BRITISH STANDARD

BS EN
15012:2007

Plastics piping systems — Soil and waste discharge systems within the building structure — Performance characteristics for pipes, fittings and their joints

ICS 23.040.01; 91.140.80

National foreword

This British Standard is the UK implementation of EN 15012:2007.

The UK participation was entrusted by Technical Committee PRI/88, Plastics piping systems, to Subcommittee PRI/88/1, Plastic piping for non-pressure applications.

This British Standard is intended as a means of demonstrating compliance with the Construction Products Directive (89/106/EEC), and affixing the CE mark. The Essential Requirements contained in this British Standard are concepts related to the Construction Products Directive, and they are not necessarily indicative of all the performance requirements or service conditions likely to be encountered in a particular pipework application.

The CE mark only indicates that a product may be legally placed on the market in the EU. It does not indicate or guarantee inherent quality of the CE marked pipework components. Compliance with this British Standard does not therefore necessarily mean that products bearing the CE mark are fit for a particular intended purpose.

It should also be noted that manufacturers are entitled to declare "No Performance Determined" (NPD) against some or all of these Essential Requirements (if there is no corresponding national legislation to those product characteristics) and yet still affix the CE mark to their products. Users are advised to check the background details with the manufacturer's claims for the CE marked products. Such details may be available on an appropriate internet website, accompanying labelling or other company documentation.

This British Standard does not replace the corresponding BS EN Product Standards (see Annex B), which do contain detailed performance requirements for pipes, fittings and joints manufactured from particular plastics materials.

The UK Approved Documents to the Building Regulations limit the use of plastic products by fire resistance testing and do not require fire reaction testing as detailed in this standard. There is therefore no UK requirement for mandatory third-party certification for CE marked products to this standard.

The UK Approved Document H for "drainage and waste disposal" gives guidance on materials for sanitary pipework. On the basis of this it is the advice of PRI/88/1 that thermoplastics sanitary pipework conforming to BS EN 15012 should meet the following performance criteria when being placed on the UK market.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 June 2008

ISBN 978 0 580 54577 1

Amendments/corrigenda issued since publication

Date	Comments

Performance criteria of pipework conforming to both BS EN 15012 and Approved Document H

Reaction to fire	NPD
Dimensional tolerances — interchangeability	External diameters to be in accordance with the thermoplastics soil and waste discharge standards listed in Annex B (this list incorporates the thermoplastic standards referred to in Table 4 of Part H of the Approved Document to the Building Regulations)
Tightness	Leak tight, after testing in accordance with BS EN 1053 and BS EN 1054
Durability	Hot and cold cycling tests in accordance with EN 1055
Stiffness — only for class BD	SN 4 minimum in accordance with ISO 13966
Release of dangerous substances	NPD

Other product standards that may be used in addition to those listed in Annex B are listed below:

BS 4514:2001, *Unplasticized PVC soil and ventilating pipes of 82.4 mm minimum mean outside diameter, and fittings and accessories of 82.4 mm and of other sizes — Specification*

BS 5254:1976, *Specification for polypropylene waste pipe and fittings (external diameter 34.6 mm, 41.0 mm and 54.1 mm)*

BS 5255:1989, *Specification for thermoplastics waste pipe and fittings*

A list of organizations represented on PRI/88/1 can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 15012

October 2007

ICS 23.040.01; 91.140.80

English Version

Plastics piping systems - Soil and waste discharge systems within the building structure - Performance characteristics for pipes, fittings and their joints

Systèmes de canalisations en plastique - Systèmes pour l'évacuation des eaux-vannes et des eaux usées à l'intérieur de la structure des bâtiments - Caractéristiques de performance pour tubes, raccords et leurs assemblages

Kunststoff-Rohrleitungssysteme - Rohrleitungssysteme zum Ableiten von Abwasser innerhalb der Gebäudestruktur - Eigenschaften für die Gebrauchstauglichkeit von Rohren, Formstücken und deren Verbindungen

This European Standard was approved by CEN on 23 August 2007.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 15012:2007: E

Contents

Foreword

This document (EN 15012:2007) 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 April 2008, and conflicting national standards shall be withdrawn at the latest by July 2009.

This document has been prepared under Mandate M/131 "Pipes, tanks and ancillaries not in contact with water intended for human consumption" given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of EU Directives.

For the relationship with EU Directives, see informative Annex ZA, which is an integral part of this document.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

This document contains only the performance characteristics needed to meet the essential requirements of EU Directive(s). It does not cover all characteristics of the products. These are specified in the standards listed in Annex B or in other appropriate product specifications.

This harmonised document is part of a family of cluster standards addressing plastics piping systems. The relationship is shown below:

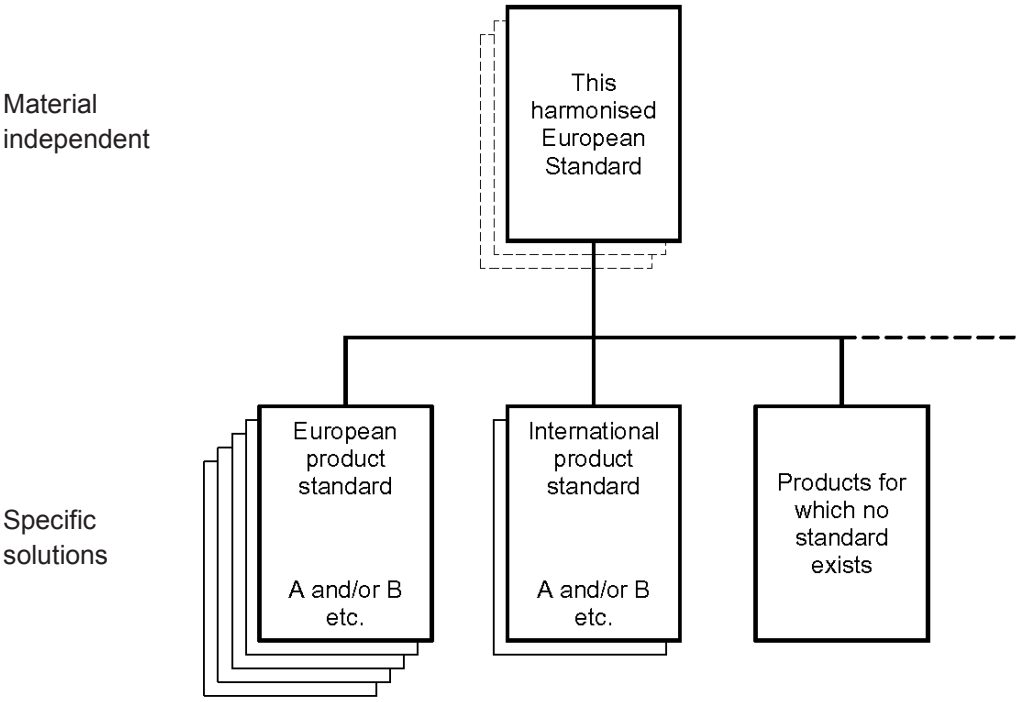


Figure 1

1 Scope

This document specifies performance requirements for non-pressure plastics pipes, fittings and their joints intended for soil and waste applications:

— inside the building (application area code "B"),

— buried in ground within the building structure (application area code "BD") and with a diameter greater than or equal to 75 mm,

and gives associated test methods for verification and evaluation of conformity with this document.

2 Normative references

The following referenced documents are indispensable for the application of this document. 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: Vulcanised rubber*

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

EN 681-3, *Elastomeric seals — Materials requirements for pipe joint seals used in water and drainage applications — Part 3: Cellular materials of vulcanised rubber*

EN 681-4, *Elastomeric seals — Materials requirements for pipe joint seals used in water and drainage applications — Part 4: Cast polyurethane sealing elements*

EN 1053, *Plastics piping systems — Thermoplastics piping systems for non-pressure applications — Test method for watertightness*

EN 1054, *Plastics piping systems — Thermoplastics piping systems for soil and waste discharge — Test method for airtightness of joints*

EN 1055, *Plastics piping systems — Thermoplastics piping systems for soil and waste discharge inside buildings — Test method for resistance to elevated temperature cycling*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using test data from reaction to fire tests*

EN 13823, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*

EN ISO 3126, *Plastics piping systems — Plastics components — Determination of dimensions (ISO 3126:2005)*

EN ISO 9001:2000, *Quality management systems — Requirements (ISO 9001:2000)*

EN ISO 9969, *Thermoplastics pipes — Determination of ring stiffness (ISO 9969:1994)*

ISO 13966, *Thermoplastics pipes and fittings — Nominal ring stiffnesses*

ISO 13967, *Thermoplastics fittings — Determination of ring stiffness*

3 Terms, definitions and symbols

For the purposes of this document, the following terms, definitions and symbols apply.

3.1
nominal size (DN)
numerical designation of the size of a component, other than a component designated by thread size, which is a convenient round number approximately equal to the manufacturing dimension, in millimetres (mm)

NOTE This can apply to either the internal diameter (DN/ID) or external diameter (DN/OD)

3.2
nominal outside diameter
d_n
specified outside diameter, in millimetres, assigned to a nominal size DN

3.3
nominal ring stiffness
SN
numerical designation of the ring stiffness of a pipe or fitting, which is a convenient round number indicating the minimum required ring stiffness of the pipe or fitting

NOTE It is designated by the letters "SN" followed by the appropriate number.

4 Performance requirements

4.1 Reaction to fire for applications inside building

Products conforming to this document shall be classified according to 5.1.

4.2 Dimensional tolerances

The manufacturer shall declare the dimensional tolerances for the jointing of the components either by means of:

a) reference to an appropriate European product standard given in Annex B, or

b) in the absence of a European Standard, reference to a specific European product specification published by a recognized European organization, or

c) in the absence of a) and b) reference to an International Standard, or

d) in the absence of a), b), and c), by stating the values of his own specification and associated jointing method.

Dimensions shall be measured in accordance with 5.2 and shall be within the declared tolerances.

4.3 Tightness (air and liquid)

4.3.1 Tightness of elastomeric sealing ring joints

The tightness of the jointed system shall be tested in accordance with 5.3 for sealing ring joints and the following shall apply:

— no water leakage shall occur;

— no air leakage shall occur.

4.3.2 Tightness of joints made by using adhesive bonding or fusion techniques

Jointing systems using adhesive bonding or fusion techniques shall be deemed to be tight provided the jointing work is executed in accordance with the manufacturer's instructions. Such instructions shall be made available by the manufacturer.

4.4 Durability

4.4.1 Durability of pipes and fittings

The durability of the piping components shall be addressed as the resistance to elevated temperature cycling.

The resistance to elevated temperature cycling shall be tested in accordance with 5.4. The piping system shall not show any leakage before and after the test. The sagging shall not exceed the following values:

— DN ≤ 50: ≤ 3 mm;

— DN > 50: $0{,}05 \times d_n$ mm.

4.4.2 Durability of elastomeric sealing joints

The tightness of elastomeric sealing joints shall be deemed to be durable if the sealing element conforms to EN 681-1, EN 681-2, EN 681-3 or EN 681-4, as applicable.

4.5 Maximum load for admissible deformation for pipes and fittings for applications buried in ground within the building structure

4.5.1 General

For the intended end use buried in ground within the building structure, the maximum load for admissible deformation shall be addressed as ring stiffness.

Ring stiffness shall be determined either by calculation or as described in 4.5.2 and 4.5.3.

4.5.2 Ring stiffness of pipes

The ring stiffness of a thermoplastics pipe shall be determined in accordance with 5.5.1 and shall be expressed either as SN 2, SN 4, SN 8 or SN 16 following ISO 13966, as applicable, or as the actual value obtained in the test, expressed in kN/m^2.

4.5.3 Stiffness of fittings

The stiffness of a fitting made from the same material and having the same wall thickness and design as a corresponding pipe shall because of its geometry be deemed to have at least the same as the stiffness as that pipe.

For other constructions the ring stiffness of bends and branches with the largest side branch shall be measured in accordance with 5.5.2. Based on the obtained lowest value of the result other fittings of the same design family can be classified with the same stiffness class.

The ring stiffness of a thermoplastics fitting shall be expressed either as SN 2, SN 4, SN 8 or SN 16 following ISO 13966, as applicable, or as the actual value obtained in the test, expressed in kN/m^2.

The fittings manufacturer shall declare for which pipe stiffness classes the product is suitable.

NOTE This clause is only applicable for components intended to be used buried in ground within the building structure and with a nominal outside diameter greater than or equal to 75 mm.

4.6 Dangerous substances

Attention is drawn to NOTE 1 and NOTE 2 in ZA.1.

NOTE Mandate M/366 “Development of horizontal standardised assessment methods for harmonised approach relating to dangerous substances under the Construction Products Directive (CPD)“ as issued by the European Commission, will require specifications relating to dangerous substances once applicable to the covered products.

5 Test methods

5.1 Reaction to fire for applications inside building

Classification shall be in accordance with EN 13501-1.

Mounting and fixing of pipes shall conform to Annex A. If no pipes are available, testing of fittings may be done in form of a linear assembly, e.g. couplers.

NOTE In case where e.g. the given dimensions do not exist the choice of dimensions and the mounting and fixing should be agreed between the manufacturer and the notified body.

5.2 Dimensional tolerances

The dimensions shall be measured in accordance with EN ISO 3126.

5.3 Tightness

The piping system shall be tested according to EN 1053 and EN 1054, whereby the sampling procedure is free and the number of test pieces is one (see 6.1).

5.4 Durability

The piping system shall be tested according to EN 1055.

5.5 Ring stiffness for applications buried in ground within the building structure

5.5.1 Ring stiffness of thermoplastics pipes

For thermoplastics pipes the ring stiffness shall be determined in accordance with EN ISO 9969.

5.5.2 Stiffness of thermoplastics fittings

For thermoplastics fittings with structured wall the ring stiffness of bends and branches shall be determined in accordance with ISO 13967.

6 Evaluation of conformity

6.1 General

The conformity of pipes and fittings with the requirements of this European Standard and with the declared values (including classes) shall be demonstrated by:

— initial type testing;

— factory production control by the manufacturer, including product assessment.

For the purposes of testing, pipes and fittings may be grouped into families, where it is considered that the results for one or more characteristics from any product within the family are representative for the same characteristics for all products within that family.

NOTE A product can be in more than one family for different characteristics.

For type testing the following family groups apply:

a) Size groups for pipes and fittings as given in Table 1.

Table 1 — Size groups

Size group	Range of nominal diameters, d_n
1	$32 < d_n \leq 63$
2	$63 < d_n \leq 180$
3	$d_n > 180$

b) Type groups for thermoplastics piping components as given in Table 2.

Table 2 — Type groups

Type group	Thermoplastics piping components
1	Bends
2	Branches
3	Other fittings

6.2 Initial type testing

6.2.1 General

Relevant type tests shall be carried out on new products and whenever there is a change in design, in material and/or in production method, other than routine in-process adjustment and extension of the product range (see Table 3). A change of supplier of a material or stabiliser does not lead to a change in performance if the chemical composition remains the same.

Material modifications within certain limits are not considered as a change of material. Guidance for these limits can be found in the documents given in Annex C.

For tests previously performed in accordance with the provisions of the standards listed in Annex B, or the recognized European specification, as applicable, (same product, same characteristic(s), same test method, same system of attestation etc.) the results may be taken into account.

All characteristics given in Clause 4 shall be subject to calculation and/or initial type testing, except 4.4.2 where the characteristics of the components used have already been determined by the component manufacturer on the basis of conformity with other product standards. However this does not relieve the manufacturer of the piping system from the responsibility of ensuring that the system conforms to the requirements of this document.

6.2.2 Initial type test requirements

The initial type testing of the characteristics according to Clause 4 shall be performed in accordance with the sampling procedure given under type tests (TT) of the applicable product specific standards for assessment of conformity as given in Annex C. If the standard does not contain one or more of the characteristics, then testing as given in Table 3 shall apply.

For products where no such standard exists Table 3 shall apply.

Table 3 — Type testing of pipes and fittings

Essential characteristics	Requirement clause of this document	Testing relevant to [a]			Sampling procedure (minimum sampling)	Acceptance
		I	M	E		
Reaction to fire	4.1	+ [b]	+ [b]	—	Once/compound or formulation [c]	See classification in EN 13501-1
Dimensional tolerances	4.2	+	+	+	Once/size/fitting/ compound or formulation	Pass/fail
Tightness of joints	4.3	+	—	+ [d]	One diameter/size group/joint design	Pass/fail
Durability	4.4	+	+	+	Once/compound or formulation	Pass/fail
Maximum load for admissible deformation [e]	4.5					Pass/fail
– pipes		+	+	+	One pipe sample/size group/SN class for each material	
– fittings		+	+	+	Once/size/fitting group 1 (largest angle of bend of the size) and 2 (45° branch)	

a I is initial type test in case of new system
M is change of material
E is extension of the product range with new size group or fitting group.
\+ denotes testing relevant for the characteristic-occurrence-combination.

b Only obligatory if subject to regulatory requirements applicable in the place of use (see also Table ZA.3).

c In case of single burning item (SBI) test the vertical part shall be size 110 and the horizontal part size 40, which will then be representative for all dimensions. In case where the given dimensions do not exist the choice of dimensions and the mounting and fixing should be agreed between the manufacturer and the notified body.

d Only in case of dimension extension.

e Only for components intended to be used buried in ground within the building structure and with a nominal outside diameter equal or greater than 75 mm.

Test reports shall be kept by the manufacturer for at least 10 years after discontinuation of the product.

6.3 Factory production control

6.3.1 General

The manufacturer shall establish, document and maintain an FPC system to ensure that the products placed on the market conform to the stated performance characteristics. The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product.

If the manufacturer has the component designed, manufactured, assembled, packed, processed and labelled by subcontracting, FPC of the original manufacturer may be taken into account. However, where subcontracting takes place, the manufacturer shall retain the overall control of the component and ensure that he receives all the information that is necessary to fulfil his responsibilities according to this European Standard. The manufacturer who subcontracts all of his activities may in no circumstances discharge himself of his responsibilities to a subcontractor.

All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures. This production control system documentation shall ensure a common understanding of conformity evaluation and enable the achievement of the required component characteristics and the effective operation of the production control system to be checked.

Factory production control therefore brings together operational techniques and all measures allowing maintenance and control of the conformity of the component with its technical specifications. Its implementation may be achieved by controls and tests on raw materials and constituents, processes, manufacturing equipment and finished components, including material properties in components, and by making use of the results thus obtained.

The results of inspections, tests or assessments requiring action shall be recorded, as shall any action taken. The action to be taken when control values or criteria are not met shall be recorded and retained for the period specified in the manufacturers FPC procedures.

The specifications of all incoming raw materials and components shall be documented, and the inspection scheme for ensuring their conformity shall be established.

Manufacturers operating a quality system, which conforms to or is no less stringent than the relevant requirements of EN ISO 9001:2000 and which is made specific to products covered by this European Standard shall be deemed to satisfy the FPC requirements of this European Standard.

6.3.2 FPC requirements

The FPC of the characteristics according to Clause 4 shall be performed in accordance with the sampling procedure given under batch release tests (BRT) of the applicable product specific standards for assessment of conformity as given in Annex C. If the standard does not contain one or more of the characteristics, then testing as given in Table 4 shall apply.

For products where no such standard exists Table 4 shall apply.

Table 4 — Factory production control of pipes and fittings

Essential characteristics	Requirement clause of this European Standard	Test method	Sampling procedure (minimum sampling)	Acceptance
Reaction to fire [a]	4.1	Identification of compound or formulation	Once/batch	See classification in EN 13501-1
Dimensional tolerances	4.2	EN ISO 3126 or according to the manufacturer's quality plan	Once/batch	Pass/fail
Tightness of joints	4.3	Indirect testing: see dimensional tolerances	Once/batch	Pass/fail
Durability	4.4	Indirect testing: see 4.4.1 and check of compound or formulation	Once/batch	Pass/fail
[a] Only obligatory if subject to regulatory requirements applicable in the place of use.				

6.3.3 FPC system requirements

6.3.3.1 Personnel

The responsibility, authority and the relationship between personnel that manages, performs or verifies work affecting product conformity, shall be defined. This applies in particular to personnel that need to initiate actions preventing product non-conformities from occurring, actions in case of non-conformities and to identify and register product conformity problems. Personnel performing work affecting product conformity shall be competent on the basis of appropriate education, training, skills and experience for which records shall be maintained.

6.3.3.2 Equipment

All weighing, measuring and testing equipment necessary to achieve, or produce evidence of, conformity shall be calibrated or verified and regularly inspected according to documented procedures, frequencies and criteria. Control of monitoring and measuring devices shall comply with the appropriate clause of EN ISO 9001:2000.

All equipment used in the manufacturing process shall be regularly inspected and maintained to ensure use, wear or failure does not cause inconsistency in the manufacturing process.

Inspections and maintenance shall be carried out and recorded in accordance with the manufacturer’s written procedures and the records retained for the period defined in the manufacturer's FPC procedures.

6.3.3.3 Raw materials and components

The specifications of all incoming raw materials and components shall be documented, as shall the inspection scheme for ensuring their conformity. The verification of conformity of the raw material with the specification shall be in accordance with EN ISO 9001:2000, 7.4.3.

6.3.3.4 In-process control

The manufacturer shall plan and carry out production under controlled conditions. Compliance with EN ISO 9001:2000, 7.5.1 and 7.5.2 shall be deemed to satisfy the requirements of this subclause.

6.3.3.5 Traceability and marking

Individual products and product batches shall be identifiable and traceable with regard to their production origin. The manufacturer shall have written procedures ensuring that processes related to affixing traceability codes and/or markings (see ZA.3) are inspected regularly. Compliance with EN ISO 9001:2000, 7.5.3 shall be deemed to satisfy the requirements of this subclause.

6.3.3.6 Non-conforming products

The manufacturer shall have written procedures which specify how non-conforming products shall be dealt with. Any such events shall be recorded as they occur and these records shall be kept for the period defined in the manufacturer's written procedures. Compliance with EN ISO 9001:2000, 8.3 shall be deemed to satisfy the requirements of this subclause.

6.3.3.7 Corrective action

The manufacturer shall have documented procedures that instigate action to eliminate the cause of non-conformities in order to prevent recurrence. Compliance with EN ISO 9001:2000, 8.5.2 shall be deemed to satisfy the requirements of this subclause.

6.3.3.8 Handling, storage and packaging

The manufacturer shall have procedures providing methods of product handling and shall provide suitable storage areas preventing damage or deterioration.

6.4 One-off products and products produced in very low quantities

Products produced as a one-off and products produced in very low quantities (less than 20 per year) are assessed as follows.

For initial type assessment, the provisions of Table 3 apply, with the following exception:

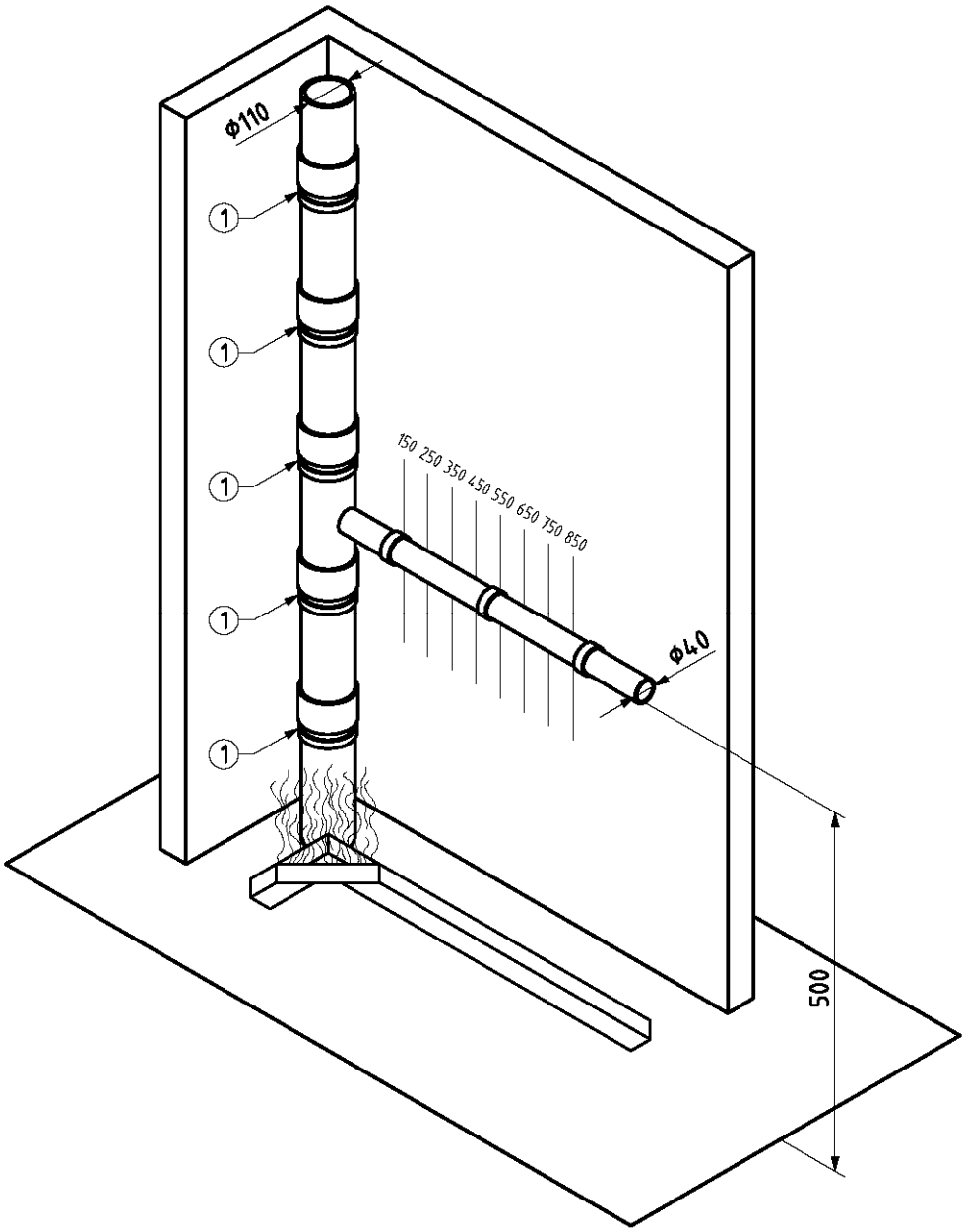
— for reaction to fire the classification of other products made out of the same compound or formulation may be used.

The FPC system of one-off products and products produced in very low quantities shall ensure that raw materials and/or components are sufficient for the product; the provisions of Table 4 applying only where appropriate. The manufacturer shall maintain records allowing traceability of the product.

Annex A
(normative)

Mounting and fixing of components in the test apparatus according to EN 13823

Dimensions in millimetres



Key
1 metallic bracket under socket

Figure A.1 — Mounting and fixing of components

Dimensions in millimetres

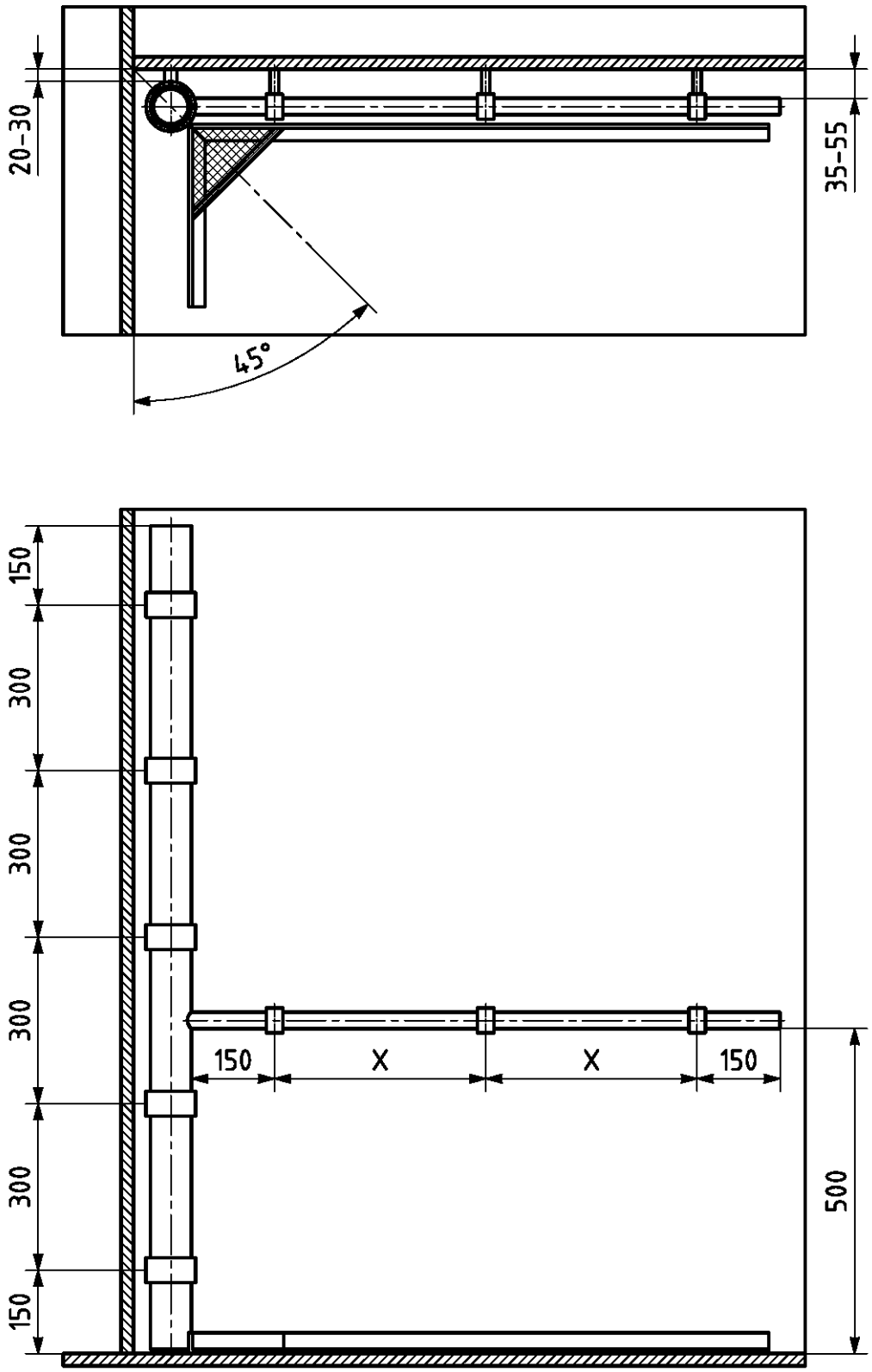


Figure A.2 — Details of mounting and fixing of components

Annex B
(normative)

Product standards for soil and waste discharge piping systems in plastics materials

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*

EN 1451-1, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Polypropylene (PP) — Part 1: Specifications for pipes, fittings and the system*

EN 1453-1, *Plastics piping systems with structured wall-pipes for soil and waste discharge (low and high temperature) inside buildings — Unplasticized poly(vinyl chloride) (PVC-U) — Part 1: Specifications for pipes and the system*

EN 1455-1, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Acrylonitrile-butadiene-styrene (ABS) — Part 1: Requirements for pipes, fittings and the system*

EN 1519-1, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Polyethylene (PE) — Part 1: Specifications for pipes, fittings and the system*

EN 1565-1, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Styrene copolymer blends (SAN+PVC) — Part 1: Specifications for pipes, fittings and the system*

EN 1566-1, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Chlorinated poly(vinyl chloride) (PVC-C) — Part 1: Specifications for pipes, fittings and the system*

NOTE This list represents the situation at the time this document was published. At the next revision, it can be amended once new standards are developed.

Annex C
(normative)

Standards for assessment of conformity for soil and waste discharge piping systems in plastics materials

This annex is normative as far as the assessment of conformity information contained in the listed standards and referred to in Clause 6 for the essential characteristics is concerned. Otherwise it has the status of an informative annex.

ENV 1329-2:2001, *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*

ENV 1451-2:2001, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Polypropylene (PP) — Part 2: Guidance for the assessment of conformity*

ENV 1453-2:2000, *Plastics piping systems with structured-wall pipes for soil and waste discharge (low and high temperature) inside buildings — Unplasticized poly(vinyl chloride) (PVC-U) — Part 2: Guidance for the assessment of conformity*

ENV 1455-2:2001, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Acrylonitrile-butadiene-styrene (ABS) — Part 2: Guidance for the assessment of conformity*

ENV 1519-2:2001, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Polyethylene (PE) — Part 2: Guidance for the assessment of conformity*

ENV 1565-2:2001, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Styrene copolymer blends (SAN+PVC) — Part 2: Guidance for the assessment of conformity*

ENV 1566-2:2001, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Chlorinated poly(vinyl chloride) (PVC-C) — Part 2: Guidance for the assessment of conformity*

NOTE This listing represents the situation at the time this document was published. It can be amended once new standards are developed.

Annex ZA
(informative)

Clauses of this European Standard addressing the provisions of the EU Construction Products Directive

ZA.1 Scope and relevant characteristics

This European Standard has been prepared under Mandate M/131 "Pipes, tanks and ancillaries not in contact with water intended for human consumption" given to CEN by the European Commission and the European Free Trade Association.

The clauses of this European Standard shown in this annex meet the requirements of the mandate given under the EU Construction Products Directive (89/106/EEC).

Compliance with these clauses confers a presumption of the product standards covered by this annex for the intended uses indicated herein; reference shall be made to the information accompanying the CE marking.

WARNING — Other requirements and other EU Directives, not effecting the fitness of intended use, can be applicable to the construction products falling within the scope of this European Standard.

NOTE 1 In addition to any specific clauses relating to dangerous substances contained in this standard, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products Directive, these requirements need also to be complied with, when and where they apply.

NOTE 2 An informative database of European and national provisions on dangerous substances is available at the Construction web site on EUROPA (accessed through http://europa.eu.int/comm/enterprise/construction/internal/dangsub/dangmain.htm).

This Annex has the same scope as Clause 1 of this standard with regard to the products covered. It establishes the conditions for the CE marking of pipes and fittings made of plastics materials intended for the use indicated in Tables ZA.1 and ZA.2 and shows the relevant clauses applicable.

Table ZA.1 — Relevant clauses for thermoplastics pipes and fittings used for soil and waste discharge inside the building (application area B)

Construction Product: Pipes and fittings made of thermoplastics materials **Intended uses:** Soil and waste discharge inside the building (application area B)			
Essential characteristics	**Requirement and clauses in this standard**	**Levels and/or classes**	**Notes**
Reaction to fire	4.1	A to F [a]	See classification in EN 13501-1
Dimensional tolerances	4.2	None	Pass/fail
Tightness: Gas and liquid	4.3	None	Pass/fail
Durability	4.4	None	Pass/fail
[a] The classification obtained when testing in accordance with 5.1 is applicable for the range of diameters from 32 mm to 315 mm.			

Table ZA.2 — Relevant clauses for thermoplastics pipes and fittings used for soil and waste discharge for application both inside the building (application area B) and buried underground within the building structure (application area BD) with a diameter greater or equal to 75 mm

Construction Product: Pipes and fittings made of thermoplastics materials with a diameter greater or equal to 75 mm **Intended uses:** Soil and waste discharge both for inside the building (application area B) and buried in ground within the building structure (application area BD)			
Essential characteristics	**Requirement and clauses in this standard**	**Levels and/or classes**	**Notes**
Reaction to fire	4.1	A to F [a]	See classification in EN 13501-1
Dimensional tolerances	4.2	None	Pass/fail
Tightness: Gas and liquid	4.3	None	Pass/fail
Durability	4.4	None	Pass/fail
Maximum load for admissible deformation	4.5	None	Ring stiffness [kN/m^2]
[a] The classification obtained when testing in accordance with 5.1 is applicable for the range of diameters from 75 mm to 315 mm.			

The requirement on a certain characteristic is not applicable in those Member States (MSs) where there are no regulatory requirements on that characteristic for the intended use of the product. In this case, manufacturers placing their products on the market of these MSs are not obliged to determine nor declare the performance of their products with the regard to this characteristic and the option "No performance determined" (NPD) in the information accompanying the CE marking (see ZA.3) may be used.

ZA.2 Procedure for attestation of conformity of plastics pipes and fittings

ZA.2.1 System of attestation of conformity

The system of attestation of conformity of the plastics pipes and fittings indicated in Tables ZA.1 and ZA.2, in accordance with the Decision of the European Commission (1999/472/EC and amendment 2001/596/EC) as given in Annex III of the mandate M/131 for pipes, tanks and ancillaries not in contact with water intended for human consumption, is shown in Table ZA.3 for the indicated intended use and relevant levels or classes.

Table ZA.3 — System of attestation of conformity

Products	Intended use	Level or class	Attestation of conformity systems
Pipes, fittings and their joints	Soil and waste discharge systems subject to reaction to fire regulations	A1[(1)], A2[(1)], B[(1)] and C[(1)] A1[(2)], A2[(2)], B[(2)], C[(2)], D and E (A1 to E)[(3)] and F	1 [a] 3 [a] 4 [a]
	Soil and waste discharge systems not subject to reaction to fire regulations	None	4 [a]
[(1)] Products/materials for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material). [(2)] Products/materials not covered by footnote [(1)]. [(3)] Products/materials that do not require to be tested for reaction to fire (e.g. products/materials of Class A1 according to Commission Decision 96/603/EC, as amended).			
[a] System 1, see Directive 89/106/EEC (CPD) Annex III.2 (i), without audit testing of samples. System 3, see Directive 89/106/EEC (CPD) Annex III.2 (ii), second possibility. System 4, see Directive 89/106/EEC (CPD) Annex III.2 (ii), third possibility.			

The attestation of conformity of plastics pipes, fittings and joints indicated in Tables ZA.1 and ZA.2, shall be based on the evaluation of conformity procedures indicated in Tables ZA.4, ZA.5 and ZA.6 resulting from application of the clauses of this standard indicated therein.

Table ZA.4 — Assignment of evaluation of conformity tasks for pipes, fittings and their joints under system 1

Tasks		Content of task	Evaluation of conformity clauses to apply
Tasks under the responsibility of the manufacturer	Factory production control (FPC)	Parameters related to all declared characteristics of Table ZA.1 and Table ZA.2	6.3
	Initial type testing	Except for "reaction to fire", all declared characteristics of Table ZA.1 and Table ZA.2	6.2
Task under the responsibility of the notified body	Factory production control (FPC)	Reaction to fire	6.3
	Initial type testing	Reaction to fire	6.2
NOTE The factory production control procedures for reaction to fire to be carried out by the manufacturer may be determined by agreement with the notified body.			

Table ZA.5 — Assignment of evaluation of conformity tasks for pipes, fittings and their joints under system 3

Tasks		Content of task	Evaluation of conformity clauses to apply
Tasks under the responsibility of the manufacturer	Factory production control (FPC)	Parameters related to all declared characteristics of Table ZA.1 and Table ZA.2	6.3
	Initial type testing	Except for "reaction to fire", all declared characteristics of Table ZA.1 and Table ZA.2	6.2
	Initial type testing by a notified body (laboratory)	Reaction to fire	6.2

Table ZA.6 — Assignment of evaluation of conformity tasks for pipes, fittings and their joints under system 4

Tasks		Content of task	Evaluation of conformity clauses to apply
Tasks for the manufacturer	Factory production control (FPC)	Parameters related to all declared characteristics of Table ZA.1 and Table ZA.2	6.3
	Initial type testing	All declared characteristics of Table ZA.1 and Table ZA.2	6.2

ZA.2.2 EC Certificate and Declaration of conformity

In case of products with system 1: When compliance with the conditions of this annex is achieved, the certification body shall draw up a certificate of conformity (EC Certificate of conformity), which entitles the manufacturer to affix the CE marking. The certificate shall include:

— name, address and identification number of the certification body;

— name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;

NOTE 1 The manufacturer may also be the person responsible for placing the product onto the EEA market, if he takes responsibility for CE marking.

— description of the product (type, identification, use, ...);

— provisions to which the product conforms (i.e. Annex ZA of this EN);

— particular conditions applicable to the use of the product (if necessary);

— number of the certificate;

— conditions and period of validity of the certificate, where applicable;

— name of, and position held by, the person empowered to sign the certificate.

In addition, the manufacturer shall draw up and retain a declaration of conformity (EC Declaration of conformity) including the following:

— name and address of the manufacturer, or his authorised representative established in the EEA;

— name and address of the certification body;

— description of the product (type, identification, use, ...), and a copy of the information accompanying the CE marking;

NOTE 2 Where some of the information required for the declaration is already given in the CE marking information, it does not need to be repeated.

— provisions to which the product conforms (i.e. Annex ZA of this EN), and a reference to the initial type test ITT report(s) and factory production control records (if appropriate);

— particular conditions applicable to the use of the product (if necessary);

— number of the accompanying EC Certificate of conformity;

— name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or of his authorised representative.

In case of products under system 3: When compliance with the conditions of this annex is achieved, the manufacturer or his agent established in the EEA shall draw up and retain a declaration of conformity (EC Declaration of conformity), which entitles the manufacturer to affix the CE marking. This declaration shall include:

— name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;

NOTE 3 The manufacturer may also be the person responsible for placing the product onto the EEA market, if he takes responsibility for CE marking.

— description of the product (type, identification, use,...), and a copy of the information accompanying the CE marking;

NOTE 4 Where some of the information required for the declaration is already given in the CE marking information, it does not need to be repeated.

— provisions to which the product conforms (i.e. Annex ZA of this EN), and a reference to the initial type test report(s) and factory production control records (if appropriate);

— particular conditions applicable to the use of the product (if necessary);

— name and address of the notified laboratory(ies);

— name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or his authorised representative.

In case of products under system 4: When compliance with this annex is achieved, the manufacturer or his agent established in the EEA shall draw up and retain a declaration of conformity (EC Declaration of conformity), which entitles the manufacturer to affix the CE marking. This declaration shall include:

— name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;

NOTE 5 The manufacturer may also be the person responsible for placing the product onto the EEA market, if he takes responsibility for CE marking.

— description of the product (type, identification, use,...), and a copy of the information accompanying the CE marking;

NOTE 6 Where some of the information required for the declaration is already given in the CE marking information, it does not need to be repeated.

— provisions to which the product conforms (i.e. Annex ZA of this EN);

— particular conditions applicable to the use of the product (if necessary);

— name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or of his authorised representative.

The above mentioned declaration and certificate shall be presented in the official language(s) or language(s) accepted in the Member State in which the product is to be used.

NOTE 7 Duplication of information between the declaration and certificate should be avoided. To avoid duplication of information, cross-reference between documents may be made when one contains more information than the other.

ZA.3 CE marking and labelling

ZA.3.1 CE marking requirements

The manufacturer or his authorised representative established within the EEA is responsible for the affixing of the CE-marking. The CE-marking symbol to affix shall be in accordance with Directive 93/68/EEC and shall be shown on the pipes and fittings, or it may be on the accompanying label or on the packaging or on the accompanying commercial documents e.g. a delivery note.

The CE marking symbol may be placed alone on the product. If this option is used the CE marking symbol shall appear again in another location including the information as required in ZA.3.1 or ZA.3.2, as applicable.

The following information shall accompany the CE marking symbol (where relevant):

— identification number of the certification body (only for products under system 1);

— name or identifying mark of the manufacturer (see Note 1 in ZA.2.2);

— number of the EC Certificate of conformity (only for products under system 1);

— last two digits of the year in which the CE marking was affixed;

— reference to this European Standard;

— description of the product: generic name, material, dimensions, ... and intended use (may be by code or by reference to a specification);

— information on those relevant essential characteristics listed in Table ZA.1 and Table ZA.2 which are to be declared:

  —declared values and, where relevant, level or class (including “pass” for pass/fail requirements, where necessary) to declare for each essential characteristic as indicated in "Notes" in Table ZA.1 and Table ZA.2;

  —“No performance determined” for characteristics where this is relevant;

  —as an alternative, a standard designation which shows some or all of the relevant characteristics (where the designation covers only some characteristics, it will need to be supplemented with declared values for other characteristics as above).

The "No performance determined" NPD option may not be used where the characteristic is subject to a threshold level. Otherwise, the NPD option may be used when and where the characteristic, for a given intended use, is not subject to regulatory requirements in the Member State of destination.

Figure ZA.1 gives an example of the information to be given on the product, label, packaging and/or commercial documents.

CE 01234	← CE conformity marking, consisting of the “CE”-symbol given in Directive 93/68/EEC. ← Identification number of the certification body (where relevant, see NOTE 1)
AnyCo Ltd., PO Box 21, B-1050 Brussels **07** 01234-CPD-00234	← Name or identifying mark and registered address of the ← manufacturerLast two digits of the year in which the marking was affixed ← Certificate number (where relevant, see NOTE 2)
EN 15012	← Number of this European Standard
Pipe of PVC-U DN 110 B	← Name and material ← Dimension ← Intended use (may be by code or by reference to a specification). For guidance see CEN/TR 15438:2007 [1]
Reaction to fire — B-s2, d0 Dimensional tolerances (EN 1329-1) — Pass Tightness of joints — Pass Durability — Pass Maximum load for admissible deformation — Pass	← Information on regulated characteristics

Figure ZA.1 — Example of CE marking information

NOTE 1 The identification of the notified body is only relevant for systems 1.

NOTE 2 Reference to the Certificate number can only be made under systems 1.

In addition to any specific information relating to dangerous substances, the product should also be accompanied, when and where required and in the appropriate form, by documentation listing any other legislation on dangerous substances for which compliance is claimed, together with any information required by that legislation.

NOTE 3 European legislation without national derogations need not be mentioned.

ZA.3.2 Simplified CE marking with reference to a web site

ZA.3.2.1 General

In situations when a manufacturer wants to use a web site to provide the information required for CE marking as given in ZA.3.1 then a simplified CE marking may be used and affixed on the product itself, on a label attached to it, on its packaging or on the accompanying commercial documents.

Such simplified CE marking (see Figure ZA.2) shall contain all information mentioned in ZA.3.1 except the information on relevant essential characteristics listed in Table ZA.1 and Table ZA.2. Instead of this list of characteristics an unambiguous reference shall be used allowing the declared performances for this specific product to be obtained. The minimum rules for the proper use of a web site for the CE marking, complementing the simplified CE marking information are given in ZA.3.2.2.

These references shall be:

— address of a web site providing the information on the characteristics;

— unique, unambiguous reference, permitting the retrieval of the complete information required in ZA.3.1 belonging to the product to which the simplified CE marking is affixed. When products are modified leading to changes in performances, this shall be clearly identifiable;

— in addition the following minimum information shall be specified on the simplified CE marking (where relevant):

- identification number of the certification body (only for products under system 1);
- name or identifying mark of the manufacturer (see NOTE 1 in ZA.2.2);
- number of the EC Certificate of conformity (only for products under system 1);
- last two digits of the year in which the CE marking was affixed;
- reference to this European Standard;
- material (may be by code or by reference to a specification);
- dimensions;
- declared performance of the product: strength, level or class (where relevant);
- intended use (may be in codified format or by reference to a product specification etc.).

Figure ZA.2 gives an example of the short format information to be given on the product, label, packaging and/or commercial documents.

CE 01234	← CE conformity marking, consisting of the "CE"-symbol given in Directive 93/68/EEC. ← Identification number of the certification body (where relevant)
AnyCo Ltd **07** 01234-CPD-00234	← Name or identifying mark of the manufacturer ← Last two digits of the year in which the marking was affixed ← Certificate number (where relevant, see NOTE 2)
EN 15012	← Number of this European Standard
Pipe of PVC-U DN 110 B **www.anyco.com/ce/**[Tracking reference]	← Name and material ← Dimension ← Intended use (may be by code or by reference to a specification). For guidance see CEN/TR 15438:2007 [1] ← Accurate unique, unambiguous reference to the part of the website where the characteristics of Table ZA.1 and Table ZA.2 are given (see NOTE 3)

Figure ZA.2 — Example of CE marking information with a link to a web site

NOTE 1 The identification of the notified body is only relevant for systems 1.

NOTE 2 Reference to the Certificate number can only be made under systems 1.

NOTE 3 The tracking reference can be by reference to e.g. "Catalogue 2007/1" or "Code and Batch number" of the product etc. It is up to the manufacturer to define its tracking reference of the product.

In addition to any specific information relating to dangerous substances, the product should also be accompanied, when and where required and in the appropriate form, by documentation listing any other legislation on dangerous substances for which compliance is claimed, together with any information required by that legislation.

NOTE 4 European legislation without national derogations need not be mentioned.

ZA.3.2.2 Minimum rules for the proper use of a web site for CE marking information

When the conditions set in ZA.3.2.1 are met, the requirements permitting the use of a web site should comply with the following provisions:

— with the unique, unambiguous reference given on the simplified label for CE marking, the complete CE marking information as given in ZA.3.1 for this specific product shall be provided;

— web site information on CE marking shall be suitably protected, preventing modification of data by external parties;

— web site information shall be dated;

— as far as the unique, unambiguous reference of the product is concerned the information shown on the simplified version of the CE marking shall be at all times coherent with the information on the web site. Changes to the CE marking information on the web site shall be reflected by a new unique, unambiguous reference of the product and consequently by a new simplified CE marking;

— web site shall allow printing the data. The print outs shall clearly reproduce all data accompanying the CE symbol as given in ZA.3.1 and the web site address;

— access to web sites, which shall allow consultation with all possible internet browsers, shall be available at all times (except for short maintenance periods);

— web site data management shall be subject to a manufacturer's procedure, ensuring that internal responsibilities as regards the data on the web site are laid down.

Bibliography

[1] CEN/TR 15438:2007, *Plastics piping systems — Guidance for coding of products and their intended uses*

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