
Thermoplastics piping systems for non-pressure underground drainage and sewerage — Test method for resistance to combined temperature cycling and external loading

Systèmes de canalisations thermoplastiques pour branchements et collecteurs d'assainissement enterrés sans pression — Méthode d'essai de la résistance à un cycle de température et de charge externe combinés

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 13260 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 — Test method for resistance to combined temperature cycling and external loading

1 Scope

This International Standard specifies two methods for testing pipes and fittings or joints for plastics piping systems intended for use in underground drainage and sewerage systems for their resistance to deformation and leakage, when subjected to sustained external loading in conjunction with the passage of hot water.

Method A involves temperature cycling, by passing hot water and cold water alternately, and is applicable to pipes and associated fittings having a mean outside diameter $d_{em} \leq 190$ mm.

Method B involves passing hot water only, except at intervals specified for measurement of internal deflection, and is applicable to pipes and associated fittings having a mean outside diameter $190 \text{ mm} < d_{em} \leq 510$ mm.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 48, *Rubber, vulcanized or thermoplastic — Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

3 Principle

A test piece comprising a pipe or an assembly of pipe(s) and fitting(s) is placed on a 100 mm gravel bed and covered with gravel to 600 mm above the crown of the pipe confined by a box of specified dimensions. Depending on the nominal size of the largest pipe or joint under test, a constant vertical load is applied via the gravel and either a specified number of cycles of hot and cold water or just hot water is passed through the test piece. The deformation of the test piece, as indicated by vertical deflection or internal diametric compression, is measured.

For sizes having a mean outside diameter $d_{em} \leq 190$ mm, hot and cold water is passed through the test piece and air may be blown through the test piece during the intervals between stages (Method A).

For pipes with a mean outside diameter $190 < d_{em} \leq 510$ mm a constant flow of hot water is passed through the test piece (Method B).

Vertical deflection of the test piece is measured. The test piece is checked at the end of the test for cracking, for local deflection in the bottom of the main channel and for leakage at the joints.