FARINA WELDTEC

FARINA (JINAN) WELDTEC & MACHINERY CO.,LTD
9# Xincheng Street Civic Industry Zone Shanghe County
Shangdong,China.
Website:www.farinaweldtec.com
E-mail:sales@farinaweldtec.com
TEL:0086-531-84809797
FAX:0086-531-84773099

FARINA (JINAN) WELDTEC & MACHINERY CO.,LTD
Manufacturer & Exporter

FARINA®

COMPANY PROFILE

Farina (Jinan) Weldtec & Machinery Co., Ltd., founded in 1993, is a professional manufacturer of various kinds of welding consumables. It is located in Civic Industrial Park, Shanghe County, Jinan, Shandong. As an export-oriented enterprise, covers an area of 27,000m2, has garden-like factory and beautiful environment, and we have **R&D Center** with Physics Lab, Chemical Lab and welding Lab. the products have been approved by **ISO, CCS, ABS, DNV-GL, CE,** and sold to more than 60 countries and regions such as Southeast Asia, the Middle East, Europe, America, etc., our products have : **Solid Wire, Flux Cored Wire, SAW Wire, Welding Electrode** and so on.

Our development and expansion can't achieve without your support and help. With the demand of product's diversification and the development of international market, FARINA continues to expand our business, aiming to provide a wide range of products, better quality and more professional services. The customized products receive high evaluation from the customers.

Compared with others, offering "**better quality based on same price and better price based on same quality.**" is our purpose. Needs of customer is the goal of our efforts.

Approved by ISO9001,CCS,ABS,DNV,CE,GL

SOLID WIRE

FRN-ER50-6Z

AWS A5.18 ER70S-6
EN ISO 14341-A G 42 2 C1 Z
JIS Z3312 G49A YGW11
GB/T8110 ER50-6

Introduction: Non-copper coated wire is for the GMAW of mild and high strength steels, It reduces the welding fume and protect welder fitness, increases productivity and decreases the welding cost, with the characteristic of stable arc, low splashing, high deposited efficiency, feeding stability.

Uses: Used for welding 500 MPa low alloy steel single and muti-pass welding; also for high speed thin plates, pipe line steel welding. Suitable for manual welding, automatic welding and robot welding, such as oil machinery, heavy crane machinery, pressure vessels, oil-chemical vessels, ship body, bridge, construction steel structure, ect.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	P	S	Cu	other
0.08	1.50	0.80	0.010	0.020	0.11	Ni: 0.029 Cr: 0.022 Mo: 0.008 V: 0.020

Typical Mechanical Properties of The Deposited Metal (100% CO_2)

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
470	560	31	-30℃	90

Size and recommended current range

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm
Amps	40~100	50~140	50~200	50~220	80~350	120~450

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm	√	√	√	√	√		
Plastic spool 5kg D200mm	√	√	√	√	√	√	
Plastic spool 15kg D270mm	√	√	√	√	√	√	√
Metal basket 15kg K300mm	√	√	√	√	√	√	√
Drum packing 100kg		√	√	√	√	√	
Drum packing 250kg/350kg		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

SOLID WIRE

FRN-ER50-6

AWS A5.18 ER70S-6
DIN8559 SG2
EN440 G3Si1
JIS Z3312 YGW12
GB/T8110 ER50-6

Introduction: Strong resistance to surface scales and oil stains on the base metal. It has low blowhole sensitivity.

Uses: Used for welding 500 MPa low alloy steel single and muti-pass welding; also for high speed thin plates, pipe line steel welding. Suitable for manual welding, automatic welding and robot welding, such as oil machinery, heavy crane machinery, pressure vessels, oil-chemical vessels, ship body, bridge, construction steel structure, ect.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	P	S	Cu	other
0.07	1.53	0.85	0.011	0.010	0.12	Ni: 0.029 Cr: 0.022 Mo: 0.008 V: 0.010

Typical Mechanical Properties of The Deposited Metal (100% CO_2)

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
425	540	31	-30℃	89

Size and recommended current range

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm
Amps	40~100	50~140	50~200	50~220	80~350	120~450

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm	√	√	√	√	√		
Plastic spool 5kg D200mm	√	√	√	√	√	√	
Plastic spool 15kg D270mm	√	√	√	√	√	√	√
Metal basket 15kg K300mm	√	√	√	√	√	√	√
Drum packing 100kg		√	√	√	√	√	
Drum packing 250kg/350kg		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

AWS A5.18 ER70S-2
EN440 G2Ti

SOLID WIRE

FRN-ER50-2

Introduction :
FRN-ER50-2 is a solid wire for Single-pass and multi-pass welding and butt or fillet structures made of 450Mpa and 500Mpa tensile strength steel, in particular for high speed welding sheet, e.g. automobile.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	P	S	Cu	other
0.05	1.20	0.60	0.016	0.010	0.20	Al: 0.08 Ti: 0.11 Zr: 0.08

Typical Mechanical Properties of The Deposited Metal (100% CO_2)

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
445	540	25	-30℃	60

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm	√	√	√	√	√		
Plastic spool 5kg D200mm	√	√	√	√	√	√	
Plastic spool 15kg D270mm	√	√	√	√	√	√	√
Metal basket 15kg K300mm	√	√	√	√	√	√	√
Drum packing 100kg		√	√	√	√	√	
Drum packing 250kg/350kg		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

AWS A5.18 ER70S-3
EN440 G2Si1
DIN8559 SG1
GB/T8110 ER50-3
JIS Z3312 YGW16

SOLID WIRE

FRN-ER50-3

Introduction: FRN-ER50-3 is a kind of CO2 gas-shielded welding wire. It has excellent welding performance, smooth and beautiful bead and fewer spatters.

Uses: 1. Used for welding low-carbon steel thin plates.
2. Used for welding low-carbon steel parts with thorough surface treatment.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	P	S	Cu	other
0.074	1.01	0.62	0.015	0.011	0.11	Ni: 0.021 Cr: 0.020 Mo: 0.007 V: 0.010

Typical Mechanical Properties of The Deposited Metal (100% CO_2)

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
435	540	29	-20℃	90

Size and recommended current range

Diameter	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm
Amps	50~140	50~200	50~220	80~350	170~450

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm	√	√	√	√	√		
Plastic spool 5kg D200mm	√	√	√	√	√	√	
Plastic spool 15kg D270mm	√	√	√	√	√	√	√
Metal basket 15kg K300mm	√	√	√	√	√	√	√
Drum packing 100kg		√	√	√	√	√	
Drum packing 250kg/350kg		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

SOLID WIRE

FRN-ER50-4

AWS A5.18 ER70S-4
GB/T8110 ER50-4
JIS Z3312 YGW12

Introduction: FRN-ER50-4 welding wire has CO2 or Ar+CO25%-20% as shielding gas. It has excellent welding performance. It has good one-time shaping performance. When used in argon-rich mixed gas arc welding, the bead is delicate and beautiful.

Uses: 1. Used for welding sheet metal and thin plates.
2. Used for welding steel pipes..

Typical Chemical Composition of welding wire (%)

C	Mn	Si	P	S	Cu	other
0.11	1.11	0.72	0.016	0.013	0.19	Ni: 0.026 Cr: 0.022 Mo: 0.007

Typical Mechanical Properties of The Deposited Metal (100% CO_2)

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
425	540	29	-30℃	75

Size and recommended current range

Diameter	0.8mm	1.0mm	1.2mm	1.6mm
Amps	50~140	50~220	80~350	170~450

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm	√	√	√	√	√		
Plastic spool 5kg D200mm	√	√	√	√	√	√	
Plastic spool 15kg D270mm	√	√	√	√	√	√	√
Metal basket 15kg K300mm	√	√	√	√	√	√	√
Drum packing 100kg		√	√	√	√	√	
Drum packing 250kg/350kg		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

SOLID WIRE

GB/T8110 ER49-1

FRN-ER49-1

Introduction: FRN-ER49-1 welding wire has excellent welding performance. When welding, it has stable arc, fewer spatters and excellent blowhole-resistance.

Uses: Used for welding low-carbon steel and some low-alloy steel structures.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	P	S	Cu	other
0.06	1.90	0.80	0.015	0.011	0.11	Ni: 0.005 Cr: 0.021

Typical Mechanical Properties of The Deposited Metal (100% CO_2)

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
400	520	30	Room Temp.	101

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm	√	√	√	√	√		
Plastic spool 5kg D200mm	√	√	√	√	√	√	
Plastic spool 15kg D270mm	√	√	√	√	√	√	√
Metal basket 15kg K300mm	√	√	√	√	√	√	√
Drum packing 100kg		√	√	√	√	√	
Drum packing 250kg/350kg		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

SOLID WIRE

FRN-ER70S-6

AWS A5.18 ER70S-6
DIN8559 SG3
EN440 G4Si1

Instruction:FRN-ER70S-6 is a coppered low alloy solid wire with all position welding, has a very good performance and has a large range of current welding. Suitable for welding of mild steels high intension steel, machinery, building, ships, vehicle pressure vessel steel structure and 500Mpa carbon steel and the low alloy steel.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	P	S	Cu	other
0.08	1.70	0.90	0.015	0.011	0.07	Ni: 0.005 Cr: 0.021

Typical Mechanical Properties of The Deposited Metal (100% CO_2)

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
460	560	30	-30	80

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm	√	√	√	√	√		
Plastic spool 5kg D200mm	√	√	√	√	√	√	
Plastic spool 15kg D270mm	√	√	√	√	√	√	√
Metal basket 15kg K300mm	√	√	√	√	√	√	√
Drum packing 100kg		√	√	√	√	√	
Drum packing 250kg/350kg		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

SOLID WIRE

FRN-ER50-G

AWS A5.18 ER70S-G
JIS Z3312 YGW11
GB/T8110 ER50-G

Introduction: The welding current has been strengthened to a great extent and the welding efficiency has been improved. Because the grains of the deposited metal have been refined, both the tensile strength and the yield strength are close to the upper limit of the standard of classification society for 50kg class welding materials. The impact absorbed energy has been improved obviously.

Uses: 1. Used for welding all kinds of 500MPa structural steel parts, thick plates and thick pipelines.
2. Used for high speed welding on 500MPa base metals.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	P	S	Cu	other
0.10	1.45	0.71	0.011	0.013	0.14	Ti: 0.15

Typical Mechanical Properties of The Deposited Metal (100% CO_2)

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
520	593	30	-30℃	157

Size and recommended current range

Diameter	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm
Amps	50~100	50~180	50~220	80~350	170~450

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm	√	√	√	√	√		
Plastic spool 5kg D200mm	√	√	√	√	√	√	
Plastic spool 15kg D270mm	√	√	√	√	√	√	√
Metal basket 15kg K300mm	√	√	√	√	√	√	√
Drum packing 100kg		√	√	√	√	√	
Drum packing 250kg/350kg		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

SOLID WIRE

AWS A5.28 ER80S-G
GB ER55-1
EN440 G3M1T
JIS Z3312 YGW19

FRN-ER55-G

Instruction: Using argon-rich, with excellent welding performance and exquisite weld. Deposited metal has good resistance to atmospheric corrosion, crack resistance and good plasticity and toughness

Uses: Used for the weathering resistant structure on 500MPa such as vehicle, offshore engineering and bridge.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	P	S	Cu	other
0.07	1.70	0.60	0.005	0.05	0.21	Ti: 0.15 Mo: 0.18

Typical Mechanical Properties of The Deposited Metal (100% CO_2)

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
495	590	28	-40℃	112

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm	√	√	√	√	√		
Plastic spool 5kg D200mm	√	√	√	√	√	√	
Plastic spool 15kg D270mm	√	√	√	√	√	√	√
Metal basket 15kg K300mm	√	√	√	√	√	√	√
Drum packing 100kg		√	√	√	√	√	
Drum packing 250kg/350kg		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

AWS A5.28 ER90S-G
GB/T8110 ER60-G

SOLID WIRE

FRN-ER60-G

Instruction: FRN-ER60-G is a kind of 600MPa high toughness low-alloy steel gas-shielded welding wire. It has excellent all-position welding performance.

Uses: Suitable for welding 600MPa high strength steel structures, such as construction machinery, pipelines, ships, pressure vessels, etc.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	P	S	Cu	other
0.07	1.70	0.60	0.005	0.05	0.21	Ti: 0.15 Mo: 0.18

Typical Mechanical Properties of The Deposited Metal (100% CO_2)

Yield Strength $R_{eL}/R_{p0.2}$ (Mpa)	Tensile Strength R_m (Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
550	650	25	-20℃	103

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm	√	√	√	√	√		
Plastic spool 5kg D200mm	√	√	√	√	√	√	
Plastic spool 15kg D270mm	√	√	√	√	√	√	√
Metal basket 15kg K300mm	√	√	√	√	√	√	√
Drum packing 100kg		√	√	√	√	√	
Drum packing 250kg/350kg		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

SOLID WIRE

AWS A5.18 ER100S-G

FRN-ER70-G

Introduction: FRN-ER70-G is a kind of NiMo type 700MPa high toughness low-alloy steel gas-shielded welding wire. It has excellent all-position welding performance, stable arc and fewer spatters.

Uses: Suitable for welding 700MPa high strength steel structures, such as construction machinery, hoisting machinery, bridges, pipelines, ships, pressure vessels, etc.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	P	S	Cu	other
0.083	1.72	0.62	0.014	0.008	0.24	Ti: 0.10 Ni: 1.14 Mo: 0.42

Typical Mechanical Properties of The Deposited Metal (100% CO_2)

Yield Strength $R_{eL}/R_{p0.2}$ (Mpa)	Tensile Strength R_m (Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
650	750	23	-20℃	121

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm	√	√	√	√	√		
Plastic spool 5kg D200mm	√	√	√	√	√	√	
Plastic spool 15kg D270mm	√	√	√	√	√	√	√
Metal basket 15kg K300mm	√	√	√	√	√	√	√
Drum packing 100kg		√	√	√	√	√	
Drum packing 250kg/350kg		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

SOLID WIRE

AWS A5.18 ER110S-G

FRN-ER80-G

Introduction: FRN-ER80-G is a kind of high strength gas-shielded welding wire. The mixed gas Ar+20% CO2 can be used as shielding gas. It has soft arc, stable burning and fewer spatters. The bead has higher impact toughness.

Uses: Suitable for welding high strength structures with tensile strength of 790MPa. It can be used for welding some key structures, such as pressure vessels, construction machinery, hoisting machinery, ships, mining machinery, etc.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	P	S	Cu	other
0.074	1.75	0.47	0.008	0.004	0.20	Cr: 0.30 Ni: 2.11 Mo: 0.54

Typical Mechanical Properties of The Deposited Metal (100% CO_2)

Yield Strength $R_{eL}/R_{p0.2}$ (Mpa)	Tensile Strength R_m (Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
730	840	24	-20℃	90

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm	√	√	√	√	√		
Plastic spool 5kg D200mm	√	√	√	√	√	√	
Plastic spool 15kg D270mm	√	√	√	√	√	√	√
Metal basket 15kg K300mm	√	√	√	√	√	√	√
Drum packing 100kg		√	√	√	√	√	
Drum packing 250kg/350kg		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

SUBMERGED ARC WELDING WIRE

FRN-H08A

AWS A5.17 EL12
BS EN 756-S1
ISO 14171-A-S1
GB/T5293-99 H08A
JIS W11

Introduction: FRN-H08A is a kind of low-manganese and low-silicon type welding wire. It matches with high-manganese and high-silicon type welding flux. It is not sensitive to the rust on the base metal. It has excellent bead molding and slag detachability. It is the most frequently used submerged-arc welding wire. Monopole or dipole. AC/DC..

Uses: Used together with fused flux HJ431 or sintered fluxes SJ301 and SJ501. Used for both high speed welding and filling welding on 50kg class base metals.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	P	S	Cu	other
0.07	0.40	0.018	0.014	0.011	0.10	

Typical Mechanical Properties of The Deposited Metal (Using with Flux SJ301)

Yield Strength $R_{eL}/R_{p0.2}$ (Mpa)	Tensile Strength R_m (Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
360	450	29	-20℃	80

Packing terms

Diameter	2.0mm	2.4mm	3.2mm	4.0mm	4.8mm
Small coil (Inner Dia 300mm) 25kg	√	√	√	√	√
Large coil (Inner Dia 550mm,630mm) 100kg,150kg,200kg,250kg,350kg	√	√	√	√	√
Metal spool (Inner Dia 300mm) 25kg	√	√	√	√	√

SUBMERGED ARC WELDING WIRE

AWS A5.17 EM12K
BS EN 756-S2Si
ISO 14171-A-S2Si

FRN-EM12K

Application

FRN-EM12K is for welding 450Mpa-500Mpa tensile strength structures, such as boiler, ships,bridges, pressure vessels as well as LPG cylinders. Before welding,, the base metal must clear away impurities and the flux Must be baked in a temperature of 300℃~350℃ for 1-2 hours.

Typical Chemical Composition of welding wire (%)

	Mn	Si	P	S	Cu	other
0.056	1.30	0.30	0.020	0.010	0.050	Cr: 0.025 Ni: 0.010

Typical Mechanical Properties of The Deposited Metal (Using with SJ301)

Yield Strength $R_{eL}/R_{p0.2}$ (Mpa)	Tensile Strength R_m (Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
420	510	31	-20℃	145

Packing terms

Diameter	2.0mm	2.4mm	3.2mm	4.0mm	4.8mm
Small coil (Inner Dia 300mm) 25kg	√	√	√	√	√
Large coil (Inner Dia 550mm,630mm) 100kg,150kg,200kg,250kg,350kg	√	√	√	√	√
Metal spool (Inner Dia 300mm) 25kg	√	√	√	√	√

SUBMERGED ARC WELDING WIRE

FRN-H08MnA

AWS A5.17 EM12
BS EN 756-S2
ISO 14171-A-S2
GB/T5293-99 H08MnA

Introduction: It is a kind of medium-manganese and medium-silicon type welding wire. It matches with medium-manganese and medium-silicon type welding flux. It is not sensitive to the rust on the base metal. It has excellent bead molding and slag detachability. Monopole or dipole. AC/DC.

Uses: Used together with fused flux HJ350 or sintered flux SJ101. Used for both high speed welding and filling welding on 50kg class base metals.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	P	S	Cu	other
0.066	0.88	0.022	0.010	0.013	0.075	Cr: 0.02 Ni: 0.021

Typical Mechanical Properties of The Deposited Metal(Using with SJ101)

Yield Strength $R_{eL}/R_{p0.2}$ (Mpa)	Tensile Strength R_m (Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
360	480	31	-20℃	110

Packing terms

Diameter	2.0mm	2.4mm	3.2mm	4.0mm	4.8mm
Small coil (Inner Dia 300mm) 25kg	√	√	√	√	√
Large coil (Inner Dia 550mm,630mm) 100kg,150kg,200kg,250kg,350kg	√	√	√	√	√
Metal spool (Inner Dia 300mm) 25kg	√	√	√	√	√

SUBMERGED ARC WELDING WIRE

FRN-H10Mn2

AWS A5.17 EH14
BS EN 756-S3
ISO 14171-A-S3
JIS W41
GB/T5293-99 H10Mn2

Introduction: It is a kind of high-manganese type welding wire. It matches with low-manganese and low-silicon type welding flux. It is not sensitive to the rust on the base metal. It has excellent bead molding and slag detachability. Monopole or dipole. AC/DC.

Uses: Used together with fused flux HJ350 or sintered flux SJ101. Used for both high speed welding and filling welding on 50kg class base metals.
The deposited metal has very stable mechanical properties.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	P	S	Cu	other
0.013	1.87	0.05	0.013	0.011	0.020	Cr: 0.018 Ni: 0.015

Typical Mechanical Properties of The Deposited Metal(Using with SJ101)

Yield Strength $R_{eL}/R_{p0.2}$ (Mpa)	Tensile Strength R_m (Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
440	530	30	-20℃	150

Packing terms

Diameter	2.0mm	2.4mm	3.2mm	4.0mm	4.8mm
Small coil (Inner Dia 300mm) 25kg	√	√	√	√	√
Large coil (Inner Dia 550mm,630mm) 100kg,150kg,200kg,250kg,350kg	√	√	√	√	√
Metal spool (Inner Dia 300mm) 25kg	√	√	√	√	√

SUBMERGED ARC WELDING WIRE

AWS A5.17 EM13K
BS EN 756-S2Si2
ISO 14171-A-S2Si2
GB/T5293-99 H08MnSi

FRN-H10MnSi

Introduction: It is a kind of welding wire with appropriate manganese and silicon content. It matches with low-manganese and low-silicon type welding flux. It is not sensitive to the rust on the base metal. It has excellent bead molding, excellent slag detachability and high welding efficiency.

Uses: Used together with fused flux SJ301 or sintered flux SJ101. Used for both high speed welding and filling welding on 50kg class base metals. Mostly used for welding boilers, pressure vessels, bridges, ships, etc.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	P	S	Cu	other
0.089	1.01	0.61	0.016	0.016	0.110	

Typical Mechanical Properties of The Deposited Metal(Using with SJ301)

Yield Strength $R_{eL}/R_{p0.2}$ (Mpa)	Tensile Strength R_m (Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
425	535	32	-20℃	110

Packing terms

Diameter	2.0mm	2.4mm	3.2mm	4.0mm	4.8mm
Small coil (Inner Dia 300mm) 25kg	√	√	√	√	√
Large coil (Inner Dia 550mm,630mm) 100kg,150kg,200kg,250kg,350kg	√	√	√	√	√
Metal spool (Inner Dia 300mm) 25kg	√	√	√	√	√

SUBMERGED ARC WELDING WIRE

AWS A5.17 EH12K

FRN-EH12K

Application

FRN-EH12K For welding structures made by 450Mpa-500Mpa tensile strength carbon steels or low alloy steels, such as boiler, bridges, pressure vessels and so on

Typical Chemical Composition of Welding wire (%)

C	Mn	Si	P	S	Cu	other
0.084	1.84	0.65	0.020	0.009	0.046	Cr: 0.020 Ni: 0.021

Typical Mechanical Properties of The Deposited Metal (Using with SJ101)

Yield Strength $R_{eL}/R_{p0.2}$ (Mpa)	Tensile Strength R_m (Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
450	590	26	-20℃	85

Packing terms

Diameter	2.0mm	2.4mm	3.2mm	4.0mm	4.8mm
Small coil (Inner Dia 300mm) 25kg	√	√	√	√	√
Large coil (Inner Dia 550mm,630mm) 100kg,150kg,200kg,250kg,350kg	√	√	√	√	√
Metal spool (Inner Dia 300mm) 25kg	√	√	√	√	√

WELDING FLUX

FRN-SJ101

AWS A5.17 F7A4-EH14
AWS A5.23 F7A0-EA2-A2
AWS A5.17 F7A2-EM12
GB F4A2-H08MnA
F5A4-H10Mn2

Description:

FRN-SJ101 is a kind of fluoride-alkaline-type slag-serial sintered flux, mesh 10-60(2.0-0.3mm）.It has great capacity of sulphur removal, phosphor removal and anti-rust. The technology has good performance, easy to deslag and with fine appearance of weld, even in the narrow gap of deep slope entrance. The metal welding seam has good plasto-toughness, with low reaction of hydrogen and fine cold and heat crack resistance.

Usage:

It can be applied to different welding wires (such as H08MnA, H10Mn2, H08MnMoA, H08Mn2MoA, etc.) and is fit for welding of low-carbon steel and low alloy steel. Moreover, it can be used for fast welding of pipeline steel and for welding of thick wall structures of different high-tensile steel.

Cautions:

1.The oil soil, moisture ,iron and other foreign substances must be removed from the welding joint.
2.It is better to use direct current.
3.The welding flux must be baked under 300-350℃ for 2 hours.

Typical Chemical Composition of Welding flux (%)

SiO_2+TiO_2	Al_2O_3	CaO+MgO	CaF_2	S	P
15～20	25～30	25～30	15～20	≤0.05	≤0.05

(Basicity of the Flux):BⅡW=1.6～1.8

Typical Mechanical Properties of The Deposited Metal

Wires	Standard Models	Yield Strength $б_s$ (Mpa)	Tensile Strength $б_b$ (Mpa)	Ballistic work (J)	Specific Elongation $δ_5$ (%)
H08MnA	F4A2- H08MnA	≥340	≥420	≥27(-20℃)	≥22%
H10Mn2	F5A4-H10Mn2	≥410	≥490	≥27(-40℃)	≥22%

WELDING FLUX

FRN-SJ301

AWS A5.17 F6A2-EL12
F7A0-EM12K
GB/T5293-1999 F4A2-H08A
F5A2-H08MnA

Description:

FRN-SJ301 is a kind of silicon-calcium-type sintered flux, mesh 10-40(2.0-0.45mm) and basicity -- 1.0-1.1. Either alternating or direct current can be used, but welding wires must be connected with the positive electrode when direct current is used. The welding technology has good performance, fine detachability and fine appearance of weld.

Usage:

The flux is fit for the submerge-arc welding of low-carbon steel and low-alloy steel used together with appropriate wires (such as H08A, H08MnA and H08MnMoA), as well as the fast single-way and double-surface welding of thin steel sheet, and it is usually used for the submerge-arc welding of liquefied gas storage tanks, gas bottles and pipeline steel.

Cautions:

1.The oil soil, moisture, iron rust and other foreign substances must be removed from the welding joint.
2.The welding flux must be baked under 300-350℃ for 2 hours.
3.It's better to use direct current.

Typical Chemical Composition of Welding flux (%)

SiO_2+TiO_2	Al_2O_3+MnO	CaO+MgO	CaF_2	S	P
30～40	25～30	20～30	5～13	≤0.05	≤0.05

Typical Mechanical Properties of The Deposited Metal

Wires	Standard Models	Yield Strength $б_s$ (Mpa)	Tensile Strength $б_b$ (Mpa)	Ballistic work (J)	Specific Elongation $δ_5$ (%)
HO8A	F4A2-HO8A	≥350	≥420	≥27(-20℃)	≥22%
HO8MnA	F5A4-HO8MnA	≥410	≥500	≥27(-40℃)	≥22%

WELDING FLUX

FRN-SJ302

AWS A5.17 F6A2-EL12
F7A2-EL12
GB/T5293-1999 F4A2-H08A
F5A2-H08MnA

Description:

FRN-SJ302 is a kind of silicon-calcium-type medium sintered flux, B∥W=1.0-1.1, mesh 10-40(2.0-0.45mm).Either alternating or direct current can be used. The welding bead shapes well and the welding slag is "short slag". And the welding seam has fine toughness and moisture and crack resistance.

Usage:

When applied to welding wires (H08A or H08MnA),it can weld boilers, pipeline steel and common steel.

Cautions:

1.The oil soil, moisture, iron rust and other foreign substances must be removed from the welding joint.
3.The welding flux must be baked under 300-350℃ for 2 hours before welding.

Typical Chemical Composition of Welding flux (%)

SiO_2+TiO_2	Al_2O_3	CaO+MgO	CaF_2	S	P
20～30	30～40	15～25	7～10	≤0.06	≤0.06

Typical Mechanical Properties of The Deposited Metal

Wires	Standard Models	Yield Strength $б_s$ (Mpa)	Tensile Strength $б_b$ (Mpa)	Ballistic work (J)	Specific Elongation $δ_5$ (%)
H08A	F4A2-HO8A	≥350	≥420	≥27	≥22%
H08MnA	F5A4-HO8MnA	≥410	≥490	≥27	≥22%

WELDING FLUX

FRN-SJ501

AWS A5.17 F6A2-EL12
F7A0-EM12
GB/T5293-1999 F4A2-H08A
F5A2-H08MnA

Description:

FRN-SJ501 is a kind of aluminum-titanium-type sintered flux, BⅡW=0.5-0.8, mesh 10-40(2.0-0.45mm),Either alternating or direct current can be used. It has hight rust resistance and the sag is easy to drop after welding. The welding bead is smooth and the welding technology has good performance..

Usage:

When applied to various welding wires such as H08A,H08MnA, H08MnMo and H10MnSi,it can weld low-carbon steel, low-alloy steel and pressure vessel steel. And it is fit for fast welding of thin steel sheet like gas steel tanks and membrane water-cooled wall in boiler factory.

Cautions:

1.The oil soil, moisture, iron rust and other foreign substances must be removed from the welding joint.
2.The welding flux must be baked under 300-350℃ for 2 hours before welding.

Typical Chemical Composition of Welding flux (%)

SiO_2+TiO_2	Al_2O_3	CaO+MgO	CaF_2	S	P
25～35	50～60	5～10	5～10	≤0.05	≤0.05

Typical Mechanical Properties of The Deposited Metal

Wires	Standard Models	Yield Strength $б_s$ (Mpa)	Tensile Strength $б_b$ (Mpa)	Ballistic work (J)	Specific Elongation $δ_5$ (%)
H08A	F4A2-HO8A	≥330	≥420	≥27	≥22%
H08MnA	F5A2-HO8MnA	≥400	≥500	≥27	≥22%

WELDING FLUX

FRN-HJ431

AWS A5.17 F6AZ-EL12
GB/T5293-1999 F4A0-H08A
F5A2-H08MnA

Description:

FRN-HJ431 is a kind of smelting-type, red brown to light yellow colored, glassy granulated flux with high manganese and silicon but low fluorine, mesh 8-14(2.5-1.5mm),8-40(2.5-0.45mm) and 14-40(1.5-0.45mm). Either alternating or direct current can be used and Welding wires must be connected with the positive electrode when direct current is used. The welding technology has good performance.

Usage:

When applied to welding wires such as H08A,H08MnA and H10MnSi,it can weld low-carbon steel and some low-alloy steel like 16Mn and 15MnV,as well as ships, boilers and high-pressure vessels. And it also can be used for electro-slag and copper welding.

Cautions:

1.The oil soil,moisture,iron rust and other foreign substances must be removed from the surface before welding.
2.The flux must be baked under 300-400℃ for 2 hours.

Typical Chemical Composition of Welding flux (%)

SiO_2+MnO	Al_2O_3+MgO	CaF+CaO	S	P
74~82	9~12	110~14	≤0.06	≤0.08

Typical Mechanical Properties of The Deposited Metal

Standard Models	Yield Strength $б_s$ (Mpa)	Tensile Strength $б_b$ (Mpa)	Ballistic work (J)	Specific Elongation $δ_5$ (%)
Requirement	≥330	410~550	≥27	≥22
Test Value	388	504	110	30

FLUX CORED WIRE

(Carbon steel FCW)

FRN-YT501T-1

GB/T10045 E501T-1/9
AWS A5.20 E71T-1C/9C
JIS Z3313 YFW-C50DR
EN ISO 17632-B T 49 0 TI-1CA-U

Introduction: FRN-YT501T-1 is a kind of titania type CO2 gas-shielded flux-cored welding wire for low-carbon steel and 490MPa high strength steel.. It has excellent welding performance, soft and stable arc, fewer spatters, good slag detachability and beautiful appearance of weld.
It has excellent low temperature toughness, good crack-resistance and stable and reliable inherent quality.

Uses: Used for welding structures made of carbon steel and low-alloy structural steel with tensile strength higher than or equal to 490MPa. Most widely used for welding some key structures like shipbuilding, mechanical manufacture, pressure vessels, boilers, petroleum machinery, chemical machinery, hoisting machinery, etc.

Typical Chemical Composition of all weld metal （%） （100%CO2）

C	Mn	Si	P	S	Others
0.05	1.35	0.45	0.012	0.010	--

Typical Mechanical Properties of Deposited Metal (100%CO_2)

Yield Strength Re_L(Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5 (%)	Impact test	
			Temperature (℃)	impact energy KV_2 (J)
480	580	27	-20℃	128

Reference Current (DC+)

Wire Diameter(mm)		φ1.2	φ1.4	φ1.6
Current Range(A)	F	120～300	150～380	180～420
	H	120～280	150～320	180～350
	VU OH	120～260	150～270	180～280
	VD	200～300	220～300	250～300

Packing terms

Diameter	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm
Plastic spool 1kg D100mm	√	√	√	√	
Plastic spool 5kg D200mm	√	√	√	√	√
Plastic spool 15kg D270mm	√	√	√	√	√

FLUX CORED WIRE

(Carbon steel FCW)

FRN-YT711

AWS A5.20 E71T-1C-J
GB/T10045 E501T-1L
JIS Z3313 YFW-C502R
EN ISO 17632-B T49 4 T1-1CA-U

Introduction: FRN-YT711 is an all position MAG welding flux cored wire which is designed to exhibit low temperature. FRN-YT711 can be used in a variety of applications, such as for shipbuilding, bridges, oceaneering, machineries, etc. Arc is stable, low spatter generation, beautiful bead appearance, little fume generation and good slag removal.

Typical Chemical Composition of all weld metal (%)

C	Mn	Si	P	S	remark
0.05	1.41	0.39	0.011	0.006	100%CO_2

Typical Mechanical Properties of Deposited Metal (100%CO2) (100%CO_2)

Yield Strength ReL(Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5 (%)	Impact test	
			Temperature (℃)	impact energy KV2 (J)
465	540	29	-40℃	98

Reference Current (DC+)

Wire Diameter(mm)		φ1.2	φ1.4	φ1.6
Current Range(A)	F	120～300	150～380	180～420
	H	120～280	150～320	180～350
	VU OH	120～260	150～270	180～280
	VD	200～300	220～300	250～300

Packing terms

Diameter	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm
Plastic spool 1kg D100mm	√	√	√	√	
Plastic spool 5kg D200mm	√	√	√	√	√
Plastic spool 15kg D270mm	√	√	√	√	√

FLUX CORED WIRE

(Carbon steel FCW)

FRN-YT70MC

AWS A5.20 E70T-1C
GB/T10045 E500T-1
JIS Z3313 YFW-C50DM
EN ISO 17632-B T49 2 T1-0CA-H10

Introduction: FRN-YT70MC is a metal cored wire for flat or horizontal fillet MAG welding of mild and 490N/mm2 high tensile steel. With high welding speed, good bead appearance, excellent arc stability and low spatter generation. Slag is less and multilayer welding can be performed without removing slag.

Uses: Used for welding structures made of carbon steel and low-alloy structural steel with tensile strength higher than or equal to 490MPa. Most widely used for welding some key structures like shipbuilding, mechanical manufacture, pressure vessels, boilers, petroleum machinery, chemical machinery, hoisting machinery, etc.

Typical Chemical Composition of all weld metal (%)（100%CO2）

C	Mn	Si	P	S	Others
0.05	1.47	0.41	0.013	0.008	--

Typical Mechanical Properties of Deposited Metal (100%CO2) (CO_2 Shielding Gas)

Yield Strength Re_L(Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	impact energy KV_2 (J)
480	560	29	-20℃	120

Reference Current （DC+）

Wire Diameter(mm)		φ1.2	φ1.4	φ1.6
Current Range(A)	F	150～350	170～400	200～450
	FF	180～350	200～350	270～400

Packing terms

Diameter	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm
Plastic spool 1kg D100mm	√	√	√	√	
Plastic spool 5kg D200mm	√	√	√	√	√
Plastic spool 15kg D270mm	√	√	√	√	√
Drum packing 100-250kg				√	√

FLUX CORED WIRE

(Carbon steel FCW)

FRN-YT71T-5

AWS A5.20 E71T-5C/5M
GB/T10045 E501T-5/5M
JIS Z3313 YFW-A502B
EN ISO 17632-B T49 3 T5-1C/MA

Introduction: FRN-Y71T-5 is a kind of calcium oxide-calcium fluoride type CO2 gas-shielded flux-cored welding wire for low-carbon steel and 490MPa high strength steel. It has excellent welding performance, stable arc, good slag detachability, beautiful appearance of weld. Suitable for all welding positions. The weld metal has excellent low temperature toughness above -30℃ and good crack-resistance.

Uses: Used for welding carbon steel and low-alloy structural steel with tensile strength higher than or equal to 490MPa and with excellent low temperature toughness and good crack-resistance. Used for welding some key structures like shipbuilding, vehicles, mechanical manufacture, pressure vessels, petrochemical machinery, hoisting machinery, etc.

Typical Chemical Composition of all weld metal (%) （100%CO2）

C	Mn	Si	P	S	Others
0.07	1.58	0.34	0.022	0.012	--

Typical Mechanical Properties of Deposited Metal (100%CO2)

Yield Strength Re_L(Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5 (%)	Impact test	
			Temperature (℃)	impact energy KV_2 (J)
480	570	31	-30	185

Reference Current （DC+）

Wire Diameter(mm)		φ1.2	φ1.4	φ1.6
Current Range(A)	F H FF	120～300	150～330	180～350
	V	120～240	150～280	180～300

Packing terms

Diameter	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm
Plastic spool 1kg D100mm	√	√	√	√	
Plastic spool 5kg D200mm	√	√	√	√	√
Plastic spool 15kg D270mm	√	√	√	√	√

FLUX CORED WIRE

(Carbon Steel Self-shielded FCW)

FRN-YT71T-11

AWS E71T-11
GB E501T-11
JIS Z3313 YFW-S50GB
EN ISO 17632-B T49 ZT11-1NA

Introduction: FRN-YT71T-11 is a self-shielded flux cored wire for single and multi-pass applications in all positions. Arc is smooth and soft, good welding performance, full slag covering and easy slag removal.

Typical Chemical Composition of weld metal (%)

C	Mn	Si	P	S	Al	Shielded Gas
0.08	0.60	0.14	0.012	0.009	1.22	None

Typical Mechanical Properties of Deposited Metal (None Gas Shielded)

Yield Strength ReL(Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5 (%)	Impact test	
			Temperature (℃)	impact energy KV2 (J)
480	530	23	--	--

Reference Current （DC-）

Wire Diameter(mm)		φ1.2	φ1.6	Φ2.0
Current Range(A)	F H FF	80～220	160～280	180～300
	V	80～180	120～220	--

Packing terms

Diameter	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm			
Plastic spool 5kg D200mm	√	√	
Plastic spool 15kg D270mm	√	√	√

FLUX CORED WIRE

(Carbon Steel Self-shielded FCW)

AWS A5.20 E71T-GS
GB/T10045 E501T-GS
JIS Z3313 YFW-S50GB
EN ISO 17632-B T49 Z TG-1NS

FRN-YT71T-GS

Introduction: self-shielded flux cored wire for single pass applications in all positions. Arc is smooth and soft, good welding performance, full slag covering and easy slag removal.

Uses: FRN-YT71T-GS is suitable for welding of mild on bridge, oil production platform, petroleum pipeline and its dabber.

Typical Chemical Composition of weld metal (%)

C	Mn	Si	P	S	Al	Shielded Gas
0.09	0.88	0.34	0.012	0.009	1.32	None

Typical Mechanical Properties of Deposited Metal (None Gas Shielded)

Yield Strength ReL(Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5 (%)	Impact test	
			Temperature (℃)	impact energy KV_2 (J)
--	540	--	--	--

Reference Current （DC+）

Wire Diameter(mm)		φ1.2	φ1.6	Φ2.0
Current Range(A)	F H FF	80～220	160～280	180～300
	V	80～180	120～220	--

Packing terms

Diameter	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm
Plastic spool 1kg D100mm	√	√	√		
Plastic spool 5kg D200mm	√	√	√	√	
Plastic spool 15kg D270mm	√	√	√	√	√

FLUX CORED WIRE

(Heat Resisting Steel FCW)

AWS A5.29 E81T1-B2C
GB/T17493 E551T1-B2C
JIS Z3318 YF1CM-C
EN ISO 17634-B T55 Z T1-1C-1CM

FRN-YT81B2

Introduction: It is a titania type flux cored wire for all-position welding and be used for welding of 1.0%Cr-0.5%Mo high temperature steel. Arc is stable, low spatter generation, beautiful bead appearance and good slag removal.

Uses: Suitable for welding of 1.0%Cr-0.5%Mo high temp. steel for power plant, boilers, pressure vessel, chemical industry, etc.

Typical Chemical Composition of weld metal (%) （100%CO2）

C	Mn	Si	P	S	other
0.07	1.09	0.59	0.012	0.008	Cr：1.27 Mo：0.52

Typical Mechanical Properties of Deposited Metal (100%CO2)

Yield Strength ReL(Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5 (%)	PWHT
520	640	25	（690℃±15℃）x1h

Reference Current (DC+)

Wire Diameter(mm)		φ1.2	φ1.4	φ1.6
Current Range(A)	F	120～280	150～300	180～320
	H	120～260	150～280	180～300
	VU OH	120～240	150～260	180～280
	VD	200～260	220～280	250～300

Packing terms

Diameter	1.2mm	1.4mm	1.6mm
Plastic spool 1kg D100mm	√	√	
Plastic spool 5kg D200mm	√	√	√
Plastic spool 15kg D270mm	√	√	√

FLUX CORED WIRE

(Heat Resisting Steel FCW)

AWS A5.29 E91T1-B3C
GB/T17493 E621T1-B3C
JIS Z3318 YF2CM-C
EN ISO 17634-B T62 Z T1-1C-2CM

FRN-YT91B3

Introduction: FRN-YT91B3 is a kind of titania type flux-cored welding wire for heat-resistant steel. It has excellent welding performance, fewer spatters, stable arc, good slag detachability, beautiful appearance of weld and high welding efficiency.

Uses: Suitable for welding 2.25％Cr－1％Mo steel below 520℃.

Typical Chemical Composition of weld metal (%) （100%CO2）

C	Mn	Si	P	S	Others
0.05	1.05	0.35	0.018	0.011	Cr：2.25 Mo：1.10

Typical Mechanical Properties of Deposited Metal (100%CO2) (100%CO_2)

Yield Strength ReL(Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5 (%)	PWHT
590	680	23	（690℃±15℃）x1h

Reference Current (DC+)

Wire Diameter(mm)		φ1.2	φ1.4	φ1.6
Current Range(A)	F	120～300	150～380	180～430
	FF	120～280	150～320	180～380
	VU OH	120～260	150～270	180～280
	H	200～280	220～320	250～330

Packing terms

Diameter	1.2mm	1.4mm	1.6mm
Plastic spool 1kg D100mm	√	√	
Plastic spool 5kg D200mm	√	√	√
Plastic spool 15kg D270mm	√	√	√

FLUX CORED WIRE

(Low Temp. service Steel FCW)

FRN-YT81Ni1

AWS A5.29 E81T1-Ni1C
GB/T17493 E551T1-Ni1C
JIS Z3313 YFW-C602R
EN ISO 17632-B T55 3 T1-1CA-N2

Introduction: FRN-YT81Ni1 is a titania type flux cored wire for all-position welding and be used for welding of 560N/mm2 class aluminium-killed steel for low temperature service. The weld metal contains about 1%Ni and maintain good impact value(as welded) at low temperatures down to -30℃. Arc is stable, low spatter generation, beautiful bead appearance and good slag removal.

Uses: Used for welding structures made of 590MPa low-alloy high strength steel. Widely used for welding some key structures like hoisting machinery, bridges, storage tanks, steel-frame structures, etc.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	P	S	other
0.04	1.36	0.50	0.011	0.008	Ni：1.03 Mo：0.12

Typical Mechanical Properties of Deposited Metal (100%CO2)

Yield Strength ReL(Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5 (%)	Impact test	
			Temperature (℃)	impact energy KV_2 (J)
520	610	24	-30	110

Reference Current (DC+)

Wire Diameter(mm)		φ1.2	φ1.4	φ1.6
Current Range(A)	F	120～300	150～380	180～430
	FF	120～280	150～320	180～380
	VU OH	120～240	150～260	180～280
	H	200～260	220～280	250～300

Packing terms

Diameter	1.2mm	1.4mm	1.6mm
Plastic spool 1kg D100mm	√	√	
Plastic spool 5kg D200mm	√	√	√
Plastic spool 15kg D270mm	√	√	√

FLUX CORED WIRE

(Low Temp. service Steel FCW)

FRN-YT81Ni2

AWS A5.29 E81T1-Ni2C
GB/T17493 E551T1-Ni2C
JIS Z3313 T57 4 T1-1CA-N5-U
EN ISO 17632-B T55 4 T1-1CA-N5

Introduction: FRN-YT81Ni2 is a kind of titania type CO2 gas-shielded flux-cored welding wire. It has excellent welding performance, soft and stable arc, fewer spatters, good slag detachability and beautiful appearance of weld. All-position welding. The weld metal has been given toughening treatment by microelements, so it has excellent low temperature toughness above -40℃ and good crack-resistance.

Uses: Used for welding structures made of 550MPa low-alloy high strength steel. Widely used for welding some key structures like hoisting machinery, bridges, storage tanks, steel-frame structures, etc.

Typical Chemical Composition of all weld metal（%）

C	Mn	Si	P	S	Others
0.05	1.05	0.40	0.015	0.010	Ni：2.25

Typical Mechanical Properties of Deposited Metal (100%CO2)

Yield Strength ReL(Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5 (%)	Impact test	
			Temperature (℃)	impact energy KV2 (J)
550	625	24	-40	96

Reference Current (DC+)

Wire Diameter(mm)		φ1.2	φ1.4	φ1.6
Current Range(A)	F	120～300	150～380	180～430
	FF	120～280	150～320	180～380
	VU OH	120～240	150～260	180～280
	H	200～260	220～280	250～300

Packing terms

Diameter	1.2mm	1.4mm	1.6mm
Plastic spool 1kg D100mm	√	√	
Plastic spool 5kg D200mm	√	√	√
Plastic spool 15kg D270mm	√	√	√

FLUX CORED WIRE

(Low Temp. service Steel FCW)

AWS A5.20 E81T1-K2C
GB/T17493 E551T1-K2C
JIS Z3313 YFL-C506R
EN ISO 17632-B T55 6 T1-1CA-N3-U

FRN-YT81K2

Introduction: FRN-YT81K2 is a kind of titania type CO2 gas-shielded flux-cored wire be used for all positions. It has excellent welding performance, soft and stable arc, fewer spatters, good slag detachability and beautiful appearance of weld. The weld metal has been given toughening treatment by microelements, so it has excellent low temperature toughness above -30℃ and good crack-resistance.

Uses: Used for welding structures made of 550MPa low-alloy high strength steel. Widely used for welding some key structures like hoisting machinery, bridges, storage tanks, steel-frame structures, etc.

Typical Chemical Composition of weld metal (%)（100%CO2）

C	Mn	Si	P	S	Others
0.04	1.35	0.35	0.016	0.011	Ni：1.55

Typical Mechanical Properties of Deposited Metal (100%CO2) (100%CO_2)

Yield Strength R_{eL}(Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5 (%)	Impact test	
			Temperature (℃)	impact energy KV_2 (J)
540	620	26	-30	110

Reference Current (DC+)

Wire Diameter(mm)		φ1.2	φ1.4	φ1.6
Current Range(A)	F	120～300	150～380	180～430
	FF	120～280	150～320	180～380
	VU OH	120～240	150～260	180～280
	H	200～260	220～280	250～300

Packing terms

Diameter	1.2mm	1.4mm	1.6mm
Plastic spool 1kg D100mm	√	√	
Plastic spool 5kg D200mm	√	√	√
Plastic spool 15kg D270mm	√	√	√

FLUX CORED WIRE

(Atmospheric Corrosion Resisting Steel FCW)

AWS A5.29 E81T1-W2C
GB/T17493 E551T1-W2C
JIS Z3320 YFA-58W
EN ISO 17632-B T55 3 T1-1CA-NCC

FRN-YT81W2

Introduction: FRN-YT81W2 is a titania type flux cored wire for all-position welding and be used for welding of high strength weather-proof steel. Arc is stable, low spatter generation, beautiful bead appearance and good slag removal. The weld-metal contains Cr, Ni, Cu and makes excellent weather-proof properties and crack resistance.

Uses: Used for welding 550MPa atmospheric corrosion-resistant steel structures, such as railway locomotive vehicles, offshore engineering, bridges, etc.

Typical Chemical Composition of all weld metal (%)

C	Mn	Si	P	S	Others
0.05	1.14	0.40	0.016	0.014	Cu：0.38 Ni：0.45 Cr：0.50

Typical Mechanical Properties of Deposited Metal (100%CO2)

Yield Strength Re_L(Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5 (%)	Impact test	
			Temperature (℃)	impact energy KV_2 (J)
540	610	27	-30	90

Reference Current (DC+)

Wire Diameter(mm)		φ1.2	φ1.4	φ1.6
Current Range(A)	F	120～300	150～380	180～430
	FF	120～280	150～320	180～380
	VU OH	120～240	150～260	180～280
	H	200～260	220～280	250～300

Packing terms

Diameter	1.2mm	1.4mm	1.6mm
Plastic spool 1kg D100mm	√	√	
Plastic spool 5kg D200mm	√	√	√
Plastic spool 15kg D270mm	√	√	√

FLUX CORED WIRE

(Stainless steel FCW)

AWS A5.22 E308LT1-1
GB/T17853 E308LT1-1
JIS Z3323 YF308LC
EN ISO 17633-B TS308L-FB1

FRN-YS308L

Introduction: FRN-YS308L is a kind of stainless steel gas-shielded flux-cored welding wire. It has soft and stable arc, fewer spatters, beautiful appearance of weld, good slag detachability and excellent welding performance. All position welding. The deposited metal has excellent mechanical properties and intercrystalline corrosion-resistance.

Uses: Used for welding corrosion-resistant 0Cr19Ni9 and 0Cr19Ni11Ti stainless steel structures below 300℃. Used for welding some stainless steel materials like 301, 302, 304, 304L, 308, 308L, etc.

Typical Chemical Composition of all weld metal (%)（100%CO2）

C	Mn	Si	P	S	Others
0.03	1.40	0.42	0.020	0.005	Cr：20.05 Ni：9.98

Typical Mechanical Properties of Deposited Metal (100%CO2)

Yield Strength ReL(Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5 (%)	Impact test	
			Temperature (℃)	impact energy KV2 (J)
--	560	42	--	--

Reference Current (DC+)

Wire Diameter(mm)	1.0	1.2	1.4	1.6
Welding Current(A)	80～160	120~250	140~280	160~300
Welding Voltage(V)	22~28	24~30	24~31	24~32

Packing terms

Diameter	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm
Plastic spool 1kg D100mm	√	√	√		
Plastic spool 5kg D200mm	√	√	√	√	
Plastic spool 15kg D270mm	√	√	√	√	√

FLUX CORED WIRE

(Stainless steel FCW)

AWS A5.22 E309LT1-1
GB/T17853 E309LT1-1
JIS Z3323 YF309LC
EN ISO 17633-B TS309L-FB1

FRN-YS309L

Introduction: FRN-YS309L is a kind of stainless steel gas-shielded flux-cored welding wire. It has soft and stable arc, fewer spatters, beautiful appearance of weld, good slag detachability and excellent welding performance. All-position welding. The deposited metal has excellent crack-resistance.

Uses: Used for stainless steel structures of the same types, composite steel, dissimilar steel, etc. in the production of equipment of synthetic fiber, petrochemical industry, etc., and also used for surfacing welding on nuclear reactors and transition layers of pressure vessel inner surfaces and welding inner parts of synthesis towers.

Typical Chemical Composition of all weld metal (%) （100%CO2）

C	Mn	Si	P	S	Others
0.03	1.56	0.45	0.022	0.008	Cr：24.50 Ni：12.85

Typical Mechanical Properties of Deposited Metal (100%CO2)

Yield Strength Re_L(Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5 (%)	Impact test	
			Temperature (℃)	impact energy KV_2 (J)
---	590	38	---	---

Packing terms

Diameter	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm
Plastic spool 1kg D100mm	√	√	√		
Plastic spool 5kg D200mm	√	√	√	√	
Plastic spool 15kg D270mm	√	√	√	√	√

FLUX CORED WIRE

(Stainless steel FCW)

AWS A5.22 E316LT1-1
GB/T17853 E316LT1-1
JIS Z3323 YF316LC
EN ISO 17633-B TS316L-FB1

FRN-YS316L

Introduction: FRN-YT316LT1-1 is a kind of stainless steel gas-shielded flux-cored welding wire. It has excellent welding performance. All-position welding. The deposited metal has excellent heat-resistance, corrosion-resistance and crack-resistance.

Uses: Used for welding ultra-low-carbon 00Cr18Ni12Mo3 stainless steel, and also used for welding Cr stainless steel which does not need heat treatment after welding, composite steel and dissimilar steel.

Typical Chemical Composition of all weld metal (%) （100%CO2）

C	Mn	Si	P	S	other
0.03	1.35	0.55	0.025	0.010	Cr 18.560 Ni 12.750 Mo 2.280

Typical Mechanical Properties of Deposited Metal (100%CO2)

Yield Strength ReL(Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5 (%)	Impact test	
			Temperature (℃)	impact energy KV2 (J)
---	580	45	---	---

Packing terms

Diameter	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm
Plastic spool 1kg D100mm	√	√	√	√	
Plastic spool 5kg D200mm	√	√	√	√	√
Plastic spool 15kg D270mm	√	√	√	√	√

FLUX CORED WIRE

(Gas shielded FCW for hardfacing)

FRN-YD132

Introduction: It is a kind of titania type CO2 gas-shielded flux-cored welding wire used for surfacing welding. FRN-YD132 is a kind of CrMo type CO2 gas-shielded flux-cored welding wire used for surfacing welding. It has stable arc in surfacing welding and good slag detachability.

Uses: It is a kind of titania type CO2 gas-shielded flux-cored welding wire used for surfacing welding. Suitable for the situation of impact-resistance and medium wear. Used for repairing the surfaces of low-carbon steel, medium-carbon steel or low-alloy steel parts, such as the surfacing welding and repairing of mining machinery and agricultural machinery

Typical Chemical Composition of weld metal (%)

C	Mo	Cr
≤0.50	≤1.50	≤3.00

Hardness of Surfacing Layer: HRC≥30

Reference Current (DC+)

Wire Diameter(mm)	1.2	1.4	1.6
Welding Current(A)	180~220	200~260	220~300

Packing terms

Diameter	1.2mm	1.4mm	1.6mm
Plastic spool 5kg D200mm	√	√	√
Plastic spool 15kg D270mm	√	√	√

FLUX CORED WIRE

(Gas shielded FCW for hardfacing)

FRN-YD172

Introduction: It is a kind of titania type CO2 gas-shielded flux-cored welding wire used for surfacing welding. FRN-YD172 is a kind of CrMo type CO2 gas-shielded flux-cored welding wire used for surfacing welding. It has stable arc in surfacing welding and good slag detachability.

Uses: Suitable for the situation of impact-resistance and medium wear. Used for surfacing welding on some worn-out gears, dredge buckets, tractor blades, deep digging blade ploughs, mining machinery, etc.

Typical Chemical Composition of all weld metal (%)

C	Mo	Cr
≤0.50	≤2.50	≤2.50

Hardness of Surfacing Layer: HRC≥40

Reference Current (DC+)

Wire Diameter(mm)	1.2	1.4	1.6
Welding Current(A)	180~220	200~260	220~300

Packing terms

Diameter	1.2mm	1.4mm	1.6mm
Plastic spool 5kg D200mm	√	√	√
Plastic spool 15kg D270mm	√	√	√

FLUX CORED WIRE

(Gas shielded FCW for hardfacing)

FRN-YD212

Introduction: It is a CO2 gas shielded hardfacing flux cored wire and be used for welding of single or multipass for damaged parts surface, such as gear, dredger bucket, mining machineries, etc. Arc is stable, low spatter generation and good slag removal.

Typical Chemical Composition of weld metal (%)

C	Mo	Cr
0.43	2.32	4.46

Hardness of Surfacing Layer: HRC≥50

Reference Current (DC+)

Wire Diameter(mm)	1.2	1.4	1.6
Welding Current(A)	180~220	200~260	220~300

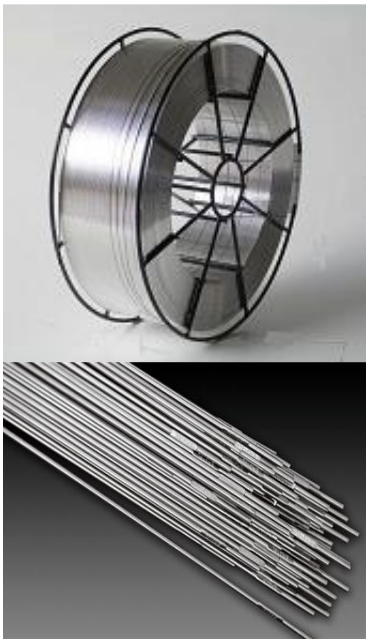
Packing terms

Diameter	1.2mm	1.4mm	1.6mm
Plastic spool 5kg D200mm	√	√	√
Plastic spool 15kg D270mm	√	√	√

STAINLESS STEEL WELDING WIRE

FRN-ER307

AWS A5.9 ER307
BS EN ISO 143-43-B-SS307
JIS Z3321 Y307
GB 4241/2 H09Cr21Ni9Mn4Mo



Introduction: The main ingredient of FRN-ER307 is 18Cr-8Ni-4Mn, it is austenitic stainless steel MIG welding wire, can be used for all-position welding. Have low sensitivity of deposited metal to crack, suitable for the welding of non-magnetic, high manganese steel, indurative corrosion resistant steel. It has excellent welding performance, smooth and beautiful bead and fewer spatters.

Uses: used in nuclear submarines, ballistic steel and other special occasions which require non-magnetic, and can also be used for dissimilar steel which is difficult to weld and easy to crack.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	Cr	Ni	Mo	other
0.080	4.50	0.43	20.02	9.52	0.97	P: 0.012 S: 0.011

Size and recommended current range

Diameter(mm)	0.8	0.9	1.0	1.2	1.6	2.0
Welding Current(A)	70-150	--	100-200	140-220	--	--

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm		√	√	√	√	√	√
Plastic spool 5kg D200mm		√	√	√	√	√	√
Plastic spool 15kg D270mm		√	√	√	√	√	√
Metal basket 15kg K300mm		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

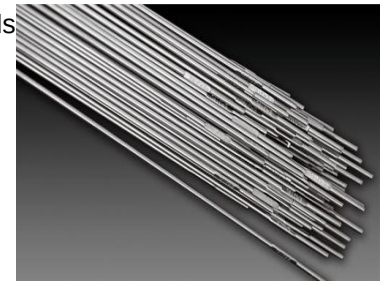
STAINLESS STEEL WELDING WIRE

FRN-ER308

AWS A5.9 ER308
BS EN ISO 143-43-B-SS308
JIS Z3321 Y308
GB 4241/2 H08Cr21Ni10Si

Introduction: The main ingredient of FRN-ER308 is 18Cr-8Ni, is the most widely used austenitic stainless steel MIG welding materials, can be used for all-position welding. It has excellent welding performance, smooth and beautiful bead and fewer spatters, deposited metal contain Ferritic, good performance on crack resistance and corrosion resistance.

Uses: Widely used for welding petrochemical, pressure vessels, food machinery, medical equipment, fertilizer equipment, textile machinery, nuclear reactors, such as welding 12Cr18Ni9 (SUS 302), 06Cr19Ni10 (SUS 304) and other materials



Typical Chemical Composition of welding wire (%)

C	Mn	Si	Cr	Ni	Mo	other
0.040	1.80	0.31	20.15	9.52	0.43	P: 0.013 S: 0.008

Size and recommended current range

Diameter(mm)	0.8	0.9	1.0	1.2	1.6	2.0
Welding Current(A)	70-150	--	100-200	140-220	--	--

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm		√	√	√	√	√	√
Plastic spool 5kg D200mm		√	√	√	√	√	√
Plastic spool 15kg D270mm		√	√	√	√	√	√
Metal basket 15kg K300mm		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

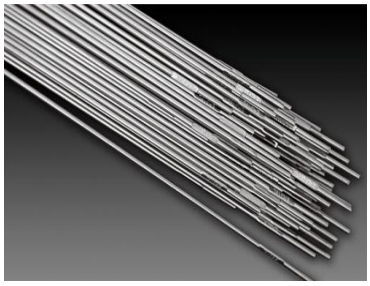
STAINLESS STEEL WELDING WIRE

FRN-ER308L

AWS A5.9 ER308L
BS EN ISO 143-43-B-SS308L
JIS Z3321 Y308L
GB 4241/2 H03Cr21Ni10Si

Instruction: The main ingredient of FRN-ER308L is ultra C-18Cr-8Ni, is the most widely used austenitic stainless steel MIG welding materials, can be used for all-position welding. It has excellent welding performance, smooth and beautiful bead and fewer spatters, deposited metal contain Ferritic, good performance on crack resistance and corrosion resistance.

Uses: Widely used for welding petrochemical, pressure vessels, food machinery, medical equipment, fertilizer equipment, textile machinery, nuclear reactors, such as welding 022Cr19Ni10 (SUS 304L) and other materials.



Typical Chemical Composition of welding wire (%)

C	Mn	Si	Cr	Ni	Mo	other
0.023	1.63	0.40	20.12	10.35	0.37	P: 0.013 S: 0.009

Size and recommended current range

Diameter(mm)	0.8	0.9	1.0	1.2	1.6	2.0
Welding Current(A)	70-150	--	100-200	140-220	--	--

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm		√	√	√	√	√	√
Plastic spool 5kg D200mm		√	√	√	√	√	√
Plastic spool 15kg D270mm		√	√	√	√	√	√
Metal basket 15kg K300mm		√	√	√	√	√	√

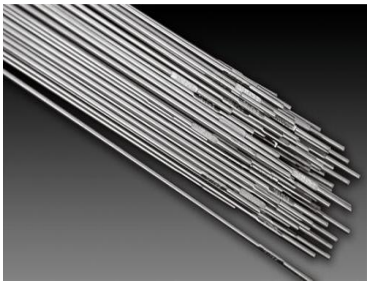
Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

STAINLESS STEEL WELDING WIRE

FRN-ER308LSi

AWS A5.9 ER308LSi
BS EN ISO 143-43-B-SS308LSi
JIS Z3321 Y308LSi
GB 4241/2 H03Cr21Ni10Si1



Introduction: The main ingredient of FRN-ER308LSi is ultra C-18Cr-8Ni, austenitic stainless steel MIG welding material widely used, can be used for all-position welding. By the addition of Si, the molten iron flow very well, thus forming more beautiful bead, feeding smooth, stable arc, fewer spatter.

Uses: Widely used for welding petrochemical, pressure vessels, food machinery, medical equipment, fertilizers and other related industries, such as welding 022Cr19Ni10 (SUS 304L) and other materials.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	Cr	Ni	Mo	other
0.023	2.20	0.75	19.82	10.54	0.36	P 0.018 S 0.011

Size and recommended current range

Diameter(mm)	0.8	0.9	1.0	1.2	1.6	2.0
Welding Current(A)	70-150	--	100-200	140-220	--	--

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm		√	√	√	√	√	√
Plastic spool 5kg D200mm		√	√	√	√	√	√
Plastic spool 15kg D270mm		√	√	√	√	√	√
Metal basket 15kg K300mm		√	√	√	√	√	√

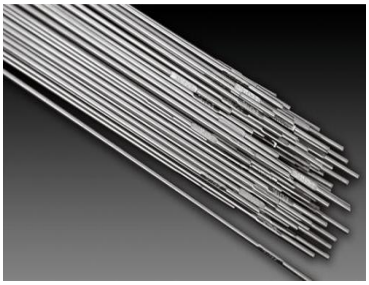
Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

STAINLESS STEEL WELDING WIRE

FRN-ER309

AWS A5.9 ER309
BS EN ISO 143-43-B-SS309
JIS Z3321 Y309
GB 4241/2 H12Cr24Ni13Si



Introduction: The main ingredient of FRN-ER309 is 22Cr-12Ni, stainless steel MIG wire, can be used for all-position welding. It has excellent welding performance, smooth and beautiful bead and fewer spatters, deposited metal contain Ferritic, has good performance on crack resistance and corrosion resistance. due to the high content of the alloy, so have good performance of temperature resistance.

Uses: Used for welding carbon steel and stainless steel dissimilar materials or applied to poor toughness martensite, pearlite stainless steel . Applications such as petrochemical, fire station and other industries.

Typical Chemical Composition of welding wire (%)

C	Mn	Si	Cr	Ni	Mo	other
0.081	1.61	0.40	23.85	13.15	0.23	P: 0.012 S: 0.013

Size and recommended current range

Diameter(mm)	0.8	0.9	1.0	1.2	1.6	2.0
Welding Current(A)	70-150	--	100-200	140-220	--	--

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm		√	√	√	√	√	√
Plastic spool 5kg D200mm		√	√	√	√	√	√
Plastic spool 15kg D270mm		√	√	√	√	√	√
Metal basket 15kg K300mm		√	√	√	√	√	√

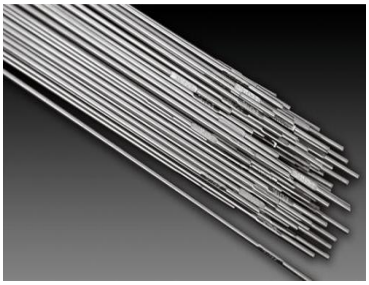
Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

STAINLESS STEEL WELDING WIRE

FRN-ER309L

AWS A5.9 ER309L
BS EN ISO 143-43-B-SS309L
JIS Z3321 Y309L
GB 4241/2 H03Cr24Ni13Si



Introduction: The main ingredient of FRN-ER309L is C-22Cr-12Ni, stainless steel MIG wire, can be used for all-position welding. It has excellent welding performance, smooth and beautiful bead and fewer spatters, deposited metal contain Ferritic, has good performance on crack resistance and corrosion resistance. due to the high content of the alloy, so have good performance of temperature resistance.

Uses: Used for welding carbon steel and stainless steel dissimilar materials , petrochemical industry such as the reaction vessel wall cladding transition metal or applied to poor toughness martensite, ferritic stainless steel .

Typical Chemical Composition of welding wire (%)

C	Mn	Si	Cr	Ni	Mo	other
0.021	1.95	0.34	23.90	12.92	0.39	P: 0.012 S: 0.008

Size and recommended current range

Diameter(mm)	0.8	0.9	1.0	1.2	1.6	2.0
Welding Current(A)	70-150	--	100-200	140-220	--	--

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm		√	√	√	√	√	√
Plastic spool 5kg D200mm		√	√	√	√	√	√
Plastic spool 15kg D270mm		√	√	√	√	√	√
Metal basket 15kg K300mm		√	√	√	√	√	√

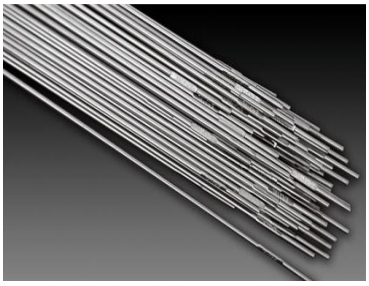
Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

STAINLESS STEEL WELDING WIRE

FRN-ER309LSi

AWS A5.9 ER309LSi
BS EN ISO 143-43-B-SS309LSi
JIS Z3321 Y309LSi
GB 4241/2 H03Cr24Ni13Si1



Introduction: The main ingredient of FRN-ER309LSi is C-23Cr-13Ni, stainless steel MIG wire, can be used for all-position welding. It has excellent welding performance, smooth and beautiful bead and fewer spatters, By the addition of Si, the molten iron flow very well, due to the low carbon content, so have good performance of corrosion resistance.

Uses: Used for welding carbon steel and stainless steel dissimilar materials , petrochemical industry such as transition metal container wall cladding or applied to poor toughness martensite, ferritic stainless steel .

Typical Chemical Composition of welding wire (%)

C	Mn	Si	Cr	Ni	Mo	other
0.021	2.33	0.78	23.93	13.84	0.46	P: 0.012 S: 0.014

Size and recommended current range

Diameter(mm)	0.8	0.9	1.0	1.2	1.6	2.0
Welding Current(A)	70-150	--	100-200	140-220	--	--

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm		√	√	√	√	√	√
Plastic spool 5kg D200mm		√	√	√	√	√	√
Plastic spool 15kg D270mm		√	√	√	√	√	√
Metal basket 15kg K300mm		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

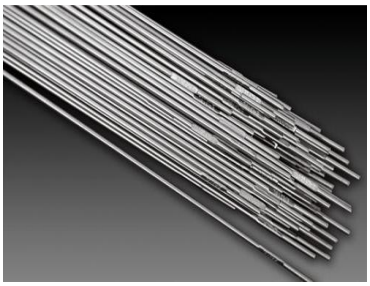
STAINLESS STEEL WELDING WIRE

FRN-ER310

AWS A5.9 ER310
BS EN ISO 143-43-B-SS310
JIS Z3321 Y310
GB 4241/2 H12Cr26Ni21Si

Introduction: The main ingredient of FRN-ER310 is 25Cr-20Ni, austenitic stainless steel MIG wire, can be used for all-position welding. High temperature stability up to 1200 ℃. It has excellent welding performance, smooth and beautiful bead and fewer spatters.

Uses: Often used for welding products such as high-temperature furnaces, coal coking equipment, can also be applied to the composite layer surfacing and welding dissimilar steels.



Typical Chemical Composition of welding wire (%)

C	Mn	Si	Cr	Ni	Mo	other
0.087	2.00	0.38	27.42	21.82	0.35	P:0.011 S:0.009

Size and recommended current range

Diameter(mm)	0.8	1.0	1.2
Welding Current(A)	70-150	100-200	140-220

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm		√	√	√	√	√	√
Plastic spool 5kg D200mm		√	√	√	√	√	√
Plastic spool 15kg D270mm		√	√	√	√	√	√
Metal basket 15kg K300mm		√	√	√	√	√	√

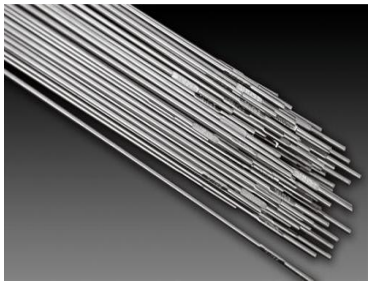
Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

STAINLESS STEEL WELDING WIRE

FRN-ER316

AWS A5.9 ER316
BS EN ISO 143-43-B-SS316
JIS Z3321 Y316
GB 4241/2 H08Cr19Ni12Mo2Si



Introduction: The main ingredient of FRN-ER316 is 18Cr-12Ni-2Mo, stainless steel MIG wire, can be used for all-position welding. It has excellent welding performance, smooth and beautiful bead and fewer spatters. Because it contains Mo, so have good corrosion resistance for acetic acid, sulfurous acid, phosphoric acid and salts.

Uses: Often used for welding petrochemical, fertilizer equipment, such as 06Cr17Ni12Mo2 (SUS 316) and other materials

Typical Chemical Composition of welding wire (%)

C	Mn	Si	Cr	Ni	Mo	other
0.048	1.75	0.45	19.63	12.52	2.50	P: 0.011 S: 0.010

Size and recommended current range

Diameter(mm)	0.8	1.0	1.2
Welding Current(A)	70-150	100-200	140-220

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm		√	√	√	√	√	√
Plastic spool 5kg D200mm		√	√	√	√	√	√
Plastic spool 15kg D270mm		√	√	√	√	√	√
Metal basket 15kg K300mm		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

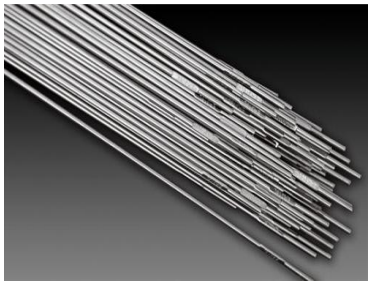
STAINLESS STEEL WELDING WIRE

FRN-ER316L

AWS A5.9 ER316L
BS EN ISO 143-43-B-SS316L
JIS Z3321 Y316L
GB 4241/2 H03Cr19Ni12Mo2Si

Introduction: The main ingredient of FRN-ER316L is C-18Cr-12Ni-2Mo, stainless steel MIG wire, can be used for all-position welding. It has excellent welding performance, smooth and beautiful bead and fewer spatters. Because it contains Mo, so have good corrosion resistance for acetic acid, sulfurous acid, phosphoric acid and salts.

Uses: Often used for welding petrochemical, fertilizer equipment, such as 022Cr17Ni12Mo2(SUS 316L) and other materials



Typical Chemical Composition of welding wire (%)

C	Mn	Si	Cr	Ni	Mo	other
0.023	1.90	0.42	19.12	12.59	2.59	P: 0.009 S: 0.008

Size and recommended current range

Diameter(mm)	0.8	1.0	1.2
Welding Current(A)	70-150	100-200	140-220

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm		√	√	√	√	√	√
Plastic spool 5kg D200mm		√	√	√	√	√	√
Plastic spool 15kg D270mm		√	√	√	√	√	√
Metal basket 15kg K300mm		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

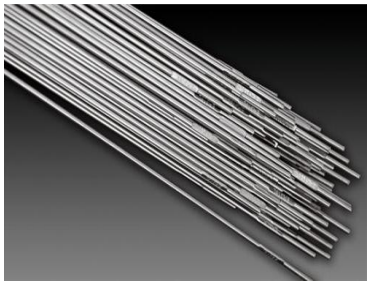
STAINLESS STEEL WELDING WIRE

FRN-ER316LSi

AWS A5.9 ER316LSi
BS EN ISO 143-43-B-SS316LSi
JIS Z3321 Y316LSi
GB 4241/2 H03Cr19Ni12Mo2Si1

Introduction: FRN-ER316LSi is stainless steel MIG wire, can be used for all-position welding. It has excellent welding performance, smooth and beautiful bead and fewer spatters. By the addition of Si, the molten iron flow very well, due to the low carbon content, so have good performance of corrosion resistance.

Uses: Often used for welding petrochemical, fertilizer equipment and other materials For the welding of same type of stainless steel and composite steel, has good corrosion resistance, such as 00Cr17Ni14Mo2 (SUS316L)



Typical Chemical Composition of welding wire (%)

C	Mn	Si	Cr	Ni	Mo	other
0.024	1.61	0.73	18.72	11.54	2.31	P: 0.011 S: 0.010

Size and recommended current range

Diameter(mm)	0.8	1.0	1.2
Welding Current(A)	70-150	100-200	140-220

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm		√	√	√	√	√	√
Plastic spool 5kg D200mm		√	√	√	√	√	√
Plastic spool 15kg D270mm		√	√	√	√	√	√
Metal basket 15kg K300mm		√	√	√	√	√	√

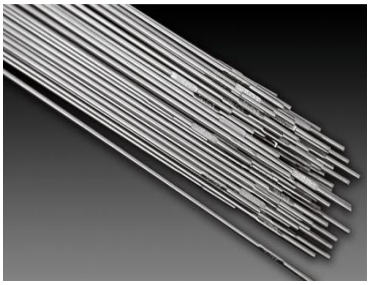
Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

STAINLESS STEEL WELDING WIRE

FRN-ER321

AWS A5.9 ER321
BS EN ISO 143-43-B-SS321
JIS Z3321 Y321
GB 4241/2 H08Cr19Ni10Ti



Introduction: The main ingredient of FRN-ER321 is 18Cr-8Ni-Ti, stainless steel MIG wire, can be used for all-position welding. Adding Ti based on the SUS308, can effectively improve the corrosion resistance, especially to improve the resistance to grain boundary corrosion. It has excellent welding performance, smooth and beautiful bead and fewer spatters.

Uses: Often used for welding food machinery, medical equipment, pressure vessel, petrochemical and other occasions, such as 07Cr19Ni11Ti (SUS 321).

Typical Chemical Composition of welding wire (%)

C	Mn	Si	Cr	Ni	Mo	other
0.038	1.54	0.47	19.60	9.76	0.42	P: 0.015 S: 0.009 Ti: 0.58

Size and recommended current range

Diameter(mm)	0.8	1.0	1.2
Welding Current(A)	70-150	100-200	140-220

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm		√	√	√	√	√	√
Plastic spool 5kg D200mm		√	√	√	√	√	√
Plastic spool 15kg D270mm		√	√	√	√	√	√
Metal basket 15kg K300mm		√	√	√	√	√	√

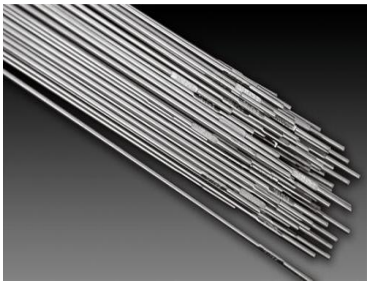
Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

STAINLESS STEEL WELDING WIRE

FRN-ER347

AWS A5.9 ER347
BS EN ISO 143-43-B-SS347
JIS Z3321 Y347
GB 4241/2 H08Cr20Ni10Nb



Introduction: The main ingredient of FRN-ER347 is 19Cr-11Ni-Nb, stainless steel MIG wire, can be used for all-position welding. Adding Nb based on the SUS308, can effectively improve the corrosion resistance, especially to improve the resistance to grain boundary corrosion. It has excellent welding performance, smooth and beautiful bead and fewer spatters.

Uses: Often used for welding food machinery, medical equipment, pressure vessel, petrochemical and other occasions, such as 07Cr19Ni11Ti (SUS 321), 07Cr18Ni11Nb (SUS 347).

Typical Chemical Composition of welding wire (%)

C	Mn	Si	Cr	Ni	Cu	other
0.027	1.80	0.40	20.39	9.92	0.33	P: 0.015 S: 0.012 Mo: 0.44

Size and recommended current range

Diameter(mm)	0.8	1.0	1.2
Welding Current(A)	70-150	100-200	140-220

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm		√	√	√	√	√	√
Plastic spool 5kg D200mm		√	√	√	√	√	√
Plastic spool 15kg D270mm		√	√	√	√	√	√
Metal basket 15kg K300mm		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

STAINLESS STEEL WELDING WIRE

FRN-ER410

AWS A5.9 ER410
BS EN ISO 143-43-B-SS410
JIS Z3321 Y410
GB 4241/2 H12Cr13

Introduction: The main ingredient of FRN-ER410 is 13Cr, martensitic stainless steel MIG wire, can be used for all-position welding.It has excellent welding performance, smooth and beautiful bead and fewer spatters.

Uses: Often used for hydropower stations as well as valves and other wear and corrosion applications, such as 12Cr13 (SUS 410).

Typical Chemical Composition of welding wire (%)

C	Mn	Si	Cr	Ni	Cu	other
0.080	0.41	0.30	11.83	0.19	0.33	P: 0.021 S: 0.011 Mo: 0.35

Size and recommended current range

Diameter(mm)	0.8	1.0	1.2
Welding Current(A)	70-150	100-200	140-220

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm		√	√	√	√	√	√
Plastic spool 5kg D200mm		√	√	√	√	√	√
Plastic spool 15kg D270mm		√	√	√	√	√	√
Metal basket 15kg K300mm		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

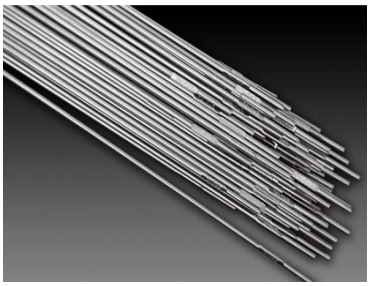
STAINLESS STEEL WELDING WIRE

FRN-ER430

AWS A5.9 ER430
BS EN ISO 143-43-B-SS430
JIS Z3321 Y430
GB 4241/2 H10Cr14

Introduction: The main ingredient of FRN-ER430 is 17Cr, Ferritic stainless steel MIG wire, can be used for all-position welding. It has excellent welding performance, smooth and beautiful bead and fewer spatters.

Uses: Often used for welding corrosion component, such as 10Cr17 (SUS 430) material devices, fence, golf class



Typical Chemical Composition of welding wire (%)

C	Mn	Si	Cr	Ni	Cu	other
0.035	0.43	0.35	16.39	0.22	0.21	P: 0.018 S: 0.012 Mo: 0.55

Size and recommended current range

Diameter(mm)	0.8	1.0	1.2
Welding Current(A)	70-150	100-200	140-220

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 1kg D100mm		√	√	√	√	√	√
Plastic spool 5kg D200mm		√	√	√	√	√	√
Plastic spool 15kg D270mm		√	√	√	√	√	√
Metal basket 15kg K300mm		√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√
TIG/1000mm x 10kg/tube	√	√	√	√	√	√

ALUMINUM ALLOY WELDING WIRE

FRN-ER1100

AWS A5.10 ER1100
GB/T10858-2008 SAl 1100

Instruction: Corrosion resistant pure aluminum wire with good plasticity and for gas protective or argon arc welding.

Uses: Pure aluminum welding wire Used for welding electric power, chemical, food, metallurgical and railway locomotives and other industries related to aluminum

Typical Chemical Composition of welding wire (%)

Cu	Si	Fe	Mn	Mg	Cr	Zn	Ti	Al
0.10	1.00	-	0.05	-	-	0.10	-	99.5

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 0.5kg D100mm	√	√	√	√	√		
Plastic spool 2kg D200mm	√	√	√	√	√	√	
Plastic spool 7kg D270mm	√	√	√	√	√	√	√
Plastic spool 7kg D300mm	√	√	√	√	√	√	√
Metal basket 7kg K300mm	√	√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√

ALUMINUM ALLOY WELDING WIRE

FRN-ER5183

AWS A5.10 ER5183
GB/T10858-2008 SAl 5183

Instruction: Good corrosion resistance and high strength, for argon arc welding.

Uses: Al-Mg alloy welding wire used for welding ships, offshore platforms, railway locomotive and car manufacturing and other industries related to aluminum

Typical Chemical Composition of welding wire (%)

Cu	Si	Fe	Mn	Mg	Cr	Zn	Ti	Al
0.10	0.40	0.40	0.05-1.00	4.30-5.20	0.05-0.25	0.25	0.15	Rem

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 0.5kg D100mm	√	√	√	√	√		
Plastic spool 2kg D200mm	√	√	√	√	√	√	
Plastic spool 7kg D270mm	√	√	√	√	√	√	√
Plastic spool 7kg D300mm	√	√	√	√	√	√	√
Metal basket 7kg K300mm	√	√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√

ALUMINUM ALLOY WELDING WIRE

FRN-ER5356

AWS A5.10 ER5356
GB/T10858-2008 SAI 5356

Instruction: FRN-ER5356 is the aluminum magnesium alloy wire with a small amount of titanium. It has a good corrosion resistance, heat resistance, good crack resistance, high strength, good ductility. Weld anodizing is white, which can provide a good color match. It is a universal type welding widely

Uses: Al-Mg alloy welding wire used for welding ships, offshore platforms, railway locomotive and car manufacturing and other industries related to aluminum

Typical Chemical Composition of welding wire (%)

Cu	Si	Fe	Mn	Mg	Cr	Zn	Ti	Al
0.10	0.25	0.40	0.05-0.20	4.50-5.50	0.05-0.20	0.10	0.06-0.20	Rem

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 0.5kg D100mm	√	√	√	√	√		
Plastic spool 2kg D200mm	√	√	√	√	√	√	
Plastic spool 7kg D270mm	√	√	√	√	√	√	√
Plastic spool 7kg D300mm	√	√	√	√	√	√	√
Metal basket 7kg K300mm	√	√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√

ALUMINUM ALLOY WELDING WIRE

FRN-ER5087

AWS A5.10 ER5087
GB/T10858-2008 SAI 5087

Instruction: Good weld ability, plasticity and corrosion resistance for gas protective or argon arc welding, has good performance in mechanics.

Uses: Widely used in welding joint with special requirement of higher intensity like engine, electric, power, chemistry, and food etc

Typical Chemical Composition of welding wire (%)

Cu	Si	Fe	Mn	Mg	Cr	Zn	Ti	Al
0.05	0.25	0.40	0.70-1.10	4.50-5.20	0.05-0.25	0.25	0.15	Rem

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 0.5kg D100mm	√	√	√	√	√		
Plastic spool 2kg D200mm	√	√	√	√	√	√	
Plastic spool 7kg D270mm	√	√	√	√	√	√	√
Plastic spool 7kg D300mm	√	√	√	√	√	√	√
Metal basket 7kg K300mm	√	√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√

ALUMINUM ALLOY WELDING WIRE

FRN-ER4047

AWS A5.10 ER4047
GB/T10858-2008 SAI 4047

Instruction: FRN-ER4047 is the eutectic aluminum silicon alloy welding wire with about 12% Si element. Suitable for Al-Si, Al-Si-Mg, Al Si mg Cu wrought aluminum and aluminum (7%Si) argon arc welding. Low melting point and good fluidity to base the welding deformation is small, mainly for blazing and soldering.

Uses: Used for jointing or overlay light alloy processing

Typical Chemical Composition of welding wire (%)

Cu	Si	Fe	Mn	Mg	Cr	Zn	Al
0.3	11.0-13.0	0.80	0.15	0.10	0.05	0.20	Rem

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 0.5kg D100mm	√	√	√	√	√		
Plastic spool 2kg D200mm	√	√	√	√	√	√	
Plastic spool 7kg D270mm	√	√	√	√	√	√	√
Plastic spool 7kg D300mm	√	√	√	√	√	√	√
Metal basket 7kg K300mm	√	√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√

ALUMINUM ALLOY WELDING WIRE

FRN-ER4043

AWS A5.10 ER4043
GB/T10858-2008 SAI 4043

Application: FRN- ER4043 is one of the oldest and most widely used welding and brazing alloys. can be classified as a general purpose type filler alloy. It is widely used in welding of 6061, 6XXX series aluminum alloy, 3XXX series and 2XXX series aluminum and alloys.

Uses: Al-Si welding wire used for welding Ships, chemicals, mold, metallurgy and automobile industries related to aluminum

Typical Chemical Composition of welding wire (%)

Cu	Si	Fe	Mn	Mg	Zn	Ti	Al
0.30	4.5-6.0	0.80	0.05	0.05	0.10	0.20	Rem

Packing terms

Diameter	0.6mm	0.8mm	0.9mm	1.0mm	1.2mm	1.6mm	2.0mm
Plastic spool 0.5kg D100mm	√	√	√	√	√		
Plastic spool 2kg D200mm	√	√	√	√	√	√	
Plastic spool 7kg D270mm	√	√	√	√	√	√	√
Plastic spool 7kg D300mm	√	√	√	√	√	√	√
Metal basket 7kg K300mm	√	√	√	√	√	√	√

Packing terms

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	3.2mm	4.0mm
TIG/1000mm x 5kg/tube	√	√	√	√	√	√

WELDING ELECTRODE

AWS A5.1 E6010

GB/T E4310

FRN-E6010

Introduction: FRN-E6010 is a kind of vertical downward welding electrode with high cellulose natrium type coating. The arc has greater spray force. One-side welding with back formation. It has fewer slags, good slag detachability, beautiful ripples and high welding speed. The deposited metal has excellent mechanical properties, blowhole-resistance and crack-resistance. It is specially used for girth all-position vertical downward welding in pipeline workplaces. DCRP (Direct Current Reversed Polarity).

Uses: Used for butt welding of circumferential seam on all kinds of carbon steel pipes, and also suitable for vertical downward welding on general carbon steel structures.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Ni	Cr	Mo	V
0.11	0.38	0.10	0.009	0.013	0.085	0.030	0.023	0.008

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
510	400	27	-30	80

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	--	--	80-100	110-130	--

WELDING ELECTRODE

AWS A5.1 E6013
GB/T 5117 E4313

FRN-J421

Introduction: FRN-J421 is a kind of carbon steel electrode with titania type coating. AC/DC. All-position welding. It has excellent welding performance, excellent operating performance, easy reignition, stable arc and beautiful appearance of weld.

Uses: For welding low-carbon steel structures, especially suitable for welding on thin plates and cosmetic welding which requires the weld beads to be beautiful and glossy.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Ni	other
0.079	0.38	0.21	0.018	0.024	0.020	Cr 0.032 Mo 0.005 V 0.010

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
485	380	28.5	0	86

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-70	50-90	90-130	130-210	170-230

WELDING ELECTRODE

AWS A5.1 E7015

GB/T 5117 E5015

FRN-J507

Introduction:FRN-J507 is a kind of carbon steel electrode with low-hydrogen natrium type coating. DCRP (Direct Current Reversed Polarity). All-position welding. It has excellent welding performance, stable arc, fewer spatters and good slag detachability. The deposited metal has excellent mechanical properties, crack-resistance and low temperature impact roughness.

Uses: Used for welding key medium-carbon steel and low-alloy steel structures (under pressure and moving loads), such as 16Mn, 09Mn2Si, 09Mn2V and A, B, D and E steel for ships, etc., and also used for welding on thick plates and hard-to-weld carbon steel structures.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Ni	other
0.087	1.12	0.58	0.012	0.021	0.011	Cr 0.028 Mo 0.007 V 0.016

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
560	450	32	-20	150
			-30	142

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	--	60-100	80-140	110-210	160-230

WELDING ELECTRODE

AWS A5.1 E7016

GB/T 5117 E5016

FRN-J506

Introduction:FRN-J506 is a kind of electrode with low-hydrogen potassium type coating. AC/DC. All-position welding. It has excellent welding performance, stable arc, fewer spatters and good slag detachability. The deposited metal has excellent mechanical properties, crack-resistance and good low temperature impact toughness.

Uses: Used for welding medium-carbon steel and low-alloy steel structures, such as 16Mn, 09Mn2Si and A, B, D and E steel for ships, and also used for welding on thick plates and hard-to-weld carbon steel structures.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Ni	other
0.080	1.05	0.51	0.012	0.020	0.012	Cr 0.030 Mo 0.007 V 0.016

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
545	440	32	-20	175
			-30	169

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	--	60-100	80-140	110-210	160-230

WELDING ELECTRODE

AWS A5.1 E7018

GB/T 5117 E5018

FRN-J507Fe

Introduction:FRN-J507Fe is a kind of carbon steel electrode with iron powder low-hydrogen natrium type coating. DCRP (Direct Current Reversed Polarity). All-position welding. The deposition efficiency is higher due to the iron powder in the coating. It has stable arc, fewer spatters, good slag detachability and beautiful appearance of weld. The deposited metal has excellent mechanical properties.

Uses: Used for welding carbon and low-alloy steel structures, such as 16Mn, etc.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Ni	other
0.087	1.10	0.56	0.012	0.021	0.011	Cr 0.028 Mo 0.007 V 0.016

Typical Deposited Metal Mechanical Feature

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
560	485	29	-30	190

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	--	60-100	80-140	110-210	160-230

WELDING ELECTRODE

AWS A5.5 E7015-G

GB/T E5015-G

FRN-W607

Introduction:FRN- W607 is a kind of low temperature steel electrode containing Ni with low-hydrogen natrium type coating. DCRP (Direct Current Reversed Polarity). All-position welding. The weld metal still has excellent impact toughness under -60℃.

Uses: Used for welding low temperature steel structures under -60℃, such as 13MnSi63, 09MnNiNb, E36, etc.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Ni
0.060	1.38	0.21	0.005	0.015	0.85

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
550	460	29	-60	100

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-70	60-90	90-120	140-180	170-210

WELDING ELECTRODE

AWS A5.5 E8015-C1

GB/T E5515-C1

FRN-W707Ni

Introduction:FRN- W707Ni is a kind of low temperature steel electrode containing Ni with low-hydrogen natrium type coating. DCRP (Direct Current Reversed Polarity). All-position welding. The weld metal still has excellent impact toughness under -70℃.

Uses: Used for welding low temperature steel structures under -70℃, such as 09Mn2V, 06MnVAl, 3.5Ni, etc.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Ni
0.057	0.90	0.30	0.006	0.015	2050

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
520	610	28	-70	90

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-70	60-90	90-120	140-180	170-210

STAINLESS STEEL WELDING ELECTRODE

AWS A5.4 E308L-16

GB/T E308L-16

FRN-A002

Introduction:FRN-A002 is a kind of ultra-low-carbon Cr19Ni10 stainless steel electrode with lime-titania type coating. The carbon content of the deposited metal is lower than or equal to 0.04%. It has excellent intercrystalline corrosion-resistance and welding performance. The coating has red-resistance, high strength and good blowhole-resistance. AC/DC.

Uses: Used for welding ultra-low-carbon Cr19Ni10 stainless steel structures, and also used for 0Cr19Ni11Ti corrosion-resistant stainless steel structures whose working temperature is lower than 300℃. Mainly used for the production of equipment of synthetic fiber, chemical fertilizers, petroleum, etc.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Cr	Ni	Mo	Cu
0.024	1.30	0.62	0.008	0.020	19.90	9.80	0.040	0.035

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
--	580	45	--	--

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-80	50-100	70-130	100-160	140-200

STAINLESS STEEL WELDING ELECTRODE

AWS A5.4 E309L-16

GB/T E309L-16

FRN-A062

Introduction:FRN-A062 is a kind of ultra-low-carbon Cr23Ni13 stainless steel electrode with lime-titania type coating. AC/DC. Due to the low carbon content, it can still resist intercrystalline corrosion led to by carbide precipitation without any stabilizers like Nb, Ti, etc.

Uses: Used for stainless steel structures of the same types, composite steel, dissimilar steel, etc. in the production of equipment of synthetic fiber, petrochemical industry, etc., and also used for surfacing welding on nuclear reactors and transition layers of pressure vessel inner surfaces and welding inner parts of synthesis towers.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Cr	Ni	Mo	Cu
0.024	1.32	0.65	0.007	0.021	23.30	12.90	0.045	0.035

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
--	560	42	--	--

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-80	50-100	70-130	100-160	140-200

STAINLESS STEEL WELDING ELECTRODE

AWS A5.4 E309MoL-16

GB/T E309MoL-16

FRN-A042

Introduction:FRN-A042 is a kind of ultra-low-carbon Cr23Ni13Mo2 stainless steel electrode with lime-titania type coating. AC/DC. Due to the appropriate quantity of Mo added into the weld, it increases the crack-resistance and the corrosion-resistance of the weld metal.

Uses: Used for welding ultra-low-carbon stainless steel materials of the same types (such as urea synthesis tower lining) and dissimilar steel.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Cr	Ni	Mo	Cu
0.026	1.35	0.66	0.007	0.021	23.20	2.35	2.36	0.034

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
--	595	38	--	--

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-80	50-100	70-130	100-160	140-200

STAINLESS STEEL WELDING ELECTRODE

AWS A5.4 E316L-16

GB/T E316L-16

FRN-A022

Introduction:A022 is a kind of ultra-low-carbon Cr18Ni12Mo2 stainless steel electrode with lime-titania type coating. The carbon content of the deposited metal is lower than or equal to 0.04%. It has excellent heat-resistance, corrosion-resistance, crack-resistance, blowhole-resistance and welding performance. The coating has red-resistance and high strength. AC/DC.

Uses: Used for welding equipment of urea, synthetic fiber, etc. and stainless steel structures of the same types, and also used for Cr stainless steel which does not need heat treatment after welding, composite steel, dissimilar steel, etc.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Cr	Ni	Mo	Cu
0.025	1.20	0.60	0.007	0.021	19.05	11.60	2.45	0.038

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
--	570	46	--	--

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-80	50-100	70-130	100-160	140-200

STAINLESS STEEL WELDING ELECTRODE

AWS A5.4 E317L-16

GB/T E317L-16

FRN-A022Mo

Introduction:FRN-A022Mo is a kind of ultra-low-carbon Cr18Ni12Mo3 stainless steel electrode with lime-titania type coating. The carbon content of the deposited metal is lower than or equal to 0.04%. It has excellent heat-resistance, corrosion-resistance, crack-resistance and blowhole-resistance. Its corrosion-resistance is especially more excellent than that of A022. It has excellent welding performance. The coating has red-resistance and high strength. AC/DC.

Uses: Used for welding ultra-low-carbon 00Cr18Ni12Mo3 stainless steel, and also used for welding Cr stainless steel which does not need heat treatment after welding, composite steel and dissimilar steel.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Cr	Ni	Mo	Cu
0.003	1.20	0.70	0.009	0.021	19.05	11.60	3.45	0.038

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
--	570	46	--	--

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-80	50-100	70-130	100-160	140-200

STAINLESS STEEL WELDING ELECTRODE

AWS A5.4 E307-16

GB/T E307-16

FRN-A172

Introduction: FRN-A172 is a kind of stainless steel electrode with titania type coating. AC/DC. The weld metal has excellent crack-resistance.

Uses: Suitable for welding ASTM307 steel and other dissimilar steel, and also used for surfacing welding on impact and corrosion-resistant steel and transition layers, such as high-manganese steel, quenched steel, etc.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Cr	Ni	Mo	Cu
0.056	3.80	0.24	0.006	0.021	20.00	9.50	0.68	0.11

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
--	610	46	--	--

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-80	50-100	70-130	100-160	140-200

STAINLESS STEEL WELDING ELECTRODE

AWS A5.4 E308-16

GB/T E308-16

FRN-A102

Introduction:FRN-A102 is a kind of Cr19Ni10 stainless steel electrode with lime-titania type coating. The weld metal has excellent mechanical properties and intercrystalline corrosion-resistance. It has excellent welding performance and blowhole-resistance. The coating is red-resistant and crack resistant. AC/DC.

Uses: Used for welding corrosion-resistant 0Cr19Ni9 and 0Cr19Ni11Ti stainless steel structures below 300℃.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Cr	Ni	Mo	Cu
0.038	1.35	0.68	0.087	0.022	19.75	9.60	0.064	0.10

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
--	590	45	--	--

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-80	50-100	70-130	100-160	140-200

STAINLESS STEEL WELDING ELECTRODE

AWS A5.4 E309-16

GB/T E309-16

FRN-A302

Introduction:FRN-A302 is a kind of Cr23Ni13 stainless steel electrode with lime-titania type coating. The deposited metal has excellent crack-resistance and oxidation-resistance. AC/DC. It has excellent welding performance.In order to increase the crack-resistance and corrosion-resistance of the deposited metal, the Mo content is increased properly, 1% higher than that of GB/T983-1995 E309-16. The other elements all accord with the international standard.

Uses: Used for welding the same types of stainless steel, stainless steel lining, dissimilar steel (Cr19Ni9 is the same as low-carbon steel), high-chrome steel, high-manganese steel, etc.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Cr	Ni	Mo	Cu
0.055	1.45	0.70	0.009	0.021	24.25	12.75	0.35	0.10

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
--	595	40	--	--

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-80	50-100	70-130	100-160	140-200

STAINLESS STEEL WELDING ELECTRODE

AWS A5.4 E316-16

GB/T E316-16

FRN-A202

Introduction:FRN- A202 is a kind of low-carbon Cr18Ni12Mo2 stainless steel electrode with lime-titania type coating. Due to Mo added to the weld metal, it has excellent corrosion-resistance, heat-resistance and crack-resistance, especially suitable for chloride ion pitting corrosion-resistance. AC/DC. It has excellent welding performance.

Uses: Used for welding 0Cr18Ni12Mo2 stainless steel equipment working in organic acid and mineral acid (non-oxidizing acid) medium, and also used for welding dissimilar steel.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Cr	Ni	Mo	Cu
0.045	1.40	0.65	0.009	0.022	19.35	12.04	2.52	0.10

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
--	590	40	--	--

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-80	50-100	70-130	100-160	140-200

STAINLESS STEEL WELDING ELECTRODE

AWS A5.4 E317-16

GB/T E317-16

FRN-A242

Introduction:FRN-A242 is a kind of low-carbon Cr19Ni13Mo3 stainless steel electrode with lime-titania type coating. The Mo content in the deposited metal is higher than that of A202. It has better corrosion-resistance to non-oxidizing acid (such as sulphuric acid, sulphurous acid and phosphoric acid) and organic acid. It is also pitting corrosion-resistant. AC/DC.

Uses: Used for welding the same types of stainless steel materials, composite steel and dissimilar steel.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Cr	Ni	Mo	Cu
0.045	0.95	0.70	0.010	0.022	19.20	12.95	3.60	0.11

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
--	590	40	--	--

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-80	50-100	70-130	100-160	140-200

STAINLESS STEEL WELDING ELECTRODE

AWS A5.4 E310-16

GB/T E310-16

FRN-A402

Introduction: FRN-A402 is a kind of Cr26Ni21 pure austenitic stainless steel electrode with lime-titania type coating. The weld metal has excellent oxidation-resistance under high temperatures of 900~1100℃. AC/DC. It has excellent welding performance.

Uses: Used for welding the same types of heat-resistant stainless steel working under high temperatures, and also used for welding Cr steel with high hardenability (such as Cr5Mo, Cr9Mo, Cr13, Cr28, etc.) and dissimilar steel.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Cr	Ni	Mo	Cu
0.13	2.00	0.60	0.007	0.022	26.65	21.10	0.045	0.10

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
--	610	38	--	--

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-80	50-100	70-130	100-160	140-200

STAINLESS STEEL WELDING ELECTRODE

AWS A5.4 E310-15

GB/T E310-15

FRN-A407

Introduction: FRN-A407 is a kind of Cr26Ni21 pure austenitic stainless steel electrode with basic coating. The weld metal has excellent oxidation-resistance under high temperatures of 900~1100℃. DCRP (Direct Current Reversed Polarity). All-position welding. Because the weld is pure austenite, the heat-resistance and crack-resistance are not better than those of dual-phase structures.

Uses: Used for welding the same types of heat-resistant stainless steel, stainless lining and dissimilar steel, and also used for welding steel with high hardenability, such as Cr5Mo, Cr9Mo, Cr13, Cr28, etc.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Cr	Ni	Mo	Cu
0.11	1.70	0.30	0.007	0.021	26.10	20.76	0.048	0.12

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
--	590	38	--	--

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-80	50-100	70-130	100-160	140-200

STAINLESS STEEL WELDING ELECTRODE

AWS A5.4 E430-15

GB/T E430-15

FRN-G307

Introduction:FRN-G307 is a kind of Cr17 stainless steel electrode with basic coating. DCRP (Direct Current Reversed Polarity). All-position welding.

Uses: Used for welding nitric acid corrosion-resistant and heat-resistant Cr17 stainless steel structures.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Cr	Ni	Mo	Cu
0.054	0.55	0.30	0.010	0.030	16.7	0.12	0.035	0.030

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
--	560	28	--	--

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-80	50-100	70-130	100-160	140-200

STAINLESS STEEL WELDING ELECTRODE

AWS A5.4 E430-16

GB/T E430-16

FRN-G302

Introduction:FRN-G302 is a kind of Cr17 stainless steel electrode with titania type coating. AC/DC.

Uses: Used for welding nitric acid corrosion-resistant and heat-resistant Cr17 stainless steel structures.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Cr	Ni	Mo	Cu
0.054	0.55	0.30	0.009	0.030	16.7	0.12	0.035	0.030

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
--	560	28	--	--

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-80	50-100	70-130	100-160	140-200

STAINLESS STEEL WELDING ELECTRODE

AWS A5.4 E410-16

GB/T E410-16

FRN-G202

Introduction:FRN-G202 is a kind of Cr13 stainless steel electrode with lime-titania type coating. AC/DC.

Uses: Used for welding 0Cr13 and 1Cr13 stainless steel structures, and also used for corrosion-resistant and wear-resistant surface overlaying.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Cr	Ni	Mo	Cu
0.080	0.30	0.45	0.015	0.021	3.5	0.30	0.030	0.035

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
--	540	28	--	--

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-80	50-100	70-130	100-160	140-200

STAINLESS STEEL WELDING ELECTRODE

AWS A5.4 E410-15

GB/T E410-15

FRN-G207

Introduction:FRN-G207 is a kind of Cr stainless steel electrode with basic coating. DCRP (Direct Current Reversed Polarity). All-position welding.

Uses: Used for welding 0Cr13 and 1Cr13 stainless steel structures, and also used for corrosion-resistant surfacing welding. All-position welding.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	P	Cr	Ni	Mo	Cu
0.054	0.55	0.20	0.007	0.020	12.5	0.12	0.030	0.030

Typical Mechanical Properties of Deposited Metal

Yield Strength ReL (Mpa)	Tensile Strength Rm(Mpa)	Elongation δ_5(%)	Impact test	
			Temperature (℃)	Impact Energy KV_2(J)
--	550	29	--	--

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	40-80	50-100	70-130	100-160	140-200

SURFACING ELECTRODE

AWS A5.4 EFeMn-A

GB/T EDMn-A-16

FRN-D256

Introduction: FRN-D256 is a kind of high-manganese steel surfacing electrode with low-hydrogen potassium type coating. AC/DC (the open circuit voltage should be higher than 70V when using AC). In surfacing welding, weak current and stringer bead should be used, and it should be hammered or given water quenching immediately when it turns red to decrease crack tendency. The surfacing metal is austenitic high-manganese steel. It can be given work hardening, and it has toughness and wear-resistance.

Uses: Used for surfacing welding on parts of all kinds of crushers, high-manganese steel rails, buckets, bulldozers, etc., which may easily be worn out due to impact.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	others
0.54	14.00	0.32	≤5.00

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	--	--	70-90	100-140	150-180

SURFACING ELECTRODE

AWS A5.4 EFeMn-B

GB/T EDMn-B-16

FRN-D266

Introduction: FRN-D266 is a kind of high-manganese steel surfacing electrode with low-hydrogen potassium type coating. AC/DC (the open circuit voltage should be higher than 70V when using AC). In surfacing welding, weak current and stringer bead should be used, and it should be hammered or given water quenching immediately when it turns red to decrease crack tendency. The surfacing metal is austenitic high-manganese steel. It can be given work hardening, and it has toughness and wear-resistance.The different between D266 and D256 is that Mo is added to the weld metal to increase crack-resistance and wear-resistance.

Uses: Used for surfacing welding on parts of all kinds of crushers, high-manganese steel rails, buckets, bulldozers, etc., which may easily be worn out due to impact.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	Mo	others
0.65	14.60	0.75	1.00	⩽1.00

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	--	--	70-90	100-140	150-180

CAST IRON
WELDING ELECTRODE

AWS A5.15 ENi-C1

GB/T EZNi-1

FRN-Z308

Introduction:FRN-Z308 is a kind of cast iron electrode with pure nickel core wire and strong reducibility graphite type coating. When welding, the preheating of the weldments can be left out. It has excellent crack-resistance and machinability. Due to the expensive nickel, it can only be selected when other kinds of electrodes are not suitable. AC/DC.

Uses: Used for repair welding on thin cast iron pieces and machined surfaces, such as some key gray cast iron pieces like engine bearers, guide rails of machine tools, pinion stands, etc.

Typical Chemical Composition of welding eletrode (%)

C	Mn	Si	S	Ni	Fe
1.45	0.85	1.80	0.003	93.20	2.00

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	--	50-100	70-120	110-180	160-190

CAST IRON
WELDING ELECTRODE

AWS A5.15 ENiFe-C1

GB/T EZNiFe-1

FRN-Z308

Introduction:FRN-Z408 is a kind of cast iron electrode with Ni-Fe alloy core wire and strong reducibility graphite type coating. It has some characteristics like high strength, good plasticity, low coefficient of linear expansion, etc. The crack-resistance for gray cast iron is similar with that of Z308, but the crack-resistance for spheroidal graphite cast iron is higher than that of Z308. It is also effective for cast iron with high phosphorus content (0.2%P). The machinability is a little worse than that of Z308 and Z508. Used for welding gray cast iron and spheroidal graphite cast iron under normal temperature or preheated a little (to about 200℃). AC/DC.

Uses: Suitable for repair welding on key high strength gray cast iron and spheroidal graphite cast iron, such as cylinders, engine bearers, gears, rollers, etc.

Typical Chemical Composition of welding electrode (%)

C	Mn	Si	S	Ni	Cu	Al	Fe
1.50	0.20	1.80	0.002	51.50	0.016	0.40	--

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	--	--	70-120	110-180	160-190

CAST IRON
WELDING ELECTRODE

AWS A5.15 ENiCu-B

GB/T EZNiCu-1

FRN-Z508

Introduction:FRN-Z508 is a kind of cast iron electrode with Ni-Cu alloy (Monel) core wire and strong reducibility graphite type coating. Both the welding performance and the machinability are quite similar with those of Z308. However, due to the higher shrinkage rate, the crack-resistance is worse. The welded joint has lower strength, so it is not suitable for welding force-bearing parts. It can be used for welding gray cast iron under normal temperature or preheated a little (to about 300℃). AC/DC.

Uses: Used for repair welding on gray cast iron pieces not requiring strength too much.

Typical Chemical Composition of welding electrde (%)

C	Mn	Si	S	Ni	Cu	Fe
0.40	1.20	0.60	0.010	65.23	30.00	4.00

Size and recommended current range

Diameter(mm)	2.0	2.5	3.2	4.0	5.0
Welding Current(A)	--	50-100	70-120	110-170	140-190