

# TM-56

AWS A5.18 ER70S-6/ER70S-6A  
EN ISO 14341-A G 42 4 C1 3Si1  
EN ISO 14341-A G 46 4 M21 3Si1  
JIS Z 3312 YGW12

## Characteristics and Applications:

TM-56 is a solid wire for butt or fillet MAG welding of mild steel and 490N/mm<sup>2</sup> high tensile steel. Stable wire feeding is due to special wire surface treatment. Low spatter loss, stable arc and high deposition efficiency can be obtained. It is suitable for the welding of vehicles, ships, containers and industrial machinery.

## Notes on usage:

1. E.S.O. (Electrode Stick Out) must be kept between 15-25mm.
2. Proper welding conditions must be adopted according to the purpose as the bead appearance and penetration are both varied widely.
3. Use 100% CO<sub>2</sub> or Ar + CO<sub>2</sub> gas mixture as shielding gas.
4. Control within the optimal range of welding conditions for this wire as possible.

## Typical chemical composition of wire metal (wt%):

|               | C         | Mn        | Si        | P      | S      | Ni    | Cr    | Mo    | V     | Cu    |
|---------------|-----------|-----------|-----------|--------|--------|-------|-------|-------|-------|-------|
| AWS           | 0.06-0.15 | 1.40-1.85 | 0.80-1.15 | ≤0.025 | ≤0.035 | ≤0.15 | ≤0.15 | ≤0.15 | ≤0.03 | ≤0.50 |
| EN ISO        | 0.06-0.14 | 1.30-1.60 | 0.70-1.00 | ≤0.025 | ≤0.025 | ≤0.15 | ≤0.15 | ≤0.15 | ≤0.03 | ≤0.35 |
| Typical value | 0.07      | 1.53      | 0.85      | 0.02   | 0.011  | 0.02  | 0.035 | 0.011 | 0.013 | 0.04  |

## Typical mechanical properties of weld metal:

|               | Yield strength<br>MPa(ksi) | Tensile strength<br>MPa(ksi) | Elongation<br>% | Charpy V-Notch<br>J (ft-lbf) |               | Remarks         |
|---------------|----------------------------|------------------------------|-----------------|------------------------------|---------------|-----------------|
|               |                            |                              |                 | -30°C (-20°F)                | -40°C (-40°F) |                 |
| AWS           | ≥400(58)                   | ≥490(70)                     | ≥22             | > 27J                        | -             | CO <sub>2</sub> |
| EN ISO        | ≥420(61)                   | 500-640(73-93)               | ≥20             | -                            | > 47J         | CO <sub>2</sub> |
|               | ≥460(67)                   | 530-680(77-99)               | ≥20             | -                            | > 47J         | MIX             |
| Typical value | 475(69)                    | 573(83)                      | 26              | -                            | 57(42)        | CO <sub>2</sub> |
|               | 490(71)                    | 585(85)                      | 27              | -                            | 98(72)        | MIX             |

## Sizes and recommended current range (DC <+>):

| Diameter (mm) | 0.9    | 1.0    | 1.2    | 1.6     |
|---------------|--------|--------|--------|---------|
| Amps          | 70-160 | 80-220 | 90-350 | 170-400 |

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