

**Test of break resistance of handles on rigid packaging****Sources:**

DIN EN ISO 2233 of Nov. 2001 – Packaging – ready for dispatch – climatic pre-treatment for testing.

**1. Purpose**

This guideline applies for the testing of handles on rigid packaging for proof of safety in regular use.

**2. Terms**

Approved weight: Weight of the filled packaging according to the approval (UN marking).

Test weight: Weight of the contents with which the packaging is filled for the test.

**3. Test devices**

- Suitable is every calibrated scales covering the weight area of the sample and having a measuring accuracy of min. 0.1% of the predetermined measuring range.
- Using is a lifting device that avoids a concentrated load of the handle.

**4. Sample preparation**

- The package is filled with the contents up to the test weight.
- In the case of approved packaging for dry bulk products, the test weight corresponds to the approved single weight. In the case of approved packaging for liquids, the test weight corresponds to the maximum specific weight of the contents plus packaging (tare weight). In the case of non-approved packaging, the test weight corresponds to the 1.5-fold weight of the nominal contents/volume at a density of 1.0 kg/dm<sup>3</sup>.
- The package is closed ready for dispatch.
- Samples that may change their strength due to environmental influences are to be conditioned for at least 24 hours in a standard climate according to DIN EN ISO 2233, climate G (23°C/50% rel. humidity).

**5. Procedure**

- The package is smoothly raised by the handle, avoiding a concentrated load, and left suspended for 5 minutes.

**6. Test report**

With reference to these test and specification guidelines, the following is to be stated in the test report:

- Type and number of test samples (e.g. packaging type, packaging number, date of manufacture, tool, form, etc.)
- Climatic pre-treatment
- Description of all significant procedures and observations that can be of importance for this evaluation. Partial or complete separation of the handle from the container is rated as a failure of the test.
- Specification or description (sketch or drawing) of damages.
- Date of test, place of test, name of tester.