

# S-777MX X H-14 X A-G

HYUNDAI

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SUBMERGED ARC WELDING CONSUMABLES FOR WELDING OF Mild & 490MPa(H-14), 570MPa(A-G) CLASS HIGH TENSILE STEEL

2025.04

## HYUNDAI WELDING CO., LTD.

Specification	Flux	JIS	Z 3352	EN ISO 14174	KS B ISO 14174		
	S-777MX	S A	AR 1	S A AR 1	S A AR 1		
	Wire	JIS Z 3351	JIS Z 3183	AWS A5.17/A5.23	EN ISO 14171-A		
	H-14	YS-S6	S502-H	A5.17 F7A0-EH A5.17 F7PZ-EH	14 S4		
	A-G	YS-S6	S582-H	A5.23 F8A0-EG	-G S4		
Applications	Single ar ships, ag	nd multi-layer pricultural imp	welding of min lements, mach	niature LPG tanks, inery, bridges and	spiral pipes, structural steels.		
Characteristics on Usage	Especially insensitive to oil, rust, scale, dirt and primers on the surface to be welded. Slag detachability in narrow groove and resistance to porosity are excellent. Suitable for welding of thin and medium plate in high speed welding. As the consumption of flux is low, it is very economical. Applicable to horizontal and flat fillet welding						
Note on Usage	1. Dry the	e flux at 300~	350℃(572~66	2°F) for 60minutes	before use.		
	2. When t	he flux heigh	t is excessive,	poor bead appeara	ance may occur.		
	3. Remov from th	e rust, scales e groove to o	s, oil, paint, wa btain sound w	ter, dirt and slag o eld metal.	f tack welds		
	4. Use we groove	elding current to avoid crac	and speed as king.	low as possible at	the first layer of		



## **Welding Consumables for Test**

Flux

Concurrente	Chemical Composition, wt%				
Consumable	Al <sub>2</sub> O <sub>3</sub> +TiO <sub>2</sub>	SiO <sub>2</sub> +MnO	CaO+MgO		
S-777MX	55	25	20		

Consumable	Particle Size (Mesh)	Type of Flux	В.І	H₂O(1000℃)/ CO₂(%)
S-777MX	10 x 48	Agglomerated	0.5	0.01/0.05

#### Electrode

Oswannakia	Dia.	Chemical Composition of Electrode (Wire)						
Consumable	mm (in)	с	Si	Mn	Р	S		
H-14	4.0(5/32)	0.12	0.03	1.93	0.016	0.009		
AWS A5.17 EH14		0.10-0.20	≤0.10	1.70-2.20	≤0.030	≤0.030		
A-G	4.0(5/32)	0.12	0.05	2.01	0.017	0.005		
AWS A5.23	B EG	Not specified				2		

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## Mechanical Properties & Chemical Composition of All Weld Metal

Welding Conditions



[Joint Preparation & Layer Details]

Base metal :	AH36
Particle size	10 x 48
Flux type :	Agglomerated
Amp./ Volt./CPM :	550 / 30 / 40
Stick-Out mm (in)	30 (1.18)
Pre-Heat ℃(°F) :	R.T.
Interpass Temp. °C (°F) :	<150 (302)
Polarity :	AC

#### Mechanical Properties of All weld metal

Consumables	РШНТ		Tensile Test	CVN Impact Test Joules (ft·lbf)		
Consumables	Condition	YS MPa(psi)	TS MPa(psi)	EL (%)	0℃ (32°F)	-20℃ (0°F)
S-777MX X H-14	As welded	560 (81,000)	620 (89,000)	27	105(77)	45(35)
AWS A5.17 F7A0-EH14	-	≥400 (58,000)	490~660 (70,000~95,000)	≥ 22	≥27J ; (0	at −20℃ Ĵ°F)

### Chemical Composition of All weld metal(wt%)

Consumables	С	Si	Mn	Р	S
S-777MX X H-14	0.08	0.50	0.90	0.020	0.010

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Method by AWS Spec.

Method by AWS Spec.

## Mechanical Properties & Chemical Composition of All Weld Metal

Welding Conditions



[Joint Preparation & Layer Details]

Base metal :	AH36
Particle size :	10 x 48
Flux type :	Agglomerated
Amp./ Volt./CPM :	550 / 30 / 40
Stick-Out mm (in)	30 (1.18)
Pre-Heat °C (°F) :	R.T .
Interpass Temp. °C (°F) :	<150 (302)
Polarity :	AC

#### Mechanical Properties of All weld metal

Consumables	PWHT Condition		Tensile Test	CVN Impact Test Joulse (ft·lbf)	
		YS MPa(psi)	TS MPa(psi)	EL (%)	0℃ (32°F)
S-777MX X H-14	620℃ x 1hr	515 (74,000)	620 (90,000)	30	110(81)
AWS A5.17 F7PZ-EH14	-	≥400 (58,000)	490~660 (70,000~95,000)	≥ <b>22</b>	-

## Chemical Composition of All weld metal(wt%)

Consumables	С	Si	Mn	Р	S
S-777MX X H-14	0.08	0.50	0.90	0.020	0.015

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Method by AWS Spec.

## Mechanical Properties & Chemical Composition of All Weld Metal

Welding Conditions



[Joint Preparation & Layer Details]

Base metal	:	AH36
Particle size	:	10 x 48
Flux type	:	Agglomerated
Amp./ Volt./CPM	:	550 / 30 / 40
Stick-Out mm (in)	:	30 (1.18)
Pre-Heat ℃(°F)	:	R.T.
Interpass Temp. °C (°F)	:	<150 (302)
Polarity	:	AC

#### Mechanical Properties of All weld metal

Consumables	Р₩НТ		Tensile Test	CVN Impact Test Joules (ft·lbf)	
Condition	YS MPa(psi)	TS MPa(psi)	EL (%)	-20℃ (0°F)	
S-777MX X A-G	As welded	510 (74,000)	610 (88,000)	30	85 (64)
AWS A5.23 F8A0-EG-G	-	≥470 (68,000)	550~700 (80,000~100,000)	≥ <b>20</b>	≥27J at −20℃ (0°F)

### Chemical Composition of All weld metal(wt%)

Consumables	С	Si	Mn	Р	S
S-777MX X A-G	0.06	0.60	1.00	0.015	0.005

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## **Approvals**

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Consumables	KR	ABS	LR	BV	DNV	NK
S-777MX X H-14	2M 2YM	2M 2YM	2M 2YM	A2M A2YM	ШҮМ	KAW2M KAW52M
	1.6~6.4	1.6~6.4	1.6~6.4	1.6~6.4	1.6~6.4	1.6~6.4
S-777MX X H-14 (2 Pole)		2M 2YM 1.6~6.4	2M 2YM 1.6~6.4	A2M A2YM 1.6~6.4	II YM 1.6~6.4	KAW2M KAW52M 1.6~6.4



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