

SW-347 Cored

FLUX CORED ARC WELDING CONSUMABLE
FOR WELDING OF HIGH TEMPERATURE APPLICATION



SW-347 Cored

❖ Specification

AWS A5.22	E347T1-1/4
JIS Z3323	TS347-BiF-FB1
EN ISO 17633-A	T19 9 Nb P M21/C1 2

❖ Applications

SW-347 Cored is designed for welding of 347 and 321 Type stainless steels for high temperature service application.

❖ Characteristics on Usage

SW-347 Cored is suitable for all position welding makes easier re-arcng, beautiful bead appearance and better slag removability. This wire benefit from a fast freezing slag system which assist the operator when welding out of position and performs equally as well when welding in the flat and horizontal position.

❖ Note on Usage

Use 100% CO₂ gas or Ar+20~25% CO₂ gas

❖ Packing

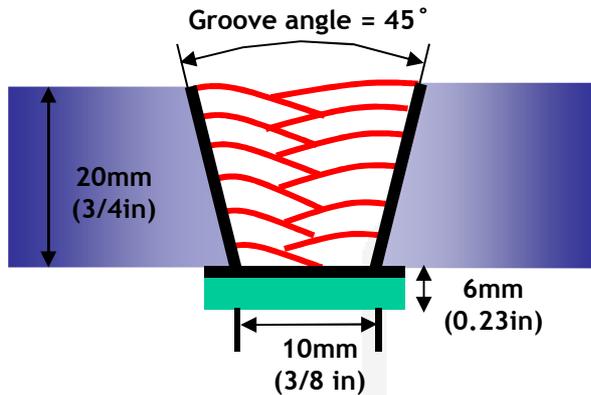
Diameter	1.2mm (0.045in)	1.4 (0.052in)	1.6 (1/16in)	
Spool *including ball pac	5kg (11lbs)	12.5kg (28lbs)	15kg (33lbs)	20kg (44lbs)



Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Diameter(mm)	: 1.2mm(0.045in)
Shielding Gas	: 100% CO ₂
Flow Rate(ℓ /min.)	: 20~22
Amp./ Volt.	: 210/30
Stick-Out(mm)	: 20(3/4 in)
Pre-Heat(°C)	: R.T . °C(°F)
Interpass Temp.(°C)	: ≤150°C(302°F)
Polarity	: DC(+)

❖ Mechanical Properties of All weld metal

Consumable	Tensile Test		CVN Impact Test J(ft · lbs)	
	TS (Mpa/ksi)	EL (%)	-20°C (-4°F)	-60°C (-76°F)
SW-347 Cored	640(93)	40.8	58(42.8)	53(39.1)
AWS A5.22 E347TX-X	≥ 520	≥ 30	Not Specified	
JIS J3323 TS347-BiF-FB1	≥ 520	≥ 25		

❖ Chemical Analysis of All weld metal(wt%)

Consumable	Shielding Gas	Chemical Composition (%)									
		C	Si	Mn	P	S	Ni	Cr	Mo	Nb	Bi
SW-347 Cored	100%CO ₂	0.053	0.72	1.2	0.014	0.008	10.12	18.71	0.01	0.60	≤10ppm
AWS A5.22 E347TX-X		≤0.08	≤1.0	0.5~2.5	≤0.04	≤0.03	9.0~11.0	18.0~21.0	≤ 0.5	8×C~1.0	-
JIS J3323 TS347-BiF-FB1		≤0.08	≤1.0	0.5~2.5	≤0.04	≤0.03	9.0~11.0	18.0~21.0	≤ 0.5	8×C~1.0	≤ 10ppm

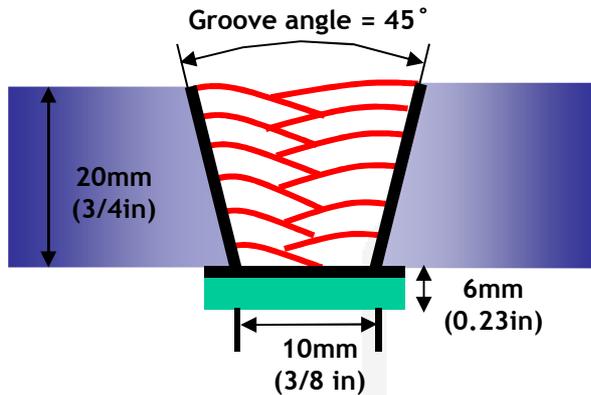
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Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Diameter(mm)	: 1.2mm(0.045in)
Shielding Gas	: Ar+200% CO ₂
Flow Rate(ℓ /min.)	: 20~22
Amp./ Volt.	: 210/29
Stick-Out(mm)	: 20(3/4 in)
Pre-Heat(°C)	: R.T. . °C(°F)
Interpass Temp.(°C)	: ≤150°C(302°F)
Polarity	: DC(+)

❖ Mechanical Properties of All weld metal

Consumable	Tensile Test		CVN Impact Test J(ft · lbs)	
	TS (Mpa/ksi)	EL (%)	-20°C (-4°F)	-60°C (-76°F)
SW-347 Cored	648(94)	40.6	59(43.5)	52(38.3)
AWS A5.22 E347TX-X	≥ 520	≥ 30	Not Specified	
JIS J3323 TS347-BiF-FB1	≥ 520	≥ 25		

❖ Chemical Analysis of All weld metal(wt%)

Consumable	Shielding Gas	Chemical Composition (%)									
		C	Si	Mn	P	S	Ni	Cr	Mo	Nb	Bi
SW-347 Cored	Ar+20%CO ₂	0.053	0.72	1.15	0.014	0.008	10.12	18.81	0.01	0.60	≤10ppm
AWS A5.22 E347TX-X		≤0.08	≤1.0	0.5 ~2.5	≤0.04	≤0.03	9.0 ~11.0	18.0 ~21.0	≤ 0.5	8×C ~1.0	-
JIS J3323 TS347-BiF-FB1		≤0.08	≤1.0	0.5 ~2.5	≤0.04	≤0.03	9.0 ~11.0	18.0 ~21.0	≤ 0.5	8×C ~1.0	≤ 10ppm

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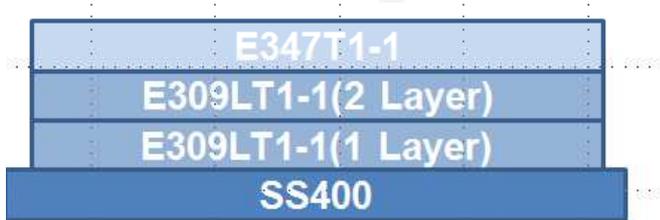


Mechanical Properties & Chemical Composition of All Weld Metal

❖ δ – Ferrite No.

Consumable	Shielding Gas	Diagram			FERITSCOPE MP-30 * (FISCHER)
		Schaeffler	DeLong	WRC(1992)	
SW-347 Cored	100% CO ₂	5.5	7.7	4.2	3~8
	Ar+20% CO ₂	6.2	8.2	4.6	3~8

❖ Test Condition and weld metal Ferrite contents



Brand Name	Parameter		
	Amp.	Voltage	Speed
SW-347	200A	30V	30CPM
SW-309L			

Brand Name	Base metal/weld metal	Ferritscope
SW-347	STS 304	5~6
	SS400+SW-309L 2 layer	7~8
SW-309L	SS400	8~12
	Multi-layer(4)	12~15

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❖ Bead Appearance

Horizontal Fillet(2F, PB) , Base : STS 304L(6mm,0.23in)	Fillet Vertical up(3F, PF) , Base : STS 304L(6mm,0.23in)	
100% CO2(220A/30V)	100% CO2(160A/25V)	Ar+20% CO2(160A/24V)
Ar+20% CO2(220A/28V)		

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Welding Efficiency & Proper Welding Condition

❖ Deposition Rate & Efficiency

Consumable (size)	Shielding Gas	Welding Conditions		Wire Feed Speed m/min (in/min)	Deposition Efficiency(%)	Deposition Rate kg/hr(lb/hr)
		Amp. (A)	Volt. (V)			
1.2mm (0.045 in)	100%CO ₂	210	30	12(472)	86~88	4.6(10.1)
	Ar-20%CO ₂	210	29	12(472)	87~89	4.8(10.6)
1.6mm (1/16 in)	100%CO ₂	290	33	8.9(350)	86~88	5.5(12.1)
	Ar-20%CO ₂	290	32	8.9(350)	87~89	5.(12.6)
Remark					Deposition efficiency =(Deposited metal weight/Wire weight used)×100	Deposition rate =(Deposited metal weight/Welding time,min.)×60

❖ Proper Current Range

Consumable	Shielding Gas	Welding Position	Wire Dia.	
			1.2mm (0.045 in)	1.6mm (1/16 in)
SW-347L Cored	100%CO ₂ or Ar-20~25%CO ₂	F	160~220Amp	250~290Amp
		HF	160~220Amp	250~290Amp
		V-Up & OH	140~180Amp	-

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