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Plastics piping systems — Test method for the resistance of plastic pipe/pipe or pipe/fitting assemblies to tensile loading

Systèmes de canalisations en plastiques — Méthode d'essai de la résistance en traction des assemblages tube/tube ou tube/raccord en plastique

Reference number
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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 5, *General properties of pipes, fittings and valves of plastic materials and their accessories – Test method and basic specifications*.

This second edition cancels and replaces the first edition (ISO 13951:2001), which have been technically revised. The reason for modification is for applicability for mechanical fittings to other plastics materials, other sizes and/or other test conditions and alignment with texts of other standards on test methods.

The modifications are:

— no material is mentioned;

— test parameters are omitted, although the original test parameters can be found in Annex A;

— no requirements are given;

— editorial changes have been introduced.

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Plastics piping systems — Test method for the resistance of plastic pipe/pipe or pipe/fitting assemblies to tensile loading

WARNING — Persons using this document should be familiar with normal laboratory practice, if applicable. The use of this International Standard can involve hazardous materials, operations, and equipment. This International Standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this International Standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

1 Scope

This International Standard specifies a method for testing the resistance to longitudinal tensile loading of uniaxial plastic pipe/pipe or pipe/fitting assemblies with electrofusion joints, butt fusion joints, or mechanical fittings (made of plastics or metals). For electrofusion joints and butt fusion joints, this test method is limited to nominal pipe diameters up to and including 250 mm.

2 Normative references

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

ISO 3126, *Plastics piping systems — Plastics components — Determination of dimensions*

3 Principle

The test consists of subjecting a plastic pipe/pipe or pipe/fitting assembly to a longitudinal stress by the application of a given constant load for 1 h, followed by application of a load at a constant speed until yielding or failure occurs. The leak tightness of the test piece is verified before the constant load, after the constant load, and at the end of the test.

4 Test parameters and requirements

The test parameter of the standard which refers to this International Standard shall be used and the requirements shall be fulfilled. If the parameter is not given in the referring standard, the one given in Annex A shall apply. The test is carried out at a temperature of (23 ± 2) °C.

The following test parameter should be given by the standard which refers to this International Standard.

a) test stress [MPa]

5 Apparatus

5.1 Room, which can be controlled at a temperature of (23 ± 2) °C.

5.2 Tensile-testing machine or other equipment, sufficiently powerful to allow tests to be carried out up to the yield point of the pipe. The tensile machine shall be capable of sustaining, between its clamping jaws, a constant load, within a load tolerance of ±2 %, and a speed of (25 ± 2,5) mm/min.

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