



NSAI
Standards

Irish Standard
I.S. EN 50193-1:2016

Electric instantaneous water heaters - Methods for measuring the Performance - Part 1: General requirements

I.S. EN 50193-1:2016

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:

EN 50193-1:2016

Published:

2016-07-01

*This document was published
under the authority of the NSAI
and comes into effect on:*

2016-07-19

ICS number:

91.140.65

NOTE: If blank see CEN/CENELEC cover page

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN 50193-1:2016 is the adopted Irish version of the European Document EN 50193-1:2016, Electric instantaneous water heaters - Methods for measuring the Performance - Part 1: General requirements

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

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

This page is intentionally left blank

EUROPEAN STANDARD

EN 50193-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2016

ICS 91.140.65

Supersedes EN 50193-1:2013

English Version

Electric instantaneous water heaters - Methods for measuring the Performance - Part 1: General requirements

Chauffe-eau électriques instantanés - Partie 1: Exigences générales

Elektro-Durchfluss-Wassererwärmer - Prüfverfahren zur Messung der Gebrauchseigenschaften - Teil 1: Allgemeine Anforderungen

This European Standard was approved by CENELEC on 2016-05-23. CENELEC 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 CEN-CENELEC Management Centre or to any CENELEC member.

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 CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

European foreword	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 General test conditions	6
4.1 Measurement Equipment	6
4.2 Number of appliances to be tested	6
4.3 General conditions	6
4.4 Test setup.....	7
5 Energy efficiency.....	7
5.1 Test methods.....	7
5.1.1 General.....	7
5.1.2 Static efficiency	7
5.1.3 Start-up losses	8
5.1.4 Determination of the smart control factor SCF	8
5.1.5 Determination of smart control compliance.....	9
5.2 Calculation methods.....	9
5.2.1 General.....	9
5.2.2 Daily energy demand	9
5.2.3 Correction factor.....	9
5.2.4 Energy efficiency.....	9
5.2.5 Annual electricity consumption	10
Annex A (informative) Load pattern.....	11
Annex B (normative) Test setup.....	15
Annex C (informative) Alternative test methods under development.....	19
C.1 General.....	19
C.2 Annual energy consumption.....	19
Annex ZZA (informative) Relationship between this European Standard and the energy labelling requirements of Commission Delegated Regulation (EU) No 812/2013 aimed to be covered.....	21
Annex ZZB (informative) Relationship between this European Standard and the ecodesign requirements of Commission Regulation (EU) No 814/2013 aimed to be covered	22
Bibliography	23

European foreword

This document (EN 50193-1:2016) has been prepared by CLC/TC 59X "Performance of household and similar electrical appliances".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-05-23
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2019-05-23

This document supersedes EN 50193-1:2013.

EN 50193-1:2016 includes the following significant technical changes with respect to EN 50193-1:2013:

- Alignment of the terms and formulas with those detailed in Commission communication in the framework of the implementation of Commission Regulation (EU) No 814/2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for water heaters and hot water storage tanks and of Commission Delegated Regulation (EU) No 812/2013 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to the energy labelling of water heaters, hot water storage tanks and packages of water heater and solar device (2014/C 207/03).
- Clarification of the Smart Control Factor and the issues surrounding its application for Electric Instantaneous Water Heaters.
- Updates to the references and bibliography.
- Addition of an informative annex for alternative test methods under development.
- Addition of Annexes ZZA and ZZB.

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

For the relationship with EU Directive(s) see informative Annex ZZA and ZZB, which are integral parts of this document.

1 Scope

This European Standard applies to **electric instantaneous water heaters** for domestic hot water heating for household and similar applications, which show both of the following characteristics:

- fulfilling at least one load pattern from Annex A;
- heating up to temperatures below the boiling temperature.

This European Standard specifies terms, definitions and measurement methods for the assessment of energy efficiency.

This European Standard does not take into account requirements regarding the safety of the appliances.

2 Normative references

The following documents, in whole or in part, are normatively reference in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 22768-1, *General tolerances - Part 1: Tolerances for linear and angular dimensions without individual tolerance indications (ISO 2768-1)*

EN ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads - Part 1: Dimensions, tolerances and designation (ISO 228-1)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

instantaneous water heater

appliance intended to heat water while it flows through the appliance

3.1.1

electric instantaneous water heater

electric powered **instantaneous water heater**

3.1.2

closed instantaneous water heater

instantaneous water heater intended to operate at the pressure of the water system, the flow of water being controlled by one or more valves in the outlet system

3.1.3

open-outlet instantaneous water heater

instantaneous water heater in which the flow of water is controlled by a valve in the inlet pipe, there being no valve in the outlet pipe

3.1.4

hydraulic instantaneous water heater

instantaneous water heater each of whose heating elements are switched on or off, depending on the water flow rate or water pressure

3.2

temperature selector

actuator which presets the temperature set point value of the water outlet and which can be adjusted by the user

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-