

# Meltio Mild Steel ER70S6

Material Group: Mild Steels

Mild Steel is the most common form of steel because of its relatively low price and good material properties. ER70S is magnetic, ductile and highly malleable alongside its unparalleled weldability and machinability.

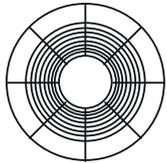
## Nomenclature Standards

AWS A 5.9 _____	Er70s-6
EN ISO 14343-A _____	G 42 4 M21 3Si1

## Chemical Composition

C	Mn	Si	S	P
0.07	1.45	0.85	0.02	0.01

## Spool Specs



<b>Diameter</b>	1 mm
<b>Weight</b>	15 kg
<b>Volume</b>	1923 cm <sup>3</sup>
<b>Density</b>	7.8 g/cm <sup>3</sup>
<b>Spool Type</b>	BS300

## Applications

Manufacturing  
finals partsTools and  
prototypesAutomotive  
industries

## Mechanical Properties

Results show Meltio's wire LMD 3D printed specimens to perform at the same level as conventional manufacturing methods, with low deviations and near isotropic properties between horizontal (XY) print orientation.

		Tensile Strength (MPa)	Yield Strength (MPa)	Elongation (%)	Hardness (HV-30)
<b>Wrought Properties</b>		400 ± 50	250	23	127
<b>Cast Properties</b>		415 ± 85	205	24	
<b>Meltio as Built</b>	<b>XY</b>	598 ± 5	484 ± 8	71 ± 1	175
	<b>XZ</b>	525 ± 12	402 ± 37	15 ± 9	

## Printing Parameters Used

Print Speed	Deposition Width	Layer Height	Laser Power
300 mm/min	1 mm	1.2 mm	1100 W

## Tomography

In this tomography we can observe the internal structure of the material and see its good density, absence of porosity or internal defects that put at risk the structure of the sample.

The resolution used for the CT inspection is 24 micrometros por pixel.



**Shielding gas: Argon > 99.996% purity.**

Machine Used: Meltio M450

**Laser System: 6x200W Fiber coupled diode lasers. 976nm wavelength.**

\* Data represent tycal reference values from Worught and Cast material classification compared to Meltio (M450) horizontal (XY) and vertical (XZ) specimens extracted from 3D printed walls and tensile tested according to UNE EN ISO 6892-1

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