

A photograph of a large industrial facility, likely a refinery or chemical plant. The image shows a dense network of silver-colored pipes, some insulated with yellow or grey material, running horizontally and vertically across the frame. Scaffolding is visible on the right side, and various industrial structures, including tall distillation columns, are in the background under a cloudy sky. The image is partially overlaid with a white triangle at the top and a blue triangle at the bottom left.

Remnant lifetime assessment of service-exposed high- temperature components

Determination of the remnant
lifetime of service-exposed
components using Iso-stress-tests
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Application

Determination of the remnant lifetime of service-exposed high-temperature components of the petrochemistry, process industry and power plant technology

Prevention of disturbance and failures with early assessment of critical conditions of components

Increased operational reliability as well as improvement of the planning security of replacements and investments of plant components

Method

Iso-stress-tests as creep rupture tests with reduced test duration (e. g. 300 to 5,000 hours), according to ASTM E139 or ISO 204

Testing of several specimens with different compared-to-service increased temperatures but near-service mechanical stresses

Extrapolation of the test results to service temperatures for direct calculation of remnant lifetime

Calculation

Interpretation of Iso-stress-results with time-temperature-parameters like Manson-Haferd or Larson-Miller and adjusted stress functions using of self-developed software tool ZVA

Correlation of the reference stress and temperature of the component allows a detailed calculation of the remnant lifetime

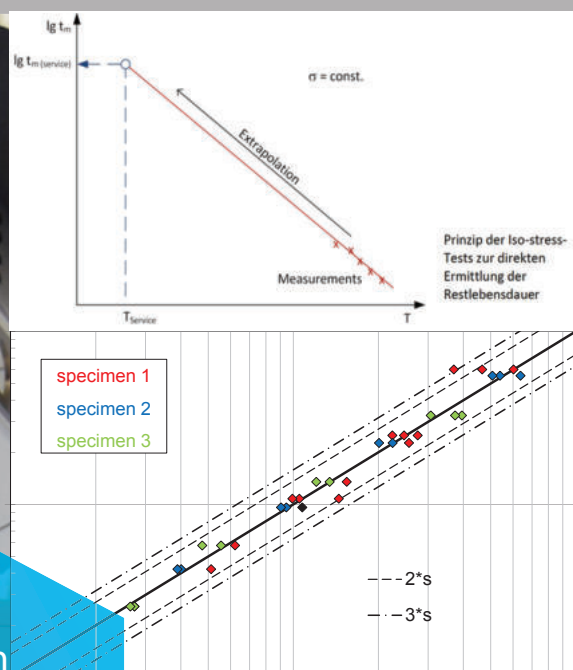


Do you still have questions?
We have the answers.

As a DAkkS accredited testing laboratory and inspection body and a TÜV SÜD Industry Service GmbH approved testing laboratory, we offer you our expertise in remnant lifetime assessment of creep-exposed high-temperature components. We have compiled more information on our services for you here:



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