

**Gaasivarustuse süsteemid. Maagaasi
mõõtejaamad. Funktsionaalnõuded**

Gas supply systems - Natural gas measuring stations -
Functional requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 1776:2000 sisaldab Euroopa standardi EN 1776:1998 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 31.05.2000 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 16.12.1998.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 1776:2000 consists of the English text of the European standard EN 1776:1998.

This standard is ratified with the order of Estonian Centre for Standardisation dated 31.05.2000 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 16.12.1998.

The standard is available from Estonian standardisation organisation.

ICS 75.180.30

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ICS 75.180.30

English version

Gas supply systems
Natural gas measuring stations
Functional requirements

Alimentation en gaz – Postes de
comptage de gaz naturel – Prescrip-
tions fonctionnelles

Gasversorgung – Erdgasmeßanlagen –
Funktionale Anforderungen

This European Standard was approved by CEN on 1998-11-27.

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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

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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 June 1999, and conflicting national standards shall be withdrawn at the latest by June 1999.

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.

This European Standard relates to other functional standards in the field of gas supply.

The standard is meant for use by gas professionals with enough understanding of their measurement's objectives and applicable gas techniques. A thorough understanding of this standard is highly desirable before starting the design phase of a new measuring station.

In some cases the billing is done in energy units. A part of the standard is therefore dedicated to calorific value measurement.

By nature, a measuring station is an aggregate of several components. In this standard, it is assumed that each component is in full compliance with applicable EN or ISO standards, if any.

1 Scope

This European standard specifies functional requirements for the design, construction, commissioning, operation and maintenance of new gas measuring stations for non-domestic custody transfer of natural gas as described in ISO 13686 with a design capacity equal to or greater than 500 m³/h (at base conditions, see 4.1) and for operating pressures equal to or greater than 1 bar (gauge pressure).

NOTE: Installations using diaphragm gas meters as primary measuring instruments are not covered by this standard.

Except for safety and environmental aspects, the extent to which the requirements of this standard are applied should be justified by the economics of the measuring station. Therefore, stations with an annual throughput of equal to or smaller than 300 000 m³ (at base conditions) are excluded from the scope of this standard.

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 these national standards and/or codes of practice setting out the above mentioned basic principles.

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 those 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 1594 | Gas supply systems - Pipelines for maximum operating pressure over 16 bar - Functional requirements |
| prEN 12186 | Gas supply systems - Gas pressure regulating stations for transmission and distribution |
| prEN 12261 | Turbine gas meters |
| prEN 12327 | Gas supply systems - Pressure testing, commissioning and decommissioning procedures - Functional requirements |
| prEN 12405 | Gas-volume electronic conversion devices |
| prEN 12480 | Rotary displacement gas meters |
| prEN 50154 | Erection of electrical installations in hazardous areas - Electrical installations in hazardous gas atmospheres (other than mines) |
| EN 55011 | Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical radio frequency equipment |

EN 55013	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment
EN 55014	Limits and methods of measurement of radio disturbance characteristics of electrical motor-operated and thermal appliances for household and similar purposes; electric tools and similar electric apparatus
EN 55015	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
EN 55020	Electromagnetic immunity of broadcast receivers and associated equipment
EN 55022	Limits and methods of measurement of radio disturbance characteristics of information technology equipment
EN 60079-10	Electrical apparatus for potentially explosive gas atmospheres - Part 10: Classification of hazardous areas
ENV 50140	Electromagnetic compatibility - Basic immunity standard - Radiated, radio-frequency electromagnetic field-immunity test
ENV 50141	Electromagnetic compatibility - Basic immunity standard - Immunity to conducted disturbances induced by radio-frequency fields
ENV 50142	Electromagnetic compatibility - Basic immunity standard - Surge immunity tests
ISO 2186	Fluid flow in closed conduits - Connections for pressure signal transmissions between primary and secondary elements
EN ISO 5167-1 +A1	Measurement of fluid flow by means of pressure differential devices - Part 1: Orifice plates, nozzles and Venturi tubes inserted in circular cross-section conduits running full (ISO 5167-1 : 1991 / AM1 : 1998)
ISO 6141	Gas analysis - Calibration gas mixtures - Certificate of mixture preparation
ISO 6142	Gas analysis - Preparation of calibration gas mixtures - Weighing methods
ISO 6143	Gas analysis - Determination of composition of calibration gas mixtures - Comparison methods
ISO 6711	Gas analysis - Checking of calibration gas mixtures by a comparison method
ISO 6974	Natural gas - Determination of hydrogen, inert gases and hydrocarbon up to C ₈ - Gas chromatographic method
ISO 6975	Natural gas - Extended analysis - Gas chromatographic method
ISO 6976	Natural gas - Calculation of calorific values, density, relative density and Wobbe index from composition
ISO 6978	Natural gas - Determination of mercury
ISO/DIS 9857	Petroleum and liquid petroleum products - Continuous density measurement
ISO 10715	Natural gas - Sampling guidelines
ISO 10723	Natural gas - Performance evaluation for on-line analytical systems
ISO/DIS 12213	Natural gas - Calculation of compression factor
ISO/TR 12764	Measurement of fluid flow in closed conduits - Flowrate measurement by means of vortex shedding flowmeters inserted in circular cross section conduits running full
ISO/CD 12765	Measurement of fluid flow in closed conduits - Methods using transit time ultrasonic flowmeters
ISO 13686	Natural gas - Quality designation
IEC 801	Electromagnetic compatibility for industrial-process measurement and control equipment

3 Definitions

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

3.1 measuring station: An installation comprising all the equipment including the inlet and outlet pipework as far as the isolating valves and any structure within which the equipment is housed, used for gas measurement in custody transfer.

3.2 measuring system: Complete set of measuring instruments and other equipment assembled to carry out specified measurements.

3.3 measuring instrument: Device intended to be used for measurements, alone or in conjunction with supplementary device(s).

EXAMPLE 1: gas meter

EXAMPLE 2: pressure sensor