MATERIAL DATA SHEET

AA3005 Hazelett continuously cast, longitudinal, along the casting direction tensile reference (CC BY experimental)

Tensile and process-stage hardness reference for exact AA3005 after Hazelett continuously cast.

Field	Value
Material ID	csic-aa3005-hazelett-cast-strip-longitudinal
Category	Metal
Condition	AA3005, Hazelett continuously cast | Hazelett continuously cast strip; tensile specimen machined to 4 mm thickness
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	Exact-alloy process-stage values from a CC BY 4.0 peer-reviewed article.
Citation	M. D. Salvador, V. Amigo, L. Reig, C. Bloem, M. Carsi, and G. Caruana, Mechanical and microstructural evolution of a 3xxx aluminium alloy made by Hazelett process, Revista de Metalurgia 43(6), 424-433 (2007), https://doi.org/10.3989/revmetalm.2007.v43.i6.85.
Valid temperature	The tensile and hardness test temperature is not explicitly stated.
Valid pressure	Pressure dependence is not represented.
Valid phase / condition	AA3005, Hazelett continuously cast
Uncertainty	Values apply only to the investigated manufacturer-supplied AA3005 heat, stated Hazelett process stage, geometry and tensile direction (Hazelett continuously cast; longitudinal, along the casting direction). No registered temper is inferred. Table III provides no replicate count or scatter. Its elongation-A heading and the accompanying reduction-of-area wording are retained as a disclosed source inconsistency. These are experimental process-development observations, not current EN product minima, supplier guarantees or design allowables.
Last reviewed	2026-08-03
Reviewer	scripts/import_csic_aa3005_public.py

Field	Value
Review status	Checked
Review scope	Checked the article-level CC BY 4.0 grant, DOI and pinned-file hash, exact AA3005 identity, process stage, thickness, direction, test method and table semantics.
Notes	Values apply only to the investigated manufacturer-supplied AA3005 heat, stated Hazelett process stage, geometry and tensile direction (Hazelett continuously cast; longitudinal, along the casting direction). No registered temper is inferred. Table III provides no replicate count or scatter. Its elongation-A heading and the accompanying reduction-of-area wording are retained as a disclosed source inconsistency. These are experimental process-development observations, not current EN product minima, supplier guarantees or design allowables.
License ID	CC-BY-4.0
License URL	https://creativecommons.org/licenses/by/4.0/
Attribution	M. D. Salvador, V. Amigo, L. Reig, C. Bloem, M. Carsi, and G. Caruana

Material Condition

Field	Value
Condition	AA3005, Hazelett continuously cast
Temper	process stage only; no registered temper stated or inferred
Heat treatment	no separate heat treatment stated; thermal history is the continuous-casting and hot-rolling route
Product form	Hazelett continuously cast strip; tensile specimen machined to 4 mm thickness
Thickness / diameter range	source strip 19 +/- 0.05 mm; tensile specimen 4 mm thick x 19 mm wide x 181 mm long
Test direction	longitudinal, along the casting direction
Processing route	AA3005 melt entered the Hazelett caster at 680 +/- 10 degC; continuously cast at 8 m/min and exited at 590 +/- 10 degC and 19 +/- 0.05 mm
Temperature range	The tensile and hardness test temperature is not explicitly stated.
Notes	Values apply only to the investigated manufacturer-supplied AA3005 heat, stated Hazelett process stage, geometry and tensile direction (Hazelett continuously cast; longitudinal, along the casting direction). No registered temper is inferred. Table III provides no replicate count or scatter. Its elongation-A heading and the accompanying reduction-of-area wording are retained as a disclosed source inconsistency. These are experimental process-development observations, not current EN product minima, supplier guarantees or design allowables.

Properties

Mechanical

Property	Value	Unit	Type	Applies to
Tensile yield strength	43.13	MPa	Experimental Measured Screening	manufacturer-supplied AA3005 heat, Hazelett continuously cast, longitudinal, along the casting direction; UNE-EN 10002-1 tensile test on an Instron 4204 at 1 mm/min crosshead speed
Ultimate tensile strength	116.27	MPa	Experimental Measured Screening	manufacturer-supplied AA3005 heat, Hazelett continuously cast, longitudinal, along the casting direction; UNE-EN 10002-1 tensile test on an Instron 4204 at 1 mm/min crosshead speed
Elongation A (source-reported metric)	14.16	%	Experimental Source Reported Elongation Screening	manufacturer-supplied AA3005 heat, Hazelett continuously cast, longitudinal, along the casting direction; UNE-EN 10002-1 tensile test on an Instron 4204 at 1 mm/min crosshead speed

Chemical

Property	Value	Unit	Type	Applies to
Silicon mass fraction	0.189	%	Manufacturer Reported Material Composition Screening	investigated manufacturer-supplied AA3005 heat; aluminum is balance
Iron mass fraction	0.525	%	Manufacturer Reported Material Composition Screening	investigated manufacturer-supplied AA3005 heat; aluminum is balance
Copper mass fraction	0.042	%	Manufacturer Reported Material Composition Screening	investigated manufacturer-supplied AA3005 heat; aluminum is balance
Manganese mass fraction	1.123	%	Manufacturer Reported Material Composition Screening	investigated manufacturer-supplied AA3005 heat; aluminum is balance
Magnesium mass fraction	0.221	%	Manufacturer Reported Material Composition Screening	investigated manufacturer-supplied AA3005 heat; aluminum is balance
Chromium mass fraction	0.009	%	Manufacturer Reported Material Composition Screening	investigated manufacturer-supplied AA3005 heat; aluminum is balance
Nickel mass fraction	0.006	%	Manufacturer Reported Material Composition Screening	investigated manufacturer-supplied AA3005 heat; aluminum is balance
Zinc mass fraction	0.028	%	Manufacturer Reported Material Composition Screening	investigated manufacturer-supplied AA3005 heat; aluminum is balance
Titanium mass fraction	0.034	%	Manufacturer Reported Material Composition Screening	investigated manufacturer-supplied AA3005 heat; aluminum is balance
Gallium mass fraction	0.013	%	Manufacturer Reported Material Composition Screening	investigated manufacturer-supplied AA3005 heat; aluminum is balance
Vanadium mass fraction	0.006	%	Manufacturer Reported Material Composition Screening	investigated manufacturer-supplied AA3005 heat; aluminum is balance

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