



SLOVENSKI STANDARD
oSIST prEN 12007-5:2023

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Infrastruktura za plin - Cevovodni sistemi za najvišji delovni tlak do vključno 16 bar - 5. del: Priključni cevovodi - Posebne funkcionalne zahteve

Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar
- Part 5: Service lines - Specific functional requirements

Gasinfrastruktur - Rohrleitungen mit einem maximal zulässigen Betriebsdruck bis einschließlich 16 bar - Teil 5: Hausanschlussleitungen - Spezifische funktionale Anforderungen

Infrastructures gazières - Canalisations pour pression maximale de service inférieure ou égale à 16 bar - Partie 5: Branchements - Recommandations fonctionnelles spécifiques

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English Version

Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar - Part 5: Service lines - Specific functional requirements

Infrastructures gazières - Canalisations pour pression maximale de service inférieure ou égale à 16 bar -
Partie 5: Branchements - Recommandations fonctionnelles spécifiques

Gasinfrastruktur - Rohrleitungen mit einem maximal zulässigen Betriebsdruck bis einschließlich 16 bar -
Teil 5: Hausanschlussleitungen - Spezifische funktionale Anforderungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 234.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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prEN 12007-5:2023 (E)**European foreword**

This document (prEN 12007-5:2023) has been prepared by Technical Committee CEN/TC 234 "Gas infrastructure", the secretariat of which is held by NSAI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 12007-5:2014.

In comparison with the previous edition, the following technical changes have been made:

- Revision to scope;
- Introduction of definition of gas to include hydrogen rich and methane rich gases, dimethyl ether (DME) and propane and butanes;
- Introduction of definitions for pressed joints terminology;
- Revision to subclause 5.1;
- Introduction of new Annex A, Material, component and joint selection;
- Revision to Annex B, Jointing methods.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of EU Directive(s) / Regulation(s).

This European Standard is part of the series EN 12007 "Gas infrastructure — Pipelines for maximum operating pressure up to and including 16 bar" which comprises the following parts:

- *Part 1: General functional requirements;*
- *Part 2: Specific functional requirements for polyethylene (MOP up to and including 10 bar);*
- *Part 3: Specific functional requirements for steel;*
- *Part 4: Specific functional requirements for renovation;*
- *Part 5: Specific functional recommendations of new service lines.*

Introduction

This document describes the general functional requirements for gas supply through service line pipe systems and covers the pressure range up to and including 16 bar maximum operating pressure (MOP). It gives normative and informative references for safe and secure gas infrastructures. It applies to their design, construction, operation and the related aspects of safety, environment and public health, all in order to provide a safe and secure supply of gas.

This document is intended to be used in addition to the EN 12007 series of European Standards.

The requirements of this document are based on safe gas engineering practice under conditions normally encountered in the gas industry. Requirements for all unusual conditions cannot be specifically provided for, nor are all engineering and construction details prescribed.

Existing industrial safety regulations applying to work areas, safety devices and safe work practices are not intended to be superseded by this document.

Persons responsible for the design, construction and operation of gas infrastructures should have regard to the guidance given in this document, the EN 12007 series of European Standards and to other relevant standards. It is the responsibility of these persons to apply these functional requirements, supplemented with other proven good practice to the particular circumstances of each gas infrastructure.

The recommendations in this document are intended to be applied by competent persons who have suitable knowledge and experience. Notes in the text are informative.

The designer, constructor or operator of service line and pipeline systems is cautioned that this document is not a design handbook or code of practice. Additional national or company standards describing the details are needed. These detailed standards should be in line with the basic principles of this document.

All pressures are gauge pressure unless stated otherwise.

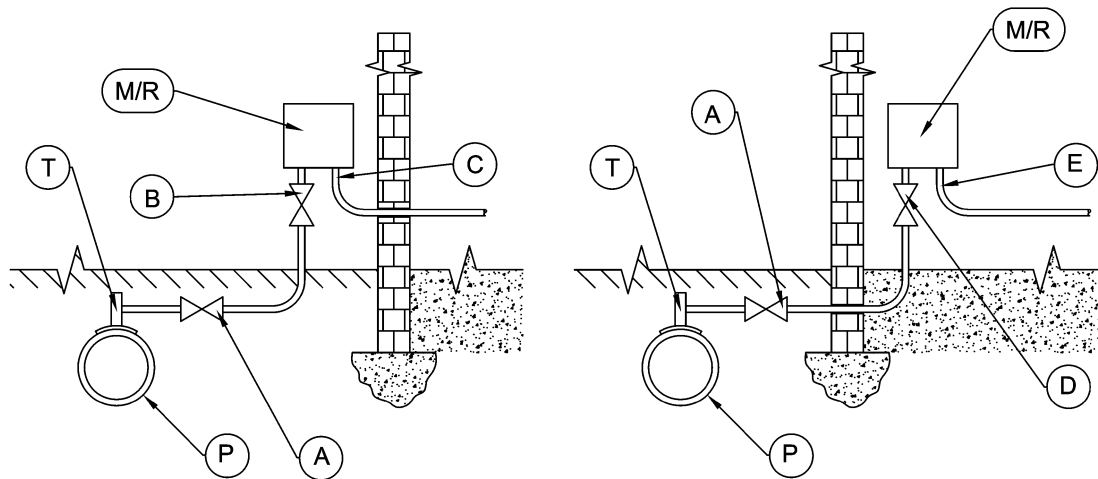
In preparing this document it was recognized that the suite of relevant European Standards is incomplete. Reference may be made where appropriate to international, national or other standards until relevant European Standards are available.

The ownership and operation responsibility can vary between member states. The extent of the service line can differ in each member state. To illustrate this, the various points of deliveries are indicated in Figure 1. Consult Figure 1 (A/B/C/D/E) and member state regulations and standards.

NOTE The valve at point A is not necessarily utilized by each member state.

National preference for points of deliveries should be stated in the national foreword.

prEN 12007-5:2023 (E)

**Key**

P	gas main		Distribution system operator nominated Point(s) of Delivery:
T	Top Tee / Branch Saddle / Equal Tee	A	outlet of below ground service line valve outside the building
M/R	Meter and/or Pressure Regulating installation	B	outlet of above ground service line valve outside the building
		C	outlet of meter/regulator outside the building
		D	outlet of above ground service line valve inside the building
		E	outlet of meter/regulator inside the building

Figure 1 — Distribution system operator nominated point of delivery

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1 Scope

This document describes the specific functional requirements for the transportation of gases (gaseous energy carriers) through service lines in addition to the general functional requirements of EN 12007-1 for:

- a) a maximum operating pressure (MOP) up to and including 16 bar;
- b) an operating temperature between -20 °C and +40 °C;
- c) non-corrosive gases including natural gas, biomethane gas, hydrogen gas and mixtures of these gases where technical evaluation has ensured that operating conditions or constituents or properties of the gas do not affect the safe operation and maintenance of the service line.

It applies to their design, construction, commissioning, decommissioning, operation, maintenance, extension and other associated works including safety and environmental aspects. The service line is the physical asset comprising of pipework from the gas main branch saddle or top tee to the outlet of the distribution system operator's nominated point(s) of delivery (for example: isolation valve, regulator, meter connection or combination of regulator and isolation valve).

Specific functional requirements for:

- polyethylene pipelines are given in EN 12007-2;
- steel pipelines are given in EN 12007-3;
- polyamide (PA-U) pipelines are given in CEN/TS 12007-6;
- pipework for buildings are given in EN 1775;
- pressure regulating installations are given in EN 12279 or EN 12186;
- pressure testing, commissioning and decommissioning are given in EN 12327;
- safety management system (SMS) and pipeline integrity management system (PIMS) are given in EN 17649 [11].

For guidance on methodology for methane emissions quantification for gas transmission, distribution and storage systems and LNG terminals, see CEN/TS 17874 [8].

This document represents the recommendations at the time of its preparation. It does not apply retrospectively to installations before the publication date unless specifically stated.

This document specifies common basic principles for gas infrastructure. Users of this document are expected to be aware that there can exist more detailed national standards and/or codes of practice in the CEN member countries. This document is intended to be applied in association with these national standards and/or codes of practice setting out the above-mentioned basic principles.

European Legislation/regulations and national legislation is obligatory for all member states. In the event of terms of additional requirements in legislation/regulation than in this document, CEN/TR 13737 (all parts) illustrates these terms.

CEN/TR 13737 gives:

- description of all legislations/regulations applicable in a member state;
- if appropriate, more restrictive national requirements;
- a national contact point for the latest information.

prEN 12007-5:2023 (E)**2 Normative references**

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 751-1, *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water - Part 1: Anaerobic jointing compounds*

EN 751-2, *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water - Part 2: Non-hardening jointing compounds*

EN 751-3, *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water - Part 3: Unsintered PTFE tapes and PTFE strings*

EN 1057, *Copper and copper alloys - Seamless, round copper tubes for water and gas in sanitary and heating applications*

EN 1254 (all parts), *Copper and copper alloys - Plumbing fittings*

EN 1254-2, *Copper and copper alloys - Plumbing fittings - Part 2: Compression fittings for use with copper tubes*

EN 1254-3, *Copper and copper alloys - Plumbing fittings - Part 3: Compression fittings for use with plastics and multilayer pipes*

EN 1254-4, *Copper and copper alloys - Plumbing fittings - Part 4: Threaded fittings*

EN 1254-7, *Copper and copper alloys - Plumbing fittings - Part 7: Press fittings for use with metallic tubes*

EN 1775:2007, *Gas supply - Gas pipework for buildings - Maximum operating pressure less than or equal to 5 bar - Functional recommendations*

EN 1776, *Gas infrastructure - Gas measuring systems - Functional requirements*

EN 10226-1, *Pipe threads where pressure tight joints are made on the threads - Part 1: Taper external threads and parallel internal threads - Dimensions, tolerances and designation*

EN 10226-2, *Pipe threads where pressure tight joints are made on the threads - Part 2: Taper external threads and taper internal threads - Dimensions, tolerances and designation*

EN 10241, *Steel threaded pipe fittings*

EN 10242, *Threaded pipe fitting in malleable cast iron*

CEN/TS 12007-6, *Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar - Part 6: Specific functional recommendations for unplasticized polyamide (PA-U)*

EN 12007-1:2012, *Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar - Part 1: General functional requirements*

EN 12007-2, *Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar - Part 2: Specific functional requirements for polyethylene (MOP up to and including 10 bar)*

EN 12007-3, *Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar - Part 3: Specific functional requirements for steel*

EN 12186, *Gas infrastructure- Gas pressure regulating stations for transmission and distribution - Functional requirements*

EN 12279, *Gas supply systems - Gas pressure regulating installations on service lines - Functional requirements*

EN 12327, *Gas infrastructure - Pressure testing, commissioning and decommissioning procedures - Functional requirements*

EN 60079 (all parts), *Explosive atmospheres (IEC 60079 (all parts))*

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1 General terminology

3.1.1

gas infrastructure

pipeline systems including pipework and their associated stations or plants for the transmission and distribution of gas

3.1.2

gas main

pipework in a gas infrastructure to which service lines are connected

3.1.3

service line

pipework from the gas main to the point of delivery of the gas into the installation pipework

3.1.4

casing

protection by means of a construction around the pipeline in order to prevent external loads or third party interference

3.1.5

sleeve

protective pipe through which a gas pipe passes

3.1.6

point of delivery

point of a gas network where the gas is transferred to the user

Note 1 to entry: This can be at a means of isolation (e.g. at the outlet of a LPG storage vessel) or at a meter connection.

Note 2 to entry: For this document, the point of delivery is typically nominated by the distribution system operator and can be defined in National Regulations or Codes of Practice, see Figure 1.

prEN 12007-5:2023 (E)**3.1.7****authorised person**

competent person who is appointed to fulfil a given task on gas infrastructure

3.1.8**competent person**

person who is trained, experienced and approved to perform activities relating to gas infrastructures or installation pipework

Note 1 to entry: Means of approval, if any, will be determined within each member country.

3.1.9**flow limiting device**

purpose manufactured self-actuating device which can limit or stop uncontrolled excess flow of gas

3.1.10**installation pipework**

pipework downstream of the point of delivery terminating at the appliance inlet connection

Note 1 to entry: This pipework is normally the property of the customer.

3.1.11**purging**

process for safely removing air or inert gas from pipework and/or pipeline components and replacing it with gas, or the reverse process

Note 1 to entry: A distinction is made between the following methods:

- direct purging is the displacement of air by gas or vice versa;
- indirect purging is the displacement of air by inert gas followed by the displacement by gas or vice versa.

Note 2 to entry: Alternatively, by means of a barrier (a slug of inert gas or a pig) between the air and the gas or vice versa.

3.1.12**pipeline components**

elements from which the pipeline is constructed

Note 1 to entry: The following are distinct pipeline elements:

- pipes, including cold formed bends;
- fittings;
- ancillaries;
- pressure vessels.

EXAMPLE 1 Reducers, tees, factory-made elbows and bends, flanges, caps, welding stubs, mechanical joints.

EXAMPLE 2 Valves, expansion joints, insulating joints, pressure regulators, pumps, compressors.