HYUNDAI WELDING

Rev. 03

SM-80D2

GAS METAL ARC WELDING CONSUMABLES
FOR WELDING OF 0.5%Mo & 550MPa CLASS
HIGH TENSILE STEEL

2022.05

HYUNDAI WELDING CO., LTD.

SM-80D2

❖ Specification

AWS A5.28 ER80S-D2 (100%CO2)

ER90S-D2 (Ar + 1~5%O2)

EN ISO 16834-B G 59 A 3 C1 4M31

EN ISO 16834-B G 62 A 3 M21 4M31

❖ Applications

Butt and fillet welding of steel structures and using 550~620MPa tensile strength steel such as construction machinery, building and pressure vessels

❖ Characteristics on Usage

Suitable for flat and horizontal fillet welding position.

As the deposition rate is very high, highly efficient welding can be performed.

As the wire contains special elements, its bead appearance is excellent.

❖ Note on Usage

1. Use with CO_2 / Argon + 1~5% O_2 gas.

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

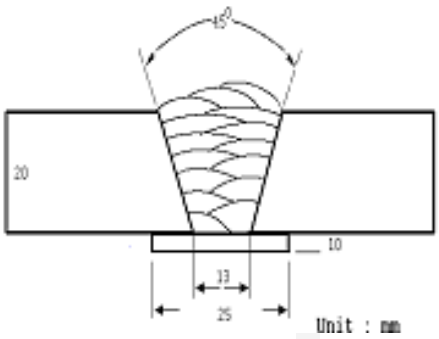
3. Use wind screen against wind.

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 weld metal

Brand Name	Tensile Test			Charpy V-Notch Impact Test J (ft . lbs)
SM-80D2	YS MPa(ksi)	TS MPa(ksi)	EL (%)	-30℃(-20°F)
	526 (76.3)	631 (91.5)	23.8	30 (22)
AWS A5.28 ER80S-D2	≥470	≥550	≥17	≥27J at -30℃

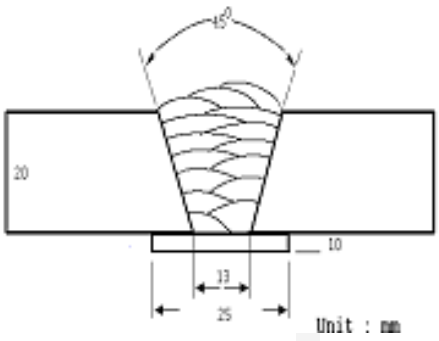
❖ Chemical Composition of weld metal(wt%)

C	Si	Mn	P	S	Mo
0.09	0.35	1.25	0.007	0.005	0.40

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	:	Ar + 5%O_2
Flow Rate(ℓ /min.)	:	20
Amp./ Volt.	:	280 / 30
Stick-Out(mm)	:	20~25
Pre-Heat(℃)	:	R.T .
Interpass Temp.(℃)	:	150±15
Polarity	:	DC(+)

❖ Mechanical Properties of weld metal

Brand Name	Tensile Test			Charpy V-Notch Impact Test J (ft . lbs)
SM-80D2	YS MPa(ksi)	TS MPa(ksi)	EL (%)	-30℃(-20°F)
	585 (84.8)	705 (102.2)	17.8	50 (37)
AWS A5.28 ER90S-D2	≥540	≥620	≥17	≥27J at -30℃

❖ Chemical Composition of weld metal(wt%)

C	Si	Mn	P	S	Mo
0.09	0.46	1.48	0.007	0.005	0.41

Chemical Composition of Wire

❖ Chemical Composition of Wire (Wt%)

Brand Name	C	Si	Mn	P	S	Mo
SM-80D2	0.09	0.55	1.74	0.007	0.005	0.41
AWS A5.28 ER80S-D2 ER90S-D2	0.07~0.12	0.50~0.80	1.60~2.10	≤ 0.025	≤ 0.025	0.40~0.60

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