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BSI Standards Publication

Energy performance of buildings - Method for calculation of system energy requirements and system efficiencies

Part 6-9: Explanation and justification of EN 15316-4-8, Module M3-8-8

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National foreword

This British Standard is the UK implementation of CEN/TR 15316-6-9:2017.

The UK participation in its preparation was entrusted to Technical Committee RHE/24, Heating systems and water based cooling systems in buildings.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Heizungsanlagen und Wasserbasierte Kühlanlagen in Gebäuden - Verfahren zur Berechnung der Energieanforderungen und Nutzungsgrade der Anlagen - Teil 6-9: Begleitender TR zur EN 15316-4-8 (Wärmeerzeugung von Warmluft- und Strahlungsheizsystemen)

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European foreword

This document (CEN/TR 15316-6-9:2017) has been prepared by Technical Committee CEN/TC 228 “Heating systems and water based cooling systems in buildings”, the secretariat of which is held by DIN.

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Introduction

The set of EPB standards, technical reports and supporting tools:

In order to facilitate the necessary overall consistency and coherence, in terminology, approach, input/output relations and formats, for the whole set of EPB-standards, the following documents and tools are available:

a) a document with basic principles to be followed in drafting EPB-standards:

   CEN/TS 16628, *Energy Performance of Buildings — Basic Principles for the set of EPB standards* [1];

b) a document with detailed technical rules to be followed in drafting EPB-standards;

   CEN/TS 16629, *Energy Performance of Buildings — Detailed Technical Rules for the set of EPB-standards* [2];

c) the detailed technical rules are the basis for the following tools:

   1) a common template for each EPB-standard, including specific drafting instructions for the relevant clauses;

   2) a common template for each technical report that accompanies an EPB standard or a cluster of EPB standards, including specific drafting instructions for the relevant clauses;

   3) a common template for the spreadsheet that accompanies each EPB standard, to demonstrate the correctness of the EPB calculation procedures.

Each EPB-standards follows the basic principles and the detailed technical rules and relates to the overarching EPB-standard, EN ISO 52000-1:2017.

One of the main purposes of the revision of the EPB-standards is to enable that laws and regulations directly refer to the EPB-standards and make compliance with them compulsory. This requires that the set of EPB-standards consists of a systematic, clear, comprehensive and unambiguous set of energy performance procedures. The number of options provided is kept as low as possible, taking into account national and regional differences in climate, culture and building tradition, policy and legal frameworks (subsidiarity principle). For each option, an informative default option is provided (Annex B).

Rationale behind the EPB technical reports:

There is a risk that the purpose and limitations of the EPB standards will be misunderstood, unless the background and context to their contents – and the thinking behind them – is explained in some detail to readers of the standards. Consequently, various types of informative contents are recorded and made available for users to properly understand, apply and nationally or regionally implement the EPB standards.

If this explanation would have been attempted in the standards themselves, the result is likely to be confusing and cumbersome, especially if the standards are implemented or referenced in national or regional building codes.

Therefore each EPB standard is accompanied by an informative technical report, like this one, where all informative content is collected, to ensure a clear separation between normative and informative contents (see CEN/TS 16629 [2]):

- to avoid flooding and confusing the actual normative part with informative content,

- to reduce the page count of the actual standard, and

- to facilitate understanding of the set of EPB standards.

This was also one of the main recommendations from the European CENSE project [4] that laid the foundation for the preparation of the set of EPB standards.

1 Scope

This Technical Report refers to EN 15316-4-8:2017, module M3-8.8.

It contains information to support the correct understanding, use and national adaptation of EN 15316-4-8:2017.

This Technical Report does not contain any normative provision.

The scope of EN 15316-4-8:2017 includes three categories of products:

- air heating systems means a system with one or more warm air generators for heating purpose. The hot air may be diffused in the installation space from the generator or distributed via a ductwork.

- overhead radiant heating systems, means systems using gas and designed to provide heat into the installation room. Radiation may be generated directly by the flame (overhead radiant luminous heaters) or by circulation of flue gas in a ductwork installed near the ceiling (overhead radiant tube heaters).

- stoves and local heaters means local devices that provide heat by transferring the heat generated by combustion into the surrounding environment.

The typical devices are shown in Figures 1 to 4.

Figure 1 — Warm air generator for an air heating system