
**Thermoplastics piping systems for non-
pressure underground drainage and
sewerage — Thermoplastics fittings —
Test method for impact strength**

*Systèmes de canalisations thermoplastiques pour branchements et
collecteurs d'assainissement enterrés sans pression — Raccords
thermoplastiques — Méthode d'essai de résistance au choc*



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Foreword

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ISO 13263 was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 1, *Plastics pipes and fittings for soil, waste and drainage (including land drainage)*.

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Thermoplastics piping systems for non-pressure underground drainage and sewerage — Thermoplastics fittings — Test method for impact strength

1 Scope

This International Standard specifies a method for testing the impact resistance of fittings by dropping them on to a rigid surface. For a fitting with seal-retaining components, such as seal-retaining caps or rings, the method includes assessment of the watertightness of the fittings when the fixing elements show damage as a result of the test.

This International Standard is applicable to fittings made from thermoplastics materials intended to be used for buried and above-ground applications.

2 Principle

The impact resistance of a fitting is tested by dropping the fitting on to a rigid surface. After impact, the fitting is inspected for any cracks visible without magnification. In the case of fittings with separate fixing elements, for example for seal retention, these elements are inspected for any permanent damage that could cause loss of watertightness.

NOTE It is assumed that the following test parameters are set by the referring standard:

- a) test temperature (see Clause 3);
- b) sampling procedure and frequency (see Clause 4);
- c) conditioning time and temperature, as applicable (see Clause 5);
- d) the height from which the test piece is to be dropped (see Clause 6);
- e) the point of impact that is to hit the test base when dropped (see Clause 6);
- f) test conditions for assessment of watertightness (see Clauses 6 and 7).

3 Apparatus

3.1 Refrigerator or liquid bath, capable of maintaining the conditioning temperature within ± 2 °C.

3.2 Temperature-controlled environment, capable of maintaining the test temperature within ± 2 °C.

3.3 Test base, comprising a solid floor made of concrete or stone at least 100 mm thick or, alternatively, a slab of concrete with a minimum thickness of 100 mm and a mass at least 20 times that of the test piece. The surface shall be rigid, flat, smooth and horizontal.

4 Test pieces

4.1 Test piece form

The test piece shall comprise a sample fitting complete, where applicable, with the sealing element and any associated means of the fixing element(s) in place.

4.2 Sampling

The sampling procedure and frequency shall be as specified in the referring standard.

4.3 Number

Unless otherwise specified in the referring standard, the number of test pieces shall be five for sizes up to and including 200 mm, and three for sizes greater than 200 mm.

5 Conditioning

Determine and measure the maximum wall thickness, e , of the sample fitting.

Place the test piece in the refrigerator, liquid bath or temperature-controlled environment (3.1 and 3.2) at the specified test temperature for at least the applicable minimum period given in Table 1, unless otherwise specified in the referring standard.

Table 1 — Minimum conditioning temperature

Wall thickness e mm	Minimum conditioning period h
$e < 3$	1
$3 \leq e < 8$	3
$8 \leq e < 16$	6
$16 \leq e$	16

6 Procedure

6.1 For each test piece in turn, remove the fitting from the conditioning environment and drop it on the test base in accordance with 6.2 within the applicable time limits given in Table 2.

Table 2 — Maximum period between conditioning and testing

Conditions for testing in accordance with 6.2	Maximum time limit s
Without temperature control conforming to 3.2	for $d_n < 200$: 10 for $200 \leq d_n \leq 630$: 30 for $d_n > 630$: 60
Temperature-controlled environment (3.2) with refrigerator or liquid bath (3.1) in the same environment	60