

ER70S-6

G42 4 M21 3Si1



Wire

Key Features

- Excellent ductility
- Low cost
- High toughness
- Machinability

Applications

- General fabrications
- Automotive
- Pipes
- Structural steel
- Carbon steel plate
- Sheet metal applications

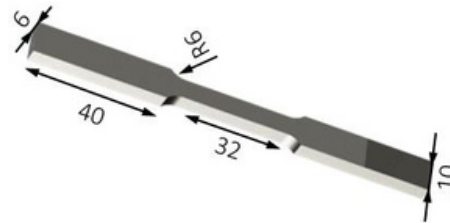


Chemical Composition

Element	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V	Fe
Weight Percent (Wt.%)	0.13	0.7	1.16	0.0103	0.025	0.025	0.01	0.03	0.1	0.002	Bal



Mechanical Properties[1]

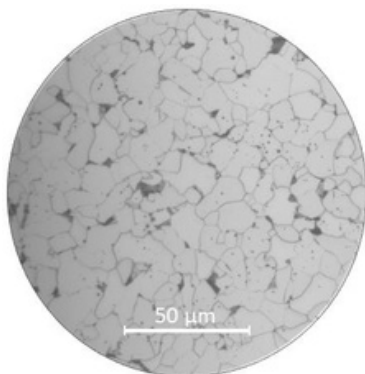


*Test Standard used ASTM E8

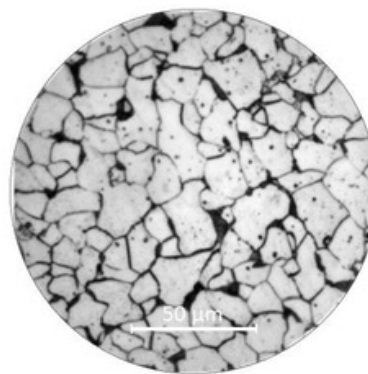
Material	Tensile Strength (MPa)	Yield Strength (MPa)	Elongation (%)	Hardness (HV)	Hardness (HB)
MetalWorm WAAM ER70S-6	486 @ LD [2]	357 @ LD	38 @ LD	170	160
	480 @ ND[3]	356 @ ND	33 @ ND		
ASTM A285 Grade C [4]	360-515	205	23-27	N/A	N/A



Microstructure



WAAM ER70S-6 @ MetalWorm



Reference ST-37 steel alloy

The microstructure of WAAM fabricated ER70S-6 is typical microstructure of low carbon steel. The dominant microstructure is equiaxed primary ferrite grains which are bonded within the secondary phase of lamellar pearlite phases.

[1] Tensile tests were carried out at room temperature, according to ASTM E8 standard with thickness of 6 mm and loading speed of 0.25 mm/s.
 [2] LD corresponds to longitudinal or deposition direction.
 [3] ND corresponds to normal or building direction.
 [4] The data are taken from Masteel UK Limited, <https://masteel.co.uk/astm-a285/>