

Gas supply systems — Pipelines for maximum operating pressure up to and including 16 bar —

Part 3: Specific functional recommendations for steel

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National foreword

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- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 18, an inside back cover and a back cover.

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**Gas supply systems - Pipelines for maximum operating pressure
up to and including 16 bar - Part 3: Specific functional
recommendations for steel**

Systèmes d'alimentation en gaz - Canalisations pour
pression maximale de service inférieure ou égale à
16 bar - Partie 3: Recommandations fonctionnelles
spécifiques pour l'acier

Gasversorgungssysteme - Rohrleitungen mit einem
maximal zulässigen Betriebsdruck bis einschließlich
16 bar - Teil 3: Besondere funktionale Empfehlungen
für Stahl

This European Standard was approved by CEN on 9 April 1999.

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 234, 'Gas Supply', the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by July 2000, and conflicting national standards shall be withdrawn at the latest by July 2000.

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

There is a complete suite of functional standards prepared by CEN/TC 234, 'Gas Supply' to cover all parts of the gas supply system from the input of gas to the transmission system up to the inlet connection of the gas appliances, whether for domestic, commercial or industrial purposes.

In preparing this standard a basic understanding of gas supply by the user has been assumed.

Gas supply systems are complex and the importance on safety of their construction and use has led to the development of very detailed codes of practice and operating manuals in the member countries. These detailed statements embrace recognized standards of gas engineering and the specific requirements imposed by the legal structures of the member countries.

1 Scope

This European Standard describes the specific functional recommendations for steel pipelines in addition to the general functional recommendations of EN 12007-1 for maximum operating pressures up to and including 16 bar.

This European Standard specifies common basic principles for gas supply systems. Users of this European Standard should be aware that more detailed national standards and/or codes of practice can exist in the CEN member countries.

This European Standard is intended to be applied in association with these national standards and/or codes of practice setting out the above mentioned principles.

2 Normative References

This European Standard incorporates by dated or undated references, 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 Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

prEN 1092-1	Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, PN-designated - Part 1: Steel flanges
EN 1514-1	Flanges and their joints - Dimensions of gaskets for PN-designated flanges - Part 1: Non-metallic flat gaskets with or without inserts
EN 1514-2	Flanges and their joints - Dimensions of gaskets for PN-designated flanges - Part 2: Spiral wound gaskets for use with steel flanges
EN 1514-3	Flanges and their joints - Dimensions of gaskets for PN-designated flanges - Part 3: Non-metallic PTFE envelope gaskets
EN 1514-4	Flanges and their joints - Dimensions of gaskets for PN-designated flanges - Part 4: Corrugated flat or grooved metallic and filled metallic gaskets for use with steel flanges

prEN 1515-1	Flanges and their joints - Bolting - Part 1: Selection of bolting
prEN 1515-2	Flanges and their joints - Bolting - Part 2: Combination of flange and bolting materials for steel flanges - PN-designated
prEN 1591	Flanges and their joints - Design rules for gasketed circular flange connections - Calculation method
prEN 1594	Gas supply systems - Pipelines - Maximum operating pressure over 16 bar - Functional requirements
EN 10204	Metallic products - Types of inspection documents
EN 10208-1	Steel pipes for pipelines for combustible fluids - Technical delivery conditions - Part 1: Pipes of requirement class A
EN 10208-2	Steel pipes for pipelines for combustible fluids - Technical delivery conditions - Part 2: Pipes of requirement class B
ENV 10220	Seamless and welded steel tubes - Dimensions and masses per unit length
prEN 10226-1	Pipe threads where pressure tight joints are made on the threads - Part 1: Designation, dimensions and tolerances
prEN 10285	Steel tubes and fittings for on and offshore pipelines - External three layer extruded polyethylene based coatings
prEN 10286	Steel tubes and fittings for on and offshore pipelines - External three layer extruded polypropylene based coatings
prEN 10287	Steel tubes and fittings for on and offshore pipelines - External fused polyethylene based coatings
prEN 10288	Steel tubes and fittings for on and offshore pipelines - External two layer extruded polyethylene based coatings
prEN 10289	Steel tubes and fittings for on and offshore pipelines - External liquid applied epoxy and epoxy-modified coatings
prEN 10290	Steel tubes and fittings for on and offshore pipelines - External liquid applied polyurethane and polyurethane-modified coatings
EN 12007-1	Gas supply systems - Pipelines for maximum operating pressure up to and including 16 bar - Part 1: General functional recommendations
EN 12068	Cathodic protection - External organic coatings for the corrosion protection of buried or immersed steel pipelines used in conjunction with cathodic protection - Tapes and shrinkable materials
prEN 12560-1	Flanges and their joints - Dimensions of gaskets for Class-designated flanges - Part 1: Non-metallic flat gaskets with or without inserts
prEN 12560-2	Flanges and their joints - Dimensions of gaskets for Class-designated flanges - Part 2: Spiral wound gaskets for use with steel flanges
prEN 12560-3	Flanges and their joints - Dimensions of gaskets for Class-designated flanges - Part 3: Non-metallic PTFE envelope gaskets
prEN 12560-4	Flanges and their joints - Dimensions of gaskets for Class-designated flanges - Part 4: Corrugated, flat or grooved metallic and filled metallic gaskets for use with steel flanges

prEN 12560-5	Flanges and their joints - Dimensions of gaskets for Class-designated flanges - Part 5: Metallic ring-joint gaskets for use with steel flanges
prEN 12732	Gas supply systems - Welding steel pipework - Functional requirements

3 Definitions

For the purposes of this standard, the following definitions apply:

3.1 compression joint: a type of joint in which gas tightness is achieved by compression within a socket with or without a seal

3.2 threaded joint: a type of joint in which gas tightness is achieved by metal to metal contact within threads with the assistance of a sealant

3.3 flanged joint: a type of joint in which gas tightness is achieved by compression of a gasket between the faces of two flanges

3.4 insulating joint: a fitting installed to insulate electrically one section of pipeline from another

3.5 inspection: the process of measuring, examining, testing, gauging or otherwise determining the status of items of the pipeline system or installation and comparing it with the applicable requirements

3.6 pipeline: a system of pipework with all associated equipment and stations up to the point of delivery
This pipework is mainly below ground but includes also above ground parts.

3.7 pipeline components: the elements from which the pipeline is constructed
The following are distinct pipeline elements:

- pipes including cold formed bends;
- fittings;

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

- ancillaries;

EXAMPLE 2: valves, expansion joints, insulating joints, pressure regulators, pumps compressors

- pressure vessels.

4 Design

4.1 General requirements for selection of steel materials

Pipes and other pipeline components shall conform to the relevant European Standards. In the absence of such standards or where such standards are incomplete, characteristics such as chemical and mechanical properties or dimensions of the final product or manufacturing or test procedures shall be subject of agreement between pipeline operator and manufacturer.

4.1.1 Base material

Pipes and other pipeline components shall be manufactured from fully killed steel. Steel made by the Martin process shall not be used.