SM-55H

GAS METAL ARC WELDING CONSUMABLES
FOR WELDING OF 540Mpa CLASS
HIGH TENSILE STEEL

HYUNDAI WELDING CO., LTD.

❖ **Specification**   *JIS Z3312*   YGW-18

❖ **Applications**

Fillet and horizontal fillet welding of construction machinery, structural Steels, bridges, ships and vehicles.

❖ **Characteristics on Usage**

SM-55H is a solid wire designed for flat and horizontal fillet welding and is to be used in a high current welding with CO_2 shielding gas, It benefits from a high deposition rate and excellent penetration. As this wire contains special elements, its weldability and impact values are excellent.
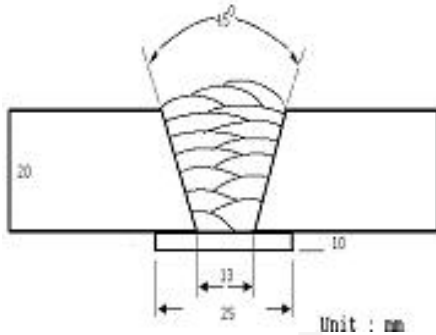
❖ **Note on Usage**

1. Use with CO_2 gas.

2. Flow quantity of shielding gas should be 25ℓ/min. approximately.

3. Use wind screen against wind.

4. Keep distance between tip and base metal 6~15mm for less than 250A, and 15~25mm for more than 250A of welding current.

Mechanical Properties
& Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Rules

[Joint Preparation & Layer Details]

Diameter(mm)	:	1.2mm (0.045in)
Shielding Gas	:	100%CO_2
Flow Rate(ℓ/min.)	:	20
Amp./ Volt.	:	280 / 32
Stick-Out(mm)	:	20~25
Pre-Heat(℃)	:	R.T .
Interpass Temp.(℃)	:	150±15
Polarity	:	DC(+)

❖ Mechanical Properties of the weld metal

Brand Name	Tensile Test Results			Charpy V-Notch Impact Value J (ft . lbs)	
	Y.S. MPa(ksi)	**T.S. MPa(ksi)**	**EL.(%)**	**0℃(32°F)**	**−20℃(−4°F)**
SM-55H	550 (79.8)	620 (89.9)	28.0	161 (119)	140 (103)
JIS Z3312 YGW-18	≥ 430	≥ 540	≥ 22	≥47J at 0℃	

❖ Chemical Analysis of the weld metal(wt%)

Brand Name	C	Si	Mn	P	S
SM-55H	0.065	0.68	1.41	0.014	0.009
JIS Z3312 YGW-18	Not Specified				

Proper Welding Condition

❖ Proper Current Range

Brand Name	Welding Position	Wire Dia. (mm)		
		1.2mm (0.045in)	1.4mm (0.052in)	1.6mm (1/16in)
SM-55H	Flat	200~350Amp	250~450Amp	300~550Amp
	H-Fillet	200~350Amp	250~450Amp	300~550Amp

Chemical Composition of Wire

❖ **Chemical Composition of Wire (Wt%)**

Brand Name	C	Si	Mn	P	S	Ti
SM-55H	0.06	0.95	1.95	0.016	0.005	0.20
JIS Z3312 YGW-18	≤ 0.15	0.55~1.10	1.40~2.60	≤ 0.030	≤ 0.030	≤ 0.30

Notice

This test report is made for giving general information, and it's not meaning guarantee.
Test results are changeable by several welding
- parameter including base materials