BS EN 12201-5:2011

BSI Standards Publication

Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE)

Part 5: Fitness for purpose of the system

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National foreword

This British Standard is the UK implementation of EN 12201-5:2011. It supersedes BS EN 12201-5:2003 and BS EN 13244-5:2002, which are withdrawn.

NOTE 1 There is no Part 6 in the EN 12201 series. Instead users of the BS EN 12201 series should refer to Water Industry Specification (WIS) 4-32-08 Specification for the fusion jointing of polyethylene pressure pipeline systems using PE80 and PE100 materials, obtainable from www.water.org.uk. In addition, guidance provided by the manufacturer of the pipes and fittings should be followed.

NOTE 2 Part 7 of the EN 12201 series has been prepared as a CEN/TS to allow further development. CEN/TS 12201-7 is not mandatory under the Public Procurement Directives (2004/18/EC and 2004/17/EC).

As yet there is no pan-European agreement on water quality requirements, so existing UK regulations remain in force for public drinking water suppliers.

The following regulations apply to the approval of substances and products used in the provision of public water supplies within the United Kingdom:

a) England – Regulation 31 of The Water Supply (Water Quality) Regulations 2000 (Statutory Instruments 2000 No 3184)

b) Wales – Regulation 31 of The Water Supply (Water Quality) Regulations 2001 (Welsh Statutory Instrument 2001 No 3911 (W.323)

c) Scotland – Regulation 27 of The Water Supply (Water Quality) (Scotland) Regulations 2001

d) Northern Ireland – Regulation 30 of The Water Supply (Water Quality) (Amendment) Regulations (Northern Ireland) 2009 (Statutory Rules of Northern Ireland 2009 No.246).

For further information, go to: http://www.legislation.gov.uk/browse

As part of the regulations, all pipes and fittings used to convey drinking water supplies are required to be approved under the provisions of Regulation 31, as applicable. In addition, manufacturers may obtain approval under the Water Regulations Advisory Scheme (WRAS) to confirm that use of their products will not cause adverse effect on water quality or a risk to health of consumers.

National Annex NA provides additional information on the selection and installation of piping systems and components in the UK.

Attention is drawn to the following statutory regulation: Health & Safety at Work etc. Act 1974, and subsequent regulations.

The requirements contained in the EN 12201 series of standards are not necessarily indicative of all the performance requirements, or the suitability of pipework for the service conditions, likely to be encountered in the UK.

The UK participation in its preparation was entrusted by Technical Committee PRI/88, Plastics piping systems, to subcommittee PRI/88/2, Plastics piping for pressure applications.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

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

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Plastics piping systems for water supply, and for drainage and sewerage under pressure - Polyethylene (PE) - Part 5: Fitness for purpose of the system

Systèmes de canalisations en plastique pour l'alimentation en eau et pour branchements et les collecteurs d'assainissement avec pression - Polyéthylène (PE) - Partie 5 : Aptitude à l'emploi du système

Kunststoff-Rohrleitungssysteme für die Wasserversorgung und für Entwässerungs- und Abwasserdruckleitungen - Polyethylen (PE) - Teil 5: Gebrauchstauglichkeit des Systems

This European Standard was approved by CEN on 8 July 2011.

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-CENELEC Management Centre or to any CEN member.

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Foreword

This document (EN 12201-5:2011) 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 March 2012, and conflicting national standards shall be withdrawn at the latest by March 2012.

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 supersedes EN 12201-5:2003, EN 13244-5:2002.

System Standards are based on the results of the work being 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 12201 consists of the following Parts:

— EN 12201-1, *Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE) — Part 1: General*;

— EN 12201-2, *Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE) — Part 2: Pipes*;

— EN 12201-3, *Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE) — Part 3: Fittings*;

— EN 12201-4, *Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE) — Part 4: Valves for water supply systems*;

— EN 12201-5, *Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE) — Part 5: Fitness for purpose of the system* (this standard);

— CEN/TS 12201-7, *Plastics piping systems for water supply — Polyethylene (PE) — Part 7: Guidance for the assessment of conformity*.

In this revision, technical changes to this document primarily reflect technical changes made to other parts of EN 12201 and updates of test methods.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

The System Standard, of which this is Part 5, specifies the requirements for a piping system and its components when made from polyethylene (PE).

It is intended to be used for water supply intended for human consumption, including the conveyance of raw water prior to treatment, drainage and sewerage under pressure, vacuum sewer systems, and water for other purposes.

In respect of potential adverse effects on the quality of water intended for human consumption, caused by the product covered by EN 12201 (all parts):

a) this standard provides no information as to whether the products may be used without restriction in any of the Member States of the EU or EFTA;

b) products intended for use in water supply systems must comply, when existing, with national regulations and testing arrangements that ensure fitness for contact with drinking water.

NOTE On April 2006, EC Commission set up a revised mandate (M/136) asking CEN to propose harmonised product standards and support standards for test methods which could be used for assessing the fitness for contact with drinking water. In parallel, EC Commission has launched processes for a regulation of construction products (CPR) to be substituted to CP directive (89/106/EEC) and for the revision of drinking water directive (98/83/EC). If relevant, when the ouputs of these processes will be known, European Product Standards will be amended by the addition of an Annex Z under Mandate M136 which will contain formal references to the applicable requirements. Until such amendments, the current national regulations remain applicable.

Requirements and test methods for components of the piping system are specified in EN 12201-1, EN 12201-2, EN 12201-3 and prEN 12201-4:2011. CEN/TS 12201-7 [1] gives guidance for the assessment of conformity.

This Part of EN 12201 covers the characteristics of the fitness for purpose of the system.

1 Scope

This Part of EN 12201 specifies the characteristics of the fitness for purpose of the assembled piping systems intended for the conveyance of water intended for human consumption, raw water prior to treatment, drainage and sewerage under pressure, vacuum sewer systems, and water for other purposes.

It also specifies the method of preparation of test piece joints, and the tests to be carried out on these joints for assessing the fitness for purpose of the system under normal and extreme conditions.

NOTE 1 For PE components intended for the conveyance of water for human consumption and raw water prior to treatment attention is drawn to the introduction of this part of EN 12201. Components manufactured for water for other purposes may not be suitable for water supply for human consumption.

It also specifies the test parameters for the test methods referred to in this standard.

In conjunction with Parts 1 to 4 of EN 12201 it is applicable to PE pipes, fittings, valves, their joints and to joints with components of other materials intended to be used under the following conditions:

a) allowable operating pressure, PFA, up to 25 bar [1)] ;

b) an operating temperature of 20 °C as a reference temperature.

c) buried in the ground;

d) sea outfalls;

e) laid in water;

f) above ground, including pipes suspended below bridges.

NOTE 2 For applications operating at constant temperatures greater than 20 °C up to 40 °C, see Annex A of EN 12201-1:2011.

EN 12201 (all parts) covers a range of allowable operating pressures and gives requirements concerning colours and additives.

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 guidance or regulations and installation practices or codes.

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 712, *Thermoplastics piping systems — End-load-bearing mechanical joints between pressure pipes and fittings — Test method for resistance to pull-out under constant longitudinal force*

EN 713, *Plastics piping systems — Mechanical joints between fittings and polyolefin pressure pipes — Test method for leaktightness under internal pressure of assemblies subjected to bending*

EN 715, *Thermoplastics piping systems — End-load bearing joints between small diameter pressure pipes and fittings — Test method for leaktightness under internal water pressure, including end thrust*

1) 1 bar = 10^5 N/m^2.

EN 911, *Plastics piping systems — Elastomeric sealing ring type joints and mechanical joints for thermoplastics pressure piping — Test method for leaktightness under external hydrostatic pressure*

EN 12201-1, *Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE) — Part 1: General*

EN 12201-2, *Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE) — Part 2: Pipes*

EN 12201-3, *Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE) — Part 3: Fittings*

prEN 12201-4:2011, *Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE) — Part 4: Valves for water supply systems*

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 1167-1:2006)*

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 1167-2:2006)*

EN ISO 1167-4, *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 4: Preparation of assemblies (ISO 1167-4:2007)*

ISO 11413:2008, *Plastics pipes and fittings — Preparation of test piece assemblies between a polyethylene (PE) pipe and an electrofusion fitting*

ISO 11414:2009, *Plastics pipes and fittings — Preparation of polyethylene (PE) pipe/pipe or pipe/fitting test piece assemblies by butt fusion*

ISO 13953, *Polyethylene (PE) pipes and fittings — Determination of the tensile strength and failure mode of test pieces from a butt-fused joint*

ISO 13954, *Plastics pipes and fittings — Peel decohesion test for polyethylene (PE) electrofusion assemblies of nominal outside diameter greater than or equal to 90 mm*

ISO 13955, *Plastics pipes and fittings — Crushing decohesion test for polyethylene (PE) electrofusion assemblies*

ISO 13956, *Plastics pipes and fittings — Decohesion test of polyethylene (PE) saddle fusion joints —Evaluation of ductility of fusion joint interface by tear test*

ISO 14236:2000, *Plastics pipes and fittings — Mechanical-joint compression fittings for use with polyethylene pressure pipes in water supply systems*

3 Terms and definitions, symbols and abbreviations

For the purposes of this document, the terms and definitions, symbols and abbreviations given in EN 12201-1 apply.

4 Fitness for purpose of the system

4.1 Method of preparation of assemblies for testing

4.1.1 General

The joints shall be made by using pipes conforming to EN 12201-2, fittings conforming to EN 12201-3 or valves conforming to prEN 12201-4:2011.

Test pieces for pressure tests shall be closed with pressure-tight, end-load-bearing end caps, plugs or flanges which shall be provided with connections for the entry of water and release of air.

Butt fusion and electrofusion joints are applicable for components in PE 100 and PE 80 materials. Pipes in PE 40 materials are joined using mechanical fittings only.

The peelable layer of peelable layer pipe shall be removed in the area of the joint prior to jointing.

4.1.2 Butt fusion joints

PE pipes, spigot end fittings and valves intended to be used for jointing by butt fusion shall be prepared and assembled in accordance with ISO 11414:2009. The conditions for the preparation of the joints are given in 4.2.2.1 for the assessment of fitness for purpose under normal conditions and in 4.2.2.2 for the assessment of fitness for purpose under extreme conditions.

4.1.3 Electrofusion joints

PE pipes, fittings and valves intended to be used for jointing by electrofusion shall be prepared and assembled in accordance with ISO 11413:2008. The conditions for the preparation of the joints are given in 4.2.3.1 for the assessment of fitness for purpose under normal conditions and in 4.2.3.2 for the assessment of fitness for purpose under extreme conditions.

For joints with electrofusion saddle fittings, the electrofusion saddle fitting shall be fused to the pipe, while it is pressurized to the allowable maximum operating pressure. The pipe shall be cut immediately after the manufacturer prescribed cooling time has elapsed.

NOTE These joints with electrofusion saddle fitting should be prepared taking into consideration national safety regulations.

For straight equal electrofusion socket fittings (couplers) test joints on selected diameters out of the product range shall be prepared with a gap of $0{,}05 d_n$ between the pipe end and the maximum theoretical depth of penetration of the fitting, where for diameters greater than 225 mm, the adjoining pipes shall be arranged to provide the maximum angular deflection possible for the fitting, limited to 1,5 °.

4.1.4 Mechanical joints

For mechanical joints the assembly of the PE pipe and the fitting shall be prepared in accordance with ISO 14236:2000, as applicable.

4.2 Requirements for fitness for purpose

4.2.1 General

When tested in accordance with the test methods as specified in Table 5 using the indicated parameters, fittings shall have mechanical characteristics conforming to the requirements given in Table 5, as applicable to the following types of joints:

— (A) electrofusion socket joints;

— (B) electrofusion saddle joints;

— (C) spigot end joints.

4.2.2 Fitness for purpose for butt fusion joint

4.2.2.1 Under normal conditions (ambient temperature 23 °C)

For the assessment of fitness for purpose under normal conditions, butt fusion joints shall have the characteristic of tensile strength conforming to the requirement given in Table 5, using the parameters as specified in Annex B Condition 1 of ISO 11414:2009 at an ambient temperature of (23 ± 2) °C and the scheme listed in Table 1.

Table 1 — Scheme for butt-fused joints

Pipe/spigot end fitting/valve with spigot ends	Pipe	
	PE 80	PE 100
PE 80	X	X [a]
PE 100	X [a]	X
[a] Only when requested by the purchaser.		

NOTE The table should be interpreted as follows: as an example, for a pipe or a spigot end fitting or a valve with spigot end made from a PE 80 compound, a joint should be tested with a pipe made from PE 80 compound. When requested by the purchaser, for mixed compound joints, test pieces should be used incorporating PE 80 and PE 100 compounds.

The pipe manufacturer shall declare, according to 4.2.2.1, which pipes from his own product range conforming to EN 12201-2 are compatible to each other for butt fusion.

The fitting or valve manufacturer shall declare, according to 4.2.2.1 the SDR range and MRS values of pipes conforming to EN 12201-2 to which his fittings conforming to EN 12201-3 or and his valves conforming to prEN 12201-4:2011 can be fused by using the same procedures (e.g. times, temperatures, fusion pressures) to conform to this standard. If there is a need for deviation in fusion procedures the fitting or valve manufacturer shall state this clearly.

4.2.2.2 Under extreme conditions

For butt fusion joints the characteristics to be examined for fitness for purpose under extreme conditions shall conform to Table 2.

Table 2 — Relation between the joints and fitness for purpose characteristics

Butt fusion joint	Associated characteristics
Both components of the joint: same MRS and same SDR Joint: minimum and maximum condition [a]	Hydrostatic strength (80 °C, 165 h)
Both components of the joint: same MRS and same SDR Joint: minimum and maximum condition [a]	Tensile strength for butt fusion joint
[a] As specified in Clause 7, item a), of ISO 11414:2009 concerning misalignment and the limit values of fusion parameters conforming to Condition 2 and 3 in Annex B of ISO 11414:2009..	

When tested in accordance with the test methods as specified in Table 5 using the indicated parameters, the joints shall have characteristics conforming to the requirements given in Table 5.

The fitting or valve manufacturer shall declare according to Table 2, as applicable, the fitness for purpose under extreme conditions of his fittings or valves.

The pipe manufacturer shall declare according to Table 2 the fitness for purpose under extreme conditions of his pipes (PE pipes, PE pipes with co-extruded layers, PE pipes peelable layers).

4.2.3 Fitness for purpose for electrofusion joints

4.2.3.1 Under normal conditions (ambient temperature 23 °C)

For the assessment of fitness for purpose under normal conditions, electrofusion joints shall have the characteristic of decohesive resistance or cohesive strength, as applicable, conforming to the requirement given in Table 5, using the assembly condition 1 as specified in Annex C of ISO 11413:2008 at an ambient temperature of (23 ± 2) °C and the scheme listed in Table 3.

Table 3 — Scheme for electrofused joints

Electrofusion fitting/valve with electrofusion socket	**Pipe**	
	PE 80	**PE 100**
	SDR maximum	SDR minimum
PE 80	X	X
PE 100	X	X

NOTE The table should be interpreted as follows: as an example, for an electrofusion fitting or a valve with electrofusion socket made from a PE 80 compound, a joint should be tested with a pipe made from PE 80 compound and the SDR maximum as declared by the fitting manufacturer, and another joint should be tested with a pipe made from PE 100 compound and the SDR minimum as declared by the fitting manufacturer.

The fitting or valve manufacturer shall declare, according to 4.2.3.1, the SDR range and MRS values of pipes conforming to EN 12201-2 to which his fittings conforming to EN 12201-3 or/and his valves conforming to prEN 12201-4:2011 can be fused by using the same procedures (e.g. times, temperatures, fusion pressures) to conform to this standard. If there is a need for deviation in fusion procedures the fitting or valve manufacturer shall state this clearly.

4.2.3.2 Under extreme conditions

For electrofusion joints the characteristics to be examined for fitness for purpose under extreme conditions shall conform to Table 4.

When tested in accordance with the test methods as specified in Table 5 using the indicated parameters, the joints shall have characteristics conforming to the requirements given in Table 5.

Table 4 — Relation between the joints and fitness for purpose characteristics

Electrofusion joint including socket fitting [a] (A)	Electrofusion joint including saddle fitting [a] (B)	Associated characteristics
Pipe: MRS maximum [b] SDR minimum [b] Joint: conditions 2 and 3 [c]		Decohesive resistance
	Pipe: MRS maximum [b] SDR minimum [b] Joint: conditions 2 and 3 [c]	Cohesive strength

a If accepted by the purchaser, the minimum and maximum energy conditions 2 and 3 may be replaced by a nominal energy at a given ambient temperature T_a defined by the fitting manufacturer (see 4.3 of ISO 11413:2008).

b As declared by the fitting manufacturer according to 4.2.3.1.

c As specified in Annex C of ISO 11413:2008 with T_{min} and T_{max} as stated in the fitting manufacturer's technical specification.

The fitting or valve manufacturer shall declare according to Table 4, column(s) A, or B, as applicable, the fitness for purpose under extreme conditions of his fittings or valves.

4.2.4 Fitness for purpose of mechanical joints

PE pipes of different MRS and SDR for jointing by mechanical fittings shall be prepared and assembled in accordance with the manufacturer's instructions.

The number of test pieces shall be as follows: One fitting per diameter from product types out of the manufacturer's own product range.

The assemblies shall conform to the requirements of ISO 14236:2000 as specified in Table 5.

4.3 Conditioning

The test pieces shall be conditioned at (23 ± 2) °C before testing, unless otherwise specified by the applicable test method as specified in Table 5.

4.4 Requirements

The requirements for characteristics of fitness for purpose are given in Table 5.

Table 5 — Characteristics for fitness for purpose of the system

Characteristics	Requirements	Test parameters		Test method
Fusion joints				
Hydrostatic strength at 80 °C	No failure during test period of any test pieces	End caps Number of test pieces [b] Conditioning period Type of test Test temperature Test period Circumferential (hoop) stress for: PE 40 PE 80 PE 100	Type A [a] 3 Shall conform to EN ISO 1167-1 Water-in-water 80 °C [c] 165 h 2,5 MPa 4,5 MPa 5,4 MPa	EN ISO 1167-1 together with EN ISO 1167-2, or EN ISO 1167-4, as applicable
Decohesive resistance (A)	Length of initiation rupture ≤ L_2/3 in brittle failure	Test temperature Number of test pieces [b] 23 °C Shall conform to	23 °C Shall conform to ISO 13954	ISO 13954
		Test temperature Number of test pieces [b]	23 °C Shall conform to ISO 13955	ISO 13955
Evaluation of ductility of fusion joint interface (B)	$L_d \leq 50\%$ and $A_d \leq 25$ %, brittle failure	Test temperature Number of test pieces [b]	23 °C Shall conform to ISO 13956	ISO 13956
Tensile strength for butt fusion joints (C)	Test to failure ductile: pass brittle: fail	Test temperature Number of test pieces [b]	23 °C Shall conform to ISO 13953	ISO 13953
Mechanical joints [d]				
Leaktightness under internal pressure [f]	No leaks	Test period Test pressure Number of test pieces [b]	1 h 1,5 × PN of pipe 1	EN 715
Leaktightness under internal pressure when subjected to bending [e]	No leaks	Test period Test pressure Number of test pieces [b]	1 h 1,5 × PN of pipe 1	EN 713
External pressure test	No leaks	Test pressure Test period Test pressure Test period Number of test pieces [b]	Δp_1 = 0,01 MPa 1 h Δp_2 = 0,08 MPa 1 h 1	EN 911
Resistance to pull out under constant longitudinal force	No pull-out or separation of the pipe from the fitting	Test temperature Test period Force [g]	23 °C 1 h Shall conform to ISO 14236:2000	EN 712

[a] Type B end caps may be used for tests for diameters ≥ 500 mm.
[b] The number of test pieces given indicates the quantity required to establish a value for the characteristic described in the table.
[c] Premature ductile failures are not taken into account; for retest procedure, see 4.5.
[d] Results obtained by testing the same characteristic according to ISO standards as given in ISO 14236:2000 are deemed to satisfy the requirements of Table 5.
[e] If applicable to test under bending.
[f] If the leaktightness test subject to bending is carried out, this test is not necessary.
[g] For PE 40 a force of 4,0 MPa is applied.

4.5 Retest in case of failure at 80 °C

A fracture in a brittle mode in less than 165 h shall constitute a failure, however if a sample in the 165 h test fails in a ductile mode in less than 165 h, a retest shall be performed at a selected lower stress in order to achieve the minimum required time for the selected stress obtained from the line through the recommended stress/time points given in Table 6.

Table 6 — Test parameters for the retest of the hydrostatic strength at 80 °C

PE 40		PE 80		PE 100	
Stress MPa	Test period h	Stress MPa	Test period h	Stress MPa	Test period h
2,5	165	4,5	165	5,4	165
2,4	230	4,4	233	5,3	256
2,3	323	4,3	331	5,2	399
2,2	463	4,2	474	5,1	629
2,1	675	4,1	685	5,0	1000
2,0	1000	4,0	1000		

4.6 Testing of coextruded layer pipe

There shall be no evidence of delamination during or after testing of coextruded layer pipe.

Bibliography

[1] CEN/TS 12201-7, *Plastics piping systems for water supply — Polyethylene (PE) — Part 7: Guidance for the assessment of conformity*

[2] Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products, OJ L 40, 11.2.1989, p. 12-26

[3] Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption, OJ L 330, 5.12.1998, p. 32-54

National Annex (informative)

Additional information on the selection and installation of piping systems and components in the UK

The responsible UK committee gives the following advice concerning the selection and installation of piping systems and components conforming to this British Standard.

a) Water supply companies and other entities deemed to be within the scope of the Public Procurement Directives (PPD) are obliged to use BS EN 12201-1:2011, BS EN 12201-2:2011, BS EN 12201-3:2011, BS EN 12201-4:2011 and BS EN 12201-5:2011, produced under European Union mandate, if they wish to purchase PE pipe systems or components within the PPD scope.

b) Attention is drawn to Clause **4.1.1** and the requirements that joints be made by using pipes conforming to BS EN 12201-2:2011, fittings conforming to BS EN 12201-3:2011 or valves conforming to BS EN 12201-4:2011. The tests within these standards confirm the compatibility of components and the efficacy and fitness for purpose of pipes, jointing systems and assemblies of components, in withstanding variations in assembly conditions and the operating pressures and temperatures generated within gas distribution systems.

c) Attention is drawn to the necessity of following manufacturers instructions on correct jointing procedure. Butt-welding parameters for welding pipe to pipe are the responsibility of the pipe manufacturer. Butt-welding parameters for welding pipes to spigot fittings are the responsibility of the fitting manufacturer. Electrofusion welding parameters are the responsibility of the fitting manufacturer. In particular, the need, (or otherwise) to scrape the pipe prior to electrofusion jointing should be established with the manufacturer of the electrofusion fittings. This is even more important in the case of coextruded pipes and pipes with a peelable outer layer.

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Revisions

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