

Superflux209

X YS-2209

SUBMERGED ARC WELDING CONSUMABLES
FOR WELDING OF DUPLEX STAINLESS STEEL

2022.02



Superflux209 X YS-2209

❖ Specification

Flux	JIS Z 3352	EN ISO 14174	KS B ISO 14174
Superflux209	S A AF 2	S A AF 2	S A AF 2
Wire	AWS A5.9		
YS-2209	ER2209		

❖ Applications

Stainless steels including duplex stainless steels.

❖ Characteristics on Usage

Especially insensitive to oil, rust, scale, and dirt on the surface to be welded. Slag detachability in narrow groove and resistance to porosity are excellent. Suitable for welding high-alloyed grades, current should be kept at the lower range.

❖ Note on Usage

1. Dry the flux at 300~350°C(572~662°F) for 60minutes before use.
2. When the flux height is excessive, poor bead appearance may occur.
3. Remove rust, scales, oil, paint, water, dirt and slag of tack welds from the groove to obtain sound weld metal.



Welding Consumables for Test

❖ Flux

Consumable	Chemical Composition, wt%		
	SiO ₂ +TiO ₂	Al ₂ O ₃ +MnO	CaF ₂
Superflux209	10	35	45

Consumable	Particle Size (Mesh)	Type of Flux	B.I	H ₂ O(1000℃)/CO ₂ (%)
Superflux209	12 x 48	Agglomerated	1.7	0.10/0.10

❖ Electrode

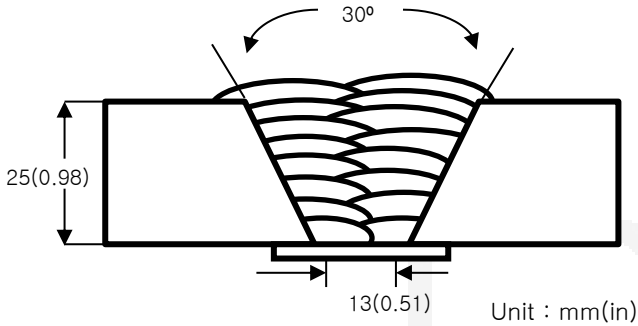
Consumable	Dia.	Chemical Composition, wt%										
	mm	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	Fe	N
YS-2209	2.4	0.017	0.40	1.48	0.015	0.001	8.59	23.0	3.21	0.044	Bal.	0.15
AWS A5.9 ER2209		≤0.03	≤0.90	0.50-2.0	≤0.03	≤0.03	7.5-9.5	21.5-23.5	2.5-3.5	≤0.75	Bal.	0.08-0.20



Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Base metal	: Buttering(SMT-2209)
Particle size	: 12 x 48
Flux type	: Agglomerated
Amp./ Volt./CPM	: 400/32/40
Stick-Out mm (in)	: 25(0.98)
Pre-Heat °C (°F)	: R.T .
Interpass Temp. °C (°F)	: <150 (302)
Current & Polarity	: DC+

❖ Mechanical Properties of All weld metal

Consumables	PWHT Condition	Tensile Test			CVN Impact Test
		YS MPa(lbs/in2)	TS MPa(lbs/in2)	EL (%)	J (ft·lbs)
Superflux209 X YS-2209	As-welded	590 (85,000)	780 (113,000)	31.0	-60°C (-80°F) 80 (58)

❖ Chemical Analysis of All weld metal(wt%)

Consumables	C	Si	Mn	P	S	Ni	Cr	Mo	N
Superflux209 X YS-2209	0.016	0.67	1.19	0.019	0.001	8.19	22.50	3.13	0.142

❖ Ferrite content of All weld metal

Consumables	FERITSCOPE MP-30
Superflux209 X YS-2209	35-65

This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of HYUNDAI WELDING CO., LTD. affect the results obtained in applying this type of information. These variables include, but are not limited to, welding procedure, shielding gas, plate chemistry and temperature, weldment design, fabrication methods and service requirements.



Approvals

❖ Authorized Approval Details

Consumables	DNV
Superflux209 X YS-2209	Duplex Stainless Steel 2.4mm

