



HYUNDAI
W E L D I N G

Rev. 00

SMT-5183

GAS METAL ARC WELDING CONSUMABLE
FOR WELDING OF 5083 AL-ALLOY

HYUNDAI WELDING CO., LTD.



❖ Specification

AWS A5.10	ER 5183
JIS Z3232	A5183-WY
EN 573.3	EN AW-5183
ISO 18273	S AL 5183

❖ Applications

This alloy is commonly used in ships, drilling equipment, train, automobile, storage tanks and pressure vessel industry.

❖ Characteristics on Usage

5183 is a about 5% Magnesium and 0.6% Manganese Aluminum filler metal which has high strength, high corrosion resistance, and matches the color well with the parent metal after anodizing.

❖ Note on Usage

1. Make sure the consumable has adapted the environment temperature before unpacking the package.
2. Remove dirt such as oil and dust from the groove before welding.
3. The quality of the weld joint will be better if the humidity of the welding room is controlled.

❖ Type of Current

DC+

❖ Packing

D270 Spool	5kg
D300 Spool	6Kg、7Kg



Chemical Composition & Diameter Tolerance of Consumable

❖ Chemical Analysis of Consumable (wt%)

Consumable	Chemical Composition (wt%)									
	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Be	Al
SMT-5183	0.06	0.09	0.02	0.65	4.96	0.08	0.03	0.02		Rem.
AWS A5.10 ER 5183	≤0.40	≤0.40	≤0.10	0.5~1.0	4.3~5.2	0.05~0.25	≤0.25	≤0.15	≤ 0.0003	Rem.
ISO 18273 S Al-5183	≤0.40	≤0.40	≤0.10	0.5~1.0	4.3~5.2	0.05~0.25	≤0.25	≤0.15	≤ 0.0003	Rem.
EN 573.3 EN AW-5183	≤0.40	≤0.40	≤0.10	0.5~1.0	4.3~5.2	0.05~0.25	≤0.25	≤0.15	≤ 0.0003	Rem.
JIS Z3232 A5183-WY	≤0.40	≤0.40	≤0.10	0.05~1.0	4.3~5.2	0.05~0.25	≤0.25	≤0.15		Rem.

❖ Diameter Tolerance

Nominal Diameter/ mm	Diameter and Tolerance			
	SMT-5183	AWS A5.10	EN 544	JIS Z3232
0.8	0.79	-0.05,+0.03	-0.04,+0.01	± 0.02
0.9	0.89	-0.05,+0.03	-0.04,+0.01	Not Specified
1.0	0.99	-0.05,+0.03	-0.04,+0.01	± 0.03
1.2	1.19	-0.05,+0.03	-0.04,+0.01	± 0.03
1.6	1.58	-0.05,+0.03	-0.04,+0.01	± 0.03

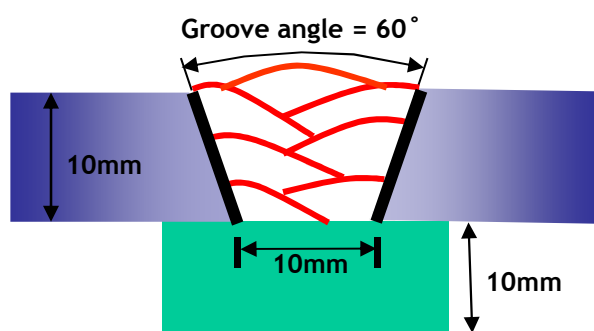
This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of HYUNDAI WELDING 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.



RT of weld matel

❖ Welding Conditions

Method by AWS Spec.



Diameter(mm)	: 1.6mm
Base metal	: 5083-O
Amp./ Volt.	: 230/23.5
Travel speed(mm/min)	: 300~800
Pre-Heat(℃)	: R.T .
Interpass Temp.(℃)	: 60~110
Position	: Overhead
Polarity	: DCEP

❖ RT of weld matel¹

Consumables	AWS A5.10 ²		EN 14532 & ISO 10042		JIS Z3232
	Results	Requirements (Rounded indications)	Results ³	Requirement	
SMT-5183	1.5mm: 3 1mm: 4 0.5mm: 11	up to 1.9mm: ≤4 up to 1.3mm: ≤5 up to 0.5mm: ≤17 or 0.5mm: ≤108	Level C	Level B	Not Specified

Note1: In evaluating the radiograph, the center 150 mm of the test specimen shall be considered, and all extra weld shall be disregarded.

Note2: Indications which do not exceed 0.4 mm diameter or length, or both, shall be disregarded, and indications larger than the large indications permitted can be regarded do not meet the requirements.

Note3: The results are obtained based on the experiment of the test specimen welded in flat position which is demanded in EN14532.




Mechanical Properties of welded joint

❖ Mechanical Properties of welded joint

Consumable	Tensile test	Bend test ¹	
	Tensile strength Rm/MPa	Former Diameter	Bending angle (degrees)
SMT-5183	281	40	180
AWS A5.10 ER 5183	Not Specified	Not Specified	
EN 14532 S Al 5183	≥275	≤50	
JIS Z3232 A5183-WY	≥275	≤66	

Note 1: During testing, the test specimen shall not reveal any one single flaw greater than 3 mm in any direction. Flaws appearing at the corners of a test specimen shall be ignored in the evaluation unless there is evidence that they result from lack of fusion.

❖ Appearance of Bead on plate

Flat(PA) , Base : 6063-T5, 6mm	
	SMT-5183
Automatic MIG, DCEP, 235A/23.5V	

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Approvals

❖ AUTHORIZED APPROVAL DETAILS

Consumable	DB	CE
SMT-5183	ISO 18273 S AI 5183 0.8~4.0mm	ISO 18273 S AI 5183 0.8~4.0mm

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