HYUNDAI WELDING

Rev. 02

Superflux300S

SUBMERGED ARC WELDING CONSUMABLES
FOR WELDING OF STAINLESS STEELS

HYUNDAI WELDING CO., LTD.

Superflux300S

❖ Specification

Flux	JIS Z3352	EN ISO 14174
Superflux300S	S A AB2	S A AB2

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

❖ Applications

Superflux300S is widely used for Stainless steel

❖ Characteristics on Usage

Superflux300S is bonded type flux containing proper contents of alloying elements. 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

❖ Flux

Consumable	Chemical Composition, wt%			
	SiO2+TiO2	CaO+MgO	Al2O3+MnO	CaF2
Superflux300S	40%	35%	15%	10%

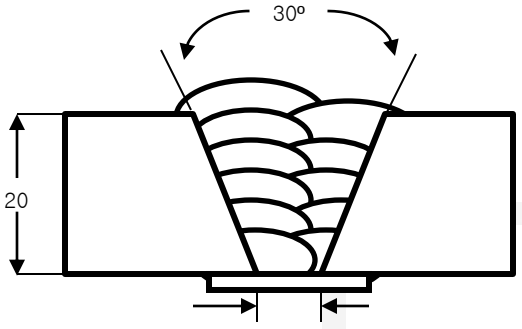
Consumable	Particle Size (Mesh)	Type of Flux	B.I	$H2O_{1000℃}$/ CO2(%)
Superflux300S	10 × 48	Agglomerated	1.0	0.03/0.59

❖ Electrodes

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	-

Mechanical Properties of All Weld Metal

❖ Welding Conditions



[Joint Preparation & Layer Details]

Base metal	:	Buttering 308L, 316L
Particle size	:	10 X 48
Flux type	:	Agglomerated
Amp./ Volt./cpm	:	550 / 32 / 40
Stick-Out(mm)	:	30
Pre-Heat(℃)	:	R.T .
Interpass Temp.(℃)	:	≤ 150
Current & Polarity	:	DC+

❖ Mechanical Properties of the All Weld Metal

Consumables	Tensile Test Results		CVN Impact Value (Joules)
	TS(MPa)	El(%)	-196℃
Superflux 300S/ YS-308L	570	40.0	45
Superflux 300S/ YS-316L	560	38.0	45

Chemical Composition & δ- Ferrite of All Weld Metal

❖ Chemical Analysis of the All Weld Metal(wt%)

Brand name	Chemical composition of weld metal wt.%							
	C	Si	Mn	P	S	Ni	Cr	Mo
Superflux 300S/ YS-308L	0.027	0.87	1.01	0.019	0.014	10.40	18.97	0.10
Superflux 300S/ YS-316L	0.025	0.84	1.23	0.015	0.009	11.73	17.90	2.59

❖ δ- Ferrite No. of the All Weld Metal

Comsumable	Feritscope MP-30* (FISCHER)
Superflux 300S/YS-308L	3.0~8.0
Superflux 300S/YS-316L	3.0~8.0