

# **SM-100 (HD)**

**AWS A5.28/ ASME SFA5.28 ER100S-G**

**EN ISO 16834 G62 4 M21 Mn3NiCrMo**



## ❖ Specifications

AWS A5.28/ ASME SFA5.28 ER100S-G  
EN ISO 16834 G62 4 M21 Mn3NiCrMo

## ❖ Applications

Gas shielded welding wire conforming to standard UNI EN ISO 16834-A- G62 4 M21 Mn3NiCrMo and AWSA5.28 ER100S-G suitable to join Cr-Ni-Mo low alloy steels.

## ❖ Characteristics on usage

Characteristic features include excellent start properties; trouble-free feeding at high wire speeds and lengthy feed distance, a very stable arc at high welding currents, extremely low levels of spatter, low fume emission, reduced contact tip wear and improved protection against corrosion of wire

## ❖ Shielding gas

Ar+CO<sub>2</sub>

## ❖ Current

GMAW : DC+

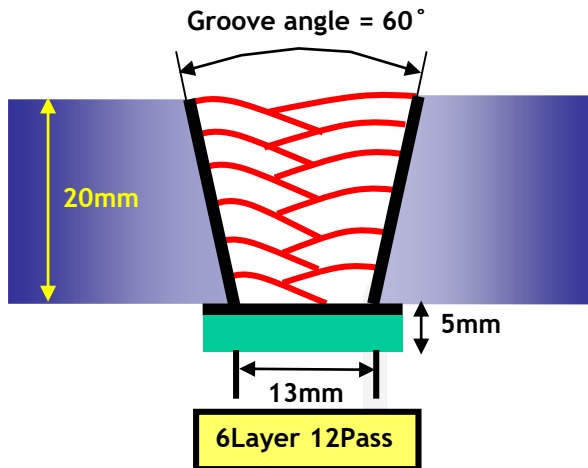
## ❖ Package

SM-100 (HD) (GMAW)	Size(mm)	0.8	1.0	1.2	1.6
	Weight	Spool : 15, 20kg			



## Mechanical Properties & Chemical Composition of All Weld Metal (GMAW)

### ❖ Welding condition



Size(mm) : 1.2mm (GMAW)

Shielding gas : 80%Ar+20%CO<sub>2</sub>

Flow rate(ℓ /min.) : 20~25

Amp.(A)/Volt.(V) : 280/30

Interpass temperature(°C) : 135~165

PWHT : As weld

### ❖ Chemical composition of wire (wt.%)

Brand Name	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	Al
SM-100 (HD)	0.10	0.78	1.69	0.009	0.011	0.51	0.58	0.27	0.06	0.007
ER100S-G	-									

\* Other Elements Total shall include Pb, Sn, Zn

### ❖ Typical Chemical Composition of All Weld Metal(wt%)

Brand Name	C	Si	Mn	P	S	Ni	Cr	Mo	Cu
SM-100 (HD)	0.088	0.59	1.30	0.010	0.010	0.465	0.519	0.236	0.098



## Mechanical Properties & Chemical Composition of All Weld Metal (GMAW)

### ❖ Typical Mechanical Properties of All Weld Metal

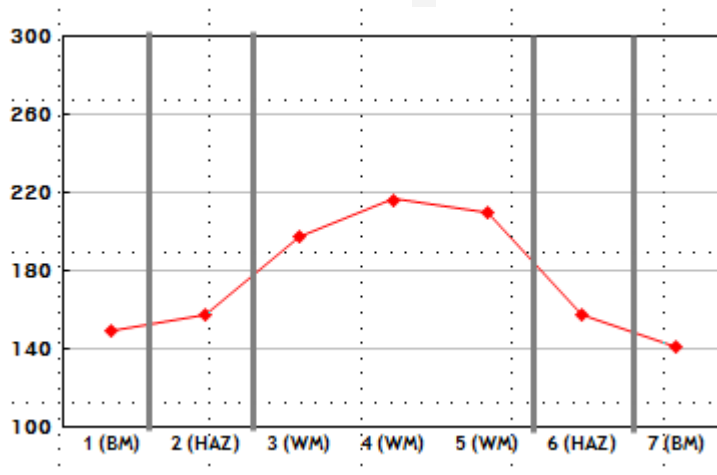
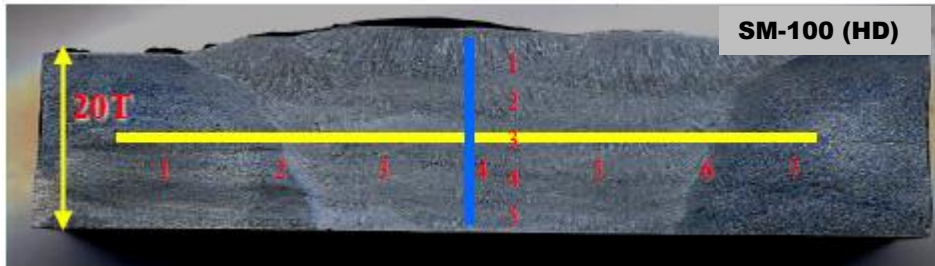
Brand Name	Y.S. (N/mm <sup>2</sup> )	T.S. (N/mm <sup>2</sup> )	EL. (%)
SM-100 (HD)	700	760	23.8
AWS A5.28 ER100S-G	-	≥690	-

Charpy V-Notch Impact Value (Joules)				
°C	X1	X2	X3	Avg.
-20	87	99	104	97
-40	78	76	63	72



## Mechanical Properties & Chemical Composition of All Weld Metal (GMAW)

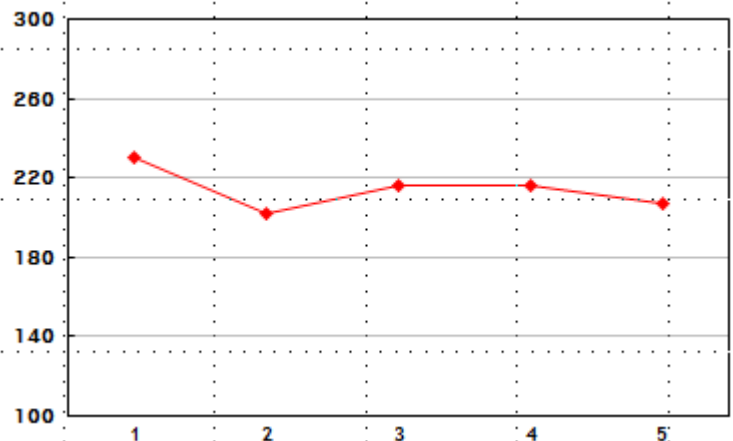
### ❖ Hardness test



Hv : 10kg load

#### SM-100 (HD)

WM(Avg.) 214 HAZ(Avg.) 157 BM(Avg.) 145



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.



## Tensile testing at elevated temperature (GMAW)

### ❖ Tensile strength (High temperature)

Test temp.	300°C	350°C	400°C	Remark	Test method
Y.S. (N/mm <sup>2</sup> )	631	612	600	0.2% offset	ASTM E8/E8M-11
T.S. (N/mm <sup>2</sup> )	706	699	697		
EL. (%)	29.8	29.8	29.4		

#### ※ Test Enviroment

- Temperature ( $18 \pm 0.5$ )°C
- Relative Humidity( $32 \pm 1$ )% R.H



#### ※ Universal Testing machine

- Force Capacity : 500kn Dynamic
- Axial Extensometer, COD gage

#### Test specimen

