

Mild Steel - SG2

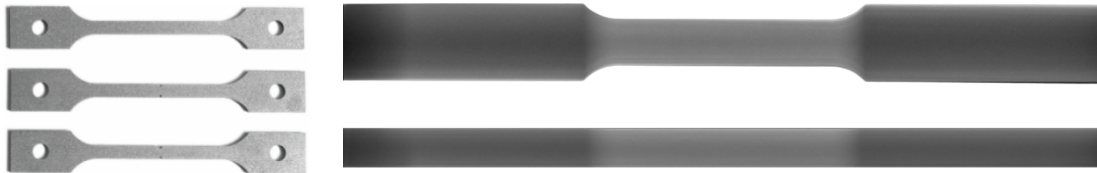
Description Mild Steel is the most common form of steel because of its relatively low price and good material properties. It is magnetic, ductile, and highly malleable. It also has unparallel weldability and machinability

Applications Used for manufacturing final parts, tools and prototypes for machinery, automotive industry, pipelines and frames.

Composition ER 70S-6 wire classification 1.2mm diameter 0.06-0.15% C, <0.15% Cr, 1.4-1.85% Mn, <0.5% Cu, <0.035% S, 0.8-1.15% Si, <0.15% Ni, <0.025% P, <0.03% V, <0.15% Mo, Balance Fe.

Computed Tomography

Scans cover external and internal surfaces, with micrometre-level resolutions. Full 3D density maps of the samples inspected consistently report 99.998% density, with no trace of voids, porosity, contamination or cracking.



Images represent the tested specimens and the imaging from the computed tomography data for YZ and XY section planes at 60µm resolution.

Mechanical Properties

Results show Meltio's WP-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.

	Wrought Properties	Cast Properties	Meltio XY Properties
Tensile Strength (MPa)	400-550	415-585	560
Yield Strength (MPa)	250	205	460
Elongation (%)	23	24	31

Data represents typical reference values from Wrought (ASTM A36) and Cast (ASTMA352) material classification compared to Meltio horizontal (XY) specimens extracted from 3D printed walls and tensile tested according to ASTM E8.

Material Datasheet

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Notes

Properties reported in this material datasheet are average of a typical batch. The test coupons were extracted from multiple 3D printed walls, cut in horizontal (XY) direction for coupon extraction. The walls were 3D printed on a Meltio M450 and the testing was performed according to ASTM E8.

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