Project Summary: Heat Shield Component for High-Temperature Applications

The aluminum alloy used in the shield is rated up to 100°C under continuous load,

and up to 120°C under short-duration peaks. The design incorporates multiple cooling fins

to improve thermal dissipation and reduce material fatigue. Weight efficiency was prioritized,

resulting in a 25% reduction from the previous version.

Key takeaways:

- Max operating temp: 100°C

- Thermal peak tolerance: 120°C (short-term)

- Material: Aluminum Alloy 6061-T6

- Use case: Aerospace, automotive, high-stress enclosures

Recommendations:

- Do not exceed 100°C for sustained use.

- For environments > 100°C, consider alternative materials like Inconel or stainless steel.