

ADDITIVE FATIGUE STUDY

INFLUENCE OF DIFFERENT SURFACE FINISHING METHODS ON MECHANICAL PROPERTIES FOR METAL AM COMPONENTS



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PROBLEM STATEMENT

Current Situation

- How does each surface finishing method influence the mechanical properties of my AM components?
- Which mechanical properties can be expected after post-processing of AM components?



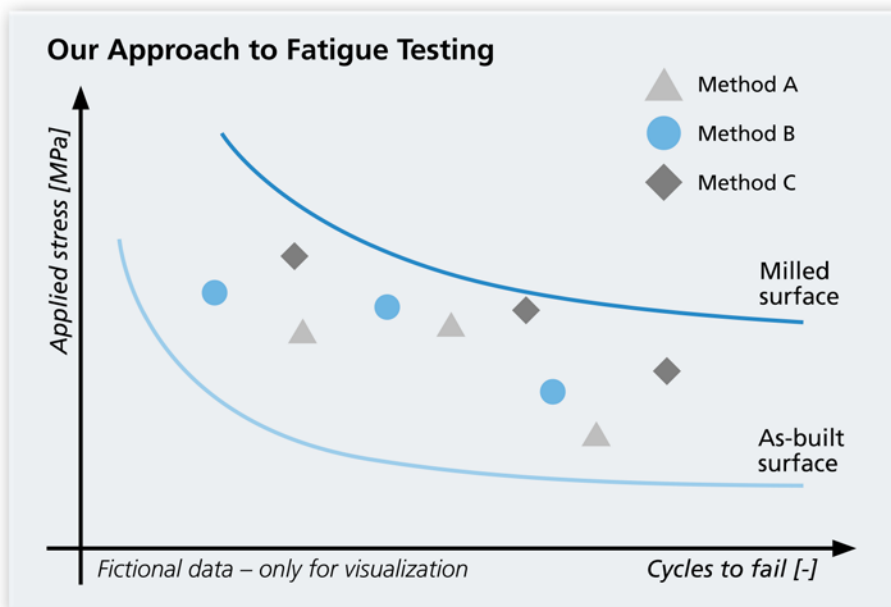
Solution

A study about the influence of post-processing methods on mechanical properties

- Objective comparison of different finishing methods
- No expertise needed
- Quick decision help in assessing the suitability and impact of various finishing methods on mechanical properties

CONTENT AND STRUCTURE OF THE STUDY

| Materials Investigated | Benchmark Criteria | Surface Finishing Methods Investigated |
|------------------------|----------------------|--|
| Ti-6Al-4V | Fatigue strength | <i>Machining with undefined cutting edge</i> |
| Inconel 718 | Tensile strength | Abrasive Blasting |
| | Elongation at break | Vibratory Finishing |
| | Dimensional accuracy | <i>Chemical ablation</i> |
| | Surface roughness | Chemical Polishing |
| | | Isotropic Superfinishing |
| | | <i>Electrochemical ablation</i> |
| | | Electrochemical Polishing |
| | | Metal DryLyte |
| | | <i>Finishing method combination</i> |
| | | Vibratory Finishing + Metal DryLyte |
| | | <i>Additional surface conditions for reference</i> |
| | | As-built surface |
| | | Milled surface |



SECURE THE STUDY RESULTS NOW!

Contact us: surface.finishing@iapt.fraunhofer.de

