


PHYWE

PHYSICS

Notched bar impact test machine



17558.02

Technical and economic considerations require that materials be fully exploited, improved and complemented through new developments and constant quality control. In order to meet these requirements, a number of materials testing methods have been developed.

One of these methods is the notched bar impact test to DIN 50 115 (ISO R83/148). This test is performed with a pendulum impact tester and serves to test metallic materials. With it, one may determine whether a specific material still possesses sufficient toughness under especially stringent conditions. Conditions promoting fracturing are created by limiting the deformation process very strictly both with respect to time (as a result of the impact stress) and location (as a result of a notch cut in the test specimen).

For the demonstration of such investigations we have developed the Notched Bar Impact Test machine.

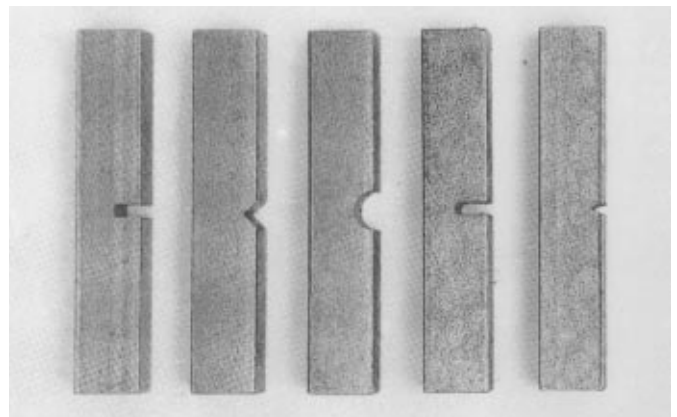
The notched bar impact test machine is suited both for demonstration experiments carried out by the lecturer as well as for direct student training. For the testing of metal materials the following test examples are possible:

- **Notch effect**
Demonstration of the effect of the notch on test pieces of the same material with different notches;
- **Notch toughness and material type.** Determination of the notch impact energy and notch toughness on test pieces of different material with the same notch;
- **Notch toughness and temperature.** Determination of the notch impact energy and notch toughness on test pieces of different materials with the same notch as a function of temperature.

In addition to the quantitative figures for notch impact energy or notch toughness, the fracture surface can also be used to assess the toughness of a material. From the appearance of the fracture, two limiting cases can be distinguished:

- plastic fracture and
- brittle fracture

This HANDBOOK can be purchased separately. It contains the experiments listed below. Please ask for a complete equipment list. Ref No 21601



Notched bar impact test pieces for the notched bar impact test machine.

**Handbook • Notched bar impact test • No. 17558.02
20 described Experiments**

1. Basic Principles

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General

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Application and significance of the notched bar impact test

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Principle of notched bar impact test

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Characteristic quantities of a pendulum impact test machine

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Characteristic quantities of the notched bar impact

2. Description of the equipment

3. Notched bar impact test pieces - shapes dimensions, materials

4. Tests with the notched bar impact test machine

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Effect of the notch

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Notch toughness and type of material

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Notch toughness and temperature

5. Summary

6. Appendix

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Technical Data

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List of DIN standards

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Symbols and units used

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Standards in English (ISO)

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Material designations to DIN
and ISO.

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Test materials for the
notched bar impact test
machine

