HYUNDAI WELDING

Rev. 00

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

Product Name	Particle Size (Mesh)	Type of Flux	B.I	$H2O_{1000℃}$/ CO2(wt%)
S-300B	12 × 48	Bonded	1.7	0.03/0.59

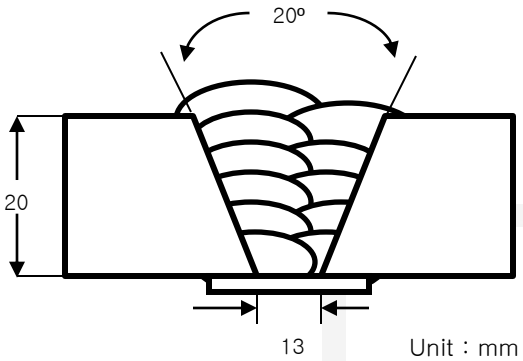
❖ Electrode

Consumables	Dia. (mm)	Chemical Composition, wt%								
		C	Si	Mn	P	S	Ni	Cr	Mo	Nb
YS-308L	4.0	0.02	0.40	1.90	0.011	0.012	10.6	20.0	-	
AWS A5.9 E308L		≤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 E316L		≤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 E347		≤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

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(℃)	:	R.T .
Interpass Temp.(℃)	:	15 ~ 150
Polarity	:	DC+

❖ Mechanical Properties of the weld metal

Consumables	Tensile Test Results		CVN Impact Value (Joules)
	TS(MPa)	El(%)	-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	Chemical composition of weld metal wt.%								
	C	Si	Mn	P	S	Ni	Cr	Mo	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