MATERIAL DATA SHEET

AA6005A age-hardened extruded profile, 3 mm (CC BY experimental)

Measured longitudinal tensile properties for a conventional AA6005A age-hardened extruded profile.

Field	Value
Material ID	mdpi-aa6005a-aged-extruded-profile-3mm
Category	Metal
Condition	conventional ingot-metallurgy AA6005A profile, extruded at 500 degC and artificially aged 175 degC for 8 h | rectangular extruded profile
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	Iria Feijoo et al., Age Hardening of Extruded AA 6005A Aluminium Alloy Powders, Materials 2019, 12, 2316, Table 3, https://doi.org/10.3390/ma12142316.
Valid temperature	Tensile tests were performed at room temperature.
Valid pressure	Pressure dependence is not represented.
Valid phase / condition	conventional ingot-metallurgy AA6005A profile, extruded at 500 degC and artificially aged 175 degC for 8 h
Uncertainty	Experimental mean values for one conventional I/M 40 x 3 mm extruded profile and the stated heat-treatment schedule; not an EN minimum.
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	Experimental mean values for one conventional I/M 40 x 3 mm extruded profile and the stated heat-treatment schedule; not an EN minimum.

Field	Value
License ID	CC-BY-4.0
License URL	https://creativecommons.org/licenses/by/4.0/
Attribution	Iria Feijoo et al.

Material Condition

Field	Value
Condition	conventional ingot-metallurgy AA6005A profile, extruded at 500 degC and artificially aged 175 degC for 8 h
Temper	experimental T6-type age-hardening schedule
Heat treatment	solution treatment 530 degC for 1 h, iced-water quench, artificial age 175 degC for 8 h
Product form	rectangular extruded profile
Thickness / diameter range	40 x 3 mm profile
Test direction	parallel to extrusion direction
Processing route	conventional ingot metallurgy, hot extrusion at 500 degC, solution treatment, quench and artificial aging
Temperature range	Tensile tests were performed at room temperature.
Notes	Experimental mean values for one conventional I/M 40 x 3 mm extruded profile and the stated heat-treatment schedule; not an EN minimum.

Properties

Mechanical

Property	Value	Unit	Type	Applies to
Tensile yield strength	228.0	MPa	Experimental Measured Screening	conventional ingot-metallurgy AA6005A extruded 40 x 3 mm profile; longitudinal tensile direction; mean of three tests
Ultimate tensile strength	257.0	MPa	Experimental Measured Screening	conventional ingot-metallurgy AA6005A extruded 40 x 3 mm profile; longitudinal tensile direction; mean of three tests
Elongation	14.5	%	Experimental Measured Screening	conventional ingot-metallurgy AA6005A extruded 40 x 3 mm profile; longitudinal tensile direction; mean of three tests

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