MATERIAL DATA SHEET

Aluminum 7075-T652 hand forging (NASA historical reference)

Historical longitudinal minimum tensile properties for a thin 7075-T652 hand forging plus alloy density from the public-use NASA handbook.

Field	Value
Material ID	nasa-7075-t652-hand-forging-reference
Category	Metal
Condition	7075-T652 hand forging; NASA historical minimums | hand forging
Unit system	Common SI
Unit contract	Material properties stored in SI engineering units.
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Source and Validity

Field	Value
Quality	Catalog record
Design release allowed	No
Source family	Government materials handbook
Confidence	Reference-grade
License	Open
Source note	Named historical alloy reference transcribed from an official public-use NASA handbook.
Citation	NASA-CR-123773, Materials Data Handbook: Aluminum Alloy 7075, 1972, NASA Technical Reports Server record 19720022809; property locations: PDF page 60 (handbook page 51), Table 7.113; PDF page 114 (handbook page 105), Chapter 9; https://ntrs.nasa.gov/citations/19720022809. NTRS marks the document 'Work of the US Gov. Public Use Permitted.'
Valid temperature	20 ... 20 degC (Room-temperature historical reference.)
Valid pressure	Pressure dependence is not represented by these solid reference values.
Valid phase / condition	7075-T652 hand forging; NASA historical minimums
Uncertainty	Historical reference data transcribed with the stated property semantics and SI conversions. Confirm against the official PDF, a current procurement specification, the actual product form and thickness, and a material test report before engineering use.
Last reviewed	2026-08-01
Reviewer	scripts/import_nasa_public_metals.py
Review status	Checked

Field	Value
Review scope	Checked official NTRS public-use status, report identity and PDF hash, cited tables, minimum/nominal semantics, condition text, and SI conversions. No claim of current specification validity or design release is made.
Notes	Historical reference only; not a current supplier certificate or procurement allowable.
License ID	US-GOV-PUBLIC-USE
License URL	https://ntrs.nasa.gov/citations/19720022809
Attribution	National Aeronautics and Space Administration

Material Condition

Field	Value
Condition	7075-T652 hand forging; NASA historical minimums
Temper	T652
Heat treatment	T652 precipitation heat treatment and stress relief
Product form	hand forging
Thickness / diameter range	less than or equal to 2.000 in (50.8 mm), as-forged short-transverse thickness
Test direction	L, longitudinal
Processing route	wrought aluminum hand forging
Temperature range	20 ... 20 degC
Notes	Historical reference data transcribed with the stated property semantics and SI conversions. Confirm against the official PDF, a current procurement specification, the actual product form and thickness, and a material test report before engineering use.

Properties

Physical

Property	Value	Unit	Type	Applies to
Density	2800	kg/m^3	Nominal	7075 alloy at 20 degC; handbook specific gravity 2.80.

Mechanical

Property	Value	Unit	Type	Applies to
Ultimate tensile strength	510.212	MPa	Historical Specified Minimum	T652 hand forging, longitudinal, thickness <=2.000 in; converted from 74.0 ksi.
Tensile yield strength	434.37	MPa	Historical Specified Minimum	T652 hand forging, longitudinal, thickness <=2.000 in; converted from 63.0 ksi.
Elongation	9	%	Historical Specified Minimum	Minimum in 2 in or 4D, longitudinal.

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