HYUNDAI WELDING

Rev. 06

Supershield 71-T8

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

HYUNDAI WELDING CO., LTD.

Supershield 71-T8

❖ Specification

AWS A5.36	**E71T8-A2-CS3-H8**
(AWS A5.36M	**E491T8-A3-CS3-H8)**
(AWS A5.20	**E71T-8 H8)**
EN ISO 17632-A	**T42 3 Y NO 2 H10**
AWS D1.8	

❖ Applications

All position welding of ship building, machinery, bridges, building, And vehicles using mild and higher strength steels.

❖ Characteristics on Usage

Supershield 71-T8 is self-shielded flux cored wire for high deposition rate all position welding where low temperature impact properties are required.

Supershield 71-T8 meets AWS D1.8 seismic requirements.

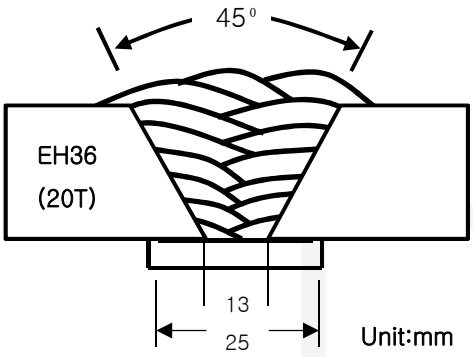
❖ Note on Usage

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)	:	1.6mm (1/16in)
Shielding Gas	:	None
Polarity	:	DC-
Amp./ Volt.	:	240A / 21V
Stick-Out	:	25mm (1in)
Pre-Heat(℃)	:	R.T .
Interpass Temp.(℃)	:	150±15 ℃ (302±59°F)

❖ Mechanical Properties of all weld metal

Consumable	Tensile Test			CVN Impact Test (Joule)	
	Tensile specimen artificially aged at 93℃ for 48hr, as permitted by AWS A5.20-95				
Supershield 71-T8	YS (MPa / ksi)	TS (MPa / ksi)	EL(%)	-30℃ (-22°F)	-40℃ (-40°F)
	447(64)	565(81)	32.2	65(48)	40(30)
AWS A5.36 E71T8-A2-CS3	≥ 400 (58)	490~660 (70~95)	≥22	≥27J at -30℃ (≥20ft · lbs at -22°F)	

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

Consumable	C	Si	Mn	P	S	Ni	Cr	Mo	V	Cu	Al
Supershield 71-T8	0.161	0.15	0.63	0.003	0.001	0.016	0.023	0.005	0.004	0.014	0.48
AWS A5.36 E71T8-A2-CS3	≤ 0.30	≤ 0.60	≤ 1.75	≤ 0.03	≤ 0.03	-	-	-	-	-	≤ 1.8

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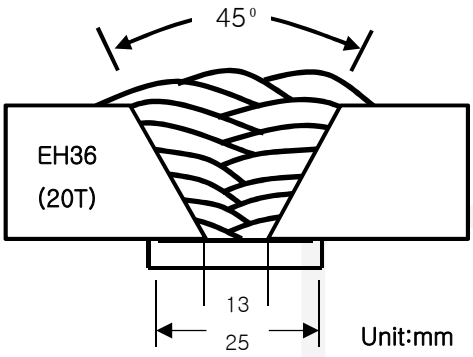
Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Welding Position	:	1G(PA)
Diameter(mm)	:	1.8mm (0.072in)
Shielding Gas	:	None
Polarity	:	DC-
Amp./ Volt.	:	240A / 21V
Stick-Out	:	25mm (1in)
Pre-Heat(℃)	:	R.T .
Interpass Temp.(℃)	:	150±15 ℃ (302±59°F)

❖ Mechanical Properties of all weld metal

Consumable	Tensile Test			CVN Impact Test (Joule)	
	Tensile specimen artificially aged at 93℃ for 48hr, as permitted by AWS A5.20-95				
Supershield 71-T8	YS (MPa / ksi)	TS (MPa / ksi)	EL(%)	-30℃ (-22°F)	-40℃ (-40°F)
	486(70)	549(79)	26.6	60(44)	39(29)
AWS A5.36 E71T8-A2-CS3	≥ 400 (58)	490~660 (70~95)	≥22	≥27J at -30℃ (≥20ft · lbs at -22°F)	

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

Consumable	C	Si	Mn	P	S	Ni	Cr	Mo	V	Cu	Al
Supershield 71-T8	0.174	0.17	0.59	0.002	0.001	0.014	0.023	0.003	0.0001	0.011	0.49
AWS A5.36 E71T8-A2-CS3	≤ 0.30	≤ 0.60	≤ 1.75	≤ 0.03	≤ 0.03	-	-	-	-	-	≤ 1.8

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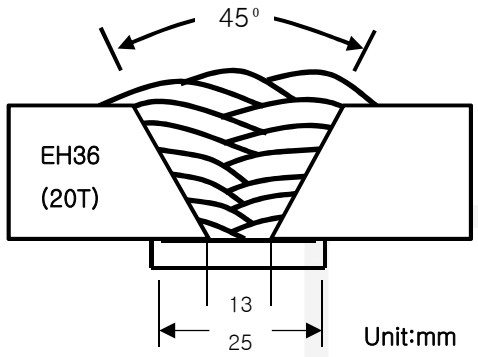
Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Welding Position	:	1G(PA)
Diameter(mm)	:	2.0mm (5/64in)
Shielding Gas	:	None
Polarity	:	DC-
Amp./ Volt.	:	250A / 22V
Stick-Out	:	25mm (1in)
Pre-Heat(℃)	:	R.T .
Interpass Temp.(℃)	:	150±15 ℃ (302±59°F)

❖ Mechanical Properties of all weld metal

Consumable	Tensile Test			CVN Impact Test (Joule)	
	Tensile specimen artificially aged at 93℃ for 48hr, as permitted by AWS A5.20-95				
Supershield 71-T8	YS (MPa / ksi)	TS (MPa / ksi)	EL(%)	-30℃ (-22°F)	-40℃ (-40°F)
	491(71)	564(81)	29.4	68(50)	46(34)
AWS A5.36 E71T8-A2-CS3	≥ 400 (58)	490~660 (70~95)	≥22	≥27J at -30℃ (≥20ft · lbs at -22°F)	

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

Consumable	C	Si	Mn	P	S	Ni	Cr	Mo	V	Cu	Al
Supershield 71-T8	0.185	0.15	0.64	0.001	0.001	0.012	0.023	0.007	0.003	0.015	0.59
AWS A5.36 E71T8-A2-CS3	≤ 0.30	≤ 0.60	≤ 1.75	≤ 0.03	≤ 0.03	-	-	-	-	-	≤ 1.8

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Diffusible Hydrogen Content

❖ Welding Conditions

Diameter	:	1.8mm (0.072in)	**Amp.(A) / Volt.(V)**	:	240 / 21
Shielding Gas	:	None	**Stick-Out**	:	25mm (1in)
Current Type & Polarity	:	DC(−)	**Welding Speed**	:	30 cm/min (12 in/min)
Welding Position	:	1G (PA)			

❖ Hydrogen Analysis Using Gas Chromatography Method

Hydrogen Evolution Time	:	72 hrs
Evolution Temp.	:	45 ℃ (113°F)
Barometric Pressure	:	780 mm-Hg

❖ Result(㎖/100g Weld Metal)

X1	X2	X3	X4
6.1	**5.8**	**6.3**	**6.4**

Average Hydrogen Content 6.15 ㎖ / *100g Weld Metal*

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Proper Welding Condition

❖ Proper Voltage and Current Range

Wire Diameter	Contact Tip to Work Distance	Current(A)	Voltage(V)
1.6mm (1/16in)	25mm (1 in)	200	18~21
		220	19~21
		240	20~22
		260	21~23
1.8mm (0.072in)	25mm (1 in)	230	20~21
		260	21~23
		290	22~24
2.0mm (5/64in)	25mm (1 in)	240	20~22
		270	21~23
		300	22~24

❖ F No & A No

F No	A No
6	1

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