

TOKO®



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TOKO GROUP

Better Together



In the past decades of year, TOKO Group Ltd has been servicing industry, commercial and retail customers in global with high reliable quality products that are on time, on specifications, on trend and forward looking.

TOKO, aims to be one-stop solutions provider for the industry of "Welding and Cutting!". In the pursuit of becoming a World-class manufacturer & supplier, we are committed to strive for excellence in our working and service. Innovative products and solutions keep pace with demands for the dynamic changes from the domestic and international market.

In order to help our customers to cut down unnecessary costs, shorter delivery time, make sure each shipment's quality, further reduce their stocks. We are also the 1st company introduces new business concept of "Customer to Factory ("C2F") + Equities" in this field, our mission is through our together working, let our thousands of customers, partners, employees they are finally become TOKO's share holders and beneficiaries...

#### **TOKO Vision**

Trying to be one-stop solutions provider for for the industry of "welding and cutting" !

#### **TOKO Mission**

Our is to forge lasting partnerships with its customers, and is dedicated to providing total support at any time it is needed!

#### **TOKO Value**

Customer-oriented, self-criticism, trust-worthy, mutual respect, self-improvement; help customers to create more values!

For more specifications at <https://www.tokoc.com/welding.htm>

## SUBMERGED WELDING WIRE EM12

TOKO AWS A5.17 H08MnA (EM12) is a type of submerged arc welding wire of copper-plated carbon structural steel. It belongs to melting type high manganese high silicon low fluorine flux, is brown-red to light yellow glass like particles, particle size is 8-40 mesh. excellent welding performance, stable arc combustion. Welding slags are easily removable; welding line is formed well and the welding speed is faster.



There is no splashing and arc stimulation in the melting of the welding wire. the welding line surface is bright and clean, and the welding quality is guaranteed and it is prone to realize mechanization and automatic welding.

This series of submerged arc welding products are widely used in shipbuilding industry, large steel structure, pressure vessels, bridges and so on.

### Mechanical Properties of Deposited Metal:

Test Item	Rm(MPa)	Rel (Mpa)	A(%)	KV2(J)
Guarantee	415-550	≥330	≥22	≥27(-20°C)
General Result	470	365	30	60

### Specification and Current:

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Current(A)	300-400	350-450	425-525	475-575	550-650

### Chemical Composition(%):

Model /Composition	C	Mn	Si	S	P	Ni	Cu	Cr
AWS EL8	≤0.10	0.30-0.55	≤0.03	≤0.030	≤0.030	≤0.30	≤0.20	≤0.20
AWS EM12	≤0.10	0.80-1.10	≤0.07	≤0.030	≤0.030	≤0.30	≤0.20	≤0.20
AWS EM12K	≤0.12	1.50-1.90	≤0.07	≤0.035	≤0.035	≤0.30	≤0.20	≤0.20

Diameter Available: 1.8MM, 2.0MM, 2.4MM,2.6MM,2.8MM,3.0MM,3.2MM,4.0MM etc

## FCW WIRE E71T-1C

TOKO AWS A5.20 E71T-1C Flux Cored Wire E71T-1C is a titanium type Co<sub>2</sub> gas-shielded flux-cored welding wire for low carbon steel and 490MPa high strength steel. It has excellent welding performance, soft and stable arc, lower spatters, excellent slags removable and beautiful appearance of weld; suitable for all-position welding. It has high welding efficiency.



AWS A5.20 E71T-1C flux core ingredients produce a fast freezing slag that facilitates out of position welds. Bead contour is flat to slightly convex. Slag is easy to remove and low spatter provides easy post Weld cleaning.

### Chemical Composition of Deposited Metal:

Items	C	Mn	Si	P	S
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Case	0.052	1.4	0.42	0.019	0.011
(W/ CO2)					
Standard	≤0.18	≤1.75	≤0.90	≤0.03	≤0.03
( AWS E71T-1)					

**Mechanical Properties of Deposited Metal:**

Items	YP Rel/ Mpa	Tensile Strength/Mpa	Elongation(%)	Impact Value
Case	505	570	28	-20°C/ 120
(W/ CO2)				
Standard	≥375	490-660	22	27
( AWS E71T-1)				

**Current and Voltage:**

Specification	1.2MM	1.4MM	1.6MM
(Diameter Size)			
Volt	23-30	24-36	25-40
Amp	150-300	170-360	200-400
mm	15-25	15-25	20-30
L/min	20-25	20-25	20-25

Diameter: 0.8mm / 0.9mm/ 1.0mm / 1.2mm / 1.6mm etc

**MIG WELDING WIRE SG2**

TOKO AWS A5.18 ER70S-6 is a solid low carbon steel solid filler wire (rod) for TIG and MIG/MAG Welding. ER70S-6 is the most widely used carbon steel filler rod used for welding mild steel, carbon steel, and low alloy steel materials. ER70S-6 or CSA ER49S-6 can be used for single pass and multipass welding in all positions.



A well balanced silicon and manganese content permits its use with CO<sub>2</sub>, Argon-Oxygen mixtures, or mixtures of the two. This wire may be used for short-circuiting arc (dip-transfer), buried arc, as well as spray transfer arc processes.

Applications: Automobile frames, farm equipment, sheet metal, ships and barges, rail cars, trailers, ornamental iron, metal furniture, storage bins and general fabrications.

**Chemical Compositions :**

Items	C	Mn	Si	P	S	Ni	Mo	Cu	V
Standard	0.06~0.15	1.4~1.85	0.8~1.1 5	≤0.025	≤0.035	≤0.15	≤0.15	≤0.50	≤0.03
Actual	0.08	1.51	0.89	0.015	0.013	0.016	0.006	0.18	0.003

**Mechanical Performance:**

Tensile strength Rm(Mpa)	Yield Strength Rel or Rp0.2 (Mpa)	Elongation Ratio(%)	Fracture Energy (J)	Protection Gas
545	452	29	91 (-30°C)	CO <sub>2</sub> 、 Ar

Packing: 15Kg/Spool/Carton, 72 Spools/Pallet, 24Pallets/20FT Container.

### STAINLESS WIRE ER316L

TOKO AWS A5.9 ER316L The main component of ER316L is 18Cr-12Ni-2Mo. It is an all position welding MIG Wire. The weld-ability is good. Feeding wire smoothly will enable stable arc, excellent welding performance and spatter is very low. It has good resistance for acetic acid, sulfuric acid, phosphoric acid and salt corrosion because it contains Molybdenum.



USES: It is widely used in petrochemical, chemical fertilizer equipment such as 022Cr17Ni12Mo2 (SUS 316L) and other materials of welding.

The welding should be operated in clean surface without rust, moist, oil contamination and dust.

AWS	Chemical Composition of Deposited Metal(%)							
	C	Si	Mn	P	S	Cr	Ni	Mo
ER304L	≤0.03	≤1.00	≤2.00	0.03	0.03	18.0-20.0	8.0-12.0	-
ER308L	0.03	0.3-0.65	1.0-2.5	0.03	0.03	19.5-22.0	9.0-11.0	0.75
ER309L	0.03	0.3-0.65	1.0-2.5	0.03	0.03	23.0-25.0	12.0-14.0	0.75
ER310	0.08-0.15	0.3-0.65	1.0-2.5	0.03	0.03	25.0-28.0	20.0-22.5	0.75
ER312	0.15	0.3-0.62	1.0-2.5	0.03	0.03	28.0-32.0	8.0-10.5	0.75
ER316L	0.03	0.3-0.65	1.0-2.5	0.03	0.03	18.0-20.0	11.0-14.0	2.0-3.0
ER316LSI	0.03	0.65-1.0	1.0-2.5	0.03	0.03	18.0-20.0	11.4-14.0	2.0-3.0

Other Items: ER201,ER304,ER308,ER308L,ER309,ER309L,ER316,ER316L,ER430,etc.

### ALUMINIUM WIRE ER4043/5356

TOKO AWS A5.10 ER5356 Aluminum MIG wire, ER4043, ER5356 Alu-alloy welding wire is mainly used where higher weld strength and greater ductility is required and is compatible with 5050, 5052, 5083, 5154, 5356, 6061, 6363 alloys.



5356 has greater resistance to corrosion (salt water) and better color match after anodizing.

Application: mainly used in electrician, chemical, sports equipment, furniture bicycle and such other aluminum alloy profile welding.

2) low carbon steel and low alloy steel, rolling stock, container, engineering machinery, and pressure container

### 1. Chemical Composition:

AWS No.	Chemical Composition(%)							
	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
ER4043	4.5-6.0	0.80	0.30	0.05	0.05	~	0.10	0.20
ER5356	0.25	0.40	0.10	0.05-0.20	4.5-5.5	0.05-0.20	0.10	0.06-0.20

Other Items: ER1060, ER1100, ER4043, ER4047, ER5356, ER5183, ER5556, etc.

Diameter: 0.8mm, 0.9mm, 1.0mm, 1.2mm, 1.6mm etc

Packing: 1.0Kg/Spool, 2.5Kg/Spool, 5Kg/Spool, 7.0Kg/Spool

### WELDING RODS E6013

AWS A5.1 E6013 is a basic common popular carbon steel welding rods with high Titania potassium type coating. It is able to provide excellent welding performance and satisfactory weld can be obtained in all position welding.



It is widely used in ordinary tensile strength mild steel structures especially suitable for intermittent welding to sheet steel and small work pieces as well as cosmetic welding with smooth and shiny appearance.

Chemical Composition of Deposited Metal (%):

	C	Mn	Si	S	P	Ni	Cr	Mo
Standard	≤0.20	≤1.20	≤1.00	≤0.035	≤0.040	≤0.30	≤0.30	≤0.30
Typical	0.070	0.41	0.26	0.021	0.023	0.018	0.027	0.002

Mechanical Properties of Deposited metal (AW):

Yield Point Reh (Mpa)	Tensile Strength Rm (Mpa)	Elongation A4(%)	Impact Value(J)	
			20°C	0°C
≥306	400-560	≥22	—	≥47
395	480	29	110	80

Sizes, Pieces & Recommended Current (AC or DC):

Specification(mm)	2.5×300	2.5×350	3.2×350	4.0×400	4.0×450	5.0×400
Pieces(5.0kg)	≈300	≈255	≈157	≈90	≈80	≈59
Current(A)	F,H	60-90	60-90	80-130	150-190	180-250
	V,OH	50-80	50-80	80-110	130-170	---

### WELDING RODS E6011

AWS A5.1 E6011 is a high cellulose potassium type welding rods for mild steel. It is suitable for vertical-down welding and lap welding for sheet structures. Such as smoke pipes, wind pipes, oil tanks, vehicles.

The AWS A5.1 E6011 electrode is an all-purpose welding rod that can be used for repair and fabrication works. It is also applicable for welding large diameter pipelines with wall thickness of less than 12.5mm.



#### Chemical Composition of Deposited Metal (%)

	C	Mn	Si	S	P	Ni	Cr	Mo
Standard	≤0.20	≤1.20	≤1.00	≤0.035	≤0.040	≤0.30	≤0.20	≤0.30
Typical	0.096	0.67	0.20	0.024	0.024	0.008	0.041	0.001

#### Mechanical Properties of Deposited metal (AW)

	Yield Point Reh (Mpa)	Tensile Strength Rm (Mpa)	Elongation A4 (%)	Impact Value(J)
				- 30 °C
Standard	≥330	≥430	≥22	≥27(Average)
Typical	405	500	30	75

#### Sizes, Pieces & Recommended Current (AC or DC)

Size(mm)	2.5×300	3.2×350	4.0×350	5.0×350
Pieces(5.0kg)	≈328	≈185	≈120	≈76
Current(A)	OH,VD	30-50	70-100	90-140
				150-200

### WELDING RODS E7018

AWS A5.1 E7018 is an outstanding quality all position welding electrode covered with extra low hydrogen potassium type coating for high tensile strength mild steels and low alloy steels. Its nominal welding efficiency is about 110% due to iron powder is contained.



The weld metal shows an excellent low temperature toughness and high crack-resistance.

It is widely used in projects of ship, boilers, high pressure vessels, bridges, skyscrapers, offshore drilling platforms, nuclear power plants and so on.

The groove of base metal should be cleared impurities away and the electrode must be baked at 400°C then be held 1-2 hours before welding, 2.5mm or less one should be done by 350°C then be held 1 hour.

#### Chemical Composition of Deposited Metal (%) :

	C	Mn	Si	S	P	Ni	Cr	Mo
Standard	≤0.15	≤1.60	≤0.75	≤0.035	≤0.040	≤0.30	≤0.20	≤0.30
Typical	0.068	1.36	0.51	0.010	0.016	0.022	0.016	0.010

#### Mechanical Properties of Deposited metal (AW) :

	Yield Point Reh (Mpa)	Tensile Strength Rm (Mpa)	Elongation A4 (%)	Impact Value(J)
				-20 °C
Standard	≥375	490-660	≥22	≥47(Average)
Typical	440	540	30	150

#### Sizes, Pieces & Recommended Current (AC or DC) :

Size(mm)	2.5×350	3.2×350	4.0×400	4.0×450	5.0×400	5.0×450

Pieces(5kg)		≈248	≈145	≈85	≈75	≈51	≈45
Current(A)	F,H	70-100	100-140	140-170	140-170	190-240	190-240

Other: AWS A5.1 E7015, AWS A5.1 E7016, AWS A5.1 E7018, AWS A5.5 E9018 etc.

### TIG WELDING WIRE

Stainless Steel TIG Wire is primarily used for welding low carbon molybdenum-bearing austenitic alloys.

This filler metal has the same analysis as AWS A5.4 ER316, except that the carbon content is limited to a maximum of 0.03% in order to reduce the possibility of formation of inter-granular carbide precipitation.



Advantages:

- 1)Excellent Straightness
- 2)Uniform and beautiful surface condition
- 3)Excellent coil-forming ability
- 4)High elasticity and high fatigue resistance
- 5)Strong corrosion resistance against exposure to the toughest atmosphere

Details as shown in the below chart :

AWS	Chemical composition of deposited metal(%)								
	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
ER308L	0.03	19.5-22.0	9.0-11.0	0.75	1.0-2.5	0.30-0.65	0.03	0.03	0.75
ER309L	0.03	23.0-25.0	12.0-14.0	0.75	1.0-2.5	0.30-0.65	0.03	0.03	0.75
ER316L	0.03	18.0-20.0	11.0-14.0	2.0-3.0	1.0-2.5	0.30-0.65	0.03	0.03	0.75

Packaging: 5kg/2.5kg/15kg/coil, into carton box, 1 ton/pallet

### WELDING RODS E309L-16

AWS A5.4 E309L-16 stainless steel welding electrode.

1. Excellent welding performance, heat-proof, corrosion resistance.
2. It is suitable to weld 18Cr-8Ni( 304 or 304L), 301, 302 etc stainless steel materials.
3. Welding Position: All positions



The oil stains and rust on the welding should be cleared.

Please dry 60 minutes at 250-300°C before welding.

Take out a small quantity into 100-150°C drying cylinder, when operation.

When swing the electrode, swing width should be within 2.5 times of the electrode diameter.



	Tensile Strength/ Mpa	Elongation %
Case	645	41
Standard (AWS A5.1 E309-16)	≥550	≥35

Reference Welding Parameter ( AC or DC+):

Specification (Diameter Size mm)		2.5mm	3.2mm	4.0mm	5.0mm
AMP	Flat Position	55-90	90-130	130-190	190-250
	Vertical/ Overhead Position	50-90	90-120	130-160	-

### WELDING RODS 25.35Nb

Welding Rods AWS A5.4 2535Nb to match 0.4%C-25%Cr-35%Ni-Nb heat resistant cast alloys, heat resistant.

DESCRIPTION: GTAW electrode for joining and surfacing of heat resistant steels and cast steels of the same or similar chemical composition  
Resistant to scaling up to 1100°C.

Typical alloy for welding of pyrolysis of furnace tubes.



APPLICATIONS: Petrochemical Industry, - Reformer tubes, - Pyrolysis coils

CLASSIFICATION:

AWS A 5.4 25-35Nb | EN ISO: EN 12072: 1999:W Z25 35 Nb | DIN: W.No.: 1.4853

WELDING POSITIONS:



TYPICAL WELD DEPOSIT WEIGHT % :

Diameter (MM)	Chemical Composition (%)								
	C	Si	Mn	Cr	S	Ni	Nb	Ti	Fe
3.2 x 350	0.3~0.5	0.2~1.3	0.5~1.9	23~27	0.014	32~36	0.75~1.5	0.02 ~ 0.20	Bal.
	Melting metal mechanical performance								
	RP0,2 (N/mm2)	Rm (N/mm2)	A5 %	Impact Energy (J) ISO-V			Hardness HRc / HV		
>460	>600	>8	-20°C -40°C -60°C						

## WELDING FLUX

Submerge Welding Flux SJ101, SJ301, SJ501 is an agglomerated aluminium-titanium type acidity flux (Rutile type), with alkalinity around 0.5-0.8. It is gray and round grain with mesh 10-60( 2.0-0.28m). It can be operated with AC and DC. the wire shall be connected to positive pole when applying DC.

It has steady arc, nice weld formation, and easy in slag removal specially at high speed. The welding porosity scarcely occur.



Caution: It should be re-dried under 300-350°C for 2 hours. Rust, grease and moisture on the weldment should be removed before welding.

Usage: When applied to various welding wires (such as H08A,H08MnA), it can weld low-carbon steel, low-alloy high strength structural steel.It can be welding boiler, ships ,pressure vessel, miniature LPG tanks, vehicles,structural steels etc.

Chemical Composition(%):

SiO <sub>2</sub> +TiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub> +MnO	CaF <sub>2</sub>	S	P
25-35	50-60	5-10	≤0.05	≤0.05

Mechanical Performance of the Deposited Metal:

AWS NO	Standard Models	Yield Point Rel(MPa)	Tensile Strength Rm(MPa)	Elongation A(%)	Impact Value Kv2(J)
EM12	F7A0-EM12	≥330	≥420	≥22	≥53(-18°C)
EM12K	F7A2-EM12K	≥410	≥500	≥22	≥45(-200°C)

Packing Details:

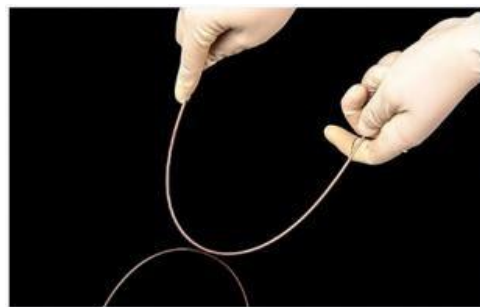
- 1) 25.0 KGS/Kraft Bag With Plastic Lining Inside;
- 2) 40 Bags (1000KGs)/Plywood Pallet; Container: 20-22 Tons/20FT
- 4) Other Flux : SJ101, SJ102, SJ301, SJ501, HJ107, HJ260, HJ431 etc

## COPPER ALLOY MIG WIRE

Phosphorus Copper filler alloys are extensively used to join copper and copper alloy base metals (brass, bronzes). Phos-Copper is extensively used in Non-Ferrous Industry.

They have self-fluxing properties when used on copper and may or may not contain Silver.

Continuous service operating temperatures of joints brazed with these alloys range up to approx 200 °C.



Corrosion resistance is satisfactory, except when the joints are exposed to sulfurous environments, especially at elevated temperatures.

Phosphorous Copper alloys should not be used on ferrous, nickel based alloys, or copper-nickel alloys with more of 10% nickel, in order to avoid premature failure of the joint due to the formation of brittle inter metallic phases.

Standard	Alloys	Chemical Composition %	Solidus	Liquids	Application
AWS A5.8	BCuP-2	Cu:Bal. P:6.5-7.5	710°C	790°C	For brazing of copper and copper alloys.
AWS A5.8	BCuP-3	Cu:Bal. P:5.7-6.1 Ag:5.0-5.2	643°C	816°C	For brazing of copper and copper alloys.
AWS A5.8	BCuP-5	Cu:Bal. P:4.8-5.3 Ag:14.5-15.5	643°C	800°C	For brazing of copper,copper alloys,silver and molybdenum etc.
AWS A5.8	BCuP-6	Cu:Bal. P:6.8-7.5 Ag:1.8-2.2	643°C	790°C	For brazing of copper and copper alloys.
AWS A5.8	BCu86PS n	Cu:Bal. P:6.5-7.5 Sn:6.5-7.5	640°C	680°C	For brazing of copper and copper alloys.

### TUNGSTEN ELECTRODE

Tungsten Inert Gas (TIG) welding is a popular type of welding that utilizes tungsten electrodes to join various metals. The tungsten electrode is a critical component in the process, as it channels the current required to establish the ARC.



The tungsten electrodes can be alloyed with a variety of metals. Different types and sizes of electrodes are used for different types of welds and materials, and welders develop preferences based on welding style and project.

Certain electrode types perform better with alternating current (AC) as opposed to direct current (DC).

### WAREHOUSE



Pallet Packing



Container Loading



## INSPECTIONS

Before shipment, we may require our partner supplier's products be inspected and tested for conformance with the requirements of our Purchase Order specifications and relevant International and Chinese Standards applicable to the products.

Where the test results or inspections show a deficiency in product, the Supplier will be notified to rectify the deficiency prior to the goods being shipped. The supplier may be required to express delivery, should the correct on process mean the agreed to ship date is now not possible. More information please contact us via Email: [office@tokoc.com](mailto:office@tokoc.com)



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