SANZHONG WELDING

A d d : Wujin Industrial Zone,Changzhou,
Jiangsu,China
T e l : 0519-8803 8688
F a x : 0519-8885 4567
M o b : 139 2109 0005
W e b : www.asweld.com
E-Mail : manager@kkweld.com

SANZHONG WELDING

INTERNATIONAL
AGGRESSIVE
FUTURE

Changzhou Sanzhong Welding Materials co.,Ltd

+SANZHONG WELDING

Company Profile

Changzhou Sanzhong Welding Materials co.,Limited founded on year 2012, is located in the Yangzi River Delta, adjacent to China’ s the largest city - Shanghai, with an area of 115,000 square meters and over 80 employees including more than 10 technicians.



Main Products

Aluminum welding wire such as ER1100,ER4043,ER5356 and so on.

Company Brand

Sanzhong + River Giant + HULK

Company Certification

ISO9001,CE,DB,TUV and so on.

Business Philosophy

Survival by quality,
Development by credit

Company Future

High quality and good price → **Follow the time and never stop** → **Based on the market and always change**

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ER1070

Standard: AWS A5.10 ER070	Chemical Composition %								
	Si	Fe	Cu	Mn	Zn	Mg	Ti	AL	Other Each
Grade ER1070	≤ 0.20	≤ 0.25	≤ 0.04	≤ 0.03	≤ 0.04	≤ 0.03	≤ 0.03	≥ 99.70	≤ 0.03

Type	Spool (MIG)			Tube (TIG)		
Specification (MM)	0.8、0.9、1.0、1.2、1.6、2.0			1.6、2.0、2.4、3.2、4.0、5.0		
Package	S100 / 0.5kg; S200 / 2kg; S270,S300/6kg-7kg S360/20kg			5kg / box 10kg / box length :1000MM		
Mechanical Properties	Fusion Temperature ℃	Electrical IACS	Heat W/m.k	Tensile Mpa	Yield Mpa	Elongation %
	646 – 657	62%	210 –230	60 – 80	30 – 55	25 – 35

	Diameter (MM)	1.2	1.6	2.0
MIG Welding	Welding Current A	180 – 300	200 – 400	240 – 450
	Welding Voltage- V	18 – 26	20 – 28	22 – 32
TIG Welding	Diameter (MM)	2.0 – 2.4	2.4 – 4.0	4.0 – 5.0
	Welding Current - A	150 – 250	200 – 300	220 – 400

Performance characteristics	Purity aluminium, Al ≥ 99.7% Excellent corrosion resistance, excellent thermal conductivity, electrical conductivity and excellent machinability. The welding seam is beautiful and bright, the arc is stable and the spatter is small. Good color matching after anodic treatment, recommended for welding 1000 series aluminum alloy.
Application	Filling material for pure aluminum welding. It is widely used in connection of aluminum busbar and guide bar in electrolytic aluminum factory and welding of related aluminum alloy such as electric power.
Notice	1、The product can be kept for two years under the condition of factory packing and sealed, and the packing can be removed for three months under the usual atmospheric environment. 2、Products should be stored in a ventilated, dry and place. 3、After the wire is removed from the package, it is recommended that appropriate dust proof cover be applied over the wire.

ER1100

Standard: AWS A5.10 AWS ER1100	Chemical Composition %							
	Si	Fe	Cu	Mn	Zn	AL	Other Each	Other Total
Grade ER1100	≤ 0.95		0.05 – 0.2	≤ 0.05	≤ 0.10	≥ 99	≤ 0.05	≤ 0.15

Type	Spool (MIG)			Tube (TIG)		
Specification (MM)	0.8、0.9、1.0、1.2、1.6、2.0			1.6、2.0、2.4、3.2、4.0、5.0		
Package	S100 /0.5kg S200 / 2kg S270,S300 / 6-7kg S360 /20kg			5kg / box 10kg / box length :1000MM		
Mechanical Properties	Fusion Temperature℃	Electrical IACS	Heat W/m.k	Tensile Mpa	Yield Mpa	Elongation %
	646 – 657	62%	210 –230	70 – 95	30 – 55	20 – 30

	Diameter (MM)	1.2	1.6	2.0
MIG Welding	Welding Current A	180 – 300	200 – 400	240 – 450
	Welding Voltage- V	18 – 26	20 – 28	22 – 32
TIG Welding	Diameter (MM)	2.0 – 2.4	2.4 – 4.0	4.0 – 5.0
	Welding Current A	150 – 250	200 – 320	220 – 400

Performance characteristics	Purity aluminium, Al ≥ 99.0% Excellent corrosion resistance, excellent thermal conductivity, electrical conductivity and excellent machinability. The welding seam is beautiful and bright, the arc is stable and the spatter is small. Good color matching after anodic treatment, recommended for welding 1000 series aluminum alloy.
Application	Filling material for pure aluminum welding. It is widely used in connection of aluminum busbar and guide bar in electrolytic aluminum factory and welding of related aluminum alloy such as electric power.
Notice	1、The product can be kept for two years under the condition of factory packing and sealed, and the packing can be removed for three months under the usual atmospheric environment. 2、Products should be stored in a ventilated, dry and place. 3、After the wire is removed from the package, it is recommended that appropriate dust proof cover be applied over the wire.

ER4043

Standard: AWS A5.10 AWS ER4043	Chemical Composition %									
	Si	Fe	Cu	Mn	Zn	Mg	Ti	AL	Other Each	Other Total
Grade ER4043	4.5 - 6.0	≤ 0.80	≤ 0.30	≤ 0.05	≤ 0.10	≤ 0.05	≤ 0.2	Rest	≤ 0.05	≤ 0.15

Type	Spool (MIG)	Tube (TIG)
Specification (MM)	0.8、0.9、1.0、1.2、1.6、2.0	1.6、2.0、2.4、3.2、4.0、5.0
Package	S100 /0.5kg S200 / 2kg S270,S300 / 6-7kg S360 /20kg	5kg / box 10kg / box length :1000MM

Mechanical Properties	Fusion Temperature℃	Electrical IACS	Density g/mm3	Tensile Mpa	Yield Mpa	Elongation %
	575 – 630	42%	2.68	130 – 160	70 – 120	10 – 18

	Diameter (MM)	1.2	1.6	2.0
MIG Welding	Welding Current A	180 – 300	200 – 400	240 – 450
	Welding Voltage- V	18 – 26	20 – 28	22 – 32
TIG Welding	Diameter (MM)	1.6 – 2.4	2.4 – 4.0	4.0 – 5.0
	Welding Current A	150 – 250	200 – 320	220 – 400

Performance characteristics	5% content of Si, aluminum silicon alloy welding wire, has good fluidity. It is used for welding forging and casting materials because of low sensitivity to hot cracking. It is easy to produce brittle Mg2Si in the weld seam during welding, which reduces the plasticity and corrosion resistance of the joint. The welding is beautiful and bright, the arc is stable, the spatter is small, but after anodizing, the color is different from the base metal.
Application	Recommended for welding 6061 ,6XXX series;3XXXand2XXX series aluminum alloy.
Notice	1、The product can be kept for two years under the condition of factory packing and sealed, and the packing can be removed for three months under the usual atmospheric environment. 2、Products should be stored in a ventilated, dry and place. 3、After the wire is removed from the package, it is recommended that appropriate dust proof cover be applied over the wire.

ER4047

Standard: AWS A5.10 ER4047	Chemical Composition %								
	Si	Fe	Cu	Mn	Mg	Zn	AL	Other Each	Other Total
Grade ER4047	11 – 13	≤ 0.8	≤ 0.3	≤ 0.15	≤ 0.1	≤ 0.2	Rest	≤ 0.05	≤ 0.15

Type	Spool (MIG)	Tube (TIG)
Specification (MM)	0.8、0.9、1.0、1.2、1.6、2.0	1.6、2.0、2.4、3.2、4.0、5.0
Package	S100 /0.5kg S200 / 2kg S270,S300 / 6-7kg S360 /20kg	5kg / box 10kg / box length :1000MM

Mechanical Properties	Fusion Temperature℃	Electrical IACS	Heat W/m.k	Tensile Mpa	Yield Mpa	Elongation %
	532 – 571	40%	2.68	130 – 160	70 – 85	6 – 12

	Diameter (MM)	1.2	1.6	2.0
MIG Welding	Welding Current A	180 – 300	200 – 400	240 – 450
	Welding Voltage- V	18 – 26	20 – 28	22 – 32
TIG Welding	Diameter (MM)	2.0 – 2.4	2.4 – 4.0	4.0 – 5.0
	Welding Current A	150 – 250	200 – 320	220 – 400

Performance characteristics	The eutectic Al-Si wire containing 12% Si,which has lower melting point and finer solidification range than ER4043; High silicon content, good fluidity, and reducing the hot cracking tendency to the minimum, increasing the shear strength of the weld; The color after anodizing is gray – black.
Application	It is used in argon arc welding of aluminum, magnesium, copper and cast aluminum （7%Si）; More widely used in pure aluminum, aluminum manganese, aluminum-silicon magnesium alloy brazing.
Notice	1、The product can be kept for two years under the condition of factory packing and sealed, and the packing can be removed for three months under the usual atmospheric environment. 2、Products should be stored in a ventilated, dry and place. 3、After the wire is removed from the package, it is recommended that appropriate dust proof cover be applied over the wire.

ER5183

Standard: AWS A5.10 AWS ER5183	Chemical Composition %										
	Si	Fe	Cu	Mn	Zn	Mg	Cr	Ti	AL	Other Each	Other Total
Grade ER5183	≤ 0.4	≤ 0.4	≤ 0.1	0.5 – 1.0	≤ 0.25	4.3 – 5.2	0.05 -0.25	≤ 0.15	Rest	≤ 0.05	≤ 0.15

Type	Spool (MIG)			Tube (TIG)		
Specification (MM)	0.8、0.9、1.0、1.2、1.6、2.0			1.6、2.0、2.4、3.2、4.0、5.0		
Package	S100 /0.5kg S200 / 2kg S270,S300 / 6-7kg S360 /20kg			5kg / box 10kg / box length :1000MM		
Mechanical Properties	Fusion Temperature℃	Electrical IACS	Density g/mm3	Tensile Mpa	Yield Mpa	Elongation %
	575 – 640	29%	2.66	275 – 300	130 – 160	15 – 25

	Diameter (MM)	1.2	1.6	2.0
MIG Welding	Welding Current A	180 – 300	200 – 400	240 – 450
	Welding Voltage- V	18 – 28	20 – 24	22 – 34
TIG Welding	Diameter (MM)	1.6 – 2.4	2.4 – 4.0	4.0 – 5.0
	Welding Current A	150 – 250	200 – 320	220 – 400

Performance characteristics	An aluminum alloy welding wire containing nearly 5% magnesium. Magnesium content in welding is required, Welding base materials 5083 and 5654 with higher magnesium content and higher tensile strength (if tensile strength is required 276MPa or higher) It has excellent resistance to seawater corrosion and low temperature, and the weld is white after anodizing, which can provide good color matching for welded joints.
Application	It is used for welding aluminum alloy in ship structure, offshore platform, cryogenic container, railway locomotive and automobile industry.
Notice	1、The product can be kept for two years under the condition of factory packing and sealed, and the packing can be removed for three months under the usual atmospheric environment. 2、Products should be stored in a ventilated, dry and place. 3、After the wire is removed from the package, it is recommended that appropriate dust proof cover be applied over the wire.

ER5356

Standard: AWS A5.10 ER5356	Chemical Composition %										
	Si	Fe	Cu	Mn	Zn	Mg	Cr	Ti	AL	Other Each	Other Total
Grade ER5356	≤ 0.25	≤ 0.40	≤ 0.10	0.05 – 0.2	≤ 0.10	4.5 – 5.5	0.05 -0.20	0.06 - 0.20	Rest	≤ 0.05	≤ 0.15

Type	Spool (MIG)			Tube (TIG)		
Specification (MM)	0.8、0.9、1.0、1.2、1.6、2.0			1.6、2.0、2.4、3.2、4.0、5.0		
Package	S100 /0.5kg S200 / 2kg S270,S300 / 6-7kg S360 /20kg			5kg / box 10kg / box length :1000MM		
Mechanical Properties	Fusion Temperature℃	Electrical IACS	Density g/mm3	Tensile Mpa	Yield Mpa	Elongation %
	574 – 638	29%	2.64	250 – 300	120 – 160	15 – 25

	Diameter (MM)	1.2	1.6	2.0
MIG Welding	Welding Current A	180 – 300	200 – 400	240 – 450
	Welding Voltage- V	18 – 28	20 – 24	22 – 34
TIG Welding	Diameter (MM)	1.6 – 2.4	2.4 – 4.0	4.0 – 5.0
	Welding Current A	150 – 250	200 – 320	220 – 400

Performance characteristics	It is also called HS331, an aluminum alloy welding wire containing 5% magnesium. It has good corrosion resistance, thermal cracking resistance, high strength and good Forgability; The weld formation is beautiful and fine, the spatter is little, and the anodizing treatment is white; Can provide good color matching, is a widely used general purpose welding materials。
Application	It is also used in the welding of aluminum, silicon, magnesium, aluminum, zinc and magnesium alloy and the repair welding of aluminum and magnesium alloy castings.
Notice	1、The product can be kept for two years under the condition of factory packing and sealed, and the packing can be removed for three months under the usual atmospheric environment. 2、Products should be stored in a ventilated, dry and place. 3、After the wire is removed from the package, it is recommended that appropriate dust proof cover be applied over the wire.

ER5556

Standard: AWS A5.10 AWS ER5556	Chemical Composition %										
	Si	Fe	Cu	Mn	Zn	Mg	Cr	Ti	AL	Other Each	Other Total
Grade ER5556	≤ 0.25	≤ 0.4	≤ 0.1	0.5 – 1.0	≤ 0.25	4.7 – 5.5	0.05 – 0.2	0.05 – 0.2	Rest	≤ 0.05	≤ 0.15

Type	Spool (MIG)	Tube (TIG)
Specification (MM)	0.8、0.9、1.0、1.2、1.6、2.0	1.6、2.0、2.4、3.2、4.0、5.0
Package	S100 /0.5kg S200 / 2kg S270,S300 / 6-7kg S360 /20kg	5kg / box 10kg / box length :1000MM

Mechanical Properties	Fusion Temperature℃	Electrical IACS	Density g/mm3	Tensile Mpa	Yield Mpa	Elongation %
	572 – 633	29%	2.65	280 – 310	130 – 165	15 – 25

	Diameter (MM)	1.2	1.6	2.0
MIG Welding	Welding Current A	180 – 300	200 – 400	240 – 450
	Welding Voltage- V	18 – 28	20 – 24	22 – 34
TIG Welding	Diameter (MM)	1.6 – 2.4	2.4 – 4.0	4.0 – 5.0
	Welding Current A	150 – 250	200 – 320	220 – 400

Performance characteristics	Aluminum magnesium wire containing 5% magnesium and 0.8% manganese has high strength, good corrosion resistance and crack resistance. Good welding performance, stable arc, fine appearance of weld, less spatter, white after anodizing.
Application	For welding 5XXX series,which has high strength aluminum-magnesium alloys, such as 5083&5456. Widely used in the military industry, storage tanks, shipbuilding, marine engineering and air separation and other related aluminum alloy welding.
Notice	1、The product can be kept for two years under the condition of factory packing and sealed, and the packing can be removed for three months under the usual atmospheric environment. 2、Products should be stored in a ventilated, dry and place. 3、After the wire is removed from the package, it is recommended that appropriate dust proof cover be applied over the wire.

Type		Chemical Composition									
AWS A5.18	GBT8110 /2008	C	Mn	Si	P	S	Ni	Cr	Mo	V	Cu
ER70S-6	ER50-6	0.06 ~ 0.15	1.40 ~ 1.85	0.80 ~ 1.15	≤ 0.025	≤ 0.035	≤ 0.15	≤ 0.15	≤ 0.15	≤ 0.03	≤ 0.50
ER50-6						≤ 0.025					
SG2 / G3Si1	EN440 G46-3 ISO14341	0.06 ~ 0.14	1.30 ~ 1.60	0.70 ~ 1.00	≤ 0.025	≤ 0.025	≤ 0.15	Al≤0.02	≤ 0.15	Ti + Zr ≤ 0.15	
SG3 / G4Si1		0.06 ~ 0.14	1.60 ~ 1.90	0.80 ~ 1.20	≤ 0.025	≤ 0.025	≤ 0.15	Al≤0.02	≤ 0.15	Ti + Zr ≤ 0.15	
ER70S-3		0.06 ~ 0.15	0.90 ~ 1.40	0.45 ~ 0.75	≤ 0.025	≤ 0.035	≤ 0.15	≤ 0.15	≤ 0.15	≤ 0.03	≤ 0.50
ER70S-G	Sample	0.07 ~ 0.10	1.51 ~ 1.80	0.65 ~ 1.00	≤ 0.035	≤ 0.035	Ti 0.15 ~ 0.20		Actually: As agreed between supplieand buyer (Normal ER70S-6 + Ti)		

Note: AWS A5.18: Any copper plating layer on the filler wire, plus the copper with the metal itself, shall not exceed the maximum of 0.50% (including copper plating).

EN440 : If Cr ≤ 0.15, Cu ≤ 0.35 and V ≤ 0.03 are not specified. The residual copper content in the steel plus the total coating should not exceed 0.35% (m/m).

Type		Mechanical Properties			
AWS A5.18	GBT8110	Tensile Strength Mpa	Yield Strength Mpa	Elongation A (%)	Impact Value KV2 (J) -30℃
ER70S-6	ER50-6	≥ 480	≥ 400	≥ 22	≥ 27
ER50-6		≥ 500	≥ 420		
SG2 / G3Si1	EN440 G46-3 ISO14341	530 ~ 680	≥ 460	≥ 20	≥ 47
					KV2 (J) -40℃
SG3 / G4Si1					≥ 47
ER70S-3		≥ 480	≥ 400	≥ 22	-20℃
					≥ 27
ER70S-G	ER50-G	≥ 480	≥ 400	≥ 22	Actually: As agreed between supplieand buyer (Normal ER70S-6 + Ti)

Note:For ER50-3 / ER50-6 wire, tensile resistance and yield may be reduced by every 10 Mpas when elongation past the minimum value every 1%,, but the minimum tensile resistance value shall not be less than 480 Mpa and the yield shall not be less than 400 Mpa.

Type		Chemical Composition									
AWS A5.20	GBT 10045 /2001	C	Mn	Si	P	S	Ni	Cr	Mo	V	Cu
E71T-1 E71T-1C E71T-1M		≤ 0.12	≤ 1.75	≤ 0.90	≤ 0.03	≤ 0.03	≤ 0.50	≤ 0.20	≤ 0.30	≤ 0.08	≤ 0.35
E71T-G E71T-GS											
	E500T-1 E500T-1M E501T-1 E501T-1M	≤ 0.18									
	E500T-G E501T-G										
E71T-11		≤ 0.30		≤ 0.60							
E71T-11	E500T-11 E501T-11	- - -									

Note: symbols

The third number X after E, indicates the welding position, where "0" means Flat and transverse welding,"1" means all position,and the letter C indicates is CO2 or of a self-protective type;M indicates that the protective gas is 75~80% ar and rest CO2; Aluminum composition requirement is limited to self-shielded flux-cored wire (E71T-G / E71T-GS / E71T-11---Al ≤ 1.80).

Type		Mechanical Properties			
AWS A5.20	GBT 10045 /2001	Tensile Strength Mpa	Yield Strength Mpa	Elongation A (%)	Impact Value KV2 (J) -30℃
E71T-1 E71T-1C E71T-1M	E500T-1 E500T-1M E501T-1 E501T-1M E500T-G E501T-G	490 ~ 670	≥ 390	≥ 22	≥ 27
E71T-GS		≥ 490	.....		.....
E71T-11	E500T-11 E501T-11	490 ~ 670	≥ 390	≥ 20	.....

Type		Chemical Composition								
AWS A5.1	AWS A5.1M	C	Mn	Si	P	S	Ni	Cr	Mo	V
E6011 E6013	E4311 E4313	≤ 0.20	≤ 1.20	≤ 1.00	- - -	- - -	≤ 0.30	≤ 0.20	≤ 0.30	≤ 0.08
E7016 E7018	E4916 E4918	≤ 0.15	≤ 1.60	≤ 0.75	≤ 0.035	≤ 0.035	≤ 0.30	≤0.20	≤ 0.30	≤ 0.08
E7018M	E4918M	≤ 0.12	0.40 ~ 1.60	≤ 0.80	≤ 0.030	≤ 0.020	≤ 0.25	≤0.15	≤ 0.35	≤ 0.05
E308 -16 E308L-16	E308 -17 E308L-17	≤ 0.08 ≤ 0.04	0.50 ~ 2.50	≤ 1.00	≤ 0.04	≤ 0.03	9.0~11.0	18.0~21.0	≤ 0.75	Cu ≤ 0.75
E309 -16 E309L-16	E309 -17 E309L-17	≤ 0.15 ≤ 0.04	0.50 ~ 2.50	≤ 1.00	≤ 0.04	≤ 0.03	12.0~14.0	22.0~25.0	≤ 0.75	Cu ≤ 0.75
E316 -16 E316L-16	E316 -17 E316L-17	≤ 0.08 ≤ 0.04	0.50 ~ 2.50	≤ 1.00	≤ 0.04	≤ 0.03	11.0~14.0	17.0~20.0	2.0 ~ 3.0	Cu ≤ 0.75
E312- 16	E312- 17	≤ 0.15	0.50 ~ 2.50	≤ 1.00	≤ 0.04	≤ 0.03	8.0~10.5	28.0~32.0	≤ 0.75	Cu ≤ 0.75

Note: E7016 and E7018 components of Mn+Ni+Cr+Mo+V ≤ 1.75; stainless steel electrode code interpretation - example E308-XX (E308-15/E308-16/E308-17/E308-26.....), the prefix code is divided into -1/-2/-4, representing the welding position; the suffix code is divided into -5/-6/-7, in which 5 represents the alkalinity, 6 represents rutile, and 7 represents the titanic acid type.

Type		Mechanical Properties					
AWS A5.1	AWS A5.1M	Tensile Strength Mpa	Yield Strength Mpa	Elongation A (%)	Impact Value KV2 (J) -45℃	Impact Value KV2 (J)-30℃	Radio graphics
E6011	E4311	≥ 430	≥ 330	≥ 22	- - -	≥ 27	Grade II
E6013	E4313	≥ 430	≥ 330	≥ 17	- - -	- - -	
E7016	E4916	≥ 490	≥ 400	≥ 22	≥ 27	≥ 27	Grade I
E7018	E4918	≥ 490	≥ 400	≥ 22	≥ 27	≥ 27	
E7018M	E4918M	Normal ≥ 490	370 ~ 500 2.4MM / 370 ~ 530	≥ 24	- - -	≥ 67	
E308- XX		≥ 550		≥ 30			
E308L-XX		≥ 520					
E309- XX		≥ 550					
E309L-XX		≥ 520					
E316- XX		≥ 520					
E316L-XX		≥ 490					
E312- XX		≥ 660		≥ 22			

Note:

E6011 has no special requirements for heat preservation furnace and drying; Environmental temperature: 20 ~ 40 ℃;The requirement of E6013 heat preservation furnace is higher than the ambient temperature [10℃~20℃]; Drying requires drying at least 1 hour at 120 ℃ 150 ℃; E7016/E7018/E7018M requirements for heat preservation furnace and drying; Environmental temperature: [30℃~140℃]; Drying requires drying at least 1~2 hours at 260 ℃~425 ℃;

Type		Chemical Composition										
AWS A5.10 /2012	GBT10858 /2008	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al	Other Single	Other Total
ER1070		≤ 0.20	≤ 0.25	≤ 0.04 ≤ 0.03	≤ 0.03	≤ 0.03	- - - -	≤ 0.04 ≤ 0.07	≤ 0.03	≥ 99.70	≤ 0.03	
	Sal1070											
ER1100	ER1100	Si + Fe ≤ 0.95		0.05~0.20	≤ 0.05	Be ≤ 0.0003		≤ 0.10	- - - -	≥ 99.00	≤0.05	≤0.15
ER4043	E4043 Sal4043	4.5~6.0	≤ 0.80	≤ 0.30	≤ 0.05	≤ 0.05	Be ≤ 0.0003	≤ 0.10	≤ 0.20	余量Rest	≤0.05	≤0.15
ER5356	5356	≤ 0.25	≤ 0.40	≤ 0.10	0.05~0.20	4.5~5.5	0.05~0.20 Be ≤ 0.0003	≤ 0.10	0.06~0.20	余量Rest	≤0.05	≤0.15
ER5183	Sal5183	≤ 0.40	≤ 0.40	≤ 0.10	0.05~1.00	4.3~5.2	0.05~0.25 Be ≤ 0.0003	≤ 0.25	≤ 0.15	余量Rest	≤0.05	≤0.15

Note: The content of Be ≤ 0.0008 in the AWS 1999 edition, Be ≤ 0.0003 in the AWS 2012 edition, AWS ER1188 Al ≥ 99.88. American standard, there are ER (E- electrode wire) and R (filler wire), example: ER1070 and R1070. In fact, they are divided into two categories: filler wire and both. As to ER5356,when Cr--0.05~0.20, Be ≤ 0.0005;when Cr≤0.30, Be ≤ 0.0003.ISO18273-2004 is the same chemical as American standard,Be of ER5356 and ER5183 can choose ≤ 0.0003 or ≤ 0.0005.

Type	Chemical Composition								
AWS A5.9M 2012	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
ER308	≤ 0.08	19.5 ~ 22.0	9.0 ~ 11.0	≤ 0.75	1.0 ~ 2.5	0.30 ~ 0.65	≤ 0.03	≤ 0.03	≤ 0.75
ER308Si						0.65 ~ 1.00			
ER308L	≤ 0.03					0.30 ~ 0.65			
ER308LSi						0.65 ~ 1.00			
ER309	≤ 0.12	23.0 ~ 25.0	12.0 ~ 14.0			0.30 ~ 0.65			
ER309Si						0.65 ~ 1.00			
ER309L	≤ 0.03					0.30 ~ 0.65			
ER309LSi						0.65 ~ 1.00			
ER316	≤ 0.08	18.0 ~ 20.0	11.0 ~ 14.0	2.0 ~ 3.0		0.30 ~ 0.65			
ER316Si						0.65 ~ 1.00			
ER316L	≤ 0.03					0.30 ~ 0.65			
ER316LSi						0.65 ~ 1.00			
ER312	≤ 0.15	28.0 ~ 32.0	8.0 ~ 10.5	≤ 0.75		0.30 ~ 0.65			
ER347	≤ 0.08	19.0 ~ 21.5	9.0 ~ 11.0			0.30 ~ 0.65			
ER2209	≤ 0.03	21.5 ~ 23.5	7.5 ~ 9.5	2.5 ~ 3.5	0.5 ~ 2.0 N-0.5 ~ 2.0	≤ 0.90			
ER430	≤ 0.10	15.5 ~ 17.0	≤ 0.60	≤ 0.75	≤ 0.60	≤ 0.50			

Type	Mechanical Properties	
AWS A5.4 / A5.4M	Tensile Strength Mpa	Elongation A (%)
E347- XX	≥ 520	≥ 30
E2209- XX	≥ 690	≥ 20
E430- XX	≥ 450	≥ 20

Table 1 — Symbol for the Chemical Composition of Solid Wires and Rods

Alloy Symbol			Chemical Composition in Weight Percent[a, b]													
AWS Classification	ISO 18273 Numerical	ISO 18273 Chemical	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ga, V	Ti	Zr	$Al_{min.}$	Be	Other Each	Other Total
ALUMINIUM-LOW ALLOYED																
ER1070, R1070	Al 1070	Al99,7	0.20	0.25	0.04	0.03	0.03	—	0.04	V 0.05	0.03	—	99.70	0.0003	0.03	—
ER1080A, R1080A	Al 1080A	Al99,8(A)	0.15	0.15	0.03	0.02	0.02	—	0.06	Ga 0.03	0.02	—	99.80	0.0003	0.02	—
ER1100, R1100	Al 1100	Al99,0Cu	Si + Fe 0.95		0.05–0.20	0.05	—	—	0.10	—	—	—	99.00	0.0003	0.05	0.15
ER1188 R1188	Al 1188	Al 99,88	0.06	0.06	0.005	0.01	0.01	—	0.03	Ga 0.03 V 0.05	0.01	—	99.88	0.0003	0.01	—
ER1200, R1200	Al 1200	Al99,0	Si + Fe 1.00		0.05	0.05	—	—	0.10	—	0.05	—	99.00	0.0003	0.05	0.15
ER1450, R1450	Al 1450	Al99,5Ti	0.25	0.40	0.05	0.05	0.05	—	0.07	—	0.10–0.20	—	99.50	0.0003	0.03	—
ALUMINIUM-COPPER																
R-206.0[c]	—	—	0.10	0.15	4.2–5.0	0.20–0.50	0.15–0.35	—	0.10	—	0.15–0.30	—	Rem	—	0.05	0.15
ER2319, R2319	Al 2319	AlCu6MnZrTi	0.20	0.30	5.8–6.8	0.20–0.40	0.02	–	0.10	V 0.05–0.15	0.10–0.20	0.10–0.25	Rem	0.0003	0.05	0.15
ALUMINIUM-MANGANESE																
ER3103, R3103	Al 3103	AlMn 1	0.50	0.7	0.10	0.9–1.5	0.30	0.10	0.20	—	Ti + Zr 0.10		Rem	0.0003	0.05	0.15
ALUMINIUM-SILICON																
R-C355.0	—	—	4.5–5.5	0.20	1.0–1.5	0.10	0.40–0.6	—	0.10	—	0.20	—	Rem	—	0.05	0.15
R-A356.0	—	—	6.5–7.5	0.20	0.20	0.10	0.25–0.45	—	0.10	—	0.20	—	Rem	—	0.05	0.15
R-357.0	—	—	6.5–7.5	0.15	0.05	0.03	0.45–0.6	—	0.05	—	0.20	—	Rem	—	0.05	0.15
R-A357.0	—	—	6.5–7.5	0.20	0.20	0.10	0.40–0.7	—	0.10	—	0.04–0.20	—	Rem	0.04–0.07	0.05	0.15
ER4009, R4009	Al 4009	AlSi5Cu1Mg	4.5–5.5	0.20	1.0–1.5	0.10	0.45–0.6	—	0.10	—	0.20	—	Rem	0.0003	0.05	0.15
ER4010, R4010	Al 4010	AlSi7Mg	6.5–7.5	0.20	0.20	0.10	0.30–0.45	—	0.10	—	0.20	—	Rem	0.0003	0.05	0.15
R4011	Al 4011	AlSi7Mg0,5Ti	6.5–7.5	0.20	0.20	0.10	0.45–0.7	—	0.10	—	0.04–0.20	—	Rem	0.04–0.07	0.05	0.15
ER4018, R4018	Al 4018	AlSi7Mg	6.5–7.5	0.20	0.05	0.10	0.50–0.8	—	0.10	—	0.20	—	Rem	0.0003	0.05	0.15
ER4043, R4043	Al 4043	AlSi5	4.5–6.0	0.8	0.30	0.05	0.05	—	0.10	—	0.20	—	Rem	0.0003	0.05	0.15
ER4043A, R4043A	Al 4043A	AlSi5(A)	4.5–6.0	0.6	0.30	0.15	0.20	—	0.10	—	0.15	—	Rem	0.0003	0.05	0.15
ER4046, R4046	Al 4046	AlSi10Mg	9.0–11.0	0.50	0.03	0.40	0.20–0.50	—	0.10	—	0.15	—	Rem	0.0003	0.05	0.15
ER4047, R4047	Al 4047	AlSi12	11.0–13.0	0.8	0.30	0.15	0.10	—	0.20	—	—	—	Rem	0.0003	0.05	0.15
ER4047A, R4047A	Al 4047A	AlSi12(A)	11.0–13.0	0.6	0.30	0.15	0.10	—	0.20	—	0.15	—	Rem	0.0003	0.05	0.15
ER4145, R4145	Al 4145	AlSi10Cu4	9.3–10.7	0.8	3.3–4.7	0.15	0.15	0.15	0.20	—	—	—	Rem	0.0003	0.05	0.15

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Table 1 (Continued) — Symbol for the Chemical Composition of Solid Wires and Rods

Alloy Symbol			Chemical Composition in Weight Percent[a, b]													
AWS Classification	ISO 18273 Numerical	ISO 18273 Chemical	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ga, V	Ti	Zr	$Al_{min.}$	Be	Other Each	Other Total
ALUMINIUM-SILICON (Continued)																
ER4643, R4643	Al 4643	AlSi4Mg	3.6–4.6	0.8	0.10	0.05	0.10–0.30	—	0.10	—	0.15	—	Rem	0.0003	0.05	0.15
ER4943,[d] R4943[d]	—	—	*5.0–6.0*	*0.40*	*0.10*	*0.05*	*0.10–0.50*	—	*0.10*	—	*0.15*	—	*Rem*	*0.0003*	*0.05*	*0.15*
ALUMINIUM-MAGNESIUM																
ER5087, R5087	Al 5087	AlMg4,5MnZr	0.25	0.40	0.05	0.7–1.1	4.5–5.2	0.05–0.25	0.25	—	0.15	0.10–0.20	Rem	0.0003	0.05	0.15
ER5183, R5183	Al 5183	AlMg4,5Mn0,7(A)	0.40	0.40	0.10	0.50–1.0	4.3–5.2	0.05–0.25	0.25	—	0.15	—	Rem	0.0003	0.05	0.15
ER5183A, R5183A	Al 5183A	AlMg4,5Mn0,7(A)	0.40	0.40	0.10	0.50–1.0	4.3–5.2	0.05–0.25	0.25	—	0.15	—	Rem	0.0005	0.05	0.15
ER5187, R5187	Al 5187	AlMg4,5MnZr	0.25	0.40	0.05	0.7–1.1	4.5–5.2	0.05–0.25	0.25	—	0.15	0.10–0.20	Rem	0.0005	0.05	0.15
ER5249, R5249	Al 5249	AlMg2Mn0,8Zr	0.25	0.40	0.05	0.50–1.1	1.6–2.5	0.30	0.20	—	0.15	0.10–0.20	Rem	0.0003	0.05	0.15
ER5356, R5356	Al 5356	AlMg5Cr(A)	0.25	0.40	0.10	0.05–0.20	4.5–5.5	0.05–0.20	0.10	—	0.06–0.20	—	Rem	0.0003	0.05	0.15
ER5356A R5356A	Al 5356A	AlMg5Cr(A)	0.25	0.40	0.10	0.05–0.20	4.5–5.5	0.05–0.20	0.10	—	0.06–0.20	—	Rem	0.0005	0.05	0.15
ER5554, R5554	Al 5554	AlMg2,7Mn	0.25	0.40	0.10	0.50–1.0	2.4–3.0	0.05–0.20	0.25	—	0.05–0.20	—	Rem	0.0003	0.05	0.15
ER5556, R5556	Al 5556	AlMg5Mn1Ti	0.25	0.40	0.10	0.50–1.0	4.7–5.5	0.05–0.20	0.25	—	0.05–0.20	—	Rem	0.0003	0.05	0.15
ER5556A, R5556A	Al 5556A	AlMg5Mn	0.25	0.40	0.10	0.6–1.0	5.0–5.5	0.05–0.20	0.20	—	0.05–0.20	—	Rem	0.0003	0.05	0.15
ER5556B, R5556B	Al 5556B	AlMg5Mn	0.25	0.40	0.10	0.6–1.0	5.0–5.5	0.05–0.20	0.20	—	0.05–0.20	—	Rem	0.0005	0.05	0.15
ER5556C, R5556C	Al 5556C	AlMg5Mn1Ti	0.25	0.40	0.10	0.50–1.0	4.7–5.5	0.05–0.20	0.25	—	0.05–0.20	—	Rem	0.0005	0.05	0.15
ER5654, R5654	Al 5654	AlMg3,5Ti	Si + Fe 0.45		0.05	0.01	3.1–3.9	0.15–0.35	0.20	—	0.05–0.15	—	Rem	0.0003	0.05	0.15
ER5654A, R5654A	Al 5654A	AlMg3,5Ti	Si + Fe 0.45		0.05	0.01	3.1–3.9	0.15–0.35	0.20	—	0.05–0.15	—	Rem	0.0005	0.05	0.15
ER5754, R5754	Al 5754[e]	AlMg3	0.40	0.40	0.10	0.50	2.6–3.6	0.30	0.20	—	0.15	—	Rem	0.0003	0.05	0.15

[a] Single values shown in the table are maximum values, except for Al.
[b] The results shall be rounded to the same number of significant figures as in the specified value using the rules in accordance with *ISO 80000-1* or ASTM E29.
[c] For R-206.0, Ni = 0.05 max. and Sn = 0.05 max.
[d] These classifications have patent application pending.
[e] Alloy Al 5754 also limits the sum (Mn + Cr): 0.10 to 0.6.

Aluminum Filler Alloy Chart

Base Alloy	Filler	1060, 1070 1080, 1350					1100					2014 2036					2219					3003 ALCLAD3003					3004				
Characteristics		S	Z	D	C	T	S	Z	D	C	T	S	Z	D	C	T	S	Z	D	C	T	S	Z	D	C	T	S	Z	D	C	T
319.0, 333.0 354.0, 355.0 C355.0, 380.0	2319											B	A	A	A	A	B	A	A	A	A									
	4043	B	A	A	A	A	B	A	A	A	A	C	C	B	C	A	C	C	B	C	A	B	B	A	A	A	B	B	A	A	A
	4145	A	A	B	A	A	A	A	B	A	A	A	B	C	B	A	A	B	C	B	A	A	A	B	A	A	A	A	B	A	A
413.0, 443.0 444.0, 356.0 A356.0, 359.0 A357.0	4043	A	A	A	A	A	A	A	A	A	A	B	B	A	A	A	B	B	A	A	A	A	A	A	A	A	A	A	A	A	A
	4145	A	A	B	B	A	A	A	B	B	A	A	A	B	A	A	A	A	B	A	A	A	A	B	B	A					
7005, 7021 7039, 7046 7146, 710.0 711.0	4043	A	A	C	A	A	A	A	C	A	A	B	B	A	A	A	B	B	A	A	A	A	B	C	A	A	A	D	C	B	A
	4145											A	A	B	A	A	A	A	B	A	A										
	5183	B	A	B	A	A	B	A	B	A	A											B	A	B	A	A	B	A	B	A	A
	5356	B	A	A	A	A	B	A	A	A	A											B	A	A	A	A	B	B	A	A	A
	5554																										C	C	A	A	A
	5556	B	A	B	A	A	B	A	B	A	A											B	A	B	A	A	B	A	B	A	A
	5654																										C	C	A	A	B
6061 6070	4043	A	A	C	A	A	A	A	C	A	A	B	B	A	A	A	B	B	A	A	A	A	B	C	A	A	A	D	C	A	A
	4145	A	A	D	B	A	A	A	D	B	A	A	A	B	A	A	A	A	B	A	A	A	A	D	B	A	B	C	D	B	A
	5183	B	A	B		A	B	A	B		A											B	A	B		A	B	A	B		A
	5356	B	A	A		A	B	A	A		A											B	A	A		A	B	B	A		A
	5556	B	A	B		A	B	A	B		A											B	A	B		A	B	A	B		A
6005, 6063 6101, 6151 6201, 6351 6951	4043	A	A	C	A	A	A	A	C	A	A	B	B	A	A	A	B	B	A	A	A	A	B	C	A	A	A	D	C	A	A
	4145	A	A	D	B	A	A	A	D	B	A	A	A	B	A	A	A	A	B	A	A	A	A	D	B	A	B	C	D	B	A
	5183	B	A	B		A	B	A	B		A											B	A	B		A	B	A	B		A
	5356	B	A	A		A	B	A	A		A											B	A	A		A	B	B	A		A
	5556	B	A	B		A	B	A	B		A											B	A	B		A	B	A	B		A
5454	4043	A	B	C	C	A	A	B	C	C	A											A	B	C	C	A	A	D	C	C	A
	5183	B	A	B	B	A	B	A	B	B	A											B	A	B	B	A	B	A	B	B	A
	5356	B	A	A	B	A	B	A	A	B	A											B	A	A	B	A	B	B	A	B	A
	5554	C	A	A	A	A	C	A	A	A	A											C	A	A	A	A	C	C	A	A	A
	5556	B	A	B	B	A	B	A	B	B	A											B	A	B	B	A	B	A	B	B	A
511.0, 512.0 513.0, 514.0 5154, 5254 535.0	4043	A	B	C	C		A	B	C	C												A	B	C	C		A	D	C	C	
	5183	B	A	B	B	A	B	A	B	B	A											B	A	B	B	A	B	A	B	B	A
	5356	B	A	A	B	A	B	A	A	B	A											B	A	A	B	A	B	B	A	B	A
	5554	C	A	A	A	A	C	A	A	A	A											C	A	A	A	A	C	C	A	A	A
	5556	B	A	B	B	A	B	A	B	B	A											B	A	B	B	A	B	A	B	B	A
	5654	C	A	A	A	B	C	A	A	A	B											C	A	A	A	B	C	C	A	A	B

Aluminum Filler Alloy Chart

Base Alloy	Filler	ALCLAD 3004	5005 5050	5052 5652	5083 5456	5086 5056	511.0, 512.0 513.0, 514.0 5154, 5254 535.0
Characteristics		S Z D C T M	S Z D C T M	S Z D C T M	S Z D C T M	S Z D C T M	S Z D C T M
319.0, 333.0 354.0, 355.0 C355.0, 380.0	4043	B B A A A A	B B A A A A	A A A A A A	A A A A A	A A A A A	A A A A A
	4145	A A B A A A	A A B A A A				
413.0, 443.0 444.0, 356.0 A356.0, 359.0 A357.0	4043	A A A A A A	A A A A A A	A B A A A A	A B B A A	A B B A A	A B B A A
	5356			B A B B A	A A A A A	A A A A A	A A A B A
7005, 7021 7039, 7046 7146, 710.0 711.0	4043	A D C B A	A B C B A	B D C B A			
	5183	B A B A A	B A B A A	A A B A A	A A B A A	A A B A A	A A B A A
	5356	B B A A A	B A A A A	A B A A A	A B A A A	A B A A A	A B A A A
	5554	C C A A A A	C A A A A A	B C A A A A			B C A A A
	5556	B A B A A	B A B A A	A A B A A	A A B A A	A A B A A	A A B A A
	5654	C C A A B	C A A A A	B C A A A			B C A A A
6061 6070	4043	A D C A A	A B C A A	A D C A A	A D C A	A D C A	A D C A
	4145	B C D B A	A B D B A				
	5183	B A B A	B A B A	B A B C B	A A B A A	A A B A A	B A B C B
	5356	B B A A	B A A A	B B A C A	A B A A A	A B A A A	B B A C A
	5554			C C A B A B	B C A A A	B C A A A	C C A B B
	5556	B A B A	B A B A	B A B C B	A A B A A	A A B A A	B A B C B
	5654			C C A B A	B C A A B	B C A A B	C C A B A
6005, 6063 6101, 6151 6201, 6351 6951	4043	A D C A A	A B C A A	A D C A A	A B C A	A B C A	A B C A
	4145	B C D B A	A B D B A				
	5183	B A B A	B A B A	B A B C B	A A B A A	A A B A A	B A B C A
	5356	B B A A	B A A A	B B A C A	A A A A A	A A A A A	B A A C A
	5554			C C A B A B	B A A A A	B A A A A	C A A B A
	5556	B A B A	B A B A	B A B C B	A A B A A	A A B A A	B A B C A
	5654			C C A B A	B A A A B	B A A A B	C A A B B
5454	4043	A D C C A	A B C C A	A D C C A			
	5183	B A B B A	B A B B A	A A A B A	A A B B A	A A B B A	A A B B A
	5356	B B A B A	B A A B A	A B A B A	A B A B A	A B A B A	A B A B A
	5554	C C A A A A	C A A A A A	C C A A A A	B C A A A	B C A A A	B C A A A
	5556	B A B B A	B A B B A	A A B B A	A A B B A	A A B B A	A A B B A
	5654			B C A B B			B C A A B
511.0, 512.0 513.0, 514.0 5154, 5254 535.0	4043	A D C C	A B C C	A D C C			
	5183	B A B B A	B A B B A	A A B B B	A A B A A	A A B A A	A A B B B
	5356	B B A B A	B A A B A	A B A B A	A B A A A	A B A A A	A B A B A
	5554	C C A A A	C A A A A	C C A A B	B C A A A	B C A A A	B C A A B
	5556	B A B B A	B A B B A	A A B B B	A A B A A	A A B A A	A A B B A
	5654	C C A A B	C A A A B	B C A A A	B C A A B	B C A A B	B C A A A

Aluminum Filler Alloy Chart

Base Alloy	Filler	5454	6005, 6063 6101, 6151 6201, 6351 6951	6061 6070	7005, 7021 7039, 7046 710.0, 711.0 7146	413.0, 443.0 444.0, 356.0 A356.0, A357.0 359.0	319.0, 333.0 354.0, 355.0 C355.0, 380.0
Characteristics		S Z D C T M	S Z D C T M	S Z D C T M	S Z D C T M	S Z D C T M	S Z D C T M
319.0, 333.0 354.0, 355.0 C355.0, 380.0	2319						B A A A A A
	4043	A A A A A A	B B A A A A	B B A A A A	B B A A A A	B B A A A A	
	4145		A A B A A A	A A B A A A	A A B A A A	A A B A A A	A B B B A A
413.0, 443.0 444.0, 356.0 A356.0, 359.0 A357.0	4043	A B B A A A	A B A A A A	A B A A A A	A B B A A A	A B A A A A	
	4145		A A B B A	A A B B A	A A B B A	A A B B A B	
	A356.0					A A A A A A	
	A357.0					A A A A A A	
	5356	A A A B A			A A A A B		
7005, 7021 7039, 7046 7146, 710.0 711.0	4043		A D C B A	A D C B A	B D C B A		
	5183	A A B A A	A A B A A	A A B A A	A A B A A		
	5356	A B A A A	A B A A A	A B A A A	A B A A A		
	5554	B C A A A A	B C A A A A	B C A A A A	B C A A A A		
	5556	A A B A A	A A B A A	A A B A A	A A B A A		
	5654	B C A A A	B C A A A	B C A A A	B C A A A		
6061 6070	4043	A D C B A	A C B A A	A C B A A			
	4643(1)		A C B A A	A C B A A			
	5183	B A B C A	B A A C A	B A A C B			
	5356	B B A C A	B A A C A	B B A C A			
	5554	C C A A A A	C B A B B A	C B A B B B			
	5556	B A B C A	B A A C A	B A A C B			
	5654	C C A B B	C B A B B	C B A B B			
6005, 6063 6101, 6151 6201, 6351 6951	4043	A B C B A	A C B A A				
	4643(1)		A C B A A				
	5183	B A B C A	B A A C A				
	5356	B A A C A	B A A C A				
	5554	C A A A A A	C B A B B A				
	5556	B A B C A	B A A C A				
	5654	C A A B B	C B A B B				
5454	5183	A A B B A					
	5356	A B A B A					
	5554	B C A A A A					
	5556	A A B B A					
	5654	B C A B B					

Aluminum Filler Alloy Chart

Base Alloy	Filler	1060, 1070 1080, 1350						1100						2014 2036						2219						3003 ALCLAD3003						3004					
Characteristics		S	Z	D	C	T	M	S	Z	D	C	T	M	S	Z	D	C	T	M	S	Z	D	C	T	M	S	Z	D	C	T	M	S	Z	D	C	T	M
5086 5056	4043	A	B	C	B			A	B	C	B															A	B	C	B			A	C	C	B		
	5183	A	A	B	A		A	A	A	B	A		A													A	A	B	A		A	A	A	B	A		A
	5356	A	A	A	A		A	A	A	A	A		A													A	A	A	A		A	A	A	B	A		A
	5556	A	A	B	A		A	A	A	B	A		A													A	A	B	A		A	A	A	B	A		A
5083 5456	4043	A	B	C	B			A	B	C	B															A	B	C	B			A	C	C	B		
	5183	A	A	B	A		A	A	A	B	A		A													A	A	B	A		A	A	A	B	A		A
	5356	A	A	A	A		A	A	A	A	A		A													A	A	A	A		A	A	A	B	A		A
	5556	A	A	B	A		A	A	A	B	A		A													A	A	B	A		A	A	A	B	A		A
5052 5652	4043	A	B	C	A	A		A	B	C	A	A														A	B	C	A	A		A	B	C	A	A	
	5183	B	A	B			A	B	A	B			A													B	A	B			A	B	A	B			A
	5356	B	A	A			A	B	A	A			A													B	A	A			A	B	A	A			A
	5556	B	A	B			A	B	A	B			A													B	A	B			A	B	A	B			A
5005 5050	1100	C	B	A	A	A	A	C	B	A	A	A	A													C	C	A	A	A	A						
	4043	A	A	C	A	A		A	A	C	A	A														A	B	C	A	A		A	B	C	A	A	
	4145	B	A	D	B	A		B	A	D	B	A														B	B	D	B	A							
	5183	C	A	B			B	C	A	B			B													C	A	B	C		B	B	A	B			A
	5356	C	A	B			B	C	A	B			B													C	A	B	C		B	B	A	A			A
	5556	C	A	B			B	C	A	B			B													C	A	B	C		B	B	A	B			A
ALCLAD 3004	1100	D	B	A	A	A	A	D	B	A	A	A	A													C	C	A	A	A	A						
	4043	A	A	C	A	A		A	A	C	A	A														A	B	C	A	A		A	D	D	A	A	
	4145	B	A	D	B	A		B	A	D	B	A														B	B	D	B	A							
	5183	C	A	B	C		B	C	A	B	C		B													C	A	B	C		A	B	A	C	C		A
	5356	C	A	B	C		B	C	A	B	C		B													C	A	B	C		A	B	B	B	C		A
	5554																																	C	C	A	B	A	A
	5556	C	A	B	C		B	C	A	B	C		B													C	A	B	C		A	B	A	C	C		A
3004	1100	D	B	A	A	A	A	D	B	A	A	A	A													C	C	A	A	A	A						
	4043	A	A	C	A	A		A	A	C	A	A														A	B	C	A	A		A	B	D	A	A	
	4145	B	A	D	B	A		B	A	D	B	A														B	B	D	B	A							
	5183	C	A	B			B	C	A	B			B													C		B	C		A	B	A	C	C		A
	5356	C	A	B			B	C	A	B			B													C	A	B	C		A	B	B	B	C		A
	5554																																	C	C	A	B	A	A
	5556	C	A	B			B	C	A	B			B													C		B	C		A	B	A	C	C		A
3003 ALCLAD 3003	1100	B	B	A	A	A	A	B	B	A	A	A	A													B	B	A	A	A	A						
	4043	A	A	B	A	A		A	A	B	A	A		B	A	A	A	A		B	A	A	A	A		A	A	B	A	A							
	4145	A	A	C	B	A		A	A	C	B	A		A	A	B	A	A		A	A	B	A	A		A	A	C	B	A							
2219	2319													B	A	A	A	A	A	A	A	A	A	A	A												
	4043	B	A	A	A	A		B	A	A	A	A		B	C	B	C	A		B	C	B	C	A													
	4145	A	A	B	A	A		A	A	B	A	A		A	B	C	B	A		A	B	C	B	A													
2014 2036	2319													C	A	A	A	A	A																		
	4043	B	A	A	A	A		B	A	A	A	A		B	C	B	C	A																			
	4145	A	A	B	A	A		A	A	B	A	A		A	B	C	B	A																			
1100	1100	B	B	A	A	A	A	B	B	A	A	A	A																								
	4043	A	A	B	A	A		A	A	B	A	A																									
1060, 1070 1080, 1350	1100	B	B	A	A	A	B																														
	1188	C	C	A	A	A	A																														
	4043	A	A	B	A	A																															

Note: Yellow means base alloy; Blue means welding wire; Gray means characteristic.
Note:

S: Ease of welding
Z: Strength of welding joint
D: Ductility
C: Corrosion resistance
T: Service at sustained temperatures above 150(℉)≈65.5(℃).
M: Color match after anodizing.

Characteristics—A: best; B: good; C: normal; D: poor; (blank means can't choose)

Aluminum Filler Alloy Chart

Base Alloy	Filler	ALCLAD 3004						5005 5050						5052 5652						5083 5456						5086 5056					
Characteristics		S	Z	D	C	T	M	S	Z	D	C	T	M	S	Z	D	C	T	M	S	Z	D	C	T	M	S	Z	D	C	T	M
5086 5056	4043	A	C	C	B			A	B	C	B																				
	5183	A	A	B	A		A	A	A	B	A		A	A	A	B	A		A	A	A	B	A		A	A	A	B	A		A
	5356	A	B	A	A		A	A	A	A	A		A	A	B	A	A		A	A	B	A	A		A	A	B	A	A		A
	5554													C	C	A	A		A												
	5556	A	A	B	A		A	A	A	B	A		A	A	A	B	A		A	A	A	B	A		A	A	A	B	A		A
	5654													B	C	A	A		B												
5083 5456	4043	A	C	C	B			A	B	C	B																				
	5183	A	A	B	A		A	A	A	B	A		A	A	A	B	A		A	A		B	A		A						
	5356	A	B	A	A		A	A	A	A	A		A	A	B	A	A		A	A		A	A		A						
	5554													C	C	A	A		A												
	5556	A	A	B	A		A	A	A	B	A		A	A	A	B	A		A	A	A	B	A		A						
	5654													B	C	A	A		B												
5052 5652	4043	A	C	C	A	A		A	B	C	A	A		A	D	C	B	A													
	5183	B	A	B			A	B	A	B			A	A	A	B	C		B												
	5356	B	B	A			A	B	A	A			A	A	B	A	C		A												
	5554													C	C	A	A	A	B												
	5556	B	A	B			A	B	A	B			A	A	A	B	C		B												
	5654													B	C	A	B		A												
5005 5050	1100							B		A	A	A	A																		
	4043	A	B	C	A	A		A	B	D	A	A																			
	5183	B	A	B	B		A	B	A	C			B																		
	5356	B	A	A	B		A	B	A	B			B																		
	5556	B	A	B	B		A	B	A	C			B																		
ALCLAD 3004	4043	A	D	D	A	A																									
	5183	B	A	C	C		A																								
	5356	B	B	B	C		A																								
	5554	C	C	A	B	A	A																								
	5556	B	A	C	C		A																								

Changzhou Sanzhong Welding Materials co.,Ltd