

Our Service Center for Material Testing has the objective to support you in the solution of problems occurring in the operation of your plant or in the manufacturing of products.

Challenge

You have a specific task regarding a component or an individual requirement regarding a material, and you have to qualify it or evaluate deviations? You need supplemental tests, support in the failure investigation or fracture mechanical properties?

Solution

Our Service Center offers you the complete service from the preparation of material testing and sampling plans, to sample processing, testing and reporting, also with acceptance certificates or independent experts.

We provide various test procedures for determining the behavior and the material properties of standardized specimens and finished components under mechanical and thermal stress. The tests are carried out on time and conforming to standards. The results are documented in the form of test certificates or comprehensive work reports.

Our service portfolio:

- Work preparation / CAD
- Handling of test specimen manufacturing
- Hardness tests, e.g. as per Vickers, Brinell, Rockwell
- Tensile tests on standard and micro-specimens
- Compression tests
- Notched bar impact tests on standard, micro- and reconstituted specimens
- Bend tests, flattening tests, drift expanding tests
- Pellini tests (drop-weight test)
- Fracture mechanics tests and fatigue tests
- Customer-specific component tests
- Manufacturing of irradiation capsules
- Acceptance certificates 3.1 (DIN EN 10204).



Mechanical materials testing in the laboratory

Customer benefits

- Obtain reliable results through our longstanding experience in the field of mechanical material testing and experimental fracture mechanics
- Rapid response times even for complex test setups
- High quality : your tests are carried out by qualified personnel

Your performance
is our everyday **commitment**

Technical information

Testing equipment:

Universal testing machines:

- Force measuring ranges: ± 250 N to ± 500 kN
- Vertical test space: max. 1,600 mm
- Temperature range: -196 °C to $1,100$ °C

Resonance pulsators:

- Force measuring ranges: ± 250 N to ± 20 kN
- Dynamic travel range: ± 4 mm
- Frequency: 70 to 220 Hz
- Oscillation mode: sinus

Servo-hydraulic testing machine:

- Force measuring ranges: ± 50 kN to ± 500 kN
- Dynamic travel range: ± 125 mm
- Frequency: ≤ 25 Hz
- Oscillation mode: sinus, triangle, single ramp, sawtooth

Impact testing machines:

- 25 J and 50 J for micro-specimens
- 150 J and 300 J (instrumented) for standard specimens

Hardness test equipment:

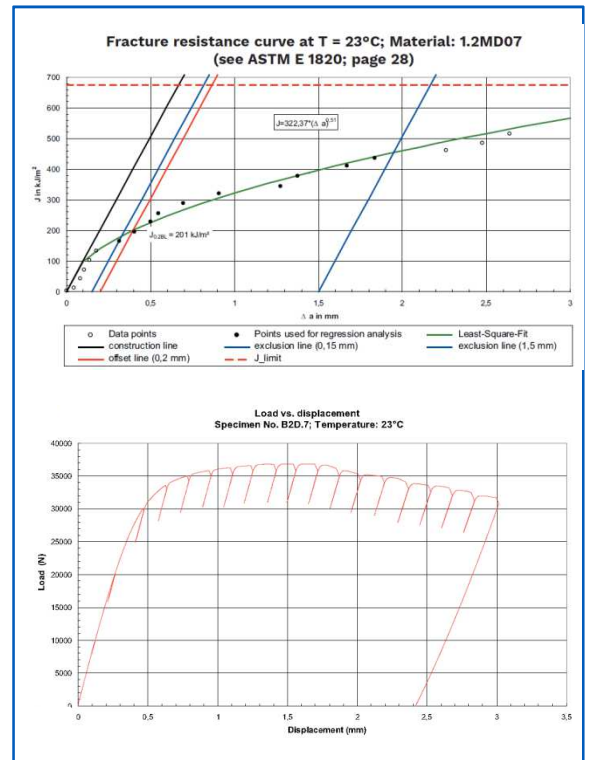
- Vickers, Brinell and Rockwell hardness testing machines

The Technical Center of Framatome Germany is considered to be a center of competence in the field of mechanical material testing and experimental fracture mechanics.

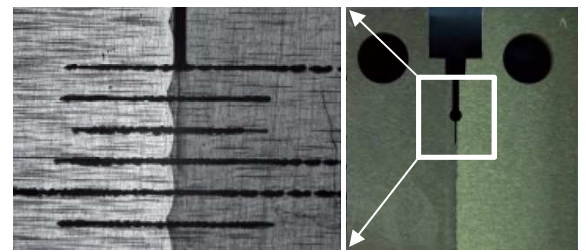
Our test labs are accredited according to DIN EN ISO/IEC 17025 *)



*) the accreditation is valid only for the scope as listed in appendix of certificate D-PL-21039-03-00
<https://www.dakks.de/en/content/directory-accredited-bodies-0>



Methods for the determination of crack initiation values and crack resistance curves with regard to stable crack expansion in the elastic-plastic fracture mechanics



Fracture-mechanical specimen CT-25 with pre-fatigued crack

Key figures

Up to **550** tension test specimens,
approximately **500** Charpy impact tests,
approximately **400** fracture toughness tests
are carried out on average per year in our test lab

Contact : materials@framatom.com
www.framatome.com

It is prohibited to reproduce the present publication in its entirety or partially in whatever form without prior written consent. Legal action may be taken against any infringer and/or any person breaching the afore mentioned prohibitions.

Subject to change without notice, errors excepted. Illustrations may differ from the original. The statements and information contained in this publication are for advertising purposes only and do not constitute an offer of contract. They shall neither be construed as a guarantee of quality or durability, nor as warranties of merchantability or fitness for a particular purpose. All statements, even those pertaining to future events, are based on information available to us at the date of publication. Only the terms of individual contracts shall be authoritative for type, scope and characteristics of our products and services.