MATERIAL DATA SHEET

# AA6082-T6 parent sheet, 1.0 mm (experimental)

Measured quasi-static and dynamic AA6082-T6 parent-sheet properties from a CC BY 4.0 study.

| Field | Value |
|---|---|
| Material ID | zenodo-aa6082-t6-parent-sheet-1mm |
| Category | Metal |
| Condition | AA6082-T6 unwelded parent sheet used in the reported FSW study \| sheet |
| Unit system | Common SI |
| Unit contract | Material properties stored in SI engineering units. |
| Generated | 2026-11-15 23:14 |

## 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 experimental values from a CC BY 4.0 peer-reviewed article. |
| Citation | Archimede Forcellese and Michela Simoncini, High-Speed Deformation of Pinless FSWed Thin Sheets in AA6082 Alloy, Metals 2020, 10, 15, Table 1, PDF page 8, https://doi.org/10.3390/met10010015; CC BY 4.0 archive record https://zenodo.org/records/14345435. |
| Valid temperature | Test temperature is not stated in Table 1; no temperature extrapolation is allowed. |
| Valid pressure | Pressure dependence is not represented. |
| Valid phase / condition | AA6082-T6 unwelded parent sheet used in the reported FSW study |
| Uncertainty | Table values are transcribed exactly, but sample count/dispersion are not given in Table 1 and the parent-material data are attributed there to article reference 23. |
| Last reviewed | 2026-08-02 |
| Reviewer | scripts/import_zenodo_aa6082_public.py |
| Review status | Checked |
| Review scope | Checked Zenodo CC BY 4.0 metadata, article license notice, PDF hash, alloy/temper/form, Table 1 values and measured versus specified-minimum semantics. |
| Notes | Experimental parent-material screening data for one AA6082-T6 1.0 mm sheet and the loading contexts stated in Table 1; not a population minimum or product specification. |
| License ID | CC-BY-4.0 |

| Field | Value |
| --- | --- |
| License URL | https://creativecommons.org/licenses/by/4.0/ |
| Attribution | Archimede Forcellese and Michela Simoncini |

## Material Condition

| Field | Value |
| --- | --- |
| Condition | AA6082-T6 unwelded parent sheet used in the reported FSW study |
| Temper | T6 |
| Heat treatment | T6 as supplied; no additional parent-sheet treatment stated |
| Product form | sheet |
| Thickness / diameter range | 1.0 mm |
| Test direction | not stated for the Table 1 parent-material values |
| Processing route | commercial sheet; parent material was not friction-stir welded |
| Temperature range | Test temperature is not stated in Table 1; no temperature extrapolation is allowed. |
| Notes | Experimental parent-material screening data for one AA6082-T6 1.0 mm sheet and the loading contexts stated in Table 1; not a population minimum or product specification. |

## Properties

### Mechanical

| Property | Value | Unit | Type | Applies to |
|---|---|---|---|---|
| Quasi-static measured ultimate tensile strength | 275.9 | MPa | Experimental Measured Screening | Unwelded parent AA6082-T6, 1.0 mm sheet; quasi-static loading; Table 1 attributes parent-material data to article reference 23 |
| Quasi-static measured ultimate elongation | 24.0 | % | Experimental Measured Screening | Unwelded parent AA6082-T6, 1.0 mm sheet; quasi-static loading; Table 1 attributes parent-material data to article reference 23 |
| Quasi-static strain-hardening exponent, n | 0.217 | - | Experimental Measured Screening | Unwelded parent AA6082-T6, 1.0 mm sheet; quasi-static loading; Table 1 attributes parent-material data to article reference 23 |
| Quasi-static limiting dome height | 8.09 | mm | Experimental Measured Screening | Unwelded parent AA6082-T6, 1.0 mm sheet; quasi-static loading; Table 1 attributes parent-material data to article reference 23 |
| Dynamic measured ultimate tensile strength | 272.4 | MPa | Experimental Measured Screening | Unwelded parent AA6082-T6, 1.0 mm sheet; dynamic loading; Table 1 attributes parent-material data to article reference 23 |
| Dynamic measured ultimate elongation | 35.0 | % | Experimental Measured Screening | Unwelded parent AA6082-T6, 1.0 mm sheet; dynamic loading; Table 1 attributes parent-material data to article reference 23 |
| Dynamic strain-hardening exponent, n | 0.217 | - | Experimental Measured Screening | Unwelded parent AA6082-T6, 1.0 mm sheet; dynamic loading; Table 1 attributes parent-material data to article reference 23 |
| Dynamic limiting dome height | 8.84 | mm | Experimental Measured Screening | Unwelded parent AA6082-T6, 1.0 mm sheet; dynamic loading; Table 1 attributes parent-material data to article reference 23 |

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