

# **Supershield 11**

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



## ❖ Specification

<i>AWS A5.36</i>	E71T11-AZ-CS3
<i>(AWS A5.36M)</i>	E491T11-AZ-CS3)
<i>(AWS A5.20)</i>	E71T-11)
<i>EN ISO 17632-A</i>	T 42 Z 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

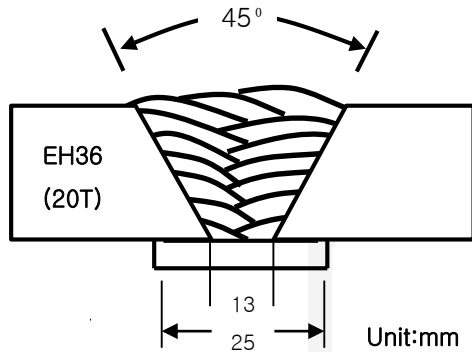
Do not use shielding gas



## Mechanical Properties & Chemical Composition of All Weld Metal

### ❖ Welding Conditions

Method by AWS Spec.



[ Joint Preparation & Layer Details ]

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

### ❖ Mechanical Properties of all weld metal

Consumable	Tensile Test			Hardness
	Tensile specimen artificially aged at 105°C for 48hr, as permitted by AWS A5.20-95			
Supershield 11	YS (MPa / ksi)	TS (MPa / ksi)	EL(%)	HRB
		510(74)	580(84)	24.0
AWS A5.36 E71T11-AZ-CS3	≥ 400 (58)	490~660 (70~95)	≥ 22	-

### ❖ Chemical Analysis of all weld metal(wt%)

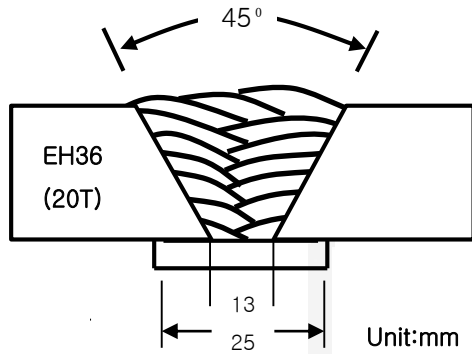
Consumable	C	Si	Mn	P	S	Al
Supershield 11	0.18	0.34	0.50	0.012	0.006	1.35
AWS A5.36 E71T11-AZ-CS3	≤ 0.30	≤ 0.60	≤ 1.75	≤ 0.03	≤ 0.03	≤ 1.8



## Mechanical Properties & Chemical Composition of All Weld Metal

### ❖ Welding Conditions

Method by AWS Spec.



[ Joint Preparation & Layer Details ]

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

### ❖ Mechanical Properties of all weld metal

Consumable	Tensile Test			Hardness
	Tensile specimen artificially aged at 105°C for 48hr, as permitted by AWS A5.20-95			
Supershield 11	YS (MPa / ksi)	TS (MPa / ksi)	EL(%)	HRB
		520(75)	590(86)	25.2
<b>AWS A5.36 E71T11-AZ-CS3</b>	≥ 400 (58)	<b>490~660</b> (70~95)	≥ 22	-

### ❖ Chemical Analysis of all weld metal(wt%)

Consumable	C	Si	Mn	P	S	Al
<b>Supershield 11</b>	0.19	0.35	0.60	0.011	0.006	1.20
<b>AWS A5.36 E71T11-AZ-CS3</b>	≤ 0.30	≤ 0.60	≤ 1.75	≤ 0.03	≤ 0.03	≤ 1.8

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.



## 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)
<b>Remark</b>			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