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BSI Standards Publication

Gas-fired overhead radiant strip heaters and multi-burner continuous radiant tube heater systems for non-domestic use — Safety and energy efficiency

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National foreword

This British Standard is the UK implementation of EN 17175:2019. Together with BS EN 416:2019, it supersedes BS EN 416-1:2009 and BS EN 416-2:2006.

The UK participation in its preparation was entrusted to Technical Committee GSE/20, Non-domestic space heaters (gas).

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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English Version

Gas-fired overhead radiant strip heaters and multi-burner continuous radiant tube heater systems for non-domestic use - Safety and energy efficiency

Bandes radiantes et systèmes à tubes radiants continus à brûleurs multiples suspendus à usage non domestique utilisant les combustibles gazeux - Sécurité et efficacité énergétique

Gasbefeuerte Strahlungsheizstreifen und Dunkelstrahlersysteme mit mehreren Brennern für gewerbliche und industrielle Anwendungen - Sicherheit und Energieeffizienz

This European Standard was approved by CEN on 26 August 2019.

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European foreword

This document (EN 17175:2019) has been prepared by Technical Committee CEN/TC 180 "Decentralized gas heating", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by month year of DOP, and conflicting national standards shall be withdrawn at the latest by month year of DOW.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 416-1:2009, EN 416-2:2006 and EN 777-4:2009.

In comparison with the previous editions, the following technical modifications have been made:

- aspects of safety and energy efficiency of appliances are brought together;
- incorporation recent state of art of overhead radiant strips heaters and multi-burner continuous radiant tube heater systems;
- unique and more detailed description of method to determine radiant factor;
- incorporating terms and calculation scheme of Ecodesign Regulation (EU) No. 2015/1188;
- minimum requirements of an optional flue gas heat exchanger.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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1 Scope

This document specifies the requirements and test methods for the construction, safety, classification, marking and efficiency of non-domestic gas-fired overhead radiant strips heaters and multi-burner continuous radiant tube heater systems (referred to in the body of the text as the "system") with each burner unit under the control of an automatic burner control system.

For radiant strip heaters incorporating a single burner, this standard is applicable to Type B₂₂, B₂₃, B₅₂, B₅₃, C₁₂, C₁₃, C₃₂, C₃₃ C₅₂ and C₅₃ appliances intended for use in other than domestic dwellings, in which the supply of combustion air and/or the evacuation of the products of combustion is achieved by mechanical means.

For multi-burner continuous radiant tube heater systems this standard is applicable to type B₂₂, B₅₂, and C₅₂ appliances intended for use in other than domestic dwellings, in which the supply of combustion air and/or the evacuation of the products of combustion is achieved by mechanical means.

This document also includes appliances incorporating a secondary heat exchanger in the flue system.

This document is not applicable to:

- a) appliances designed for use in domestic dwelling;
- b) outdoor appliances;
- c) radiant strip heaters where the heat input is in excess of 300 kW (based on the net calorific value of the appropriate reference test gas);
- d) continuous radiant tube heater systems where the heat input of any individual burner unit is in excess of 70 kW (based on the net calorific value of the appropriate reference test gas);
- e) appliances having combustion products evacuation ducts that are non-metallic in the flue system – except ducts downstream of a possible additional condensing exhaust gas heat exchanger.

In addition, for heater systems incorporating multiple tube heaters this standard is not applicable to:

- f) appliances that are designed for continuous condensation within the flue system under normal operating conditions – except downstream a possible additional exhaust gas heat exchanger.

This document is applicable to appliances which are intended to be type tested.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 88-1:2011+A1:2016, *Pressure regulators and associated safety devices for gas appliances - Part 1: Pressure regulators for inlet pressures up to and including 50 kPa*

EN 126:2012, *Multifunctional controls for gas burning appliances*

EN 161:2011+A3:2013, *Automatic shut-off valves for gas burners and gas appliances*

EN 257:2010, *Mechanical thermostats for gas-burning appliances*

EN 298:2012, *Automatic burner control systems for burners and appliances burning gaseous or liquid fuels*