MATERIAL DATA SHEET

EN AW-2017A sheet, 4 mm, anisotropic calibration (CC BY experimental)

Elastic constants, calibrated initial yield stresses and Lankford coefficients for exact EN AW-2017A 4 mm sheet.

Field	Value
Material ID	mdpi-en-aw-2017a-sheet-4mm-anisotropy
Category	Metal
Condition	EN AW-2017A rolled sheet as supplied for multi-direction tensile characterization | sheet
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	Michael Brunig, Steffen Gerke, and Sanjeev Koirala, Biaxial Experiments and Numerical Analysis on Stress-State-Dependent Damage and Failure Behavior of the Anisotropic Aluminum Alloy EN AW-2017A, Metals 2021, 11, 1214, https://doi.org/10.3390/met11081214.
Valid temperature	Test temperature is not stated in the cited base-material table.
Valid pressure	Pressure dependence is not represented.
Valid phase / condition	EN AW-2017A rolled sheet as supplied for multi-direction tensile characterization
Uncertainty	Experimental/calibrated values for exact EN AW-2017A 4 mm sheet; three tests per direction, but dispersion, temper and test temperature are not stated. Initial yield calibration values are not EN product minima or 0.2 percent proof stresses.
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/calibrated values for exact EN AW-2017A 4 mm sheet; three tests per direction, but dispersion, temper and test temperature are not stated. Initial yield calibration values are not EN product minima or 0.2 percent proof stresses.
License ID	CC-BY-4.0
License URL	https://creativecommons.org/licenses/by/4.0/
Attribution	Michael Brunig

Material Condition

Field	Value
Condition	EN AW-2017A rolled sheet as supplied for multi-direction tensile characterization
Temper	not stated; do not infer T4
Heat treatment	not stated
Product form	sheet
Thickness / diameter range	4 mm
Test direction	rolling (RD, 0 deg), diagonal (DD, 45 deg), and transverse (TD, 90 deg) directions
Processing route	rolled sheet; detailed processing history not stated
Temperature range	Test temperature is not stated in the cited base-material table.
Notes	Experimental/calibrated values for exact EN AW-2017A 4 mm sheet; three tests per direction, but dispersion, temper and test temperature are not stated. Initial yield calibration values are not EN product minima or 0.2 percent proof stresses.

Properties

Mechanical

Property	Value	Unit	Type	Applies to
Young's modulus	74.0	GPa	Reported Elastic Reference Screening	EN AW-2017A 4 mm rolled sheet; supplied temper and tensile-test temperature not stated; three tensile tests per direction
Poisson's ratio	0.3	-	Reported Elastic Reference Screening	EN AW-2017A 4 mm rolled sheet; supplied temper and tensile-test temperature not stated; three tensile tests per direction
Shear modulus	28.46	GPa	Derived	Calculated from Young's modulus / (2 * (1 + Poisson's ratio)).
Calibrated initial yield stress, RD	313.0	MPa	Experimental Calibrated Screening	EN AW-2017A 4 mm rolled sheet; supplied temper and tensile-test temperature not stated; three tensile tests per direction
Calibrated initial yield stress, DD	308.0	MPa	Experimental Calibrated Screening	EN AW-2017A 4 mm rolled sheet; supplied temper and tensile-test temperature not stated; three tensile tests per direction
Calibrated initial yield stress, TD	297.0	MPa	Experimental Calibrated Screening	EN AW-2017A 4 mm rolled sheet; supplied temper and tensile-test temperature not stated; three tensile tests per direction
Lankford coefficient, RD	0.597	-	Experimental Measured Screening	EN AW-2017A 4 mm rolled sheet; supplied temper and tensile-test temperature not stated; three tensile tests per direction
Lankford coefficient, DD	0.783	-	Experimental Measured Screening	EN AW-2017A 4 mm rolled sheet; supplied temper and tensile-test temperature not stated; three tensile tests per direction
Lankford coefficient, TD	0.695	-	Experimental Measured Screening	EN AW-2017A 4 mm rolled sheet; supplied temper and tensile-test temperature not stated; three tensile tests per direction

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