

Nederlandse norm

NEN-EN 1329-1+A1

(en)

Kunststofleidingssystemen voor binnenriolering
(lage en hoge temperatuur) - Ongeplasticeerd
polyvinylchloride (PVC-U) - Deel 1: Specificaties
voor leidingen, hulpstukken en het systeem

Plastic piping systems for soil and waste
discharge (low and high temperature) within the
building structure - Unplasticized poly(vinyl
chloride) (PVC-U) - Part 1: Specifications for
pipes, fittings and the systems

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EUROPEAN STANDARD

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English Version

Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure - Unplasticized poly(vinyl chloride) (PVC-U) - Part 1: Specifications for pipes, fittings and the systems

Systèmes de canalisations en plastique pour l'évacuation des eaux-vannes et des eaux usées (à basse et à haute température) à l'intérieur de la structure des bâtiments - Poly(chlorure de vinyle) non plastifié (PVC-U) - Partie 1: Spécifications pour tubes, raccords et le système

Kunststoff-Rohrleitungssysteme zum Ableiten von Abwasser (niedriger und hoher Temperatur) innerhalb der Gebäudestruktur - Weichmacherfreies Polyvinylchlorid (PVC-U) - Teil 1: Anforderungen an Rohre, Formstücke und das Rohrleitungssystem

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Orbeel
 Preview

EN 1329-1:2014+A1:2018 (E)**Foreword**

This document (EN 1329-1:2014+A1:2018) has been prepared 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of an identical text or by endorsement, at the latest by September 2018, and conflicting national standards shall be withdrawn at the latest by September 2018.

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

This document includes Amendment 1 approved by CEN on 11 November 2017.

This document supersedes A1 EN 1329-1:2014 A1.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

EN 1329 consists of the following parts:

- EN 1329-1, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Unplasticized poly(vinyl chloride) (PVC-U) — Part 1: Specifications for pipes, fittings and the system* [the present document];
- CEN/TS 1329-2, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Unplasticized poly(vinyl chloride) (PVC-U) — Part 2: Guidance for the assessment of conformity* [Technical Specification].

The main changes are:

- specification of the scope with restriction to solid wall;
- updating of the normative references;
- alignments of products characteristics for BD applications with UD applications (EN 1401-1) for $d_n \geq 110$ mm;
- introduction of alternative test methods to DCMT for the evaluation of the gelation of PVC;
- explicit integration of designs of fittings.

System Standards are based on the results of the work undertaken in ISO/TC 138 “Plastics pipes, fittings and valves for the transport of fluids”, which is a Technical Committee of the International Organization for Standardization (ISO).

They are supported by separate standards on test method to which references are made throughout the System Standard.

The System Standards are consistent with general standards on functional requirements and on recommended practice for installation.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Preview

EN 1329-1:2014+A1:2018 (E)**1 Scope**

This part of EN 1329 specifies the requirements for solid wall unplasticized poly(vinyl chloride) (PVC-U) pipes, fittings and the system intended for:

- soil and waste discharge applications (low and high temperature) inside buildings (application area code “B”);
- soil and waste discharge applications (low and high temperature) for both inside buildings and buried in ground within the building structure (application area code “BD”).

NOTE 1 The intended use is reflected in the marking of products by “B” or “BD”.

NOTE 2 For use buried in ground within the building structure are intended only those components (marked with “BD”) with nominal outside diameters equal to or greater than 75 mm.

This part of EN 1329 is also applicable to PVC-U pipes, fittings and the system intended for the following purposes:

- ventilating part of the pipework in association with discharge applications;
- rainwater pipework within the building structure.

It also specifies the test parameters for the test method referred to in this European Standard.

This European Standard covers a range of nominal sizes, a range of pipes and fittings series and gives recommendations concerning colours.

NOTE 3 It is the responsibility of the purchaser or specifier to make the appropriate selections from these aspects, taking into account their particular requirements and any relevant national regulations and installation practices or codes.

For external above ground application additional requirements depending on the climate should be agreed between the manufacturer and the user.

NOTE 4 Pipes, fittings and other components conforming to any of the plastics product standards listed in Annex B can be used with pipes and fittings conforming to this European Standard, provided they conform to the requirements for joint dimensions given in Clause 6 and to the requirements of Table 24.

NOTE 5 Joints and adhesives are considered to be part of the system as covered in the scope.

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.

EN 681-1, *Elastomeric seals — Materials requirements for pipe joint seals used in water and drainage applications — Part 1: Vulcanized rubber*

EN 681-2, *Elastomeric Seals — Materials requirements for pipe joint seals used in water and drainage applications — Part 2: Thermoplastic elastomers*

EN 1401-1:2009, *Plastics piping systems for non-pressure underground drainage and sewerage — Unplasticized poly(vinyl chloride) (PVC-U) — Part 1: Specifications for pipes, fittings and the system*

EN 1905, *Plastics piping systems — Unplasticized poly(vinyl chloride) (PVC-U) pipes, fittings and material — Method for assessment of the PVC content based on total chlorine content*

EN 10204:2004, *Metallic products — Types of inspection documents*

EN 14680, *Adhesives for non-pressure thermoplastics piping systems — Specifications*

EN 14814, *Adhesives for thermoplastic piping systems for fluids under pressure — Specifications*

EN ISO 472, *Plastics — Vocabulary (ISO 472)*

EN ISO 580, *Plastics piping and ducting systems — Injection-moulded thermoplastics fittings — Methods for visually assessing the effects of heating (ISO 580)*

EN ISO 1043-1, *Plastics - Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics (ISO 1043-1)*

EN ISO 1167-1, *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 1: General method (ISO 1167-1)*

EN ISO 1167-2, *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 2: Preparation of pipe test pieces (ISO 1167-2)*

EN ISO 1183-1, *Plastics — Methods for determining the density of non-cellular plastics — Part 1: Immersion method, liquid pycnometer method and titration method (ISO 1183-1)*

EN ISO 2505, *Thermoplastics pipes — Longitudinal reversion — Test method and parameters (ISO 2505)*

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

EN ISO 6259-1, *Thermoplastics pipes — Determination of tensile properties — Part 1: General test method (ISO 6259-1)*

EN ISO 13229, *Thermoplastics piping systems for non-pressure applications — Unplasticized poly(vinyl chloride) (PVC-U) pipes and fittings — Determination of the viscosity number and K-value (ISO 13229)*

ISO 2507-1, *Thermoplastics pipes and fittings — Vicat softening temperature — Part 1: General test method*

ISO 3127, *Thermoplastics pipes — Determination of resistance to external blows — Round-the-clock method*

ISO 6259-2, *Thermoplastics pipes — Determination of tensile properties — Part 2: Pipes made of unplasticized poly(vinyl chloride) (PVC-U), chlorinated poly(vinyl chloride) (PVC-C) and high-impact poly(vinyl chloride) (PVC-HI)*

ISO 9852, *Unplasticized poly(vinyl chloride) (PVC-U) pipes — Dichloromethane resistance at specified temperature (DCMT) — Test method*

ISO 11173, *Thermoplastics pipes — Determination of resistance to external blows — Staircase method*

ISO 13254, *Thermoplastics piping systems for non-pressure applications — Test method for watertightness*

ISO 13255, *Thermoplastics piping systems for soil and waste discharge inside buildings — Test method for airtightness of joints*

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ISO 13257:2010, *Thermoplastics piping systems for non-pressure applications — Test method for resistance to elevated temperature cycling*

ISO 13259, *Thermoplastics piping systems for underground non-pressure applications — Test method for leaktightness of elastomeric sealing ring type joints*

ISO 18373-1, *Rigid PVC pipes — Differential scanning calorimetry (DSC) method — Part 1: Measurement of the processing temperature*

3 Terms and definitions, symbols and abbreviations**3.1 Terms and definitions**

For the purposes of this document, the terms and definitions given in EN ISO 472 and EN ISO 1043-1 and the following apply.

3.1.1**application area code**

code used in the marking of pipes and fittings to indicate the application area(s) for which they are intended, as follows:

- B: application area code for components intended for use above ground inside the building, or for components outside buildings fixed onto the wall;
- D: application code for the area under and within 1 m from the building where the pipes and fittings are buried in ground and are connected to the underground drainage and sewerage system;
- BD: application area code for components intended for use for both code B and code D application areas

Note 1 to entry: In D application areas the existence of external forces from the surroundings in addition to the hot water discharge is usual.

Note 2 to entry: Other application area codes U and UD not covered by this standard are defined elsewhere, e.g. in EN 1401-1.

3.1.2**nominal size****3.1.2.1****nominal size**

DN
numerical designation of the size of a component, other than a component designated by thread size, which is approximately equal to the manufacturing dimension, in millimetres

3.1.2.2**nominal size**

DN/OD

nominal size, related to the outside diameter

3.1.3**nominal outside diameter**

d_n

specified outside diameter, in millimetres, assigned to a nominal size DN/OD

3.1.4 outside diameter

d_e

value of the measurement of the outside diameter through its cross section at any point of a pipe or spigot of a fitting, rounded to the next greater 0,1 mm

3.1.5 mean outside diameter

d_{em}

value of the measurement of the outer circumference of a pipe or spigot of a fitting in any cross section, divided by π ($\approx 3,142$), rounded to the next greater 0,1 mm

3.1.6 inside diameter

d_s

value of the measurement of the inside diameter through its cross section at any point of a socket, rounded to the next greater 0,1 mm

3.1.7 mean inside diameter of a socket

d_{sm}

arithmetical mean of a number of measurements of the inside diameter of a socket in the same cross section

3.1.8 out-of-roundness ovality

difference between the measured maximum and the measured minimum outside diameter in the same cross section of a component

3.1.9 wall thickness

e

value of measurement of the wall thickness at any point around the circumference of a component

3.1.10 mean wall thickness

e_m

arithmetical mean of a number of measurements of the wall thickness, regularly spaced around the circumference and in the same cross section of a component, including the measured minimum and the measured maximum values of the wall thickness in that cross section

3.1.11 standard dimension ratio SDR

nominal ratio of the outside diameter, d_n , to the minimum wall thickness, e_{min}

EN 1329-1:2014+A1:2018 (E)**3.1.12****nominal ring stiffness****SN**

numerical designation of the ring stiffness of a pipe or fitting which is a convenient round number relative to the determined stiffness in kilonewtons per square metre, indicating the minimum ring stiffness of a pipe or fitting

3.1.13**assembled fittings**

fittings which are made from several injection moulded parts to be assembled together by screwing or clipping

Note 1 to entry: Such fittings can incorporate rubber membranes or joints.

3.1.14**fabricated fittings**

fittings produced from pipe and/or from injection-moulded fittings by thermoforming, solvent-cementing or welding

Note 1 to entry: Fabricated fittings need an additional fabrication step.

3.1.15**solid wall pipe and fitting**

pipe or fitting with smooth internal and external surface with the same compound / formulation through the wall

3.1.16**material definitions****3.1.16.1****virgin material**

material in the form such as granules or powder that has not been subjected to use or processing other than that required for its manufacture and to which no reprocessed or recycled material has been added

Note 1 to entry: It is understood that the addition of additives such as stabilizers and pigments is still resulting into a virgin material.

3.1.16.2**own reprocessed material**

material prepared from rejected unused pipes, gutters or fittings and ancillaries, including trimmings from the production of pipes or fittings, that has been reprocessed in a manufacturer's plant after having been previously processed by the same manufacturer by a process such as moulding or extrusion, and for which the complete formulation is known

3.1.16.3**external reprocessed material**

material prepared from unused thermoplastics products regardless of where those products were manufactured

3.1.16.4**recycled material**

material from used thermoplastic products which have been cleaned and crushed or ground

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