

70S TIG filler wire in a 2.5 mm diameter (commonly sourced as standard **2.4 mm** or exact **2.5 mm** depending on the regional manufacturer) is a copper-coated carbon steel solid rod primarily used for high-quality Gas Tungsten Arc Welding (GTAW) on mild and medium-tensile steels. [[1](#), [2](#), [3](#), [4](#), [5](#)]

Key Technical Breakdown

- **70**: Indicates a minimum tensile strength of **70,000 psi** (approx. 485–520 MPa).
 - **S**: Stands for **Solid wire** (not flux-cored).
 - **2.5 mm Diameter**: Ideal for medium-thickness plate fabrication, multi-pass welding, and structural root runs.
 - **Shielding Gas**: Requires **100% Argon gas**.
 - **Current Conditions**: Operates on **DCEN** (Direct Current Electrode Negative). [[1](#), [2](#), [3](#), [4](#), [5](#)]
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Common Variations: 70S-2 vs. 70S-6 [[1](#), [2](#), [3](#)]

When purchasing "70S" wire, you will usually choose between two specific American Welding Society (AWS) classifications:

1. ER70S-2 (Triple Deoxidized)

- **Composition**: Contains added **zirconium, titanium, and aluminum**.
- **Best For**: Surfaces with light rust, mill scale, or minor oil residues. The triple deoxidizers prevent porosity.
- **Puddle Behavior**: Freezes faster, making it excellent for out-of-position or vertical-up welding.