

Heating systems in buildings — Procedure for the preparation of documents for operation, maintenance and use — Heating systems not requiring a trained operator

The European Standard EN 12171:2002 has the status of a British Standard

ICS 91.140.10

National foreword

This British Standard is the official English language version of EN 12171:2002.

The UK participation in its preparation was entrusted to Technical Committee RHE/24, Central heating installations, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
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This British Standard, having been prepared under the direction of the Engineering Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 20 September 2002

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 8, an inside back cover and a back cover.

The BSI copyright date displayed in this document indicates when the document was last issued.

Amendments issued since publication

Amd. No.	Date	Comments

© BSI 20 September 2002

ISBN 0 580 40445 5

EUROPEAN STANDARD

EN 12171

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2002

ICS 91.140.10

English version

Heating systems in buildings - Procedure for the preparation of documents for operation, maintenance and use - Heating systems not requiring a trained operator

Systèmes de chauffage dans les bâtiments - Instructions de conduite, maintenance et utilisation - Systèmes de chauffage ne requérant pas pour leur conduite l'intervention d'un professionnel

Heizungsanlagen in Gebäuden - Betriebs-, Wartungs- und Bedienungsanleitungen - Heizungsanlagen, die kein qualifiziertes Bedienungspersonal erfordern

This European Standard was approved by CEN on 11 April 2002.

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This European Standard exists 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 Management Centre has the same status as the official versions.

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



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Foreword

This document (EN 12171:2002) has been prepared by Technical Committee CEN/TC 228 "Heating systems in buildings", the secretariat of which is held by DS.

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 November 2002, and conflicting national standards shall be withdrawn at the latest by November 2002.

This European Standard does not include any annexes.

The subjects covered by CEN/TC 228 are the following:

- design of heating systems (water based, electrical, etc.);
- installation of heating systems;
- commissioning of heating systems;
- instructions for operation, maintenance and use of heating systems;
- methods for calculation of the design heat loss and heat loads;
- methods for calculation of the energy performance of heating systems.

Heating systems also include the effect of attached systems such as hot water production systems.

All these standards are system standards, i.e. they are based on requirements addressed to the system as a whole and not dealing with requirements to the products within the system.

Where possible, reference is made to other CEN or ISO standards, a.o. product standards. However, use of products complying with relevant product standards is no guarantee of compliance with the system requirements.

The requirements are mainly expressed as functional requirements, i.e. requirements dealing with the function of the system and not specifying shape, material, dimensions or the like.

The guidelines describe ways to meet the requirements, but other ways to fulfil the functional requirements might be used if fulfilment can be proved.

Heating systems differ among the member countries due to climate, traditions and national regulations. In some cases requirements are given as classes so national or individual needs may be accommodated.

In cases where the standards contradict with national regulations, the latter should be followed.

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This standard is intended to be used in the preparation of documents for operation, maintenance and use of heating systems for new projects and renovation projects as well as in the updating of existing such documents. Documents for operation, maintenance and use is hereafter termed OM&U documents.

The objective of this standard is to ensure that the OM&U documents contain essential information to a minimum standardised level.

The intention of the OM&U documents is to provide a durable record of the system design and the set of instructions and requirements for operation, maintenance and use of the heating system. Relevant instructions and requirements for operation, maintenance and use are necessary in order to ensure safety, rational use of energy and environmental quality management.

Heating systems not requiring a trained operator are those systems, designed in such a way that they can be operated safely by persons having no specific technical training, knowledge or skill.

Users of this standard may be:

- persons compiling the OM&U documents;
- system designers (as guidance when preparing their part of the OM&U documents and obtaining the OM&U requirements from the manufacturers/suppliers of equipment for the heating system);
- installers and commissioning personnel (as guidance when preparing their part of the OM&U documents, verifying the information and submitting the documents to those persons responsible for compiling the OM&U documents);
- owners (as guidance when specifying the requirements for the OM&U documents for their projects).

1 Scope

This standard specifies requirements for providing documents for the operation, maintenance and use of heating systems in buildings not requiring a trained operator.

Parts of heating systems covered by this standard are:

- boilers or heat supply equipment, including control;
- safety arrangements, including air supply;
- domestic hot water production facilities;
- energy sources, storage and supply;
- flue gas systems, including condensate treatment and disposal;
- heat distribution network, including associated components;
- heat emitters, including accessories;
- control system;
- water treatments and procedures (e.g. chemical and physical, including antifreeze).

2 Terms, definitions and abbreviations

For the purposes of this European Standard, the following terms and definitions apply:

- 2.1 operation**
those actions necessary to make available the services, which the system has been designed to provide
- 2.2 maintenance**
combination of all technical, administrative and managing actions necessary to retain an item in, or restore it to, a state in which it can perform an intended function
- 2.3 use**
the action of receiving the services, which the system has been designed to provide
- 2.4 item**
any part, component, device, sub-system, functional unit, equipment or system that can be individually considered
- NOTE 1 Any item may consist of hardware, software or both, and may also in particular cases include people.
NOTE 2 A number of items (e.g. a population of items or a sample) may itself be considered as an item.
- 2.5 inspection**
procedure or action to check whether or not maintenance is required
- 2.6 OM&U**
operation, maintenance and use

3 General requirements for the OM&U documents

3.1 Extent

OM&U documents shall be provided and compiled with any installed heating system of the type covered by this standard.

3.2 OM&U instructions

A set of OM&U instructions shall be prepared and form part of the OM&U documents. The OM&U instructions shall be prepared in the official language of the country where the heating system is installed.

3.3 Manufacturers' instructions

The OM&U documents shall incorporate the manufacturers' instructions for the appliances and components of the heating system. The system designer's specification for the heating system shall be paramount to the manufacturers' instructions. Whenever the system designer utilises any component in a manner not specified in the manufacturer's instructions for that component, this shall be explained and highlighted in the OM&U documents.

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3.4 Form and format

The OM&U documents shall be prepared in a form suitable for retention by the user. The definitions given in this standard shall be applied when preparing the OM&U documents¹.

The OM&U documents shall be presented in a clearly legible and lasting form.

3.5 Availability

The OM&U documents shall be available at hand-over of the heating system.

3.6 Revisions

The OM&U documents shall be revised following alterations in system design or in specifications for appliances or components of the heating system. The revised documents shall be made available for retention by the user.

4 Contents of the OM&U documents

4.1 General information

The OM&U documents shall contain general information about the heating system, as follows:

- a general description of the system, in accordance with the quotation, specification or contract with which the system has been designed and installed. The description should include information about the purpose and the services for which the system has been designed and intended;
- the following statement: “These OM&U documents have been compiled according to EN 12171.”;
- a functional diagram of the system, including cross-references to any marking (e.g. labels) on system components;
- information about major components of the system and essential technical data (e.g. fuel type, location of concealed pipes, ducts and components, pump duty, boiler output and design temperature, expansion vessel size);
- commissioning information and data (when specified by the system designer);
- the name and address of the installer and/or the compiler of the OM&U documents (possibly clearly indicated in the OM&U instructions);
- any warranty conditions.

4.2 Instructions for operation and use

4.2.1 General

Instructions on the methods for system start-up, system shut down and emergency procedures shall be included. Further, where appropriate, instructions on summer and winter operation of the system shall be included, as well as instructions on the methods for independent control of different sub-systems and/or zones.

This information shall be made available for retention by the user, either in the manufacturers' instructions for

¹ Alternative terms should be avoided.

appliances and components of the system or as provided by the person responsible for compiling the OM&U documents.

4.2.2 Control and safety devices

Instructions for operating the control and safety devices of the system shall be included.

4.2.3 Routine inspections and actions

Instructions for routine inspections and actions, as required by the system designer and the manufacturers of appliances and components of the system, shall be included.

4.2.4 Local statutory requirements

Any local statutory requirements for operation and use shall be included in the instructions.

4.2.5 Possible system malfunctioning

Unless such information is provided elsewhere in the OM&U documents, the instructions shall include information for the user concerning possible system malfunctioning, e.g. including advice that combustion or supply air openings and flue terminations shall not be covered, blocked or obstructed.

4.2.6 Gas or oil supply leakage

Advice to the user concerning the action to be taken in the event of gas or oil supply leakage shall be included in the instructions.

4.3 Instructions for maintenance ²

4.3.1 General

Instructions for maintenance shall be in accordance with requirements given by the manufacturers of appliances and components of the system. Additional requirements for maintenance given by the system designer or determined by local statutory regulations shall be included in the instructions.

4.3.2 System performances, safety and efficiency

Advice to the user, that regular maintenance is necessary in order to maintain specified system performances, safety and efficiency, shall be included in the instructions.

² Maintenance actions may include preventive maintenance, corrective maintenance, servicing and/or repair.

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4.3.3 Inspection, servicing and repair

Recommendation to the user to employ trained or competent persons for inspection, servicing and repair shall be included in the instructions³.

4.3.4 Maintenance record

The instructions shall include provision for a maintenance record.

4.3.5 Safety and emergency procedures

Instructions on safety and emergency procedures shall be included.

4.4 Additional information

Relevant literature, as available from local or national authorities, containing advice to users on the economical and energy conscious operation and use of the heating system shall be included in the OM&U documents.

³ This standard covers heating systems not requiring a trained operator. It should be noted, with reference to the introduction of the standard, that the condition of not requiring a trained operator refers to the safe operation of the system – not to the maintenance. Therefore, maintenance actions for these systems may indeed require trained or competent persons.

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