

# Mechanical Stability of Thin Film On Substrate Systems

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## **Abstract**

A method for analysis of the mechanical stability of a film on a substrate system is presented. This analysis is based on in-situ microtensile tests, which allow to follow how the film develops irreversible damage (cracking and deadhesion), when progressively pulled in tension. Following „in-situ“ this degradation, the critical parameters which correspond to the initiation of a irreversible damage mechanism can be determined. Associated to analytical models, the determined parameters allow to compare a predictive behaviour of the film on substrate system, to the real one, which is given by the experiments.

**Keywords:** Reliability, Analysis, Mechanical stability, Thin film, Failure analysis, Microtensile tests.

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