

FILI PIENI 
SOLID WIRES

OERLIKON

Notes on Wire electrodes EN 440

Wire electrodes and weld metal for gas-shielded metal-arc welding of unalloyed steels and fine grain structural steels.

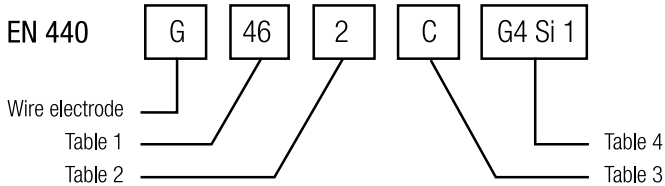


Table 1

Code digit for tensile and elongation properties of all-weld metal			
Code digit	Minimum yield strength ¹⁾ [N/mm ²]	Tensile strength [N/mm ²]	Minimum elongation ²⁾ [%]
35	355	440–570	22
38	380	470–600	20
42	420	500–640	20
46	460	530–680	20
50	500	560–720	18

¹⁾ For yield strength the lower yield (R_{eL}) shall be used if yielding occurs, other-wise the 0,2% proof strength ($R_{p0,2}$) shall be applied.
²⁾ Gauge length is equal to five times the test specimen diameter.

Table 2

Symbols for impact energy of all-weld metal	
Symbols	Temperature for minimum average impact energy of 47 J [°C]
Z	no requirements
A	+20
0	0
2	-20
3	-30
4	-40
5	-50
6	-60

Table 3

Symbols for shielding gas	
Symbols	Meaning
M	This symbol for mixed gas shall be used if classification has been performed with shielding gas EN 439-M2, but without helium.
C	This symbol shall be used if classification has been performed with shielding gas EN 439-C1, carbon dioxide. Kohlendioxid, durchgeführt worden ist

Table 4

Symbols for the chemical composition of wire electrodes									
Symbols	Chemical composition [%] (m/m) ^{1) 2) 3)}								
	C	Si	Mn	P	S	Ni	Mo	Al	Ti and Zr
GO	any other chemical composition agreed upon								
G2Si1	0,06–0,14	0,50–0,80	0,90–1,30	0,025	0,025	0,15	0,15	0,02	0,15
G3Si1	0,06–0,14	0,70–1,00	1,30–1,60	0,025	0,025	0,15	0,15	0,02	0,15
G4Si1	0,06–0,14	0,80–1,20	1,60–1,90	0,025	0,025	0,15	0,15	0,02	0,15
G3Si2	0,06–0,14	1,00–1,30	1,30–1,60	0,025	0,025	0,15	0,15	0,02	0,15
G2Ti	0,04–0,14	0,40–0,80	0,90–1,40	0,025	0,025	0,15	0,15	0,05–0,20	0,05–0,25
G3Ni1	0,06–0,14	0,50–0,90	1,00–1,60	0,020	0,020	0,80–1,50	0,15	0,02	0,15
G3Ni2	0,06–0,14	0,40–0,80	0,80–1,40	0,020	0,020	2,10–2,70	0,15	0,02	0,15
G2Mo	0,08–0,12	0,30–0,70	0,90–1,30	0,020	0,020	0,15	0,40–0,60	0,02	0,15
G4Mo	0,06–0,14	0,50–0,80	1,70–2,10	0,025	0,025	0,15	0,40–0,60	0,02	0,15
G2Al	0,08–0,14	0,30–0,50	0,90–1,30	0,025	0,025	0,15	0,15	0,35–0,75	0,15

¹⁾ If not specified: Cr ≤ 0,15, Cu ≤ 0,35 and V ≤ 0,03. The amount of copper in the steel plus covering shall not exceed 0,35 %.

²⁾ Single values in this table are maximum values.

³⁾ The results shall be rounded to the same decimal place as the specified values using the Rule A, Appendix B of ISO 31-0 : 1992.

Notes on Wire electrodes

EN 12534

Wire electrodes, wires, rods and weld metal for gas-shielded metal-arc welding of high-strength steels.

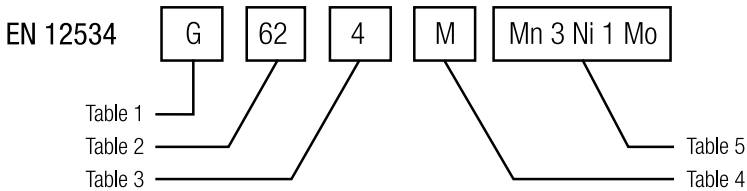


Table 1

Symbols for the product/welding process	
Symbols	Welding process
W	Tungsten-inert gas welding
G	Gas-shielded metal-arc welding

Table 2

Code digits for tensile and elongation properties of all-weld metal			
Code digits	Minimum yield strength ¹⁾ [N/mm ²]	Tensile strength [N/mm ²]	Minimum elongation ²⁾ [%]
55	550	640–820	18
62	620	700–890	18
69	690	770–940	17
79	790	880–1080	16
89	890	940–1180	15

¹⁾ For yield strength the lower ($R_{p0.2}$) shall be used if yielding occurs, otherwise the 0,2% proof strength ($R_{p0.2}$) shall be applied.

²⁾ Gauge length is equal to five times the test specimen diameter.

Table 3

Symbols for impact energy of all-weld metal	
Symbols	Temperature for minimum average impact energy of 47 J [°C]
Z	no requirements
A	+20
0	0
2	-20
3	-30
4	-40
5	-50
6	-60

Notes on Wire electrodes

EN 12534

Table 4

Symbols for shielding gas	
Symbols	Meaning
M	This symbol for mixed gas shall be used if classification has been performed with shielding gas EN 439-M2, but without helium
C	This symbol shall be used if classification has been performed with shielding gas EN 439-C1, carbon dioxide

Table 5

Symbols for the chemical composition of wire electrodes										
Symbols	Chemical composition [%] (m/m) ^{1) 2)}									
	C	Si	Mn	P	S	Cr	Ni	Mo	Cu	all other elements
Z	any other chemical composition agreed upon									
Mn3NiCrMo	0,14	0,60–0,80	1,30–1,80	0,015	0,018	0,40–0,65	0,50–0,65	0,15–0,30	0,30	0,25
Mn3Ni1CrMo	0,12	0,40–0,70	1,30–1,80	0,015	0,018	0,20–0,40	1,20–1,60	0,20–0,30	0,35	0,25 V = 0,05–0,13
Mn3Ni1Mo	0,12	0,40–0,80	1,30–1,90	0,015	0,018	0,15	0,80–1,30	0,25–0,65	0,30	0,25
Mn3Ni1,5Mo	0,08	0,20–0,60	1,30–1,80	0,015	0,018	0,15	1,40–2,10	0,25–0,55	0,30	0,25
Mn3Ni1Cu	0,12	0,20–0,60	1,20–1,80	0,015	0,018	0,15	0,80–1,25	0,20	0,30–0,65	0,25
Mn3Ni1MoCu	0,12	0,20–0,60	1,20–1,80	0,015	0,018	0,15	0,80–1,25	0,20–0,55	0,35–0,65	0,25
Mn3Ni2,5CrMo	0,12	0,40–0,70	1,30–1,80	0,015	0,018	0,20–0,60	2,30–2,80	0,30–0,65	0,30	0,25
Mn4Ni1Mo	0,12	0,50–0,80	1,60–2,10	0,015	0,018	0,15	0,80–1,25	0,20–0,55	0,30	0,25
Mn4Ni2Mo	0,12	0,25–0,60	1,60–2,10	0,015	0,018	0,15	2,00–2,60	0,30–0,65	0,30	0,25
Mn4Ni1,5CrMo	0,12	0,50–0,80	1,60–2,10	0,015	0,018	0,15–0,40	1,30–1,90	0,30–0,65	0,30	0,25
Mn4Ni2CrMo	0,12	0,60–0,90	1,60–2,10	0,015	0,018	0,20–0,45	1,80–2,30	0,45–0,70	0,30	0,25
Mn4Ni2,5CrMo	0,13	0,50–0,80	1,60–2,10	0,015	0,018	0,20–0,60	2,30–2,80	0,30–0,65	0,30	0,25

¹⁾ If not specified: Ti ≤0,10, Zr ≤0,10, Al ≤0,12 and V ≤0,03. The amount of copper in the steel plus covering shall not exceed 0,35%.

²⁾ Single values in this table are maximum values.

³⁾ The results shall be rounded to the same decimal place as the specified values using Rule A, Appendix B of ISO 31-0 : 1992.

Notes on Wire electrodes

EN 12070

Wire electrodes, Wires and Rods for arc-welding of creep resistant steels

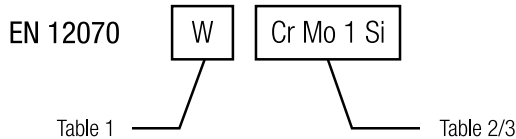


Table 1

Symbols for the product/welding process	
Symbols	Welding process
W	Tungsten-inert gas welding
S	Submerged-arc welding
G	Gas-shielded metal-arc welding

Table 2

Alloy symbols for the chemical composition of wire electrodes, wires and rods									
Symbols	Chemical composition [%] (m/m) ^{1) 2) 3)}								
	C	Si	Mn	P	S	Cr	Mo	V	other elements
Mo	0,08–0,15	0,05–0,25	0,80–1,20	0,025	0,025	–	0,45–0,65	–	–
MoSi	0,08–0,15	0,50–0,80	0,70–1,30	0,020	0,020	–	0,40–0,60	–	–
MnMo	0,08–0,15	0,05–0,25	1,30–1,70	0,025	0,025	–	0,45–0,65	–	–
MoV	0,08–0,15	0,10–0,30	0,60–1,00	0,020	0,020	0,30–0,60	0,50–1,00	0,25–0,45	–
MoVSi	0,08–0,15	0,40–0,70	0,70–1,10	0,020	0,020	0,30–0,60	0,50–1,00	0,20–0,40	–
CrMo1	0,08–0,15	0,05–0,25	0,60–1,00	0,020	0,020	0,90–1,30	0,40–0,65	–	–
CrMo1Si	0,08–0,14	0,50–0,80	0,80–1,20	0,020	0,020	0,90–1,30	0,40–0,65	–	–
CrMoV1	0,08–0,15	0,05–0,25	0,80–1,20	0,020	0,020	0,90–1,30	0,90–1,30	0,10–0,35	–
CrMoV1Si	0,06–0,15	0,50–0,80	0,80–1,20	0,020	0,020	0,90–1,30	0,90–1,30	0,10–0,35	–
CrMo2	0,08–0,15	0,05–0,25	0,30–0,70	0,020	0,020	2,2–2,8	0,90–1,15	–	–
CrMo2Si	0,04–0,12	0,50–0,80	0,80–1,20	0,020	0,020	2,3–3,0	0,90–1,20	–	–
CrMo2Mn ⁴⁾	0,10	0,5	0,50–1,20	0,020	0,015	2,0–2,5	0,90–1,20	–	–
CrMo2L	0,05	0,05–0,25	0,30–0,70	0,020	0,020	2,2–2,8	0,90–1,15	–	–
CrMo2LSi	0,05	0,50–0,80	0,80–1,20	0,020	0,020	2,3–3,0	0,90–1,20	–	–
CrMo5	0,03–0,10	0,20–0,50	0,40–0,75	0,020	0,020	5,5–6,5	0,50–0,80	–	–
CrMo5Si	0,03–0,10	0,30–0,60	0,30–0,70	0,020	0,020	5,5–6,5	0,50–0,80	–	–
CrMo9	0,06–0,10	0,30–0,60	0,30–0,70	0,025	0,025	8,5–10,0	0,80–1,20	0,15	Ni 1,0
CrMo9Si	0,03–0,10	0,40–0,80	0,40–0,80	0,020	0,020	8,5–10,0	0,80–1,20	–	–
CrMo91	0,07–0,15	0,60	0,4–1,5	0,020	0,020	8,0–10,5	0,80–1,20	0,15–0,30	Ni 0,4–1,0 Nb 0,03–0,10 N 0,02–0,07 Cu 0,25 Ni 0,8 W 0,35–0,8
CrMoWV12	0,22–0,30	0,05–0,40	0,40–1,20	0,025	0,020	10,5–12,5	0,80–1,20	0,20–0,40	Ni 0,8 W 0,35–0,8
CrMoWV12Si	0,17–0,24	0,20–0,60	0,40–1,00	0,025	0,020	10,5–12,0	0,80–1,20	0,20–0,40	Ni 0,8 W 0,35–0,8
Z	any other chemical composition agreed upon								

¹⁾ If not specified N < 0,3, Cu < 0,3, V < 0,03, Nb < 0,01, Cr < 0,2.
²⁾ Single values in this table are maximum values
³⁾ The results shall be rounded to the same decimal place as the specified values using Rule A, Appendix B of ISO 31-0 : 1992.
⁴⁾ A ratio of Mn to Si of > 2,0 is desirable.

Notes on Wire electrodes

EN 12070

Table 3

Mechanical properties of all-weld metal								
Alloy symbol	Minimum yield strength $R_{p0.2}$ [N/mm ²]	Minimum tensile strength R_m [N/mm ²]	Minimum elongation ¹⁾ A [%]	Impact energy (Kv) (J) at +20°C		Heat treatment of weld metal		
				Minimum average from three test specimens	Minimum single value ²⁾	Preheat and interpass temperature [°C]	Heat treatment of test specimen	
							Temperature ³⁾ [°C]	Time ⁴⁾ [min]
Mo / MoSi	355	510	22	47	38	<200	none	–
MnMo	355	510	22	47	38	<200	none	–
MoV / MoVSi	355	510	18	47	38	200–300	690–730	60
CrMo1 / CrMo1Si	355	510	20	47	38	150–250	660–700	60
CrMoV1 / CrMoV1Si	435	590	15	24	21	200–300	680–730	60
CrMo2 / CrMo2Si / CrMo2Mn	400	500	18	47	38	200–300	690–750	60
CrMo2L / CrMo2LSi	400	500	18	47	38	200–300	690–750	60
CrMo5 / CrMo5Si	400	590	17	47	38	200–300	730–760	60
CrMo9 / CrMo9Si	435	590	18	34	27	200–300	740–780	120
CrMo91	415	585	17	47	38	250–350	750–760	180
CrMoWV12 / CrMoWV12Si	550	690	15	34	27	250–350 ⁵⁾ or 400–500 ⁵⁾	740–780	120
Z	any other mechanical properties agreed upon							

¹⁾ Gauge length is equal to five times the test specimen diameter.
²⁾ Only one single value lower than minimum average is permitted.
³⁾ The test piece shall be cooled in the furnace to 300°C at a rate not exceeding 200°C/h.
⁴⁾ Tolerance ±10min
⁵⁾ Immediately after welding the specimen is to be cooled down to 120°C to 100°C and kept at this temperature for at least 1h.

MIG-MAG Wires C-Mn and low-alloy steels

Filo pieno dalle ottime proprietà meccaniche usato per la saldatura in atmosfera di CO₂ o miscela. Indicato nelle carpenterie per l'unione di acciai non legati ed al carbonio. Buona qualità radiografica ottimo aspetto della ramatura.

Carbofil is a copper coated solid wire suitable for welding with CO₂ or mixed shielding gases. Excellent mechanical properties. Carbofil is used for a very wide range of structural steel applications. Good x-ray quality.

Classification	
AWS	A5.18: ER 70S-3
EN ISO	14341-A: G 42 3 M G2Si
EN ISO	14341-A: G 38 3 C G2Si

Approvals	Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.07	1	0.65	≤ 0.025	≤ 0.025	-	-	-	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 0°C	Hardness
As Welded	≥ 420	480-550	≥ 22	≥ 90	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5) or C1 (Arcal 2)

Materials

S(P)235 to S(P)355; GP240; GP280

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	0,6	0,8	1,0	1,2	1,6	
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CARBOFIL 1

MIG-MAG Wires C-Mn and low-alloy steels

Filo pieno dalle ottime proprietà meccaniche usato per la saldatura in atmosfera di CO₂ o miscela. Indicato nelle carpenterie per l'unione di acciai non legati ed al carbonio. Buona qualità radiografica ottimo aspetto della ramatura

Carbofil 1 is a copper coated solid wire suitable for welding with CO₂ or 80% Ar-20% CO₂ shielding gases. Excellent mechanical properties. Carbofil 1 is used for a wide range of structural steel applications. Good x-ray quality.

Classification	
AWS	A5.18: ER 70S-6
EN ISO	14341-A: G 42 4 M G3Si1
EN ISO	14341-A: G 42 3 C G3Si1

Approvals	Grades
DB	
GL	
LRS	
RINA	
TÜV	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.08	1.50	0.90	≤ 0.025	≤ 0.025	-	-	-	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -30°C	Hardness
As Welded	≥ 420	500-640	≥ 24	≥ 47	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5) or C1 (Arcal 2)

Materials

S(P)235 to S(P)355; GP240; GP280

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	0,6	0,8	0,9	1,0	1,2	1,6
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MIG-MAG Wires C-Mn and low-alloy steels

Da utilizzarsi con protezione di gas CO₂ o miscela Ar/CO₂. Adatto per lavori di carpenteria, movimento terra e costruzione. Indicato per acciai al carbonio-manganese ad alta resistenza tipo Fe 490 Fe 510.
* SVILUPPATO PER APPLICAZIONI TIME PROCESS.

Carbofil TP is a copper coated solid wire suitable for the welding with CO₂ or mixed Ar/CO₂ shielding gases. Suited for structural work, earthmoving and construction site work. Suitable for carbon-manganese steels.
Developed for the TIME process welding.

Classification	
AWS	A5.18: ER 70S-6
EN ISO	14341-A: G 42 3 M G3 Si1

Approvals	Grades
DB	
DNV	
LRS	
TÜV	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.08	1.60	0.90	≤ 0.015	≤ 0.015	-	-	-	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -29°C	Hardness
As Welded	≥ 430	510-590	≥ 24	≥ 47	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20/21(Arcal21-Atal6) or C1(Arcal 2)

Materials

H I, H II, 17 Mn 4,

St 33, St 37, St 44, St 52-3, St E 255, St E 285, St E 315, St E 355, W St E 255, W St E 285,

St 45.8, St E 210.7, St E 240.7, St E 290.7, St E 320.7, St E 360.7

U St 37.0, St 37.0, St 37.4, St 44.0, St 44.4, St 52.0, St 52.4, St 35.8,

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



PA PB PC PF PE

Packaging data: K300 Kg. 16

Diameters	1,0	1,2				
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CARBOFIL 1 GOLD

MIG-MAG Wires C-Mn and low-alloy steels

Nuovo filo pieno prodotto con tecnologia MHC (Metal Hybrid Coating) che riduce gli attriti in guaina migliorandone lo scorrimento e riducendo significativamente l'effetto peeling e l'intasamento delle punte porta filo. Eccezionale stabilità d'arco. Assenza di proiezioni.

Carbofil 1 GOLD is a C-Mn solid wire with a special coating, suitable for welding with CO₂ or 80% Ar-20% CO₂ shielding gases. It is used for a wide range of structural steel applications. Excellent mechanical properties and good x-ray quality.

Classification	
AWS	A5.18: ER 70S-6
EN ISO	14341-A: G 42 3 C G3Si1
EN ISO	14341-A: G 42 4 M G3Si1

Approvals	Grades
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Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.08	1.50	0.90	≤ 0.025	≤ 0.025	-	-	-	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -30°C	Hardness
As Welded	≥ 420	500-640	≥ 24	≥ 47	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5) or C1 (Arcal 2)

Materials

S(P)235 to S(P)355; GP240; GP280

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	0,8	1,0	1,2			
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CARBOFIL 1A

MIG-MAG Wires C-Mn and low-alloy steels

Da utilizzarsi con protezione di gas CO₂ o miscele Ar/CO₂. Adatto per lavori di carpenteria, movimento terra e costruzione. Indicato per acciai al carbonio-manganese ad alta resistenza tipo Fe 490 Fe 510.

Carbofil 1A is a copper coated solid wire used with CO₂ or mixed Ar/CO₂ shielding gases. Suited for welding a wide range of structural steels, earthmoving and construction site work. Suitable for high strength carbon-manganese steels, types Fe 490 Fe 510.

Classification	
AWS	A5.18: ER 70S-6
EN ISO	14341-A: G 46 4 M G4Si1
EN ISO	14341-A: G 46 3 C G4Si1

Approvals	Grades
ABS	
BV	
DB	
DNV	
GL	
LRS	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.06	1.70	0.90	≤ 0.020	≤ 0.030	-	-	-	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -30°C	Hardness
As Welded	≥ 460	550-630	≥ 24	≥ 47	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5) or C1 (Arcal 2)

Materials

S(P)235 to S(P)460; GP240; GP280

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	0,8	1,0	1,2	1,6		
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CARBOFIL 1A GOLD

MIG-MAG Wires C-Mn and low-alloy steels

Nuovo filo pieno prodotto con tecnologia MHC (Metal Hydrid Coating) che riduce gli attriti in guaina migliorandone lo scorrimento e riducendo significativamente l'effetto peeling e l'intasamento delle punte porta filo. Eccezionale stabilità d'arco, assenza di proiezioni.

Carbofil 1A GOLD is a C-Mn solid wire with a special coating, suitable for welding with CO₂ or 80% Ar-20% CO₂ shielding gases. It is used for a wide range of structural steel applications. Excellent mechanical properties and good x-ray quality.

Classification	
AWS	A5.18: ER 70S-6
EN ISO	14341-A: G 46 3 C G4Si1
EN ISO	14341-A: G 46 4 M G4Si1

Approvals	Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.06	1.70	0.90	≤ 0.020	≤ 0.030	-	-	-	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -30°C	Hardness
As Welded	≥ 460	530-680	≥ 24	≥ 47	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5) or C1 (Arcal 2)

Materials

S(P)235 to S(P)460; GP240; GP280

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	0,8	1,0	1,2	1,6		
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CARBOFIL GALVA

MIG-MAG Wires C-Mn and low-alloy steels

Filo pieno ramato per la saldatura in passata singola di acciai zincati.
Fondamentale l'utilizzo di miscele ternarie come ARCAL 14 per ottenere depositi esenti da spruzzi.
Raccomandato l'utilizzo in abbinamento a generatori di corrente sinergici.
Dopo la saldatura raccomandiamo il ripristino del trattamento di zincatura.

Carbofil Galva is a copper coated solid wire used for the single pass GMAW welding, of galvanized sheets. Used with ternary shielding gas mixtures, such as ARCAL 14, to obtain spatter free welding with a good bead appearance. The use of this wire with a synergic inverter generator such as CITO@PULS, gives excellent results. After welding it is recommended to restore the protective surface in the welding area.

Classification

EN ISO 14341-A: G 42 2 M G2Ti

Approvals

Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.07	1.10	0.60	≤ 0.025	≤ 0.025	-	-	-	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -20°C	Hardness
As Welded	≥ 480	≥ 570	≥ 22	≥ 90	

Gas test: Acc. To EN 14175: M20 (Arcal 21)

Shielding Gas: Acc. To EN 14175: M21(Arcal 21) or M14(Arcal 14)

Materials

S(P)235 to S(P)420

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	0,8	1,0	1,2			

CARBOFIL MO

MIG-MAG Wires C-Mn and low-alloy steels

Filo pieno ramato per la saldatura di acciai allo 0,5% di Molibdeno.

Carbofil Mo is a copper coated solid wire suitable for welding 0,5% Mo steels. Excellent mechanical properties. Cold cracking resistant weld deposit.

Classification	
AWS	A5.28: ER 70S-A1
EN	12070: G MoSi

Approvals	Grades
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Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.08	1	0.60	-	-	-	-	0.50	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -20°C	Hardness
PWHT 580°C x 15h	≥ 380	480-560	≥ 22	≥ 47	
As Welded	≥ 400	515-620	≥ 22	≥ 47	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5)

Materials

S(P)235-S(P)460, 16Mo3

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	0,8	1,0	1,2	1,6		
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CARBOFIL KV5 (ETC KV5)



MIG-MAG Wires C-Mn and low-alloy steels

Filo impiegato per la saldatura di acciai con 1,25% Cr e 0,5% Mo. Ottime caratteristiche meccaniche. Può essere anche usato per la saldatura dall'acciaio con 0,9% Cr e 0,5% Mo. Il deposito è insensibile alle fessurazioni di solidificazione.

Carbofil CrMo1 is a copper coated solid wire suitable for welding 1,25% Cr 0,5% Mo steels. Excellent mechanical properties. Carbofil CrMo1 can also be used for welding 0,9% Cr 0,5% Mo steels. Cold cracking resistant weld deposit.

Classification	
AWS	A5.28: ER 80S-B2
EN ISO	21952-B: G 55M 1CM

Approvals	Grades
TÜV	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.08	0.56	0.50	≤ 0.020	≤ 0.020	1.25	-	0.50	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
PWHT 620°C x 1h	≥ 470	≥ 550	≥ 20	≥ 80	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5)

Materials

13CrMo4-5, 13CrMoSi5-5, G17CrMo5-5

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	0,8	1,0	1,2	1,6		
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CARBOFIL KV3 (ETC KV3)



MIG-MAG Wires C-Mn and low-alloy steels

Filo adatto per la saldatura dell'acciaio debolmente legato con 2,25% Cr e 1% Mo. Ottime caratteristiche meccaniche e deposito insensibile alle fessurazioni. Buone qualità radiografiche.

Carbofil CrMo2 is a copper coated solid wire suitable for the welding of low alloyed 2,25% Cr steels or 10 Cr Mo 910-G5 or 10 Cr Mo 910 steels. Excellent weld deposit mechanical properties and impact toughness. Good x-ray quality.

Classification	
AWS	A5.28: ER 90S-B3
EN ISO	21952-B: G 62M 2C1M

Approvals	Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.08	0.60	0.55	≤ 0.020	≤ 0.020	2.40	-	1	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
PWHT 690°C x 1h	≥ 540	≥ 620	≥ 18	≥ 47	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5)

Materials

10CrMo9-10, 12CrMo9-10; A387 Gr.22, Cl 1 and 2, A 182 Gr.F 22, A 336 Gr.F22

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC +				
PA	PB	PC	PF	PE

Packaging data: K300 Kg. 16

Diameters	0,8	1,0	1,2	1,6		
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CARBOFIL CrMo5 (ETC KV4)



MIG-MAG Wires C-Mn and low-alloy steels

Filo pieno per la saldatura di acciai resistenti allo scorrimento a caldo con 5,5% Cr 0,5% Mo. Impiegato nell'industria chimica e nei processi di sintesi dell'ammoniaca. Si consiglia preriscaldamento ed interpassi di 250-300°C.

Carbofil CrMo5 is a copper coated solid wire suitable for welding creep resistant 5,5% Cr 0,5% Mo steels, including chemical and ammonia synthesis applications. Pre-heating and interpass temperatures in the range 250-300°C are recommended.

Classification	
AWS	A5.28: ER 80S-B6
EN ISO	21952-A: G CrMo5 Si

Approvals	Grades
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Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.08	0.50	0.40	≤ 0.020	≤ 0.020	5.70	-	0.60	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
PWHT 760°C x 1h	≥ 470	≥ 590	≥ 17	≥ 47	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5)

Materials

12CrMo19-5, X12CrMo5; A182 Gr. F5, A199 Gr. T5, A213 Gr.T5, A335 Gr.P5

A 336 Cl. F5, A 369 Gr. FP5, A 387 Gr.5, Cl 1 and 2

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	1,0	1,2	1,6			
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CARBOFIL CrMo9 (ETC KV7)



MIG-MAG Wires C-Mn and low-alloy steels

Filo pieno per la saldatura di acciai resistenti allo scorrimento a caldo, legati al 9%Cr e 1%Mo. Questo tipo di acciaio è impiegato soprattutto nell'industria petrolchimica per temperature di esercizio fino a +625°C, ma a pressioni relativamente basse, dove si richiede particolare resistenza alla corrosione in presenza di idrogeno. Consigliato preriscaldamento ed interpass di 250-300°C.

Carbofil CrMo9 is a copper coated solid wire used for the welding of creep resistant steels containing 9%Cr and 1%Mo. During welding preheat and interpass temperature controls between 250-300°C are recommended.

Classification

AWS	A5.28: ER 80S-B8
EN ISO	21952-A: G CrMo9

Approvals

Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.08	0.50	0.40	≤ 0.025	≤ 0.025	9	0.06	1	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) +20°C	Hardness
PWHT 760°C x 2h	≥ 470	≥ 590	≥ 18	≥ 34	
PWHT 760°C x 1h	≥ 470	≥ 550	≥ 17	≥ 27	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5)

Materials

A335 Gr. P9

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC +



PA PB PC PG PF PE PG2

Packaging data: K300 Kg. 16

Diameters	1,2					
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CARBOFIL KV7M (ETC KV7M)



MIG-MAG Wires C-Mn and low-alloy steels

Filo pieno per la saldatura di acciai debolmente legati tipo ASTM T/P91 utilizzati fino a temperature di esercizio di 620°C. Si consigliano preriscaldamento ed interpassi di 200-300°C. Buone proprietà meccaniche.

Solid wire suitable to weld low alloy steels like P91. Excellent mechanical properties.

Classification		Approvals	Grades
AWS	5.28: ER90S-B9		
EN ISO	21952-A: G CrMo91		

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.09	0.50	0.20	≤ 0.010	≤ 0.010	9	0.60	0.90	0.06	0.20	0.04	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) +20°C	Hardness
PWHT 760°C x 2h	≥ 415	≥ 585	≥ 17	≥ 47	
PWHT 760°C x 1h	≥ 410	≥ 620	≥ 16	≥ 27	

Gas test: Acc. To EN 14175: M20 (Arcal 21)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5)

Materials

1.4903 X10CrMoVNb9-1

A 199 Gr. T91, A335 Gr. P91, A213/213M Gr. T91

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters

CARBOFIL Ni1 (ETC 1Ni)

MIG-MAG Wires C-Mn and low-alloy steels

Filo pieno per la saldatura di acciai debolmente legati al 1% Ni e a grano fine per applicazione a bassa temperatura.

Carbofil Ni1 is a copper coated solid wire suitable for welding low alloyed 1% Ni steels and fine grain steels for low temperature applications.

Classification	
AWS	A5.28: ER 80S-Ni1
EN ISO	14341-A: G 46 6 M G3Ni1

Approvals	Grades
RINA	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.08	1	0.60	≤ 0.020	≤ 0.020	-	1	0.10	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -60°C	Hardness
As Welded	≥ 470	550-680	≥ 20	≥ 47	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5)

Materials

S(P)235-S(P)460, GP240-GP280

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	0,8	1,0	1,2			

CARBOFIL Ni2 (ETC 2Ni)

MIG-MAG Wires C-Mn and low-alloy steels

Filo pieno per la saldatura di acciai debolmente legati al 2% Ni e per applicazioni a bassa temperatura. Ottime caratteristiche meccaniche.

Carbofil Ni2 is a copper coated solid wire suitable for the welding of alloyed steels, and 2%Ni steels for low temperature applications. Excellent mechanical properties.

Classification	
AWS	A5.28: ER 80S-Ni2
EN ISO	14341-A: G 46 6 M G2Ni2

Approvals	Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.08	1.10	0.50	≤ 0.020	≤ 0.020	-	2.50	-	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -60°C	Hardness
As Welded	≥ 470	550-680	≥ 20	≥ 47	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5)

Materials

S(P)275-S(P)420

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC +



PA PB PC PF PE

Packaging data: K300 Kg. 16

Diameters	0,8	1,0	1,2			
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CARBOFIL MnMo (ETC KV2)

MIG-MAG Wires High strength steels

Filo pieno per la saldatura di acciai 0,5 Mo, usato anche per la saldatura di acciai ad alta resistenza. Il metallo depositato presenta una alta insensibilità alla fessurazione.

Carbofil MnMo is a copper coated solid wire suitable for the welding of 0,5%Mo steels and high temperature resistant steels. Resistant to cold cracking and retains strength after prolonged heat treatment.

Classification	
AWS	A5.28: ER 80S-D2
EN ISO	14341-A: G 46 2 M G4Mo

Approvals	Grades
DB	
TÜV	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.08	1.85	0.60	≤ 0.020	≤ 0.020	-	-	0.50	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -30°C	Hardness
PWHT 620°C x 1h	≥ 460	530-680	≥ 22	≥ 47	
As Welded	≥ 470	≥ 550	≥ 22	≥ 27	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5)

Materials

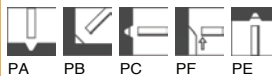
S(P)235-S(P)460, 16Mo3

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	0,8	1,0	1,2	1,6		

CARBOFIL MnNiMoCr

MIG-MAG Wires High strength steels

Filo pieno legato Cr-Ni-Mo impiegato nella saldatura MAG di acciai ad elevata resistenza. Ottime proprietà meccaniche del materiale depositato. Si consiglia di lavorare con bassi apporti termici al fine di ottenere migliori caratteristiche.

Carbofil NiMo1 is a copper coated alloyed Ni-Mo solid wire suitable for the MAG welding of high strength steels. Excellent mechanical properties. Low heat inputs are recommended to obtain optimum joint mechanical properties.

Classification	
AWS	A5.28: ER 90S-G
EN	12534: G 55 4 M Mn3Ni1Mo

Approvals	Grades
DB	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.08	1.50	0.60	≤ 0.015	≤ 0.018	0.50	0.50	0.25	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -40°C	Hardness
As Welded	≥ 620	700-890	≥ 18	≥ 47	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5)

Materials

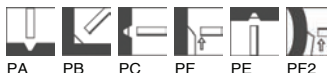
S(P)460-S(P)620

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	1,0	1,2	1,6			
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CARBOFIL NiMoCr

MIG-MAG Wires High strength steels

Filo pieno legato al Cr-Ni-Mo impiegato nella saldatura MAG di acciai ad elevata resistenza tipo T1-HY100. Ottime proprietà meccaniche del materiale depositato. Si consiglia di lavorare con bassi apporti termici al fine di ottenere migliori caratteristiche.

Carbofil NiMoCr is a copper coated solid wire used for the MAG welding of high tensile strength steels and type T1-HY100 steels. Excellent mechanical properties. Low heat inputs are recommended to obtain optimum joint mechanical properties.

Classification	
AWS	A5.28: ER 100S-G
EN	12534:G 69 4 M Mn3Ni1CrMo

Approvals	Grades
DB	
TÜV	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.07	1.60	0.60	≤ 0.015	≤ 0.018	0.30	1.50	0.25	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -40°C	Hardness
As Welded	≥ 690	770 - 890	≥ 17	≥ 47	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5) or C1 (Arcal 2)

Materials

S620, S690, HY 100

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	0,8	1,0	1,2	1,6		
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CARBOFIL 2NiMoCr

MIG-MAG Wires High strength steels

Filo pieno per la saldatura di acciai debolmente legati al Cr-Ni-Mo ed acciai ad elevato limite elastico. Ottime caratteristiche meccaniche del metallo depositato con limite elastico = 890 N/mm² carico di rottura = 920 N/mm².

Carbofil 120 is a copper coated solid wire suitable for welding Cr-Ni-Mo low alloyed and high yield strength steels. Excellent mechanical properties, yield strength 890 N/mm² and tensile strength = 920 N/mm².

Classification		Approvals	Grades
AWS	A5.28: ER 120S-G		
EN	12534: G 89 4 M Mn4Ni2CrMo		

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.07	1.60	0.75	≤ 0.015	≤ 0.018	0.30	2	0.60	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -40°C	Hardness
As Welded	≥ 890	≥ 920	≥ 16	≥ 47	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5)

Materials

S690; S890

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+				
				
PA	PB	PC	PF	PE

Packaging data: K300 Kg. 16

Diameters	1,0	1,2				
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CARBOFIL NICU

MIG-MAG Wires Weathering steels

Filo per la saldatura sotto protezione gassosa di acciai al carbonio tipo Cor Ten. Le sue caratteristiche meccaniche consentono l'impiego anche su acciai ad elevato limite elastico. Acciai tipo Cor Ten A.B.C. Resco 36, Patinox, Tenaspò ecc.

Carbofil Cu is a copper coated solid wire suitable for the welding of weathering steels such as COR-TEN. The mechanical properties allow Carbofil Cu to be used for joining high yield strength steels.

Classification

AWS	A5.28: ER 80S-G
EN ISO	14431-A: G 46 2 M GO

Approvals

Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	V	N	Cu
0.10	1.40	0.80	≤ 0.020	≤ 0.030	-	0.60	-	-	-	-	0.40

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -20°C	Hardness
As Welded	≥ 460	550-650	≥ 24	≥ 60	

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5) or C1 (Arcal 2)

Materials

S235J0W; S235J2W; S355J0W; S355J2W; S355K2W

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	0,8	1,0	1,2			
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INERTFIL 307

MIG-MAG Wires Stainless and Heat resistant steels

Filo inox per la saldatura di acciai dissimili, acciai da bonifica, al 13% Mn, acciai al Cr, acciai da corazzata a balistici. Deposito con notevoli caratteristiche meccaniche e di resistenza all'usura. Indicato anche per l'esecuzione di strati cuscinetto e strati intermedi di placature.

Inertfil 307 stainless steel solid wire is suitable for welding dissimilar steels, hardening and tempering steels, 13% Mn steels, Cr steels and ballistic steels. Good mechanical properties and wear resistance. Used for buffer layers.

Classification	
AWS	A5.9: ER 307 (approx)
EN	12072: G 18 8Mn

Approvals	Grades
DB	
TÜV	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.10	7	0.80	≤ 0.030	≤ 0.030	19	9	-	-	-	-	≤ 5

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
As Welded	≥ 420	≥ 590	≥ 30	≥ 50	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

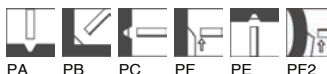
Armour plate; Dissimilar Steels
X120Mn12 (1.3401)

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: BS300 Kg. 15

Diameters	0,8	1,0	1,2			

INERTFIL 308L

MIG-MAG Wires Stainless and Heat resistant steels

Filo inox del tipo ER 308L indicato per la saldatura di acciai inox austenici del tipo AISI 304 e 308. Ottima resistenza meccanica e alla corrosione. Elevata resistenza alla fessurazione.

Inertfil 308L is a stainless steel solid wire similar to ER 308L suitable for welding austenitic stainless steels such as AISI 304 and AISI 304L. Excellent corrosion resistance and good mechanical properties.

Classification	
AWS	A5.9: ER 308L
EN	12072: G 19 9L

Approvals	Grades
DB	
TÜV	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.02	1.80	0.45	≤ 0.025	≤ 0.020	20	10	0.20	-	-	-	5-10

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
As Welded	≥ 350	≥ 520	≥ 35	≥ 47	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

1.4541 (X6CrNiTi18-10); 1.4301 (X4CrNi18-10); 1.4311 (X2CrNiN18-10)

AISI 304 - 304L - 302

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: BS300 Kg. 15

Diameters	0,8	1,0	1,2	1,6		

INERTFIL 308LSi

MIG-MAG Wires Stainless and Heat resistant steels

Filo inox del tipo ER 308L indicato per la saldatura di acciai inox austenici del tipo AISI 304 e 308L. Ottima resistenza meccanica e alla corrosione. Il contenuto Si ~ 0,85% conferisce una migliore caratteristica di saldabilità ed estetica.

Inertfil 308LSi is a stainless steel solid wire similar to ER 308LSi suitable for welding austenitic stainless steels such as AISI 304 and AISI 304L. Excellent corrosion resistance and good mechanical properties. Si ~ 0,85% content improves weldability and bead appearance.

Classification	
AWS	A5.9: ER 308L Si
EN	12072: G 19 9 L Si

Approvals	Grades
TÜV	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.02	1.80	0.85	≤ 0.025	≤ 0.020	20	10	0.20	-	-	-	5-10

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
As Welded	≥ 350	≥ 520	≥ 35	≥ 47	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials






1.4541 (X6CrNiTi18-10); 1.4301 (X4CrNi18-10); 1.4311 (X2CrNiN18-10)

AISI 304 - 304L - 302

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+				
				
PA	PB	PC	PF	PE

Packaging data: BS300 Kg. 15

Diameters	0,6	0,8	1,0	1,2	1,6

INERTFIL 308H

MIG-MAG Wires Stainless and Heat resistant steels

Filo inox del tipo ER 308H indicato per la saldatura di acciai inox austenici del tipo AISI 304H e 308H. Ottima resistenza meccanica e alla corrosione. Elevata resistenza alla fessurazione.

Inertfil 308H is stainless steel solid wire similar to ER 308H and suitable for welding AISI 304H austenitic stainless steel and similar steels. Excellent corrosion resistance and good mechanical properties.

Classification	
AWS	A5.9: ER 308H
EN	12072: G 19 9H

Approvals	Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.06	1.90	0.50	≤ 0.030	≤ 0.020	20	10.50	-	-	-	-	5-10

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
As Welded	≥ 350	≥ 550	≥ 35	≥ 47	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

AISI 304H; 1.4948 (X6CrNi18-10); 1.4310 (X10CrNi18-8)

Storage

Keep dry and avoid condensation

Current condition and welding position

DC +				
				
PA	PB	PC	PF	PE

Packaging data: BS300 Kg. 15

Diameters	1,0	1,2				

INERTFIL 316L

MIG-MAG Wires Stainless and Heat resistant steels

Filo inox tipo ER 316L con C 0,03% max. Ottima resistenza meccanica e chimica, indicato nella saldatura o ricarica di acciai inox con uguale composizione chimica. Ottima estetica. Il filo pieno ETC 316H con C 0.08% max, è disponibile su richiesta (AWS A5.9: ER 316H)

Inertfil 316L is a stainless steel solid wire conforming to ER 316L with C=0,03% max. Excellent mechanical properties and resistance to chemical corrosion, suitable for welding or surfacing stainless steels having the same chemical analysis. Excellent weld bead appearance. Upon request Inertfil 316H with Carbon 0.08% max (AWS A5.9: ER 316H) can be supplied.

Classification	
AWS	A5.9: ER 316L
EN	12072: G 19 12 3L

Approvals	Grades
DB	
TÜV	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.02	1.40	0.45	≤ 0.025	≤ 0.020	19	12.50	2.60	-	-	-	5-10

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
As Welded	≥ 350	≥ 510	≥ 30	≥ 47	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

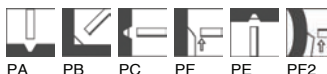
1.4401 (X4CrNiMo17-12-2), 1.4435 (X2CrNiMo18-14-3)
1.4571 (X6CrNiMoTi17-12-2), 1.4583 (X10CrNiMoNb18-12)
AISI 316L

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: BS300 Kg. 15

Diameters	1,0	1,2				

INERTFIL 316LSi

MIG-MAG Wires Stainless and Heat resistant steels

Filo inox tipo ER 316L con C 0,03%max con Si 0,85%. Ottima resistenza meccanica e chimica, indicato nella saldatura o ricarica di acciai inox con uguale composizione chimica. Ottima estetica.

Inertfil 316LSi is a stainless steel solid wire conforming to ER 316LSi with C=0.03% max and Si ~ 0,85 %. Excellent mechanical properties and resistance to chemical corrosion, suitable for welding or surfacing stainless steels having similar chemical compositions. Excellent bead appearance.

Classification	
AWS	A5.9: ER 316L Si
EN	12072: G 19 12 3L Si

Approvals	Grades
TÜV	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.02	1.40	0.85	≤ 0.025	≤ 0.020	19	12.50	2.60	-	-	-	5-10

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
As Welded	≥ 350	≥ 510	≥ 30	≥ 47	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

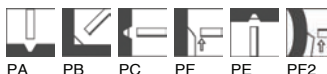
1.4401 (X4CrNiMo17-12-2), 1.4435 (X2CrNiMo18-14-3)
1.4571 (X6CrNiMoTi17-12-2), 1.4583 (X10CrNiMoNb18-12)
AISI 316L

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: BS300 Kg. 15

Diameters	0,6	0,8	1,0	1,2	1,6
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INERTFIL 20.16L

MIG-MAG Wires Stainless and Heat resistant steels

Filo inox tipo ER 316L con aggiunta di azoto. Ottima resistenza meccanica e chimica, indicato nella saldatura o ricarica di acciai inox e acciai al 5% di Ni.

Inertfil 20.16L is a stainless steel solid wire with the composition of ER 316L with N. Good mechanical properties and resistance to chemical corrosion, suitable for welding or hardfacing stainless steels and 5% Ni steels.

Classification		Approvals	Grades
EN	12072: G 20 16 3 Mn N L	RINA	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.02	7	0.90	≤ 0.020	≤ 0.020	20	17	3	-	-	0.15	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -120°C	Hardness
As Welded	≥ 450	≥ 580	≥ 38	≥ 47	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1) or M12 (Arcal 12)

Materials

X2CrNiMoN17-13-3 (1.4429)

X2CrNiMoN18-14-3 (1.3952); X2CrNiMo18-14-3 (1.4435)

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: BS300 Kg. 15

Diameters	1,0	1,2				
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INERTFIL 347

MIG-MAG Wires Stainless and Heat resistant steels

Filo inox per la saldatura degli acciai austenici stabilizzati, del tipo AISI 321 e 347. La presenza dello stabilizzante migliora notevolmente la resistenza all'ossidazione del deposito.

Inertfil 347 is a stainless steel solid wire suitable for welding stabilised austenitic steels such as AISI 321 and 347. Nb+Ta additions improve the oxidation resistance of the weld deposit.

Classification	
AWS	A5.9: ER 347
EN	12072: G 19 9Nb

Approvals	Grades
DB	
TÜV	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.06	1.60	0.45	≤ 0.030	≤ 0.030	19.50	10	-	0.80	-	-	5-10

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
As Welded	≥ 400	≥ 550	≥ 30	≥ 47	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

1.4541 (X6CrNiTi18-10); 1.4301 (X4CrNi18-10); 1.4550 (X6CrNiNb18-10);

AISI 347 - 321

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: BS300 Kg. 15

Diameters	0,8	1,0	1,2			
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INERTFIL 318Si

MIG-MAG Wires Stainless and Heat resistant steels

Filo inox per la saldatura di degli acciai austenitici stabilizzati del tipo AISI 318. La presenza di stabilizzanti migliora la resistenza all'ossidazione del deposito.

Inertfil 318Si is a stainless steel solid wire suitable for welding stabilized austenitic steels such as AISI 318. Nb + Ta additions improve the oxidation resistance of the weld deposit.

Classification	
AWS	A5.9: ER318 (similar)
EN	12072: G 19 12 3 Nb Si

Approvals	Grades
TÜV	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.07	1.75	0.85	≤ 0.020	≤ 0.020	19	12.60	2.60	0.70	-	-	5-10

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
As Welded	≥ 400	≥ 550	≥ 30	≥ 47	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

1.4571 (X6CrNiMoTi17-12-2) - 1.4401 (X4CrNiMo17-12-2)

1.4580 (X6CrNiMoNb17-12-2) - 1.4408 (GX5CrNiMo19-11)

1.4581 (GX5CrNiMoNb19-10) - 1.4436 (X4CrNiMo17-13-3)

1.4583 (X10CrNiMoNb18-12)

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



PA PB PC PF PE PF2

Packaging data: BS300 Kg. 15

Diameters	1,0	1,2				
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INERTFIL 309L

MIG-MAG Wires Stainless and Heat resistant steels

Filo inox per la saldatura di acciai austeno-ferritici e per saldature dissimili.

Inertfil 309L is a stainless steel solid wire suitable for welding austenitic-ferritic steels with 25% Cr and 12% Ni, for applications up to 300°C. Inertfil 309L can be supplied with Carbon= 0.12% max.

Classification	
AWS	A5.9: ER 309L
EN	12072: G 23 12L

Approvals	Grades
TÜV	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.02	1.80	0.45	≤ 0.030	≤ 0.020	24	13	-	-	-	-	10-20

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
As Welded	≥ 350	≥ 520	≥ 30	≥ 47	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

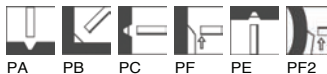
A312 TP309S; carbon steel to stainless steels joining

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: BS300 Kg. 15

Diameters	0,8	1,0	1,2			
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INERTFIL 309LSi

MIG-MAG Wires Stainless and Heat resistant steels

Filo inox del tipo 25Cr 12Ni con basso contenuto di C. La più alta percentuale di Si conferisce al filo un'ottima saldabilità. È indicato per la saldatura di acciai inox austenitici del tipo AISI 309. Viene impiegato per la saldatura di acciai dissimili e per strati cuscinetto.

Inertfil 309LSi is a stainless steel solid wire with 25%Cr 12%Ni, low carbon content. The increased Si level gives excellent weldability. Inertfil 309LSi is suitable for welding austenitic stainless steels similar to AISI 309. It is also used for welding dissimilar steels and for buffer layers.

Classification

AWS	A5.9: ER 309L Si
EN	12072: G 23 12 L Si

Approvals

Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.02	1.80	0.85	≤ 0.030	≤ 0.020	24	13	-	-	-	-	10-20

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
As Welded	≥ 350	≥ 520	≥ 30	≥ 47	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

A312 TP309S; carbon steel to stainless steels joint

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: BS300 Kg. 15

Diameters	0,8	1,0	1,2	1,6		
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INERTFIL 309LMo

MIG-MAG Wires Stainless and Heat resistant steels

Filo inox del tipo 25Cr 12Ni con basso contenuto di C e alto contenuto di Mo. E' indicato per la saldatura di acciai inox austenitici del tipo AISI 309. Viene impiegato per la saldatura di acciai dissimili.

Inertfil 309LMo is a stainless steel solid wire containing a 25%Cr 12%Ni low C and high Mo. Suitable for welding AISI 309 austenitic stainless steel and similar steels. Inertfil 309LMo is also used to weld dissimilar steels or for buffer layers on 316L.

Classification	
AWS	A5.9: ER 309L Mo (approx)
EN	12072: G 23 12 2L

Approvals	Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.03	1.60	0.45	≤ 0.030	≤ 0.020	22	15	2.70	-	-	-	10-20

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
As Welded	≥ 350	≥ 550	≥ 30	≥ 47	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

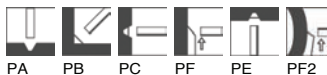
Cladding of carbon steel and low alloy steel

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: BS300 Kg. 15

Diameters	0,8	1,0	1,2			

INERTFIL 310

MIG-MAG Wires Stainless and Heat resistant steels

Filo inox del tipo ER310 con 25%Cr e 20%Ni indicato per la saldatura di acciai aventi la stessa composizione chimica o per acciai dissimili. Deposito completamente austenico. Ottima resistenza alla corrosione anche a caldo. Filo inox del tipo ER310 con 25%Cr e 20%Ni indicato per la saldatura di acciai aventi la stessa composizione chimica o per acciai dissimili. Deposito completamente austenico. Ottima resistenza alla corrosione anche a caldo.

Inertfil 310 is a stainless steel solid wire conforming to the ER310 classification with 25% Cr and 20% Ni. Suitable for welding steels having the same chemical compositions or for dissimilar steel welding. The weld deposit is fully austenitic. Excellent high temperature corrosion resistance.

Classification	
AWS	A5.9: ER 310
EN	12072: G 25 20

Approvals	Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.12	1.80	0.60	≤ 0.030	≤ 0.020	26	21	-	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
As Welded	≥ 350	≥ 550	≥ 30	≥ 47	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

AISI 310; 1.4845 (X8CrNi25-21); 1.4841 (X15CrNiSi25-21); 1.4828 (X15CrNiSi20-12)

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: BS300 Kg. 15

Diameters	0,8	1,0	1,2			
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INERTFIL 312

MIG-MAG Wires Stainless and Heat resistant steels

Filo inox per la saldatura e la ricarica di acciai difficilmente saldabili. Adatto per l'esecuzione di strati intermedi di riporti duri. Le elevate caratteristiche meccaniche e la grande resistenza alla fessurazione rendono questo filo di impiego universale.

Inertfil 312 is a stainless steel solid wire suitable for welding or surfacing difficult to weld steels. Suitable for welding buffer layers when hardfacing. The excellent mechanical properties and the impact toughness mean that this wire is suitable for a wide range of applications.

Classification	
AWS	A5.9: ER 312
EN	12072: G 29 9

Approvals	Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.10	1.80	0.40	≤ 0.030	≤ 0.020	29	9	-	-	-	-	12-20

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
As Welded	≥ 450	≥ 650	≥ 22	≥ 47	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

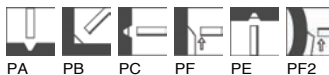
Dissimilar and difficult to weld steels

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: BS300 Kg. 15

Diameters	0,8	1,0	1,2			

MIG-MAG Wires Stainless and Heat resistant steels

Filo pieno per la saldatura di acciai tipo AISI 904L altamente legati, con basso contenuto di carbonio. Ottima resistenza alla corrosione in miscele solforose e cloridriche. Buona resistenza alla corrosione intergranulare.

Inertfil 904L is a solid wire for welding stainless steels type 904L. Low carbon content. Very good resistance to intergranular and pitting corrosion.

Classification	
AWS	A5.9: ER 385 L
EN	12072: G 20 25 5 Cu L

Approvals	Grades
TÜV	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.025	1.90	0.40	≤ 0.020	≤ 0.020	20	25	4.50	-	1.50	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -70°C	Hardness
As Welded	≥ 410	≥ 560	≥ 35	≥ 100	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

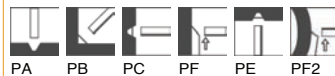
URANUS B6; AISI 904L; 1.4539 (X1NiCrMoCu25-20-5); 1.4439 (X2CrNiMoN17-13-5); 1.4537 (X1CrNiMoCuN25-25-5)

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: BS300 Kg. 15

Diameters	1,0	1,2				
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INERTFIL 410

MIG-MAG Wires Stainless and Heat resistant steels

Filo pieno per la saldatura di acciai al 12% Cr (AISI 410). Tali acciai sono del tipo autotemprante e pertanto richiedono trattamenti di preriscaldamento e di distensione al fine di ottenere delle saldature con sufficiente duttilità. Il filo pieno ETC 410 con C 0,08% max, è disponibile su richiesta.

Inertfil 410L is a solid wire for welding 12%Cr steels (AISI 410). These are self-hardening steels and usually require pre-heating and stress relieving treatments in order to obtain adequate ductility. Upon request Inertfil 410 solid wire with carbon 0,08% max can be supplied.

Classification

AWS	A5.9: ER 410
EN	12072: G 13L

Approvals

Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.03	0.40	0.50	≤ 0.030	≤ 0.020	13.50	-	-	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
PWHT 750°C x 1h	≥ 350	≥ 450	≥ 20	≥ 47	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

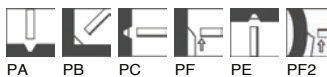
1.4000 (X6Cr13); 1.4006 (X12Cr13)
AISI 410

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC+



Packaging data: BS300 Kg. 15

Diameters	1,0	1,2				
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INERTFIL 410 NiMo

MIG-MAG Wires Stainless and Heat resistant steels

Filo pieno per la saldatura di acciai serie AISI 410 Ni Mo. Tali acciai sono del tipo autotemperante e pertanto richiedono trattamenti di preriscaldamento e di distensione al fine di ottenere delle saldature con sufficiente duttilità.

Inertfil 410NiMo is a solid wire suitable for welding AISI 410 NiMo. These are self-hardening steels and usually require pre-heating and stress relieving treatments in order to obtain adequate ductility.

Classification	
AWS	A5.9: ER 410 NiMo
EN	12072: G 13 4

Approvals	Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.05	0.60	0.50	≤ 0.030	≤ 0.020	12.50	4	0.70	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
As Welded	≥ 500	≥ 760	≥ 20	≥ 47	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

ASTM C696M; G-X5CrNi 13-4; Z6 CND 1304 M

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC+					
					
PA	PB	PC	PF	PE	PF2

Packaging data: BS300 Kg. 15

Diameters	1,0	1,2				

INERTFIL 430

MIG-MAG Wires Stainless and Heat resistant steels

Filo pieno per la saldatura di acciai al 15-17% Cr (AISI 430). Tali tipi di acciaio sono previsti per la tempra in aria e richiedono pertanto dei trattamenti di preriscaldamento e di distensione al fine di ottenere delle saldature di sufficiente duttilità per la lavorazione meccanica.

Inertfil 430 is a solid wire suitable for the welding of 15-17% Cr steels (AISI 430). These steels have been developed for air hardening and require pre-heating and stress relieving treatments in order to obtain sufficient ductility to allow mechanical working.

Classification	
AWS	A5.9: ER 430
EN	12072: G 17

Approvals

Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.08	0.60	0.40	≤ 0.030	≤ 0.020	17	-	-	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
PWHT 770°C x 2h	≥ 400	≥ 450	≥ 20	≥ 47	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

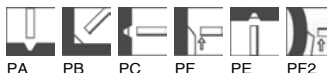
AISI 430

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: BS300 Kg. 15

Diameters	1,0	1,2				
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INERTFIL 22 9 3

MIG-MAG Wires Stainless and Heat resistant steels

Filo pieno per la saldatura di acciai bifasici tipo Duplex. La ottima resistenza alla corrosione e le caratteristiche meccaniche del deposito dipendono molto dalla tecnica di saldatura. Temperatura di esercizio fino a 280°C.

Inertfil 22 9 3 is a solid wire suitable for welding duplex stainless steels. The weld metal has excellent corrosion resistance and weld metal mechanical properties.

Classification	
AWS	A5.9: ER 2209
EN	12072: G 22 9 3NL

Approvals	Grades
TÜV	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
0.02	1.70	0.50	≤ 0.030	≤ 0.020	23	9	3	-	-	0.15	30-65

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) 20°C	Hardness
As Welded	≥ 450	≥ 600	≥ 26	≥ 80 J	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

1.4462 (X2CrNiMoN22-5-3)

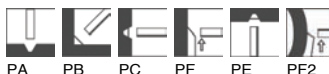
UNS S31803 - S31500 - S31200 - S32304

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: BS300 Kg. 15

Diameters	0,8	1,0	1,2			

MIG-MAG Wires Nickel and Copper alloys

Filo pieno indicato per la saldatura o ricarica di leghe con uguale composizione chimica. Buona estetica e ottima resistenza agli agenti chimici.

Nifil Ni1 is a solid wire suitable for welding alloys with similar chemical analysis and for weld overlay. Good appearance and excellent resistance to chemical corrosion.

Classification	
AWS	A5.14: ER Ni-1
EN ISO	18274: S Ni 2061 (NiTi3)

Approvals	Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Fe	W	Cu
0.10	1	0.70	≤ 0.030	≤ 0.015	-	98	-	-	0.90	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J)	Hardness
As Welded	≥ 280	≥ 380	≥ 38		

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1) or I3 (Arcal 32)

Materials

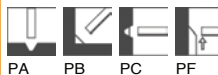
Buffer layers for welding Ni or Cu alloys to steels

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	1,0	1,2				
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MIG-MAG Wires Nickel and Copper alloys

Filo pieno per la saldatura o ricarica di leghe inconel 600 o incoloy 800. ETC 82 è anche indicato nel caso di saldature di acciai dissimili o difficilmente saldabili. Ottime caratteristiche meccaniche e resistenza alla corrosione.

Nifil 600 is a solid wire for welding Inconel 600 and Incoloy 800. Nifil 600 is also suitable for welding dissimilar or difficult to weld steels, particularly Ni alloys and stainless steels. Excellent mechanical properties and corrosion resistance at high temperatures up to 1100°C.

Classification	
AWS	A5.14: ER NiCr-3
EN ISO	18274: S Ni 6082

Approvals	Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Fe	W	Cu
0.01	3	0.30	≤ 0.030	≤ 0.015	20	67	-	2	2	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -196°C	Hardness
As Welded	≥ 380	≥ 550	≥ 25	≥ 55	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1) or I3 (Arcal 32)

Materials

2.4816; 1.4876; 1.4958

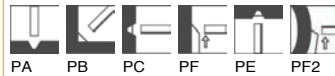
UNS N06600; UNS N08800; UNS N08810

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	0,8	1,0	1,2	1,6		

MIG-MAG Wires Nickel and Copper alloys

Filo pieno a struttura austenitica, può essere utilizzato per saldature criogeniche e acciai al 9% Ni, grazie alla sua buona tenuta alle alte temperature (1100°C) può essere utilizzato su tutte le installazioni soggette a trattamento termico. Buona resistenza alla corrosione intercristallina.

Nifil 625 is a nickel alloy solid wire, for use in cryogenic welding and 9% Ni steel welding applications. Suitable for high temperature applications (1100°C). It is used for components which will undergo heat treatments. Good resistance to intercrystalline corrosion.

Classification

AWS	A5.14: ER NiCrMo-3
EN	18274: Ni 6625

Approvals

Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Fe	W	Cu
0.025	-	0.30	≤ 0.020	≤ 0.015	21	60	9	3.50	3	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -196°C	Hardness
As Welded	≥ 440	≥ 760	≥ 35	≥ 55	

Gas test: Acc. To EN 14175: M12 (Arcal 12)

Shielding Gas: Acc. To EN 14175: M12 (Arcal12-Arcal121)

Materials

2.4856; 2.4839

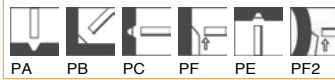
UNS N06625; UNS N08825

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	0,8	1,0	1,2	1,6		
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MIG-MAG Wires Nickel and Copper alloys

Filo pieno utilizzato per ricariche e riporti antiusura, buona resistenza alla corrosione in ambienti ossidanti, riducenti contenenti acidi o cloruri. E' inoltre utilizzato per la saldatura di leghe Ni-Cr-Mo a basso carbonio, per depositi di saldatura su acciai o con altri tipi di leghe al Nickel

This solid wire is applicable in welding of Ni-Cr-Mo alloys with low carbon content. In addition it can be used for dissimilar base metal or Ni alloy welding. Good corrosion resistance in presence of acids or chlorides.

Classification		Approvals	Grades
AWS	A5.14: ER NiCrMo-4		

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Cu	N	Ferrite
≤ 0.02	≤ 1	≤ 0.08	≤ 0.030	≤ 0.025	14.50	Rem	15-17	-	≤ 0.50	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J) -196°C	Hardness
As Welded	≥ 490	≥ 700		≥ 55	

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1) or I3 (Arcal 32)

Materials

2.4602 (C22)

2.4610 (C4)

2.4819

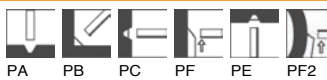
ASTM B 574, B575, B622 e B626, UNS N10276 e HASTELLOY C 276

Storage

Keep dry and avoid condensation

Current condition and welding position

DC +



PA PB PC PF PE PF2

Packaging data: K300 Kg. 16

Diameters

MIG-MAG Wires Nickel and Copper alloys

Filo pieno indicato per la saldatura o ricarica di leghe con uguale composizione estetica e ottima resistenza alla corrosione in presenza di ambienti salini. Applicazione tipo dissalatori per leghe tipo MONEL.

Nifil NiCu7 is a solid wire suitable for welding alloys with similar chemical analyses. Good bead appearance with excellent corrosion resistance in saline solutions. Suitable for desalination plant construction applications and joining MONEL type alloys.

Classification	
AWS	A5.14: ER NiCu7
EN ISO	18274: S Ni 4060 (NiCu30Mn3Ti)

Approvals	Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Fe	W	Cu
0.10	3	1	≤ 0.020	≤ 0.015	-	≥ 62	-	-	1	-	30

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J)	Hardness
As Welded	≥ 350	≥ 480	≥ 30		

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials



2.4360 (NiCu30Fe); 2.4375 (NiCu30Al); 2.4377

UNS N04400; UNS N 05500

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC+					
					
PA	PB	PC	PF	PE	PF2

Packaging data: K300 Kg. 16

Diameters	1,0	1,2				

COPPERFIL 70-30

MIG-MAG Wires Nickel and Copper alloys

Filo indicato per la saldatura o ricarica di leghe con uguale composizione chimica. Buona estetica e ottima resistenza agli agenti chimici e marini (es. dissalatori).

Copperfil 70-30 is a solid wire suitable for welding all copper-nickel alloys such as 70/30 - 80/20 - 90/10. Good bead appearance and excellent weld deposit properties. Excellent corrosion resistance in saline solutions.

Classification		Approvals	Grades
AWS	A5.7: ER CuNi (CuNi30)		
EN	14640: S Cu 7158		

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Fe	Cu	Sn
-	1	0.20	≤ 0.020	-	-	30	-	-	0.50	Rem	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J)	Hardness
As Welded	≥ 250	≥ 345	≥ 20		

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

2.0872 (CuNi10Fe1Mn9); 2.0882 (CuNi30Mn1Fe); 2.0837

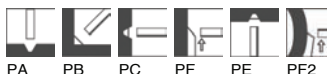
UNS C70600; UNS C71500

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	1,2					
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COPPERFIL 90-10

MIG-MAG Wires Nickel and Copper alloys

Filo indicato per la saldatura o ricarica di leghe con uguale composizione chimica. Buona estetica e ottima resistenza agli agenti chimici e marini (es. dissalatori).

Copperfil 90-10 is a solid wire suitable for welding alloys with similar chemical analyses. Good bead appearance and excellent weld deposit properties. Excellent corrosion resistance in saline solutions.

Classification		Approvals	Grades
EN	14640: S Cu 7061 (CuNi10)		

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Fe	Cu	Sn
0.05	1	0.20	≤ 0.020	≤ 0.015	-	10	-	-	1	Rem	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J)	Hardness
As Welded		≥ 380			

Gas test: Acc. To EN 14175: M13 (Cargal 1)

Shielding Gas: Acc. To EN 14175: M13 (Cargal 1)

Materials

2.0873

UNS C70600; UNS C71500

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC +



Packaging data: K300 Kg. 16

Diameters	1,2					
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COPPERFIL CuAl8

MIG-MAG Wires Nickel and Copper alloys

Filo pieno per la saldatura di leghe di rame. Impiegato nell'industria automobilistica e nelle fonderie artistiche. Ottima resistenza alla corrosione da acqua di mare e in soluzione acide.

Copperfil CuAl8 has been developed for welding copper alloys and steel castings, nickel alloys and for welding in artistic foundries. This composition offers a very high resistance to sea water-corrosion and to the most commonly used acids in any concentrations and at a wide range of operating temperatures. High erosion resistance. Used for welding galvanized steel sheets and components in the automobile industry.

Classification	
AWS	A5.7: ER CuAl-A1
DIN	1733: SG-CuAl8
EN	14640: S CuAl8-S Cu 6100

Approvals	Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Fe	Cu	Sn
-	≤ 0.10	≤ 0.20	-	-	-	≤ 0.80	-	-	≤ 0.50	Rem	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J)	Hardness
As Welded		390-450	≥ 45		80-100 HB

Gas test: Acc. To EN 14175: I1(Arcal1)

Shielding Gas: Acc. To EN 14175: I1(Arcal1)

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	1,0	1,2			

COPPERFIL CuSi3

MIG-MAG Wires Nickel and Copper alloys

Filo pieno idoneo alla saldatura di leghe rame-silicio o rame-zinco. Ottima resistenza alla corrosione.

Copperfil CuSi3 is used for the inert gas welding of copper base alloys, for example, copper-silicon, copper-zinc and galvanized sheets, also welded to steel. This wire is frequently used for joining in artistic foundries, for welding galvanized sheets and even as a steel coating. It is also suitable for surfaces subject to corrosion.

Classification	
AWS	A5.7: ER CuSi-A
DIN	1733: SG-Cu Si3
EN	14640: S CuSi3Mn1-S Cu 6560

Approvals	Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Fe	Cu	Sn
-	0.75	2.80-4	≤ 0.020	-	-	-	-	-	≤ 0.30	Rem	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J)	Hardness
As Welded		330-370	≥ 40		80-90 HB




Gas test: Acc. To EN 14175: I1(Arcal1)

Shielding Gas: Acc. To EN 14175: I1(Arcal1)

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC+		
		
PA	PB	PC

Packaging data: K300 Kg. 16

Diameters	1,0	1,2				

CARBOFIL A 250

MIG-MAG Wires Hardfacing

Filo pieno per riporti antiusura di durezza 225-275 HB

Carbofil A 250 is a solid wire for hardsurfacing of wear resistant parts, subject to heavy impact and shock. Carbofil A 250 is suitable for the welding of rail, rail crossing and wear parts such as rope rollers.

Classification

DIN	8555: MSG 1-GZ-250
EN	14700: S Fe1

Approvals

Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Fe	W	Cu
0.30	1	0.50	-	-	1	-	-	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J)	Hardness
As Welded					225-275 HB

Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5)

Storage

keep dry and avoid condensation.

Current condition and welding position

DC+



Packaging data: K300 Kg. 16

Diameters	1,2					
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CARBOFIL A 350

MIG-MAG Wires Hardfacing

Fili pieni per riporti antiusura indicati per ripristinare superfici che devono essere sottoposte ad abrasioni. Le caratteristiche di durezza si ottengono in condizioni di solo materiale d'apporto. Si consiglia in alcuni casi uno strato cuscinetto.

Carbofil A 350 is a solid wire for hardfacing suitable for hardfacing surfaces subjected to abrasive wear. 325-380 HB is obtained in the all weld metal. In some cases the use of a buffer layer may be required.

Classification	
DIN	8555: MSG 2-GZ-350P
EN	14700: S Fe2

Approvals	Grades
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Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Fe	W	Cu
0.70	2	0.50	-	-	1	-	1	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J)	Hardness
As Welded					325-380 HB




Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5)

Storage

keep dry and avoid condensation.

Current condition and welding position

DC +		
		
PA	PB	PC

Packaging data: K300 Kg. 16

Diameters	1,2					
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CARBOFIL A 600

MIG-MAG Wires Hardfacing

Fili pieni per riporti antiusura indicati per ripristinare superfici che devono essere sottoposte ad abrasione. Le caratteristiche di durezza si ottengono in condizioni di solo materiale d'apporto. Si consiglia in alcuni casi uno strato cuscinetto.

Carbofil A 600 is a solid wire for hardfacing surfaces to be subjected to abrasive wear. 570-660 HB is obtained in the all weld metal. In some cases the use of a buffer layer may be required.

Classification	
AWS	14700: S Fe8
DIN	8555: MSG 6-GZ-60-GP

Approvals	Grades
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Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Fe	W	Cu
0.45	0.40	3	-	-	9	-	1.40	-	-	-	-

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J)	Hardness
As Welded					57-62 HRC




Gas test: Acc. To EN 14175: M21 (Atal 5)

Shielding Gas: Acc. To EN 14175: M20 (Arcal 21) - M21 (Atal 5)

Storage

Keep dry and avoid condensation

Current condition and welding position

DC +		
		
PA	PB	PC

Packaging data: K300 Kg. 16

Diameters	1,0	1,2	1,6			
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ALUFIL Al 99,5 Ti

MIG-MAG Wires Aluminum alloys

Filo pieno che deposita alluminio al 99,55. Adatto per la saldatura di leghe d'alluminio e alluminio puro. Buone caratteristiche meccaniche e buona permeabilità magnetica. Ottima resistenza alla corrosione chimica.

Alufil Al 99,5Ti is a solid wire which deposits a 99,5% Al composition. Suitable for welding aluminium and pure aluminium alloys. Good mechanical properties and magnetic permeability. Excellent resistance to chemical corrosion.

Classification

EN ISO 18273: S Al 1450

Approvals

TÜV

Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Zn	Ti	Mg	Fe	Cu	Al
-	0.05	0.20	-	-	-	-	0.15	-	-	≤ 0.05	Rem

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J)	Hardness
As Welded	≥ 20	≥ 65	≥ 35		

Gas test: Acc. To EN 14175: I1(Arcal1)

Shielding Gas: Acc. To EN 14175: I1(Arcal1)

Materials

3.0805

Al 99,5 ;Al 99; Al 99,9 Mg 0,5; AlMg 0,5

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC+



Packaging data: BS300 Kg. 7

Diameters	1,2	1,6				

ALUFIL AISi 5

MIG-MAG Wires Aluminum alloys

Filo pieno che deposita una lega con 5% di Si. Ottima saldabilità e buone caratteristiche meccaniche.

Alufil AISi5 is a solid wire for welding of aluminium and aluminium alloys with a silicon content up to 7%. Suitable for Al-Mg-Si alloys series 6000 and for dissimilar welding such as 6000/1000 or 6000/3000.

Classification	
AWS	A5.10: ER 4043
EN ISO	18273: S Al 4043

Approvals	Grades
DB	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Zn	Ti	Mg	Fe	Cu	Al
-	≤ 0.05	5	-	-	-	-	≤ 0.20	≤ 0.05	≤ 0.80	≤ 0.30	Rem

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J)	Hardness
As Welded	≥ 40	≥ 120	≥ 8		

Gas test: Acc. To EN 14175: I1(Arcal1)

Shielding Gas: Acc. To EN 14175: I1(Arcal1)

Materials

3.2245

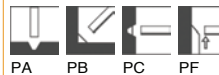
Al-Mg-Si and Al-Mg alloys with 2.5% Mg max. Al-Mn-Cu - AlSi cast

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: BS300 Kg. 7

Diameters	0,8	1,0	1,2	1,6		

ALUFIL AISi 12

MIG-MAG Wires Aluminum alloys

Filo pieno per la saldatura di leghe alluminio-silicio con contenuto di silicio >7%.

Alufil AISi 12 is a solid wire for the welding of aluminium-silicon alloys with a silicon content >7%.

Classification

AWS A5.10: ER 4047

Approvals

Grades

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Zn	Ti	Mg	Fe	Cu	Al
-	0.20	12	-	-	-	-	≤ 0.15	0.35	≤ 0.50	≤ 0.03	Rem

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J)	Hardness
As Welded	≥ 60	≥ 130	≥ 5		

Gas test: Acc. To EN 14175: I1(Arcal1)

Shielding Gas: Acc. To EN 14175: I1(Arcal1)

Materials

3.2211; 3.2373; 3.2585

G-Al Si 12

Storage

Keep dry and avoid condensation.

Current condition and welding position

DC+



Packaging data: BS300 Kg. 7

Diameters	1,0	1,2	1,6	2,0	2,4	3,2
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ALUFIL AlMg 4,5 Mn

MIG-MAG Wires Aluminum alloys

Filo pieno che deposita una lega con 4,5% di Mg. Ottime caratteristiche meccaniche.

Alufil AlMg 4,5 Mn is an aluminium alloy solid wire suitable for welding aluminium and magnesium alloys with 5% max of Mg. Zirconium promotes grain refinement and increases the mechanical properties and corrosion characteristics.

Classification	
AWS	A5.10: ER 5183
EN ISO	18273: S Al 5183

Approvals	Grades
DB	
GL	
LRS	
TÜV	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Zn	Ti	Mg	Fe	Cu	Al
-	0.80	0.30	-	-	0.10	-	0.10	4.50	0.10	0.10	Rem

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J)	Hardness
As Welded	≥ 125	≥ 275	≥ 17		

Gas test: Acc. To EN 14175: I1(Arcal1)

Shielding Gas: Acc. To EN 14175: I1(Arcal1)

Materials

3.3548

Al Mg 3, Al Mg 5, Al Mg Mn, Al Zn 4,5 Mg 1

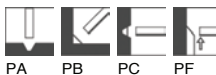
G-Al Mg 3 Si; G-Al Mg 5 Si; G-Al Mg 10;

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: BS300 Kg. 7

Diameters	1,0	1,2	1,6			

ALUFIL AIMg 5

MIG-MAG Wires Aluminum alloys

Filo pieno che deposita una lega con 5% di Magnesio. Ottime caratteristiche meccaniche.

Alufil AIMg5 is a solid wire for the MIG welding of aluminium and aluminium alloys with a magnesium content up to 5%. Suitable for welding of all commercial aluminium alloys, also in structural work. Good mechanical properties and high resistance to corrosion including marine corrosion.

Classification	
AWS	A5.10: ER 5356
EN ISO	18273: S Al 5356

Approvals	Grades
DB	
LRS	
TÜV	

Analysis of all-weld metal (Typical values in %)

C	Mn	Si	P	S	Cr	Zn	Ti	Mg	Fe	Cu	Al
-	0.10	0.20	-	-	0.10	-	0.10	5	0.30	0.10	Rem

All-weld metal Mechanical Properties

Heat Treatment	Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation A5 (%)	Impact Energy ISO - V (J)	Hardness
As Welded	≥ 110	≥ 240	≥ 17		

Gas test: Acc. To EN 14175: I1(Arcal1)

Shielding Gas: Acc. To EN 14175: I1(Arcal1)

Materials

3.3556

Al Mg 1SiCu, Al Mg Si 0,7;

Al Mg 3, Al Mg 5, Al Zn 4,5 Mg 1;

G-Al Mg 3Si; G-Al Mg 5Si

Storage

Keep dry and avoid condensation

Current condition and welding position

DC+



Packaging data: BS300 Kg. 7

Diameters	0,8	1,0	1,2	1,6		
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TIPO/SPOOL	S 200 / Plastic		B 200 / Basket		S 300 / Plastic		B 300 / Basket		BS 300 / Basket 52		DAYTONA SYSTEM
	R	LW	R	LW	R	LW	R	LW	R	LW	
FILI PIENI PER LA SALDATURA DI ACCIAI NON LEGATI											
CARBOFIL	5 Kg x 3				15 Kg	15 Kg	16 Kg	16 Kg			300 Kg
CARBOFIL 1	5 Kg x 3				15 Kg	15 Kg	16 Kg	16 Kg			300 Kg
CARBOFIL 1A	5 Kg x 3				15 Kg	15 Kg	16 Kg	16 Kg			300 Kg
CARBOFIL TP	5 Kg x 3				15 Kg	15 Kg	16 Kg	16 Kg			300 Kg
CARBOFIL Galva	5 Kg x 3				15 Kg	15 Kg	16 Kg	16 Kg			300 Kg
CARBOFIL 1 GOLD								16 Kg			300 Kg
CARBOFIL 1A GOLD								16 Kg			300 Kg
FILI PIENI PER LA SALDATURA DI ACCIAI COR-TEN											
CARBOFIL NiCu								16 Kg			
FILI PIENI PER LA SALDATURA DI ACCIAI AD ELEVATO LIMITE ELASTICO											
CARBOFIL MnNiMoCr								16 Kg			
CARBOFIL NiMoCr								16 Kg			
CARBOFIL 2NiMoCr								16 Kg			
FILI PIENI PER LA SALDATURA DI ACCIAI LEGATI E DEBOLMENTE LEGATI											
CARBOFIL 1Ni								15 Kg			
CARBOFIL 2Ni								15 Kg			
CARBOFIL MnMo								15 Kg			
CARBOFIL CrMo1								15 Kg			
CARBOFIL CrMo2								15 Kg			
CARBOFIL CrMo5								15 Kg			
CARBOFIL 9Cr								15 Kg			
ETC KV7M								15 Kg			
FILI PIENI PER LA SALDATURA DI ACCIAI INOSSIDABILI											
INERTFIL 307										15 Kg	
INERTFIL 308L	5kg x 3									15 Kg	200 kg
INERTFIL 308H										15 Kg	
INERTFIL 308LSi										15 Kg	
INERTFIL 309L										15 Kg	
INERTFIL 309LSi										15 Kg	
INERTFIL 309LMo										15 Kg	

SPOOL	S 200 / Plastic		B 200 / Basket		S 300 / Plastic		B 300 / Basket		BS 300 / Basket 52		DAYTONA SYSTEM
	R	LW	R	LW	R	LW	R	LW	R	LW	
FILI PIENI PER LA SALDATURA DI ACCIAI INOSSIDABILI											
INERTFIL 310											15 Kg
INERTFIL 904L											15 Kg
INERTFIL 312											15 Kg
INERTFIL 316L											15 Kg
INERTFIL 316LN											15 Kg
INERTFIL 316LSi											15 Kg
INERTFIL 318Si											15 Kg
INERTFIL 22 9 3											15 Kg
INERTFIL 347											15 Kg
INERTFIL 410											15 Kg
INERTFIL 410NiMo											15 Kg
INERTFIL 430											15 Kg
FILI PIENI PER LA SALDATURA DI LEGHE Nichel E Cu-Ni											
NIFIL NiCu7											16 kg
COPPERFIL 70-30											16 kg
NIFIL Ni1											16 kg
COPPERFIL 90-10											16 kg
FILI PIENI PER LA SALDATURA DI LEGHE Ni-Cr											
NIFIL 600							15 kg				
NIFIL 625							15 kg				
NIFIL C276							15 kg				
FILI PIENI PER LA SALDATURA DI ALLUMINIO											
ALUFIL AL99,5 Ti							6 kg				7 kg
ALUFIL AlMg 5							6 kg				7 kg
ALUFIL AISi 5							6 kg				7 kg
ALUFIL AISi 12							6 kg				7 kg
ALUFIL Al Mg4.5Mn							6 kg				7 kg
FILI PIENI PER RIPORTI ANTIUSURA											
CARBOFIL A 250							15 kg				
CARBOFIL A 350							15 kg				
CARBOFIL A 600							15 kg				