instruction

Clean weld area thoroughly. Thick walled weldments must be preheated.

Welding procedure and availability

Ø (mm)	Current type	Shielding gas EN ISO 14175	Availability
			Rods
		11	EN ISO 544
2,5	AC	x	x

UTP A 902 Ti

Titanium-alloy grade 2

Standard :
Material-No. : 3.7035
AWS A5.16 : ER Ti2

Application field

UTP A 902 Ti is used for titanium grade 2

Weld metal analysis in %

C	N	Ti	Fe	O	H
0,03	0,002	balance	0,2	< 0,1	< 0,008

Welding procedure and availability

Ø (mm)	Current type	Shielding gas EN ISO 14175	Availability
			Rods
		I 1	EN ISO 544
2,0 *	DC (-)	x	x
2,5 *	DC (-)	x	x
3,0 *	DC (-)	x	x

* available on request