

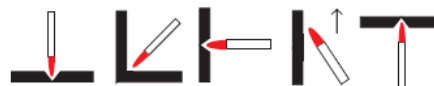
Electrode: Stainless Steel



WE-308L

Welding Position

Classification	AWS A5.4 E308L-16
	EN E 19 9 L R 12
	ISO 3581 B-ES308L-16



Application and Properties:

WE-308L is a stainless stick electrode for all-position welding, containing low C-18Cr-8Ni in the deposited metal to secure great mechanical properties. Its low carbon content of weld metal can provide good corrosion resistance. Stable arc, less spatter, smooth weld bead appearance, slag detachability easily, and excellent radiographic test result can be obtained. WE-308L is widely used in petrochemical, pressure containers, food machinery, medical equipment, chemical fertilizers, and other related sectors.

Notes on Usage:

1. Be sure to remove moisture, oil, and rust on the base metal.
2. Choice of Current: $I = (25 \sim 40) \times D$ (D: diameter of stick electrode)
3. Dry the stick electrode at 300 – 350°C for one hour before welding. Do not dry twice to avoid detachment of covering. Control interpass (layer) temperature to make it under 100°C.
4. Try to reduce heat input. Remove the slag after each welding process.
5. Keep short arc length during welding in order to prevent the crack.
6. When using AC, the stick electrode will become hot easily and there will be more spatters during welding process. The situation can be improved by using DC.

Chemical Composition of Deposited Metal:

Element wt%	C	Mn	Si	Cr	Ni	Mo	P	S	Cu
AWS	0.04	0.5-2.5	1.00	18.0-21.0	9.0-11.0	0.75	0.040	0.030	0.75
Type Value	0.02	1.17	0.54	20.2	9.5	0.11	0.015	0.005	0.049

Mechanical Properties of Deposited Metal:

	Yield Stress MPa	Tensile Strength MPa	Elongation %	Charp V-notch J/°C
AWS	-	520	30	-
Typical	500	675	36	-

Size Available and Recommended Parameter:

Diameter and Length/mm		2.0×350	2.6×350	3.2×350	4.0×350	5.0×350
Current/Amp	F	30-55	50-85	80-120	100-150	140-180
	V, OH	20-50	45-80	70-110	90-135	-

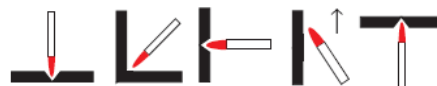
Electrode: Stainless Steel

WE-309LMo



Welding Position

Classification	AWS A5.4 E309LMo-16
	EN E 23 12 2 L B 32
	ISO 3581 B-ES309LMo-16



Application and Properties:

WE-309LMo is a stainless stick electrode for all-position welding, containing low C-22Cr-12Ni-Mo in the deposited metal to secure great mechanical properties. Its low carbon content of weld metal can provide good corrosion resistance. Stable arc, less spatter, smooth weld bead appearance, slag detachability easily, and excellent radiographic test result can be obtained. WE-309LMo is widely used in the welding of carbon steel with stainless steel (dissimilar metal) or ferrite stainless steel, and martensitic stainless steel.

Notes on Usage:

1. Be sure to remove moisture, oil, and rust on the base metal.
2. Choice of Current: $I = (25 \sim 40) \times D$ (D: diameter of stick electrode)
3. Dry the stick electrode at 300 – 350°C for one hour before welding. Do not dry twice to avoid detachment of covering. Control interpass (layer) temperature to make it under 100°C.
4. Try to reduce heat input. Remove the slag after each welding process.
5. Keep short arc length during welding in order to prevent the crack.
6. When using AC, the stick electrode will become hot easily and there will be more spatters during welding process. The situation can be improved by using DC.

Chemical Composition of Deposited Metal:

Element wt%	C	Mn	Si	Cr	Ni	Mo	P	S	Cu
AWS	0.04	0.5-2.5	1.00	22.0-25.0	12.0-14.0	2.0-3.0	0.040	0.030	0.75
Type Value	0.032	1.12	0.65	22.54	13.3	2.56	0.016	0.008	0.019

Mechanical Properties of Deposited Metal:

	Yield Stess MPa	Tensile Strength MPa	Elongation%	Charp V-notch J°C
AWS	-	520	30	-
Typical	-	610	40	-

Size Available and Recommended Parameter:

Diameter and Length/mm		2.0×350	2.6×350	3.2×350	4.0×350	5.0×350
Current/Amp	F	30-55	50-85	80-120	100-150	140-180
	V, OH	20-50	45-80	70-110	90-135	-

Electrode: Stainless Steel



WE-316L

Welding Position

Classification	AWS A5.4 E316L-16
	EN E 19 12 3 L B 11
	ISO 3581 B-ES316L-16



Application and Properties:

WE-316L is a stainless stick electrode for all-position welding, containing low C-18Cr-12Ni-2%Mo in the deposited metal. It has good toughness at -196°C. Its weldability is featured by stable arc, less spatter, smooth weld bead appearance, and slag detachability easily, and excellent radiographic test result. WE-316L is suitable for the welding of petroleum, chemical engineering and cryogenic temperature service.

Notes on Usage:

1. Be sure to remove moisture, oil, and rust on the base metal.
2. Choice of Current: $I = (25 \sim 40) \times D$ (D: diameter of stick electrode)
3. Dry the stick electrode at 300 – 350°C for one hour before welding. Do not dry twice to avoid detachment of covering. Control interpass (layer) temperature to make it under 100°C.
4. Try to reduce heat input. Remove the slag after each welding process.
5. Keep short arc length during welding in order to prevent the crack.
6. When using AC, the stick electrode will become hot easily and there will be more spatters during welding process. The situation can be improved by using DC.

Chemical Composition of Deposited Metal:

Element wt%	C	Mn	Si	Cr	Ni	Mo	P	S	Cu
AWS	0.04	0.5-2.5	1.00	17.0-20.0	11.0-14.0	2.0-3.0	0.040	0.030	0.75
Type Value	0.04	1.48	0.70	19.10	11.15	2.58	0.014	0.012	0.23

Mechanical Properties of Deposited Metal:

	Yield Stress MPa	Tensile Strength MPa	Elongation %	Charp V-notch J/°C
AWS	-	490	30	-
Typical	-	558	44	-

Size Available and Recommended Parameter:

Diameter and Length/mm		2.0×350	2.6×350	3.2×350	4.0×350	5.0×350
Current/Amp	F	30-55	50-85	80-120	100-150	140-180
	V, OH	20-50	45-80	70-110	90-135	-

Electrode: Stainless Steel



WE-317L

Welding Position

Classification	AWS A5.4 E317L-16
	EN E 19 12 D N LR 32



Application and Properties:

WE-317L is a stainless stick electrode for all-position welding, containing low C-18Cr-12Ni-3%Mo in the deposited metal to secure great mechanical properties. Its low carbon content of weld metal can provide good corrosion resistance. Stable arc, less spatter, smooth weld bead appearance, slag detachability easily, and excellent radiographic test result can be obtained. WE-317L is suitable for the welding of corrosion resistance storage facilities.

Notes on Usage:

1. Be sure to remove moisture, oil, and rust on the base metal.
2. Choice of Current: $I = (25 \sim 40) \times D$ (D: diameter of stick electrode)
3. Dry the stick electrode at 300 – 350°C for one hour before welding. Do not dry twice to avoid detachment of covering. Control interpass (layer) temperature to make it under 100°C.
4. Try to reduce heat input. Remove the slag after each welding process.
5. Keep short arc length during welding in order to prevent the crack.
6. When using AC, the stick electrode will become hot easily and there will be more spatters during welding process. The situation can be improved by using DC.

Chemical Composition of Deposited Metal:

Element wt%	C	Mn	Si	Cr	Ni	Mo	P	S	Cu
AWS	0.04	0.5-2.5	1.00	18.0-21.0	12.0-14.0	3.0-4.0	0.04	0.03	0.75
Type Value	0.032	1.21	0.60	19.01	12.13	3.45	0.013	0.011	0.25

Mechanical Properties of Deposited Metal:

	Yield Stress MPa	Tensile Strength MPa	Elongation%	Charp V-notch J/°C
AWS	-	520	30	-
Typical	-	610	40	-

Size Available and Recommended Parameter:

Diameter and Length/mm		2.0×350	2.6×350	3.2×350	4.0×350	5.0×350
Current/Amp	F	30-55	50-85	80-120	100-150	140-180
	V, OH	20-50	45-80	70-110	90-135	-

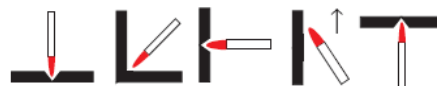
Electrode: Stainless Steel

WE-347L



Welding Position

Classification	AWS A5.4 E347L-16
	EN E 19 9 LR 32
	ISO 3581 B-ES347-16



Application and Properties:

The main composition of WE-347L is 19Cr-11Ni-Nb(Ti). The welding can be done in all position with AC/DC. Adding Ti or Nb can improve the corrosion resistance, especially for intergranular corrosion resistance. It has excellent weldability, stable arc, nice molding, exquisite ripple, little spatter, good slag detachability, good fire and porosity resistance, stable mechanical properties of deposited equipment, and high X-Ray eligibility rate. WE-347L can be widely used in petrochemical, pressure vessel, food machinery, medical equipment, chemical fertilizers, and other related sectors.

Notes on Usage:

1. Be sure to remove moisture, oil, and rust on the base metal.
2. Choice of Current: $I = (25 \sim 40) \times D$ (D: diameter of stick electrode)
3. Dry the stick electrode at 300 – 350°C for one hour before welding. Do not dry twice to avoid detachment of covering. Control interpass (layer) temperature to make it under 100°C.
4. Try to reduce heat input. Remove the slag after each welding process.
5. Keep short arc length during welding in order to prevent the crack.
6. When using AC, the stick electrode will become hot easily and there will be more spatters during welding process. The situation can be improved by using DC.

Chemical Composition of Deposited Metal:

Element wt%	C	Mn	Si	Cr	Ni	Mo	P	S	Others
AWS	0.08	0.5-2.5	1.00	18.0-21.0	9.0-11.0	0.75	0.040	0.030	Cu0.75/Nb8C-1.00
Type Value	0.04	1.45	0.74	19.44	9.39	0.49	0.013	0.013	Cu0.16/Nb0.44

Mechanical Properties of Deposited Metal:

	Yield Stress MPa	Tensile Strength MPa	Elongation %	Charp V-notch J/°C
AWS	-	520	30	-
Typical	-	605	39	-

Size Available and Recommended Parameter:

Diameter and Length/mm		2.0×350	2.6×350	3.2×350	4.0×350	5.0×350
Current/Amp	F	30-55	50-85	80-120	100-150	140-180
	V, OH	20-50	45-80	70-110	90-135	-

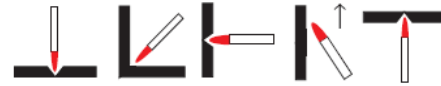
Electrode: Stainless Steel



WE-410

Welding Position

Classification	AWS A5.4 E410-16
	EN E 13 R 32
	ISO 3581 B-ES410-16



Application and Properties:

WE-410 is a martensitic type stainless stick electrode for all-position welding, with the chemical composition of 13%Cr in the weld metal. Stable arc, less spatter and good crack resistance can be obtained. WE-410 is suitable for the welding of corrosion resistant conditions.

Notes on Usage:

1. Be sure to remove moisture, oil, and rust on the base metal.
2. Dry the stick electrode at 300 – 350°C for one hour before welding. Do not dry twice to avoid detachment of covering.
3. Preheat treatment at 150-250°C to prevent excessive post weld stress.
4. If the base metal cannot do PWHT, using austenitic type stainless stick electrodes is recommended.

Chemical Composition of Deposited Metal:

Element wt%	C	Mn	Si	Cr	Ni	Mo	P	S	Cu
AWS	0.12	1.0	0.90	11.0-13.5	0.7	0.75	0.04	0.03	0.75
Type Value	0.063	0.501	0.50	13.12	0.14	0.17	0.016	0.011	0.15

Mechanical Properties of Deposited Metal:

	Yield Stress MPa	Tensile Strength MPa	Elongation %	Charp V-notch J/°C
AWS	-	520	20	-
Type Value	-	560 (750/1hr)	27	-

Size Available and Recommended Parameter:

Diameter and Length/mm		2.0*300	2.6*300	3.2*350	4.0*350	5.0*350
Current/Amp	F	30-55	60-85	80-120	100-150	140-180
	V, OH	20-50	60-80	60-105	90-140	-

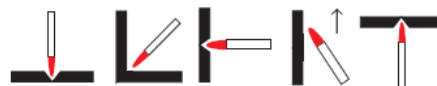
Electrode: Stainless Steel

WE-410NiMo



Welding Position

Classification	AWS A5.4 E410NiMo-16
	EN E 13 4 R 32
	ISO 3581 B-ES410NiMo-16



Application and Properties:

WE-410NiMo is a martensitic type stainless stick electrode for all-position welding, with the chemical composition of 13%Cr-NiMo in the weld metal. By adding NiMo alloy, WE-410NiMo can provide stable corrosion resistance, as well as higher hardness than WE-410. Great weldability, stable arc, less spatter and crack resistance can be secured. WE-410 is suitable for harsher corrosion resistant working conditions, such as valves application.

Notes on Usage:

1. Be sure to remove moisture, oil, and rust on the base metal.
2. Dry the stick electrode at 300 – 350°C for one hour before welding. Do not dry twice to avoid detachment of covering.
3. Preheat treatment at 150-250°C to prevent excessive post weld stress.
4. If the base metal cannot do PWHT, using austenitic type stainless stick electrodes is recommended.

Chemical Composition of Deposited Metal:

Element wt%	C	Mn	Si	Cr	Ni	Mo	P	S	Cu
AWS	0.12	1.0	0.90	11.0-13.5	4.5-5.0	0.40-0.70	0.04	0.03	0.75
Type Value	0.059	0.52	0.36	12.95	4.85	0.56	0.015	0.011	0.16

Mechanical Properties of Deposited Metal:

	Yield Stress MPa	Tensile Strength MPa	Elongation %	Charp V-notch J/°C
AWS	-	520	20	-
Type Value	-	560 (750/1hr)	28	-

Size Available and Recommended Parameter:

Diameter and Length/mm		2.0*300	2.6*300	3.2*350	4.0*350	5.0*350
Current/Amp	F	30-55	60-85	80-120	100-150	140-180
	V, OH	20-50	60-80	60-105	90-140	-

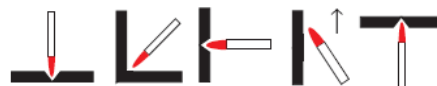
Electrode: Stainless Steel

WE-2209



Welding Position

Classification	AWS A5.4 E2209-16
	EN E 22 9 3 NL R 32
	ISO 3581 B-ES2209-16



Application and Properties:

WE-2209 is a duplex (austenite-ferrite matrix) type stainless stick electrode for all-position welding with its chemical composition of 22%Cr-9%Ni-3%Mo-N in the weld metal. There is about 40% ferrite content in weld metal. Its characteristics of weld metal are combined with those of ferrite and austenite. Its weldability is featured by stable arc, less spatter, smooth bead appearance, and easy slag detachability. WE-2209 is suitable in the welding of petroleum, chemical industries.

Notes on Usage:

1. Be sure to remove moisture, oil, and rust on the base metal.
2. Choice of Current: $I = (25 \sim 40) \times D$ (D: diameter of stick electrode)
3. Dry the stick electrode at 300 – 350°C for one hour before welding. Do not dry twice to avoid detachment of covering. Control interpass (layer) temperature to make it under 100°C.
4. Try to reduce heat input. Remove the slag after each welding process.
5. Keep short arc length during welding in order to prevent the crack.
6. When using AC, the stick electrode will become hot easily and there will be more spatters during welding process. The situation can be improved by using DC.

Chemical Composition of Deposited Metal:

Element wt%	C	Mn	Si	Cr	Ni	Mo	P	S	N
AWS	0.04	0.5-2.0	0.90	21.5-23.5	8.5-10.5	2.5-3.5	0.040	0.030	0.08-0.20
Type Value	0.024	0.75	0.80	22.23	9.65	3.07	0.012	0.008	0.16

Mechanical Properties of Deposited Metal:

	Yield Stress MPa	Tensile Strength MPa	Elongation %	Charp V-notch J/°C
AWS	-	690	20	-
Typical	-	760	20	-

Size Available and Recommended Parameter:

Diameter and Length/mm		2.0×350	2.6×350	3.2×350	4.0×350	5.0×350
Current/Amp	F	30-55	50-85	80-120	100-150	140-180
	V, OH	20-50	45-80	70-110	90-135	-