

## **Gas supply systems - Compressor stations - Functional requirements**

Gas supply systems - Compressor stations -  
Functional requirements

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12583:2001 sisaldab Euroopa standardi EN 12583:2000 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 15.01.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12583:2001 consists of the English text of the European standard EN 12583:2000.</p> <p>This document is endorsed on 15.01.2001 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
--	---

<p><b>Käsitlusala:</b></p> <p>This European standard describes the specific functional requirements for the design, construction, operation, maintenance and disposal activities for safe and secure gas compressor stations. This European standard applies to gas compressor stations with Maximum Operating Pressure (MOP) over 16 bar and with a total shaft power over 1 MW.</p>	<p><b>Scope:</b></p> <p>This European standard describes the specific functional requirements for the design, construction, operation, maintenance and disposal activities for safe and secure gas compressor stations. This European standard applies to gas compressor stations with Maximum Operating Pressure (MOP) over 16 bar and with a total shaft power over 1 MW.</p>
---	---

ICS 23.140, 75.200

Võtmesõnad:

ICS 23.140; 75.200

**English version**

Gas supply systems  
**Compressor stations**  
Functional requirements

Systèmes d'alimentation en gaz –  
Stations de compression – Prescrip-  
tions fonctionnelles

Gasversorgungssysteme – Gas-  
Verdichterstationen – Funktionale  
Anforderungen

This European Standard was approved by CEN on 2000-02-04.

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 Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

**Central Secretariat: rue de Stassart 36, B-1050 Brussels**

Contents	Page
Foreword .....	4
1 Scope .....	4
2 Normative references .....	6
3 Definitions .....	7
4 Safety .....	13
5 Quality assurance .....	13
6 Environmental constraints .....	13
7 Design, construction and testing .....	13
7.1 General requirements for design .....	13
7.2 Location and station lay-out .....	14
7.3 Gas pipework .....	15
7.4 Compressor unit .....	17
7.5 Station control and automation .....	25
7.6 Electrical installation and power supply .....	27
7.7 General requirements for construction .....	27
7.8 Testing and acceptance .....	28
8 Operation .....	29
8.1 Introduction and basic requirements .....	29
8.2 Operating organisation .....	29
8.3 Instruction procedures .....	30
8.4 Management of operating procedures .....	31
8.5 Training of personnel .....	31
8.6 Safety precautions .....	31
9 Maintenance .....	32
9.1 Introduction and basic requirements .....	32
9.2 Maintenance organisation .....	32
9.3 Maintenance procedures .....	32
9.4 Management of the maintenance procedures .....	33
9.5 Training of personnel .....	33
9.6 Maintenance tools and equipment .....	33
9.7 Safety .....	33
10 Decommissioning and disposal .....	34
10.1 Decommissioning .....	34
10.2 Disposal .....	34

Annex A (Informative): Boundary of a gas compressor station .....	35
Annex B (Informative): Parts of a gas compressor unit .....	36
Annex C (Informative): Boundary gas compressor unit / Driver .....	37
Annex D (Informative): Boundary gas compressor unit / Gas compressor .....	38
Annex E (Informative): Boundary gas compressor unit / Unit control system .....	39
Annex F (Informative): Boundary gas compressor unit / Auxiliary equipment .....	40
Bibliography .....	41

## 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 February 2001, and conflicting national standards shall be withdrawn at the latest by February 2001.

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 transport 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 recognised standards of gas engineering and the specific requirements imposed by the legal structures of the member countries.

This European Standard supersedes all other European standard for gas compressor stations for gas supply systems above 16 bar.

## 1 Scope

This European standard describes the specific functional requirements for the design, construction, operation, maintenance and disposal activities for safe and secure gas compressor stations.

This European standard applies to gas compressor stations with a Maximum Operating Pressure (MOP) over 16 bar and with a total shaft power over 1 MW.

This European standard need not be applied to gas compressor stations operating prior to the publication of this standard.

For gas compressor stations already in service, this standard applies by analogy only to the parts of the stations to be modified, extended or disposed. This standard can also be applied at any time to areas of operation and maintenance.

The purpose of this European standard is to ensure the safety of the public and the safety of all the personnel involved, to cover environmental issues and avoid damage to property.

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 may exist in the CEN member countries.

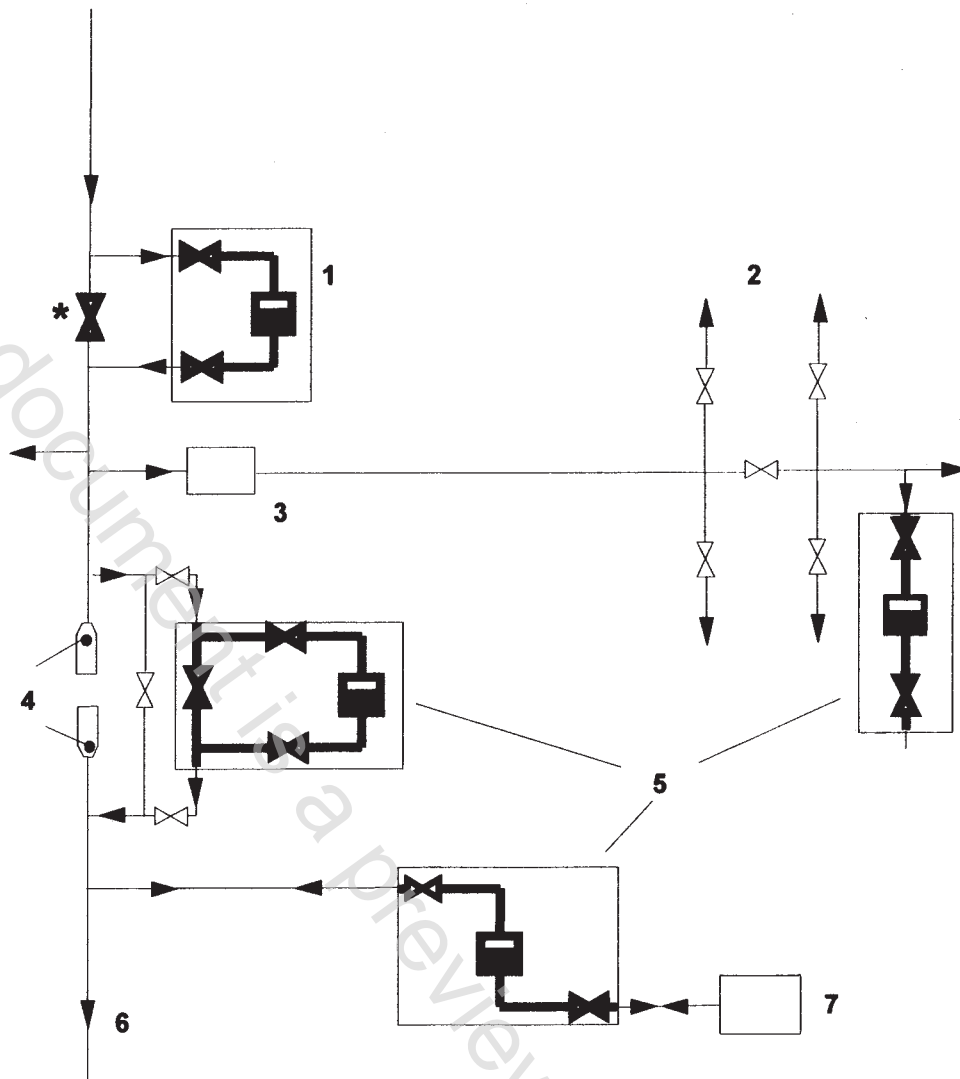
This European Standard is intended to be applied in association with the national standards and/or codes of practice setting out the above mentioned principles.

In the event of conflicts in terms of more restrictive requirements in the national legislation/regulation with the requirements of this standard, the national legislation/regulation shall take precedence.

This standard does not apply to :

- off-shore gas compressor stations;
- gas compressor stations for compressed natural gas filling-stations

Figure 1 shows a schematic representation of compressor stations in a gas supply system.



#### Key

- 1 Compressor station
- 2 Distribution system
- 3 Metering and/or pressure limiting or regulation station
- 4 Pig's traps
- 5 Compressor station
- 6 Transmission line
- 7 Storage facility

NOTE Parts indicated in frames by thick lines are within the scope of this standard  
(\* part of pipeline but operated by SCS)

**Figure 1 - Schematic representation of compressor stations in a gas supply system**

## 2 Normative references

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

EN 954-1 *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design*

EN 1012-1 *Compressors and vacuum pumps - Safety requirements - Part 1: Compressors*

EN 1594 *Gas supply systems - Pipelines for maximum operating pressure over 16 bar - Functional requirements*

EN 12186 *Gas supply systems - Gas pressure regulating stations for transmission and distribution - Functional requirements*

EN 12732 *Gas supply systems - Welding steel pipework - Functional requirements*

EN 50081-2 *Electromagnetic compatibility - Generic emission standard - Part 2: Industrial environment*

EN 50082-2 *Electromagnetic compatibility - Generic immunity standard - Part 2: Industrial environment*

EN 60079-10 *Electrical apparatus for explosive gas atmospheres - Part 10: Classification of hazardous areas (IEC 60079-10:1995)*

EN ISO 9000-1 *Quality management and quality assurance standards - Part 1: Guidelines for selection and use (ISO 9000-1:1994)*

EN ISO 9001 *Quality systems - Model for quality assurance in design/development, production, installation and servicing (ISO 9001:1994)*

EN ISO 9002 *Quality systems - Model for quality assurance in production, installation and servicing (ISO 9002:1994)*

EN ISO 9003 *Quality systems - Model for quality assurance in final inspection and test (ISO 9003:1994)*

EN ISO 9004-1 *Quality management and quality system elements - Part 1: Guidelines (ISO 9004-1:1994)*

EN ISO 14001 *Environmental management systems - Specification with guidance for use*

ISO 3977-1 *Gas turbines - Procurement - Part 1: General introduction and definitions*

ISO 3977-2 *Gas turbines - Procurement - Part 2: Standard reference conditions and ratings*

ISO 10437 *Petroleum and natural gas industries - Special-purpose steam turbines for refinery service*

ISO/ DIS 10439:1996 *Centrifugal compressors for general refinery service in the petroleum and natural gas industries (API STD 617)*

ISO/ DIS 13707:1996 *Reciprocating compressors for the petroleum and natural gas industries*