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English Version

**Plastics rainwater piping systems for above ground
external use - Unplasticized poly(vinyl chloride) (PVC-U) -
Part 1: Specifications for pipes, fittings and the system**

Systèmes de canalisations de descentes d'eaux
pluviales en plastique à usage externe en aérien -
Poly(chlorure de vinyle) non plastifié (PVC-U) - Partie
1: Spécifications pour tubes, raccords et le système

Kunststoff-Rohrleitungssysteme für außenliegende
Regenfallleitungen - Weichmacherfreies
Polyvinylchlorid (PVC-U) - Teil 1: Anforderungen an
Rohre, Formstücke und das Rohrleitungssystem

This European Standard was approved by CEN on 9 January 2016.

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

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European foreword

This document (EN 12200-1:2016) has been prepared by Technical Committee CEN/TC 155 “Plastics piping systems and ducting systems”, the secretariat of which is held by NEN.

This document supersedes EN 12200-1:2000.

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of an identical text or by endorsement, at the latest by October 2016, and conflicting national standards shall be withdrawn at the latest by October 2016.

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 European Standard has been prepared in liaison with CEN/TC 128 “Roof covering products for discontinuous laying and products for wall cladding” taking into account EN 607 [1] and EN 1462 and CEN/TC 165 “Waste water engineering” taking into account the design guidance in EN 12056-3 [4].

This standard is a Part of a System Standard for plastics piping systems of a particular material for a specified application. There are a number of such System Standards.

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 methods 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.

EN 12200 consists of the following Parts, under the general title “*Plastics rainwater piping systems for above ground external use — Unplasticized poly(vinyl chloride) (PVC-U)*”:

- Part 1: Requirements for pipes fittings and the system (the present standard);
- Part 2: Guide for the assessment of conformity [3].

For Rainwater discharge systems used internally within buildings the following standards apply:

EN 1329, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Unplasticized poly(vinyl chloride) (PVC-U)*

EN 1451, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Polypropylene (PP)*

EN 1453, *Plastics piping systems with structured-wall pipes for soil and waste discharge (low and high temperature) inside buildings – Unplasticized poly(vinyl chloride) (PVC-U)*

EN 1455, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Acrylonitrile-butadiene-styrene (ABS)*

EN 1519, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Polyethylene (PE)*

EN 1565, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Styrene copolymer blends (SAN+PVC)*

EN 1566, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Chlorinated poly(vinyl chloride) (PVC-C)*

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the requirements for pipes, fittings, brackets and the system of unplasticized poly(vinyl chloride) (PVC-U) intended for use as above-ground external rainwater piping systems.

It also specifies:

- a) The requirements for metallic brackets.
- b) Both solid wall pipes and fittings, (i.e. product manufactured from a single layer), as well as solid wall multi-layer pipes.
- c) The test parameters for the test methods referred to in this standard.

Pipes can be used in conjunction with fittings and brackets of acrylic materials provided these polymers meet the performance requirements of this standard.

The products are usually used in conjunction with gutters conforming to EN 607 [1]. They are not intended for use with products conforming to EN 612 [2].

This standard is applicable to PVC-U rainwater systems of circular, square, rectangular or any other shape with sealed (rubber ring or solvent cement) or unsealed joints.

This standard covers a range of pipes and fittings sizes.

NOTE 1 It is the responsibility of the purchaser or specifier to make the appropriate selections from the size range to take into account their particular requirements and any relevant national regulations and installation practices or codes.

NOTE 2 The term "rainwater" in this standard is used also to encompass "surface water" (as defined in EN 752 [6]) run-off from buildings.

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 513:1999, *Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors - Determination of the resistance to artificial weathering*

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 1462, *Brackets for eaves gutters - Requirements and testing*

EN 12095, *Plastics piping systems - Brackets for rainwater piping systems - Test method for bracket strength*

CEN/TS 14541:2013, *Plastics pipes and fittings - Characteristics for utilisation of non-virgin PVC-U, PP and PE materials*

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

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

EN 20105-A02, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour (ISO 105-A02)*

EN ISO 306, *Plastics - Thermoplastic materials - Determination of Vicat softening temperature (VST) (ISO 306)*

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 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 4892-2, *Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps (ISO 4892-2)*

EN ISO 4892-3, *Plastics - Methods of exposure to laboratory light sources - Part 3: Fluorescent UV lamps (ISO 4892-3)*

EN ISO 8256, *Plastics - Determination of tensile-impact strength (ISO 8256)*

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 13254, *Thermoplastics piping systems for non-pressure applications — Test method for water tightness*

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