MATERIAL DATA SHEET

EN AW-6060-T6 extruded I-beam tensile group 3 (CC BY experimental)

Room-temperature tensile means and 95% measurement errors for six group-3 coupons cut parallel to an EN AW-6060-T6 extrusion.

Field	Value
Material ID	mdpi-en-aw-6060-t6-ibeam-group3-short-slow
Category	Metal
Condition	EN AW-6060 peak temper T6; group 3 short flat coupons cut from extruded I-beam I 160 x 88 x 6.5 x 5 | extruded I-beam I 160 x 88 x 6.5 x 5
Unit system	Common SI
Unit contract	Material properties stored in SI engineering units.
Generated	2026-11-15 22:58

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	Marcin Chybinski, Lukasz Polus, Maria Ratajczak, and Piotr W. Sielicki, The Evaluation of the Fracture Surface in the AW-6060 T6 Aluminium Alloy under a Wide Range of Loads, Metals 2019, 9, 324, https://doi.org/10.3390/met9030324.
Valid temperature	20 ... 25 degC (Tests began at room temperature; group-1 samples heated locally during fracture.)
Valid pressure	Pressure dependence is not represented.
Valid phase / condition	EN AW-6060 peak temper T6; group 3 short flat coupons cut from extruded I-beam I 160 x 88 x 6.5 x 5
Uncertainty	Experimental mean values for six group-3 coupons with the article's 95 percent measurement errors (Student t, five degrees of freedom); exact I-beam, coupon geometry, direction and loading rate apply. Not EN minima.
Last reviewed	2026-08-03
Reviewer	scripts/import_mdpi_open_aluminum_public.py
Review status	Checked

Field	Value
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 six group-3 coupons with the article's 95 percent measurement errors (Student t, five degrees of freedom); exact I-beam, coupon geometry, direction and loading rate apply. Not EN minima.
License ID	CC-BY-4.0
License URL	https://creativecommons.org/licenses/by/4.0/
Attribution	Marcin Chybinski

Material Condition

Field	Value
Condition	EN AW-6060 peak temper T6; group 3 short flat coupons cut from extruded I-beam I 160 x 88 x 6.5 x 5
Temper	T6 (peak temper condition)
Heat treatment	T6; detailed solution/cooling/artificial-aging schedule not stated
Product form	extruded I-beam I 160 x 88 x 6.5 x 5
Thickness / diameter range	5 mm thick tensile coupons from 500 mm I-beam sections
Test direction	parallel to extrusion direction (0 deg)
Processing route	extruded I-beam; tensile coupons waterjet cut to limit heating
Temperature range	20 ... 25 degC
Notes	Experimental mean values for six group-3 coupons with the article's 95 percent measurement errors (Student t, five degrees of freedom); exact I-beam, coupon geometry, direction and loading rate apply. Not EN minima.

Properties

Mechanical

Property	Value	Unit	Type	Applies to
Tensile yield strength	186.7	MPa	Experimental Measured Screening	EN AW-6060-T6 coupons, 5 mm thick, waterjet cut parallel to extrusion direction from I 160 x 88 x 6.5 x 5 extruded I-beam; six specimens; room-temperature test; group 3, short flat, 25 mm extensometer gauge; 2.0 MPa/s through elastic range, then reported 0.03 mm/s
Ultimate tensile strength	210.2	MPa	Experimental Measured Screening	EN AW-6060-T6 coupons, 5 mm thick, waterjet cut parallel to extrusion direction from I 160 x 88 x 6.5 x 5 extruded I-beam; six specimens; room-temperature test; group 3, short flat, 25 mm extensometer gauge; 2.0 MPa/s through elastic range, then reported 0.03 mm/s
Young's modulus	63.7	GPa	Experimental Measured Screening	EN AW-6060-T6 coupons, 5 mm thick, waterjet cut parallel to extrusion direction from I 160 x 88 x 6.5 x 5 extruded I-beam; six specimens; room-temperature test; group 3, short flat, 25 mm extensometer gauge; 2.0 MPa/s through elastic range, then reported 0.03 mm/s
Elongation	10.1	%	Experimental Measured Screening	EN AW-6060-T6 coupons, 5 mm thick, waterjet cut parallel to extrusion direction from I 160 x 88 x 6.5 x 5 extruded I-beam; six specimens; room-temperature test; group 3, short flat, 25 mm extensometer gauge; 2.0 MPa/s through elastic range, then reported 0.03 mm/s

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