MATERIAL DATA SHEET

AA6082-T6 parent sheet, 1.0 mm (experimental)

Measured quasi-static and dynamic AA6082-T6 parent-sheet properties from a CC BY 4.0 study.

Field	Value
Material ID	zenodo-aa6082-t6-parent-sheet-1mm
Category	Metal
Condition	AA6082-T6 unwelded parent sheet used in the reported FSW study | sheet
Unit system	Common SI
Unit contract	Material properties stored in SI engineering units.
Generated	2026-11-15 23:02

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 experimental values from a CC BY 4.0 peer-reviewed article.
Citation	Archimede Forcellese and Michela Simoncini, High-Speed Deformation of Pinless FSWed Thin Sheets in AA6082 Alloy, Metals 2020, 10, 15, Table 1, PDF page 8, https://doi.org/10.3390/met10010015; CC BY 4.0 archive record https://zenodo.org/records/14345435.
Valid temperature	Test temperature is not stated in Table 1; no temperature extrapolation is allowed.
Valid pressure	Pressure dependence is not represented.
Valid phase / condition	AA6082-T6 unwelded parent sheet used in the reported FSW study
Uncertainty	Table values are transcribed exactly, but sample count/dispersion are not given in Table 1 and the parent-material data are attributed there to article reference 23.
Last reviewed	2026-08-02
Reviewer	scripts/import_zenodo_aa6082_public.py
Review status	Checked
Review scope	Checked Zenodo CC BY 4.0 metadata, article license notice, PDF hash, alloy/temper/form, Table 1 values and measured versus specified-minimum semantics.
Notes	Experimental parent-material screening data for one AA6082-T6 1.0 mm sheet and the loading contexts stated in Table 1; not a population minimum or product specification.
License ID	CC-BY-4.0

Field	Value
License URL	https://creativecommons.org/licenses/by/4.0/
Attribution	Archimede Forcellese and Michela Simoncini

Material Condition

Field	Value
Condition	AA6082-T6 unwelded parent sheet used in the reported FSW study
Temper	T6
Heat treatment	T6 as supplied; no additional parent-sheet treatment stated
Product form	sheet
Thickness / diameter range	1.0 mm
Test direction	not stated for the Table 1 parent-material values
Processing route	commercial sheet; parent material was not friction-stir welded
Temperature range	Test temperature is not stated in Table 1; no temperature extrapolation is allowed.
Notes	Experimental parent-material screening data for one AA6082-T6 1.0 mm sheet and the loading contexts stated in Table 1; not a population minimum or product specification.

Properties

Mechanical

Property	Value	Unit	Type	Applies to
Quasi-static measured ultimate tensile strength	275.9	MPa	Experimental Measured Screening	Unwelded parent AA6082-T6, 1.0 mm sheet; quasi-static loading; Table 1 attributes parent-material data to article reference 23
Quasi-static measured ultimate elongation	24.0	%	Experimental Measured Screening	Unwelded parent AA6082-T6, 1.0 mm sheet; quasi-static loading; Table 1 attributes parent-material data to article reference 23
Quasi-static strain-hardening exponent, n	0.217	-	Experimental Measured Screening	Unwelded parent AA6082-T6, 1.0 mm sheet; quasi-static loading; Table 1 attributes parent-material data to article reference 23
Quasi-static limiting dome height	8.09	mm	Experimental Measured Screening	Unwelded parent AA6082-T6, 1.0 mm sheet; quasi-static loading; Table 1 attributes parent-material data to article reference 23
Dynamic measured ultimate tensile strength	272.4	MPa	Experimental Measured Screening	Unwelded parent AA6082-T6, 1.0 mm sheet; dynamic loading; Table 1 attributes parent-material data to article reference 23
Dynamic measured ultimate elongation	35.0	%	Experimental Measured Screening	Unwelded parent AA6082-T6, 1.0 mm sheet; dynamic loading; Table 1 attributes parent-material data to article reference 23
Dynamic strain-hardening exponent, n	0.217	-	Experimental Measured Screening	Unwelded parent AA6082-T6, 1.0 mm sheet; dynamic loading; Table 1 attributes parent-material data to article reference 23
Dynamic limiting dome height	8.84	mm	Experimental Measured Screening	Unwelded parent AA6082-T6, 1.0 mm sheet; dynamic loading; Table 1 attributes parent-material data to article reference 23

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