MATERIAL DATA SHEET

EN AW-5005/5005A-H24 sheet, plate and strip <=12.5 mm certificate population (CC BY)

Measured proof- and tensile-strength statistics for combined EN AW-5005 and EN AW-5005A source population; H24; sheet, plate and strip; thickness <=12.5 mm; 33 European-market material-test-certificate results.

Field	Value
Material ID	mdpi-en-aw-5005-5005a-h24-sheet-plate-strip-certificates
Category	Metal
Condition	combined EN AW-5005/5005A H24 certificate population; grades are not separable in the source | sheet, plate and strip
Unit system	Common SI
Unit contract	Material properties stored in SI engineering units.
Generated	2026-11-15 23:07

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	Davor Skejic, Tihomir Doksanovic, Ivan Cudina, and Federico M. Mazzolani, The Basis for Reliability-Based Mechanical Properties of Structural Aluminium Alloys, Applied Sciences 2021, 11, 4485, https://doi.org/10.3390/app11104485.
Valid temperature	Certificate/test temperature is not reported for this population; no temperature extrapolation is allowed.
Valid pressure	Pressure dependence is not represented.
Valid phase / condition	combined EN AW-5005/5005A H24 certificate population; grades are not separable in the source
Uncertainty	The article reports AW-5005 and AW-5005A as one combined population, so the values cannot be assigned to either grade separately. Measured certificate-population statistics for combined EN AW-5005 and EN AW-5005A source population; H24; sheet, plate and strip; thickness <=12.5 mm; 33 European-market material-test-certificate results. The article flags groups below 100 samples as insufficient for robust reliability analysis. Imported values are the observed mean, observed minimum and coefficient of variation only; licensed EN nominal values and derived fractiles are deliberately excluded. Not a current product-standard minimum or design allowable.
Last reviewed	2026-08-03

Field	Value
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	The article reports AW-5005 and AW-5005A as one combined population, so the values cannot be assigned to either grade separately. Measured certificate-population statistics for combined EN AW-5005 and EN AW-5005A source population; H24; sheet, plate and strip; thickness <=12.5 mm; 33 European-market material-test-certificate results. The article flags groups below 100 samples as insufficient for robust reliability analysis. Imported values are the observed mean, observed minimum and coefficient of variation only; licensed EN nominal values and derived fractiles are deliberately excluded. Not a current product-standard minimum or design allowable.
License ID	CC-BY-4.0
License URL	https://creativecommons.org/licenses/by/4.0/
Attribution	Davor Skejic

Material Condition

Field	Value
Condition	combined EN AW-5005/5005A H24 certificate population; grades are not separable in the source
Temper	H24
Heat treatment	H24 as recorded on material test certificates; detailed schedules are not reported
Product form	sheet, plate and strip
Thickness / diameter range	thickness <=12.5 mm
Test direction	certificate direction not reported
Processing route	European-market aluminium products represented by industry material test certificates
Temperature range	Certificate/test temperature is not reported for this population; no temperature extrapolation is allowed.
Notes	The article reports AW-5005 and AW-5005A as one combined population, so the values cannot be assigned to either grade separately. Measured certificate-population statistics for combined EN AW-5005 and EN AW-5005A source population; H24; sheet, plate and strip; thickness <=12.5 mm; 33 European-market material-test-certificate results. The article flags groups below 100 samples as insufficient for robust reliability analysis. Imported values are the observed mean, observed minimum and coefficient of variation only; licensed EN nominal values and derived fractiles are deliberately excluded. Not a current product-standard minimum or design allowable.

Properties

Mechanical

Property	Value	Unit	Type	Applies to
Tensile yield strength	149.0	MPa	Measured Certificate Population Mean Screening	combined EN AW-5005 and EN AW-5005A source population; H24; sheet, plate and strip; thickness <=12.5 mm; 33 European-market material-test-certificate results
Observed minimum tensile yield strength	133.0	MPa	Measured Certificate Population Minimum Screening	combined EN AW-5005 and EN AW-5005A source population; H24; sheet, plate and strip; thickness <=12.5 mm; 33 European-market material-test-certificate results
Coefficient of variation, tensile yield strength	0.07	-	Measured Certificate Population Statistic Screening	combined EN AW-5005 and EN AW-5005A source population; H24; sheet, plate and strip; thickness <=12.5 mm; 33 European-market material-test-certificate results
Ultimate tensile strength	164.0	MPa	Measured Certificate Population Mean Screening	combined EN AW-5005 and EN AW-5005A source population; H24; sheet, plate and strip; thickness <=12.5 mm; 33 European-market material-test-certificate results
Observed minimum ultimate tensile strength	145.0	MPa	Measured Certificate Population Minimum Screening	combined EN AW-5005 and EN AW-5005A source population; H24; sheet, plate and strip; thickness <=12.5 mm; 33 European-market material-test-certificate results
Coefficient of variation, ultimate tensile strength	0.06	-	Measured Certificate Population Statistic Screening	combined EN AW-5005 and EN AW-5005A source population; H24; sheet, plate and strip; thickness <=12.5 mm; 33 European-market material-test-certificate results

Statistics

Property	Value	Unit	Type	Applies to
Certificate sample count	33.0	count	Reported Population Size	combined EN AW-5005 and EN AW-5005A source population; H24; sheet, plate and strip; thickness <=12.5 mm; 33 European-market material-test-certificate results

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