HYUNDAI WELDING

Rev. 05

Supershield 11

SELF-SHIELDED FLUX CORED ARC WELDING CONSUMABLE
FOR MILD & 490MPa CLASS HIGH TENSILE STEEL

HYUNDAI WELDING CO., LTD.

Supershield 11

❖ Specification

AWS A5.20	E71T-11
(AWS A5.20M	E491T-11)
JIS Z3313	T49 T14-1 N A
EN ISO 17632-A	T 42 Z Z NO 1

❖ Applications

Supershield 11 is use where light structures, short assembly welds, and other general fabrication and galvanized steel fixtures, gate etc.

❖ Characteristics on Usage

Supershield 11 is an all position self-shielded flux cored wire designed for single & multi-pass welding of thin mild steel plate. Supershield 11 used DC(-) polarity produces smooth arc stability, low spatters ,full covering slag for all position welding

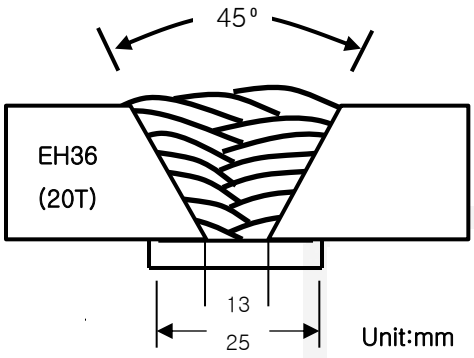
❖ Note on Usage

Do not use shielding gas

Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Welding Position	:	1G(PA)
Diameter(mm)	:	1.2mm(0.045in)
Shielding Gas	:	None
Polarity	:	DC-
Amp./ Volt.	:	220 / 20
Stick-Out	:	20mm(0.79in)
Pre-Heat	:	R.T .
Interpass Temp.	:	150±15℃ (302±59°F)

❖ Mechanical Properties of all weld metal

Consumable	Tensile Test			Hardness
	Tensile specimen artificially aged at 105℃ for 48hr, as permitted by AWS A5.20			
Supershield 11	YS MPa (ksi)	TS MPa (ksi)	EL(%)	HRB
	510(74)	580(84)	24.0	82~95
AWS A5.20 E71T-11	**≥ 400 (58)**	**490~660 (70~95)**	**≥ 22**	**-**

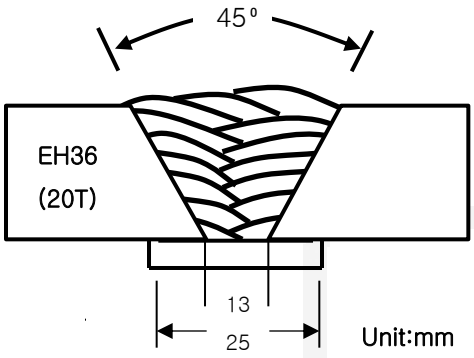
❖ Chemical Analysis of all weld metal(wt%)

Consumable	C	Si	Mn	P	S	Al
Supershield 11	0.18	0.34	0.50	0.012	0.006	1.35
AWS A5.20 E71T-11	**≤ 0.30**	**≤ 0.60**	**≤ 1.75**	**≤ 0.03**	**≤ 0.03**	**≤ 1.80**

Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Welding Position	:	1G(PA)
Diameter(mm)	:	1.6mm(1/16in)
Shielding Gas	:	None
Polarity	:	DC-
Amp./ Volt.	:	260 / 20
Stick-Out	:	20mm(0.79in)
Pre-Heat	:	R.T .
Interpass Temp.	:	150±15℃ (302±59°F)

❖ Mechanical Properties of all weld metal

Consumable	Tensile Test			Hardness
	Tensile specimen artificially aged at 105℃ for 48hr, as permitted by AWS A5.20			
Supershield 11	YS MPa (ksi)	TS MPa (ksi)	EL(%)	HRB
	520(75)	590(86)	25.2	84~95
AWS A5.20 E71T-11	≥ **400 (58)**	**490~660 (70~95)**	≥ **22**	-

❖ Chemical Analysis of all weld metal(wt%)

Consumable	C	Si	Mn	P	S	Al
Supershield 11	0.19	0.35	0.60	0.011	0.006	1.20
AWS A5.20 E71T-11	≤ 0.30	≤ 0.60	≤ 1.75	≤ 0.03	≤ 0.03	≤ 1.80

Welding Efficiency

❖ Deposition Rate & Efficiency

Wire Size	Welding Conditions		Deposition Efficiency(%)	Deposition Rate kg/hr(lb/hr)
	Amp.(A)	Volt.(V)		
1.6mm (1/16in)	150	16	77~79	0.9(2.0)
	200	18	78~80	1.2(2.6)
	250	20	79~81	2.2(4.8)
Remark			Deposition efficiency =(Deposited metal weight/ Wire weight used)×100	Deposition rate =(Deposited metal weight/ Welding time,min.)×60

Proper Welding Condition

❖ Proper Current Range

Consumable	Shielding Gas	Welding Position	Wire Dia.		
			1.0mm (0.040in)	1.2mm (0.045in)	1.6mm (1/16in)
Supershield 11	NONE	F	160~200Amp (180A 23V)	160~220Amp (190A 18V)	200~280Amp (250A 20V)
		HF	160~190Amp (170A 23V)	140~200Amp (180A 17V)	180~260Amp (240A 19V)
		V-Up	150~190Amp (160A 22V)	130~180Amp (150A 16V)	170~230Amp (190A 20V)
		OH	150~180Amp (160A 22V)	130~180Amp (150A 16V)	170~230Amp (190A 20V)

❖ F No & A No

F No	A No
6	1