

# **S-300B**

SUBMERGED ARC WELDING CONSUMABLES FOR STAINLESS STEEL

**HYUNDAI WELDING CO., LTD.** 



## Specification

Flux	JIS Z3352	EN ISO 14174	KS B ISO 14174	
S-300B	S A AF 2	S A AF 2	S A AF 2	

WIRE	AWS A5.9	JIS Z3321	EN ISO 14343 -A-
YS-308L	ER308L	YS308L	G 19 9L
YS-316L	ER316L	YS316L	G 19 12 3L
YS-347	ER347	YS347	G 19 9 Nb

## Applications

The flux is widely used for Stainless steel

## Characteristics on Usage

S-300B is an agglomerated flux for submerged arc welding of stainless steel. It provides a very good slag detachability, a smooth surface finish and a nice bead appearance. As weld metal contains proper contents of ferrite, its crack-resistibility, mechanical properties and corrosion-resistibility is excellent.

## Note on Usage

- 1. Dry the flux at 300~350 ℃ for 60 minutes before use.
- 2. Avoid using high current to prevent harming of corrosion-resistibility in heat-affected zone.
- 3. Welding in groove should be done in 2 passes to ease slag removal.



## **Welding Consumables for Test**

#### ❖ Flux

Product		Chemical Com	nposition, wt%	
Name	SiO2+TiO2	CaO+MgO	Al2O3+MnO	CaF2
S-300B	10	3	35	45

Product Name	Particle Size (Mesh)	Type of Flux	B.I	H2O <sub>1000℃</sub> / CO2(wt%)
S-300B	12 × 48	Bonded	1.7	0.03/0.59

#### Electrode

	Dia.		Chemical Composition, wt%							
Consumables	(mm)	С	Si	Mn	Р	S	Ni	Cr	Мо	Nb
YS-308L	4.0	0.02	0.40	1.90	0.011	0.012	10.6	20.0	-	
AWS A5.9 E3	308L	≤0.03	0.30~ 065	1.0~ 2.5	≤0.03	≤0.03	9.0~ 11.0	19.5~ 22.0	≤0.75	_
YS-316L	4.0	0.02	0.35	1.84	0.014	0.009	13.0	18.5	2.6	
AWS A5.9 E3	316L	≤0.03	0.30~ 065	1.0~ 2.5	≤0.03	≤0.03	11.0~ 14.0	18.0~ 20.0	2.0~3.0	_
YS-347		0.060	0.39	1.53	0.020	0.001	9.59	19.67	_	0.68
AWS A5.9 E	347	≤0.08	0.30~ 0.65	1.0~ 2.5	≤0.03	≤0.03	9.0~ 11.0	19.0~ 21.5	≤0.75	10XC~ 1.0

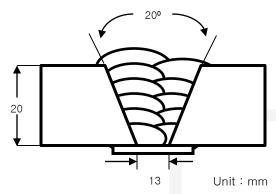
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## Mechanical Properties & Chemical Composition of All Weld Metal

#### Welding Conditions

Method by JIS Rules



[ Joint Preparation & Layer Details ]

Base metal : Buttering 308L,

316L, 347 **Amp./ Volt./cpm** : 550 / 32 / 40

Stick-Out(mm) : 30

Pre-Heat(°C) : R.T.

Interpass Temp.( $^{\circ}$ ) : 15 ~ 150

Polarity : DC+

## Mechanical Properties of the weld metal

Consumables	Tensile Te	est Results	CVN Impact Value (Joules)
Consumables	TS(MPa)	EI(%)	-196℃
S-300B/YS-308L	573	42.0	59
S-300B/YS-316L	572	43.0	64
S-300B/YS-347	662	41.0	-



## Mechanical Properties & Chemical Composition of All Weld Metal

### Chemical Analysis of the weld metal(wt%)

Brand name		C	hemica	l compo	position of weld metal wt.%				
	С	Si	Mn	Р	S	Ni	Cr	Мо	Nb
S-300B/YS-308L	0.029	0.67	1.89	0.018	0.005	9.83	19.24	_	
S-300B/YS-316L	0.021	0.62	1.61	0.015	0.001	11.60	18.32	2.61	
S-300B/YS-347	0.055	0.63	1.31	0.020	0.001	8.63	18.67	-	0.66

#### \* δ- Ferrite No.

Comsumable	Feritscope MP-30∗ (FISCHER)
S-300B/YS-308L	3.0~8.0
S-300B/YS-316L	3.0~8.0
S-300B/YS-347	5.0~10.0