



KUANG TAI

KM-56Z

Product Data Sheet

Non Copper Coating Wire for High Strength Steel

Specification

AWS A5.18 ER70S-6

JIS Z3312 YGW12

Applications

- Capable of producing weld deposits with tensile strength exceeding 490 N/mm²
- Butt and fillet welding of automobiles, steel structures, shipbuilding and heavy machine.

Characteristics

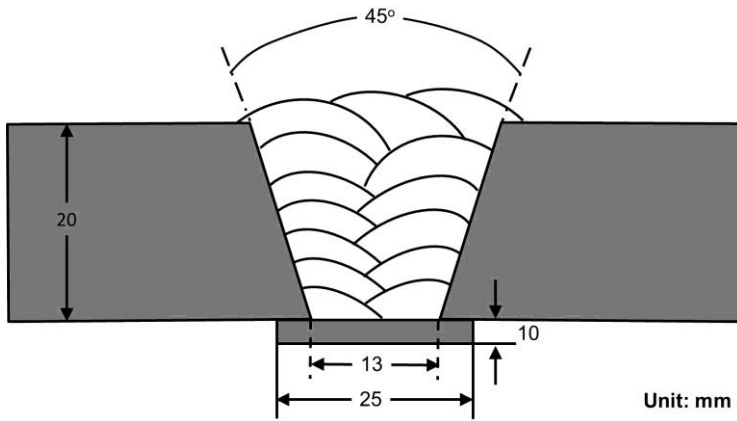
- High levels of manganese and silicon deoxidizers tolerate medium to heavy mill scale surfaces
- Supports short-circuiting, globular, axial spray and pulsed spray transfer
- Excellent rust resistance, wire feedability and tip life
- Lower spatter and harmful copper fume.

Note on Usage

- Use with 100%CO₂ or Ar+15~20%CO₂
 - Flow quantity of shielding gas should be 20~25 l/min.
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Mechanical Properties & Chemical Composition of All Weld Metal

Welding Conditions



[Joint Preparation & Layer Details]

Method by AWS Rules

Diameter(mm)	1.2mm
Shielding Gas	100%CO ₂
Flow Rate (l/min)	20
Amp / Volt	260 / 28
Stick-Out (mm)	15-20
Interpass Temp (°C)	150±15
Polarity	DC(+)

● Mechanical Properties of the Weld Metal

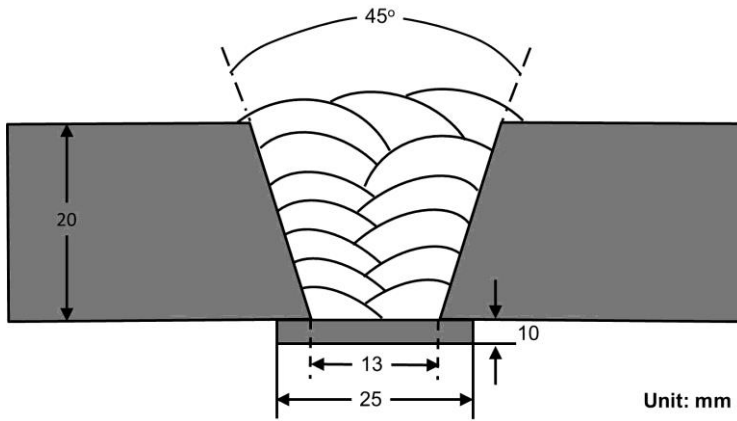
Brand Name	Tensile Test Results			Charpy V-Notch Impact Value (Joules)		
	Y.S. (MPa)	T.S. (MPa)	EL. (%)	-29°C	-40°C	-50°C
KM-56	481	598	28	81	58	-
AWS A5.18 ER70S-6	400 min	480 min	22 min	27	-	-

● Chemical Analysis of the Weld Metal

Brand Name	Unit: wt%								
	C	Si	Mn	P	S	Ni	Cr	Mo	V
KM-56	0.08	0.81	1.47	0.011	0.012	0.01	0.02	0.02	<0.005

Mechanical Properties & Chemical Composition of All Weld Metal

Welding Conditions



[Joint Preparation & Layer Details]

Method by AWS Rules

Diameter(mm)	1.2mm
Shielding Gas	80%Ar+20% CO ₂
Flow Rate (l/min)	20
Amp / Volt	260 / 27
Stick-Out (mm)	15-20
Interpass Temp (°C)	150±15
Polarity	DC(+)

● Mechanical Properties of the Weld Metal

Brand Name	Tensile Test Results			Charpy V-Notch Impact Value (Joules)		
	Y.S. (MPa)	T.S. (MPa)	EL. (%)	-29°C	-40°C	-50°C
KM-56	572	621	25	94	62	-
AWS A5.18 ER70S-6	400 min	480 min	22 min	27	-	-

● Chemical Analysis of the Weld Metal

Unit: wt%

Brand Name	C	Si	Mn	P	S	Ni	Cr	Mo	V
KM-56	0.07	0.88	1.55	0.010	0.011	0.02	0.03	0.01	<0.005

Chemical Analysis of the Wire

Brand Name	C	Si	Mn	P	S	Cu
KM-56Z	0.07	0.89	1.68	0.015	0.011	0.02
AWS A5.18 ER70S-6	0.06-0.15	0.8-1.15	1.4-1.85	<0.025	<0.035	<0.50

Diffusible Hydrogen Content of Weld Metal

Unit: ml/100g weld metal

Specimen no.	1	2	3
	1.5	1.8	1.4

* Test method: carrier gas hot extraction with infrared furnace; conforms to EN/ISO 3690 and AWS A4.3.

Available Sizes and Suggested Operating Range

Welding Position	Wire Diameter (mm)		
	0.9mm	1.0mm	1.2mm
F&HF	100~200A	100~200A	120~330A
Vertical Up	80~160A	80~160A	100~180A

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 Kuang Tai Metal IND 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.