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Gas infrastructure - Welding steel pipework - Functional requirements

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Gasinfrastruktur - Schweißen an Rohrleitungen aus Stahl - Funktionale Anforderungen

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EN 12732:2013+A1:2014 (E)

Foreword

This document (EN 12732:2013+A1:2014) has been prepared by Technical Committee CEN/TC 234 “Gas infrastructure”, 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of an identical text or by endorsement, at the latest by October 2014, and conflicting national standards shall be withdrawn at the latest by October 2014.

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 ⟦A1⟩ EN 12732:2013 ⟨A1⟧.

This document includes Amendment 1 approved by CEN on 2014-02-03.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ⟦A1⟩ ⟨A1⟧.

This European Standard has been prepared under mandate M/017 given to CEN by the Commission of the European Communities and the European Free Trade Association.

Annex I provides details of significant technical changes between this European Standard and the previous edition.

There is a complete suite of functional standards prepared by CEN/TC 234 ”Gas infrastructure“ to cover all parts 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 infrastructure by the user has been assumed.

Gas infrastructure is complex and the importance on safety of its 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 recognised standards of gas engineering and the specific requirements imposed by the legal structures of the member countries.

CEN/TC 234 will continue its work updating this standard to the latest developments at regular intervals.

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

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1 Scope

This European Standard contains requirements for the production and testing of weld joints for the installation and modification of onshore steel pipelines and pipework used in gas infrastructure, including in-service pipelines, for all pressure ranges for the carriage of processed, non-toxic and non-corrosive natural gas according to EN ISO 13686 and for the carriage of non-conventional gases such as injected biomethane,

where

— the pipeline elements are made of unalloyed or low-alloyed carbon steel;

— the pipeline is not located within commercial or industrial premises as integral part of the industrial process on those premises except for any pipelines and facilities delivering gas to such premises;

— the pipework is not located within household installations according to EN 1775;

— the design temperature of the system is between -40 °C up to and including 120 °C.

The onshore steel pipelines and pipework used in gas infrastructure include in-service pipelines, for all pressure ranges for the carriage of processed, non-toxic and non-corrosive natural gas according to EN ISO 13686 and for the carriage of non-conventional gases complying with EN ISO 13686, and for which a detailed technical evaluation of the functional requirements (such as injected biomethane) is performed ensuring there are no other constituents or properties of the gases that can affect the integrity of the pipeline.

This standard is not applicable to welds produced prior to the publication of this European Standard.

Table 1 assigns the application areas to quality requirement categories as a function of the working pressure and pipe materials used.

Table 1 — Allocation to quality requirement categories

Quality requirement category	Area of activity applies to	
B	Pressure range and base material	≤ 5 bar Group 1.1, 1.2 and 1.4 according to CEN ISO/TR 15608 $R_{t\,0,5}$ ≤ 360 N/mm^2 Examples of use: Mains and service pipes in gas distribution systems, pipework in stations
C	Pressure range and base material	> 5 bar ≤ 16 bar Group 1.1, 1.2 and 1.4 according to CEN ISO/TR 15608 $R_{t\,0,5}$ ≤ 360 N/mm^2 Examples of use: Pipelines including pipework in stations and gas distribution systems
D	Pressure range or base material	> 16 bar [a] Group 1, 2 and 3 according to CEN ISO/TR 15608

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Quality requirement category	Area of activity applies to	
		Examples of use: Pipelines including pipework in stations and gas transmission systems
Key $R_{t\,0,5}$ is the specified minimum yield strength according to EN ISO 3183.		
NOTE 1 "Category A" for pipework up to and including 100 mbar, as mentioned in the previous version EN 12732:2000, has been incorporated in the pressure range of "Category B" and has been deleted from this table. NOTE 2 Gas infrastructure with a MOP up to and including 16 bar is generally dedicated to gas distribution.		
[a] Pipelines having hoop stresses at design pressure up to 30 % of specified minimum yield strength ($R_{t\ 0,5}$) and operated at a pressure up to 24 bar may be allocated to quality requirement Category C by the pipeline operator.		

Additional requirements may be specified when, for example:

— the strain on pipelines and systems,

— the materials,

— the line routing,

— the design or the welding technique

are considered critical.

This European Standard specifies common basic principles for gas infrastructure. Users of this European Standard should be aware that there can exist more detailed national standards and/or codes of practice 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 basic principles.

In the event of conflicts in terms of more restrictive requirements in national legislation/regulation with the requirements of this standard, the national legislation/regulation takes precedence as illustrated in CEN/TR 13737 (all parts).

NOTE CEN/TR 13737 (all parts) contains:

— clarification of relevant legislation/regulations applicable in a country;

— if appropriate, more restrictive national requirements;

— national contact point for the latest information.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.