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English version

**Plastics piping systems for the supply of gaseous fuels -  
Polyethylene (PE) - Part 7: Guidance for the assessment of  
conformity**

Systèmes de canalisations en plastiques pour la  
distribution de combustibles gazeux - Polyéthylène (PE) -  
Partie 7: Guide pour l'évaluation de la conformité

Kunststoff-Rohrleitungssysteme für die Gasversorgung -  
Polyethylen (PE) - Teil 7: Empfehlungen für die Beurteilung  
der Konformität

This Technical Specification (CEN/TS) was approved by CEN on 25 November 2002 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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## Foreword

This document (CEN/TS 1555-7:2003) has been prepared by Technical Committee CEN /TC 155, "Plastics piping systems and ducting systems", the secretariat of which is held by NEN.

It has been prepared in liaison with CEN/TC 234 "Gas supply".

This Technical Specification can be used to support elaboration of national third party certification procedures for products conforming to the applicable Parts of EN 1555.

This Technical Specification 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 1555 consists of the following Parts, under the general title *Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE)*

- *Part 1: General*
- *Part 2: Pipes*
- *Part 3: Fittings*
- *Part 4: Valves*
- *Part 5: Fitness for purpose of the system*
- *Part 7: Guidance for assessment of conformity (this Technical Specification).*

NOTE The document dealing with recommended practice for installation which was initially submitted for CEN enquiry as prEN 1555-6 was withdrawn when EN 12007-2 <sup>[1]</sup>, prepared by CEN/TC 234 "Gas supply", was published with the title "*Gas supply systems - Pipelines for maximum operating pressure up to and including 16 bar - Part 2: Specific functional recommendations for polyethylene (MOP up to and including 10 bar)*".

This document includes the following:

- Annex A (normative) Change of compound
- Bibliography.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this CEN Technical Specification: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

## Introduction

The System Standard, of which this is Part 7, specifies the requirements for a piping system and its components made from polyethylene (PE) and is intended to be used for the supply of gaseous fuels.

Requirements and test methods for material and components of the piping system are specified in EN 1555-1, EN 1555-2, EN 1555-3 and EN 1555-4. Characteristics for fitness for purpose are covered in EN 1555-5. Recommended practice for installation is given in EN 12007-2 <sup>[1]</sup> prepared by CEN/TC 234.

This Part of EN 1555 gives guidance to procedures and requirements for the assessment of conformity of materials, components, joints and is intended to be used by manufacturers, inspection bodies, testing laboratories and certification bodies.

## 1 Scope

This Part of EN 1555 gives guidance for assessment of conformity to be included in the manufacturer's quality plan as part of the quality system.

This Part of EN 1555 includes:

- a) requirements for materials, components and joints given in the applicable Parts of EN 1555;
- b) requirements for the manufacturer's quality system;

NOTE 1 It is recommended that the quality system conforms to EN ISO 9001 [2].

- c) definitions and procedures to be applied if third party certification is involved.

NOTE 2 If third party certification is involved, it is recommended that the certification body is accredited to EN 45011 [3] or EN 45012 [4], as applicable.

In conjunction with the other Parts of EN 1555 it is applicable to PE pipes, fittings, and valves, their joints and to joints with components of other materials intended to be used under the following conditions:

- a) a maximum operating pressure, MOP, up to and including 10 bar <sup>1)</sup>;
- b) an operating temperature of 20 °C as reference temperature.

NOTE 3 For other operating temperatures, derating coefficients can be used, see EN 1555-5.

For mechanical fittings conforming to ISO 10838-1 [5], ISO 10838-2 [6] or ISO 10838-3 [7], as applicable, guidance for assessment of conformity is not given in this part of EN 1555. When requested, a quality plan based on the tests mentioned in ISO 10838-1 [5], ISO 10838-2 [6] or ISO 10838-3 [7], as applicable, should be set up in agreement between user and manufacturer.

EN 1555 covers a range of maximum operating pressures and gives requirements concerning colours and additives.

NOTE 4 It is the responsibility of the purchaser or specifier to make the appropriate selections from these aspects, taking into account their particular requirements and any relevant national regulations and installation practices or codes.

## 2 Normative references

This European Technical Specification incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Technical Specification only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 728, *Plastics piping and ducting systems — Polyolefin pipes and fittings — Determination of oxidation induction time*.

EN 1555-1:2002, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 1: General*.

EN 1555-2:2002, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 2: Pipes*.

EN 1555-3:2002, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 3: Fittings*.

EN 1555-4:2002, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 4: Valves*.

EN 1555-5:2002, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 5: Fitness for purpose of the system*.

EN ISO 12162, *Thermoplastics materials for pipes and fittings for pressure applications — Classification and designation — Overall service (design) coefficient (ISO 12162:1995)*.

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1) 1 bar = 0,1 MPa

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection.*

ISO 2859-2, *Sampling procedures for inspection by attributes — Part 2: Sampling plans indexed by limiting quality (LQ) for isolated lot inspection.*

ISO 6259-1, *Thermoplastics pipes – Determination of tensile properties – Part 1: General test method.*

ISO 6259-3, *Thermoplastics pipes – Determination of tensile properties – Part 3: Polyolefin pipes.*

ISO 13477, *Thermoplastics pipes for the conveyance of fluids — Determination of resistance to rapid crack propagation (RCP) — Small-scale steady-state test (S4 test).*

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/DIS 13956,, *Plastics pipes and fittings — Determination of cohesive strength — Tear test for polyethylene (PE) saddle assemblies.*

### 3 Terms and definitions, symbols and abbreviations

For the purposes of this Technical Specification, the terms and definitions, symbols and abbreviations given in prEN 1555-1:2002, prEN 1555-3:2002, prEN 1555-4:2002 and prEN 1555-5:2002, as applicable, apply together with the following.

#### 3.1 Terms and definitions

##### 3.1.1

##### **certification body**

impartial body, governmental or non-governmental, possessing the necessary competence and responsibility to carry out certification of conformity according to given rules of procedure and management

##### 3.1.2

##### **inspection body**

impartial organization or company, approved by a certification body as possessing the necessary competence to verify and/or to carry out initial type testing, witness testing, audit testing, and inspection of the manufacturer's factory production control in accordance with the relevant European Standard

##### 3.1.3

##### **testing laboratory**

laboratory which measures, tests, calibrates or otherwise determines the characteristics of the performance of materials and products

##### 3.1.4

##### **quality system**

organizational structure, responsibilities, procedures, processes and resources for implementing quality management (see EN ISO 9000 [8])

##### 3.1.5

##### **quality plan**

document setting out the specific quality practices, resources and sequence of activities relevant to a particular product or range of products

##### 3.1.6

##### **type testing (TT)**

testing performed to prove that the material, component, assembly is capable of conforming to the requirements given in the relevant standard