MATERIAL DATA SHEET

AA6063-T6 plate, 2 mm (CC BY reference)

Reported AA6063-T6 base-plate strength, elongation and hardness from a CC BY study.

Field	Value
Material ID	mdpi-aa6063-t6-plate-2mm
Category	Metal
Condition	AA6063-T6 base plate used for friction-stir T-joints | plate
Unit system	Common SI
Unit contract	Material properties stored in SI engineering units.
Generated	2026-11-15 23:14

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	Ibrahim Sabry et al., Friction Stir Welding of T-Joints: Experimental and Statistical Analysis, JMMP 2019, 3, 38, Table 2, https://doi.org/10.3390/jmmp3020038.
Valid temperature	Test temperature is not stated in the cited base-material table.
Valid pressure	Pressure dependence is not represented.
Valid phase / condition	AA6063-T6 base plate used for friction-stir T-joints
Uncertainty	Reported base-plate values for the study's 2 mm material; not a population minimum or EN product specification.
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.
Notes	Reported base-plate values for the study's 2 mm material; not a population minimum or EN product specification.
License ID	CC-BY-4.0
License URL	https://creativecommons.org/licenses/by/4.0/

Field	Value
Attribution	Ibrahim Sabry et al.

Material Condition

Field	Value
Condition	AA6063-T6 base plate used for friction-stir T-joints
Temper	T6
Heat treatment	T6 as supplied; no additional base-plate heat treatment stated
Product form	plate
Thickness / diameter range	2 mm
Test direction	not stated for the Table 2 base-material values
Processing route	commercial plate before friction-stir welding
Temperature range	Test temperature is not stated in the cited base-material table.
Notes	Reported base-plate values for the study's 2 mm material; not a population minimum or EN product specification.

Properties

Mechanical

Property	Value	Unit	Type	Applies to
Ultimate tensile strength	240.7	MPa	Reported Reference Screening	AA6063-T6 base plate, 2 mm; direction and sample statistics not stated in Table 2
Elongation	12.0	%	Reported Reference Screening	AA6063-T6 base plate, 2 mm; direction and sample statistics not stated in Table 2
Vickers hardness	85.0	HV	Reported Reference Screening	AA6063-T6 base plate, 2 mm; direction and sample statistics not stated in Table 2

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