

## Failures Caused by Heat Treatment and Their Identification

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The article deals with the failures caused by heat treatment and their identification. The various types of tool failure are occurring from the design through to the tool application stages. Heat treatment naturally plays a major role due to its significant influence on the tool properties, and indeed most defects appear after the heat treatment stages. There are many methods how to study failures of tools and gadgets. One of the most important is metallographic investigation. Metallography is very important part of failure analysis. Thanks to microstructure analysis can be evaluated crack morphology and relationship between the failure and microstructure. Investigation can be performed using classic optical microscopy or SEM (Scanning Electron Microscopy). The aim of this paper is classifying these failures according to type and occurrence to deliver practical solution.

**Keywords:** Failures, Heat Treatment, Tool Properties, Treatment Stages

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