Thermoplastics pipes - Determination of resistance to external blows - Round-the-clock method (ISO 3127:1994)

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NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 3127:2017 sisaldab Euroopa standardi EN ISO 3127:2017 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 3127:2017 consists of the English text of the European standard EN ISO 3127:2017.
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.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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English Version

Thermoplastics pipes - Determination of resistance to external blows - Round-the-clock method (ISO 3127:1994)

Tubes en matières thermoplastiques - Détermination de la résistance aux chocs extérieurs - Méthode autour du cadran (ISO 3127:1994)

Rohre aus Thermoplasten - Bestimmung der Widerstandsfähigkeit gegen äußere Schlagbeanspruchung - Umfangsverfahren (ISO 3127:1994)

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

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COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

The text of ISO 3127:1994 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 3127:2017 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of an identical text or by endorsement, at the latest by April 2018, and conflicting national standards shall be withdrawn at the latest by October 2020.

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This document supersedes EN 744:1995.

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Endorsement notice

The text of ISO 3127:1994 has been approved by CEN as EN ISO 3127:2017 without any modification.

Thermoplastics pipes — Determination of resistance to external blows — Round-the-clock method

1 Scope

This International Standard specifies a method for the determination of the resistance to external blows of thermoplastics pipes of circular cross-section; it is called the round-the-clock method.

This method is applicable to isolated batches of pipe tested at 0 °C (information is also given for sampling from the continuous production of pipe).

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

2 Definitions

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

2.1 true impact rate (TIR): The total number of failures divided by the total number of blows, as a percentage, as if the whole batch had been tested.

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

2.2 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 is not considered a failure.

3 Principle

Test pieces are subjected to blows from a falling striker, of specified mass and shape, dropped from a known height onto specified positions around the circumference of the test piece. The true impact rate (TIR) of the batch, or production run from an extruder, is estimated.

The severity of this test method can be adjusted by changing the mass of the striker and/or by changing the drop height. It is not technically correct to vary the severity of the test by choosing values of the TIR other than those specified below.

The maximum value acceptable for the TIR is taken to be 10 %.

NOTE 3 It should be appreciated that a completely definitive result can be reached only by testing the whole batch, but in practice a balance is necessary between the statistical possibility of a definitive result and the cost of further testing.

4 Apparatus

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

4.1.1 Main frame, with guide rails or a guiding tube rigidly fixed in the vertical position, to accommodate a striker (4.1.2) 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.

4.1.2 Striker, having a nose comprising all or part of a hemisphere, combined with a cylindrical stem at least 10 mm long, and having dimensions conforming to figure 2 and table 1, depending upon the mass of the striker. The mass of the striker, including any associated weights, shall be selected from the values given in table 2. Below the stem, the nose shall be of steel with a minimum wall thickness of 5 mm and the striking surface shall be free from visible imperfections such as scratches or dents which may influence the results.