

Thermoplastics pipes - Determination of resistance to external blows - Staircase method (ISO 11173:1994)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 11173:2017 sisaldab Euroopa standardi EN ISO 11173:2017 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 11173:2017 consists of the English text of the European standard EN ISO 11173:2017.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 18.10.2017.	Date of Availability of the European standard is 18.10.2017.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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English Version

Thermoplastics pipes - Determination of resistance to
external blows - Staircase method (ISO 11173:1994)

Tubes en matières thermoplastiques - Détermination
de la résistance aux chocs extérieurs - Méthode en
escalier (ISO 11173:1994)

Rohre aus Thermoplasten - Bestimmung der
Widerstandsfähigkeit gegen äußere
Schlagbeanspruchung - Stufenverfahren (ISO
11173:1994)

This European Standard was approved by CEN on 19 September 2017.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European Foreword

The text of ISO 11173:1994 has been prepared by Technical Committee ISO/TC 138 “Plastics pipes, fittings and valves for the transport of fluids” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 11173:2017 by Technical Committee CEN/TC 155 “Plastics piping systems and ducting systems” the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2018 and conflicting national standards shall be withdrawn at the latest by October 2020.

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Endorsement notice

The text of ISO 11173:1994 has been approved by CEN as a EN ISO 11173:2017 without any modification.

Thermoplastics pipes — Determination of resistance to external blows — Staircase method

1 Scope

This International Standard specifies a method for determining the resistance to external blows of thermoplastic pipes of circular cross-section; it is called the staircase method.

This method is applicable to isolated batches of pipe to be tested at 0 °C.

NOTE 1 If testing below 0 °C is necessary, the temperature of – 20 °C is recommended.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 6603-1:1985, *Plastics — Determination of multi-axial impact behaviour of rigid plastics — Part 1: Falling dart method*.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 drop height for 50 % failure, H_{50} : Height of fall of a striker of specified mass, which provokes failure of 50 % of test pieces from samples of pipe taken to represent a batch.

NOTE 2 In practice, test pieces are drawn at random from the batch and the result is only an estimate of the H_{50} for that batch.

3.2 failure: Unless otherwise specified in the product standard, shattering or any crack or split on the inside of the pipe that was caused by the impact and that can be seen by the naked eye (lighting devices may be used to assist in examining the specimens).

Indentation of the test piece or a crease on the surface shall not be considered a failure.

4 Principle

Test pieces, comprising cut lengths of pipe, are each subjected to a single blow by a falling striker of specified mass and shape dropped from one of a sequence of different heights onto a random position around the circumference of the pipe.

If a test piece fails, the drop height for the next blow is decreased by a predetermined amount. If a test piece does not fail, the drop height for the next blow is increased accordingly. If sufficient test pieces are used, the H_{50} value of a batch, or a production run from an extruder, can be calculated.

The severity of this test method can be adjusted by changing the mass of the striker and/or the test temperature.

5 Apparatus

5.1 Falling-weight testing machine, incorporating the following basic components (see figure 1).

5.1.1 Main frame, with guide rails or a guiding tube rigidly fixed in the vertical position, to accommodate a striker (5.1.2) and release it to fall vertically and freely. When calibrated, the speed of the striker at the moment of impact shall be not less than 95 % of the theoretical speed.