MATERIAL DATA SHEET

# AA6005A age-hardened extruded profile, 3 mm (CC BY experimental)

Measured longitudinal tensile properties for a conventional AA6005A age-hardened extruded profile.

| Field | Value |
|---|---|
| Material ID | mdpi-aa6005a-aged-extruded-profile-3mm |
| Category | Metal |
| Condition | conventional ingot-metallurgy AA6005A profile, extruded at 500 degC and artificially aged 175 degC for 8 h \| rectangular extruded profile |
| 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 | 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 | Iria Feijoo et al., Age Hardening of Extruded AA 6005A Aluminium Alloy Powders, Materials 2019, 12, 2316, Table 3, https://doi.org/10.3390/ma12142316. |
| Valid temperature | Tensile tests were performed at room temperature. |
| Valid pressure | Pressure dependence is not represented. |
| Valid phase / condition | conventional ingot-metallurgy AA6005A profile, extruded at 500 degC and artificially aged 175 degC for 8 h |
| Uncertainty | Experimental mean values for one conventional I/M 40 x 3 mm extruded profile and the stated heat-treatment schedule; not an EN minimum. |
| Last reviewed | 2026-08-03 |
| Reviewer | scripts/import_mdpi_open_aluminum_public.py |
| Review status | Checked |
| 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 one conventional I/M 40 x 3 mm extruded profile and the stated heat-treatment schedule; not an EN minimum. |

| Field | Value |
|---|---|
| License ID | CC-BY-4.0 |
| License URL | https://creativecommons.org/licenses/by/4.0/ |
| Attribution | Iria Feijoo et al. |

## Material Condition

| Field | Value |
|---|---|
| Condition | conventional ingot-metallurgy AA6005A profile, extruded at 500 degC and artificially aged 175 degC for 8 h |
| Temper | experimental T6-type age-hardening schedule |
| Heat treatment | solution treatment 530 degC for 1 h, iced-water quench, artificial age 175 degC for 8 h |
| Product form | rectangular extruded profile |
| Thickness / diameter range | 40 x 3 mm profile |
| Test direction | parallel to extrusion direction |
| Processing route | conventional ingot metallurgy, hot extrusion at 500 degC, solution treatment, quench and artificial aging |
| Temperature range | Tensile tests were performed at room temperature. |
| Notes | Experimental mean values for one conventional I/M 40 x 3 mm extruded profile and the stated heat-treatment schedule; not an EN minimum. |

## Properties

### Mechanical

| Property | Value | Unit | Type | Applies to |
|---|---|---|---|---|
| Tensile yield strength | 228.0 | MPa | Experimental Measured Screening | conventional ingot-metallurgy AA6005A extruded 40 x 3 mm profile; longitudinal tensile direction; mean of three tests |
| Ultimate tensile strength | 257.0 | MPa | Experimental Measured Screening | conventional ingot-metallurgy AA6005A extruded 40 x 3 mm profile; longitudinal tensile direction; mean of three tests |
| Elongation | 14.5 | % | Experimental Measured Screening | conventional ingot-metallurgy AA6005A extruded 40 x 3 mm profile; longitudinal tensile direction; mean of three tests |

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