MATERIAL DATA SHEET

AA6005-T6 extruded plate, 2 mm, ED (CC BY experimental)

Measured tensile and bend properties in the extrusion direction for exact AA6005-T6 2 mm extruded plate.

Field	Value
Material ID	mdpi-aa6005-t6-extruded-plate-2mm-ed
Category	Metal
Condition	AA6005-T6 industrially cast, hot-extruded, water-quenched and artificially aged plate | hot-extruded plate
Unit system	Common SI
Unit contract	Material properties stored in SI engineering units.
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Source and Validity

Field	Value
Quality	Experimental screening
Design release allowed	No
Source family	Experimental screening dataset
Confidence	Reference-grade
License	Open
Source note	Condition-specific base-material values from a CC BY 4.0 peer-reviewed article.
Citation	Qi Zhang, Xiaochang Xu, and Yu Wang, Effect of Mg/Si Ratio on the Bendability and Anisotropic Bend Behavior of Extruded 6000-Series Al Alloy, Materials 2023, 16, 3599, https://doi.org/10.3390/ma16093599.
Valid temperature	Tensile tests were conducted at ambient temperature; the exact temperature is not stated.
Valid pressure	Pressure dependence is not represented.
Valid phase / condition	AA6005-T6 industrially cast, hot-extruded, water-quenched and artificially aged plate
Uncertainty	Experimental values for one AA6005-T6 2 mm extruded plate and ED direction. The tensile test was repeated three times but Table 2 gives no dispersion. The Table 2 caption contains an apparent AA6605 typo; its alloy row, methods and article text consistently identify AA6005. These are not EN product minima.
Last reviewed	2026-08-03
Reviewer	scripts/import_mdpi_open_aluminum_public.py
Review status	Checked
Review scope	Checked article CC BY notice, DOI and PDF hash, exact alloy/temper, source geometry, table values, and reported or measured rather than specified-minimum semantics.

Field	Value
Notes	Experimental values for one AA6005-T6 2 mm extruded plate and ED direction. The tensile test was repeated three times but Table 2 gives no dispersion. The Table 2 caption contains an apparent AA6605 typo; its alloy row, methods and article text consistently identify AA6005. These are not EN product minima.
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Attribution	Qi Zhang

Material Condition

Field	Value
Condition	AA6005-T6 industrially cast, hot-extruded, water-quenched and artificially aged plate
Temper	T6
Heat treatment	billet homogenized at 560 degC for 12 h; plate water quenched after 530 degC extrusion; artificially aged at 170 degC for 12 h
Product form	hot-extruded plate
Thickness / diameter range	2 mm thick x 110 mm wide
Test direction	extrusion direction (ED)
Processing route	127 mm industrial DC-cast billet, homogenized, preheated to 500 degC, direct hot extruded at 530 degC, water quenched and artificially aged
Temperature range	Tensile tests were conducted at ambient temperature; the exact temperature is not stated.
Notes	Experimental values for one AA6005-T6 2 mm extruded plate and ED direction. The tensile test was repeated three times but Table 2 gives no dispersion. The Table 2 caption contains an apparent AA6605 typo; its alloy row, methods and article text consistently identify AA6005. These are not EN product minima.

Properties

Mechanical

Property	Value	Unit	Type	Applies to
Tensile yield strength, ED	270.0	MPa	Experimental Measured Screening	AA6005-T6 plate, 2 mm thick x 110 mm wide, industrial DC-cast billet, homogenized 560 degC for 12 h, hot extruded at 530 degC, water quenched and aged 170 degC for 12 h; ambient tensile test at 6.7e-4 1/s; three repeats; extrusion direction (ED)
Ultimate tensile strength, ED	295.0	MPa	Experimental Measured Screening	AA6005-T6 plate, 2 mm thick x 110 mm wide, industrial DC-cast billet, homogenized 560 degC for 12 h, hot extruded at 530 degC, water quenched and aged 170 degC for 12 h; ambient tensile test at 6.7e-4 1/s; three repeats; extrusion direction (ED)
Elongation, ED	12.0	%	Experimental Measured Screening	AA6005-T6 plate, 2 mm thick x 110 mm wide, industrial DC-cast billet, homogenized 560 degC for 12 h, hot extruded at 530 degC, water quenched and aged 170 degC for 12 h; ambient tensile test at 6.7e-4 1/s; three repeats; extrusion direction (ED)
Normalized bend angle, ED	85.0	deg	Experimental Measured Screening	AA6005-T6 plate, 2 mm thick x 110 mm wide, industrial DC-cast billet, homogenized 560 degC for 12 h, hot extruded at 530 degC, water quenched and aged 170 degC for 12 h; ambient tensile test at 6.7e-4 1/s; three repeats; extrusion direction (ED)
Bend strength, ED	618.0	MPa	Experimental Measured Screening	AA6005-T6 plate, 2 mm thick x 110 mm wide, industrial DC-cast billet, homogenized 560 degC for 12 h, hot extruded at 530 degC, water quenched and aged 170 degC for 12 h; ambient tensile test at 6.7e-4 1/s; three repeats; extrusion direction (ED)

Engineering note: seed solid-material values are reference values only. Verify against the project material specification or supplier data sheet before release.