MATERIAL DATA SHEET

EN AW-7022, 10 mm clamp-frame model inputs (CC BY)

Exact-grade elastic, yield and Cowper-Symonds model inputs for a source-reported 10 mm EN AW-7022 clamp frame.

Field	Value
Material ID	lajss-en-aw-7022-clamp-frame-10mm-model-inputs
Category	Metal
Condition	source-identified EN AW-7022 clamp-frame material-model input; temper not stated | 10 mm thick clamp frame in the reproduced blast-test validation setup
Unit system	Common SI
Unit contract	Material properties stored in SI engineering units.
Generated	2026-11-15 23:02

Source and Validity

Field	Value
Quality	Unknown
Design release allowed	No
Source family	peer_reviewed_open_article
Confidence	Reference-grade
License	Open
Source note	Table 1 reproduces EN AW-7022 clamp-frame inputs attributed to Spranghers et al. (2013). The present article does not report direct coupon measurements, temper, heat/batch, product route, direction, scatter or a yield-definition method. The values are finite-element reference inputs for one 10 mm clamp frame, not current EN minima, supplier guarantees, Cowper-Symonds calibration data for all EN AW-7022 products, or design allowables.
Citation	J. M. Sohn and S. J. Kim, Dynamic structural response characteristics of new concept blast walls under hydrocarbon explosions, Latin American Journal of Solids and Structures 16(2) (2019) e161, Table 1, doi:10.1590/1679-78255351.
Valid temperature	The source does not state input temperature or a temperature-dependent validity range.
Valid pressure	Pressure dependence is not represented.
Valid phase / condition	source-identified EN AW-7022 clamp-frame material-model input; temper not stated
Uncertainty	Table 1 reproduces EN AW-7022 clamp-frame inputs attributed to Spranghers et al. (2013). The present article does not report direct coupon measurements, temper, heat/batch, product route, direction, scatter or a yield-definition method. The values are finite-element reference inputs for one 10 mm clamp frame, not current EN minima, supplier guarantees, Cowper-Symonds calibration data for all EN AW-7022 products, or design allowables.
Last reviewed	2026-08-03
Reviewer	scripts/import_exact_open_aluminum_public.py
Review status	Checked

Field	Value
Review scope	Checked the CC BY notice, article identity, exact alloy label, source table, units, product geometry and downloaded PDF hash.
Notes	Table 1 reproduces EN AW-7022 clamp-frame inputs attributed to Spranghers et al. (2013). The present article does not report direct coupon measurements, temper, heat/batch, product route, direction, scatter or a yield-definition method. The values are finite-element reference inputs for one 10 mm clamp frame, not current EN minima, supplier guarantees, Cowper-Symonds calibration data for all EN AW-7022 products, or design allowables.
License ID	CC-BY-4.0
License URL	https://creativecommons.org/licenses/by/4.0/
Attribution	Sohn and Kim (2019), Latin American Journal of Solids and Structures 16(2), e161

Material Condition

Field	Value
Condition	source-identified EN AW-7022 clamp-frame material-model input; temper not stated
Temper	not stated
Heat treatment	not stated
Product form	10 mm thick clamp frame in the reproduced blast-test validation setup
Thickness / diameter range	10 mm source model thickness
Test direction	isotropic finite-element input; source does not identify specimen direction
Processing route	not stated
Temperature range	The source does not state input temperature or a temperature-dependent validity range.
Notes	Source-reported material inputs for the EN AW-7022 clamp frame in a blast-test validation model.

Properties

Physical

Property	Value	Unit	Type	Applies to
Density	2700.0	kg/m^3	Source Reported Finite Element Input Screening	source-reported EN AW-7022 material model for the 10 mm clamp frame in the blast-test validation setup
Source model thickness	10.0	mm	Source Reported Finite Element Input Screening	source-reported EN AW-7022 material model for the 10 mm clamp frame in the blast-test validation setup

Mechanical

Property	Value	Unit	Type	Applies to
Young's modulus	70.0	GPa	Source Reported Finite Element Input Screening	source-reported EN AW-7022 material model for the 10 mm clamp frame in the blast-test validation setup
Poisson's ratio	0.33	-	Source Reported Finite Element Input Screening	source-reported EN AW-7022 material model for the 10 mm clamp frame in the blast-test validation setup
Shear modulus	26.32	GPa	Derived	Calculated from Young's modulus / (2 * (1 + Poisson's ratio)).
Yield strength	450.0	MPa	Source Reported Finite Element Input Screening	source-reported EN AW-7022 material model for the 10 mm clamp frame in the blast-test validation setup
Cowper-Symonds C	6500.0	1/s	Source Reported Finite Element Input Screening	source-reported EN AW-7022 material model for the 10 mm clamp frame in the blast-test validation setup
Cowper-Symonds q	4.0	-	Source Reported Finite Element Input Screening	source-reported EN AW-7022 material model for the 10 mm clamp frame in the blast-test validation setup

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