BS EN 12207:2016

BSI Standards Publication

Windows and doors — Air permeability — Classification

National foreword

This British Standard is the UK implementation of EN 12207:2016. It supersedes BS EN 12207:2000 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/538/1, Windows and doors.

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.

© The British Standards Institution 2017.
Published by BSI Standards Limited 2017

ISBN 978 0 580 88020 9

ICS 91.060.50

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 January 2017.

Amendments/corrigenda issued since publication

Date	Text affected

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12207

December 2016

ICS 91.060.50

Supersedes EN 12207:1999

English Version

Windows and doors - Air permeability - Classification

Fenêtres et portes - Perméabilité à l'air - Classification

Fenster und Türen - Luftdurchlässigkeit - Klassifizierung

This European Standard was approved by CEN on 15 October 2016.

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

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

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

© 2016 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No. EN 12207:2016 E

Contents

Page

European foreword

This document (EN 12207:2016) has been prepared by Technical Committee CEN/TC 33 “Doors, windows, shutters, building hardware and curtain walling”, 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 June 2017, and conflicting national standards shall be withdrawn at the latest by June 2017.

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 12207:1999.

The revision of this European Standard clarifies only the classification method and does not affect existing classification evidence of EN 12207:1999.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard defines the classification of test results for:

— windows; and

— external and internal pedestrian doorsets;

completely assembled, of any materials after testing in accordance with EN 1026.

2 Normative references

The following documents, in whole or in part, are normatively referenced 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 1026, *Windows and doors - Air permeability - Test method*

3 Terms and definitions

For the purposes of this document the terms and definitions given in EN 1026 apply.

4 Classification

4.1 General

The classification is based on a comparison of the air permeability of the test specimen related to overall area and on the air permeability related to the length of opening joint(s).

4.2 Classification based on the air permeability related to the overall area

The total air permeability through the test specimen, measured in accordance with EN 1026 is divided by its overall area and the result recorded in $m^3/(h \cdot m^2)$.

A range of classes is defined for air permeability related to the overall area.

4.3 Classification based on the air permeability related to the length of opening joint(s)

The total air permeability through the test specimen, measured in accordance with EN 1026 is divided by the length of the opening joints and the result recorded in $m^3/(h \cdot m)$.

A range of classes is defined for air permeability related to the total length of opening joint(s).

4.4 Definition of the classes

The reference air permeabilities for overall area and opening joint length are defined at a reference test pressure of 100 Pa. For other pressure steps, the following equation is used:

$$Q = Q_{100}\left(\frac{p}{100\text{Pa}}\right)^{\frac{2}{3}}$$

where

Q_{100} is the reference air permeability in cubic metres per hour at a test pressure of 100 Pa;

Q is the air permeability in cubic metres per hour (m^3/h) at a test pressure p, (p in Pascal).

The lines in Figure A.1 (for windows and pedestrian doorsets) and Figure A.2 (for internal pedestrian doorsets) defining the upper limits of each class are derived from the reference air permeabilities at 100 Pa related to the overall area and the length of opening joint (see 4.5 and 4.6).

A specimen belongs to a specified class if the measured air permeability does not exceed the upper limit at any test pressure step in that class.

4.5 Classification based on the overall area

4.5.1 Classification for windows and pedestrian doorsets

Table 1 — Reference air permeability related to overall area

Class	**Reference air permeability at 100 Pa** $m^3/(h \cdot m^2)$	**Maximum test pressure Pa**
1	50	150
2	27	300
3	9	600
4	3	600

NOTE This table also applies to internal pedestrian doorsets upon customer's request.

4.5.2 Classification for internal pedestrian doorsets

Table 2 — Reference air permeability related to overall area

Class	**Reference air permeability at 100 Pa** $m^3/(h \cdot m^2)$	**Maximum test pressure Pa**
A	50	100
B	27	100
C	9	150
D	3	150

4.6 Classification based on opening joint length

4.6.1 Classification for windows and pedestrian doorsets

Table 3 — Reference air permeability related to opening joint length

Class	Reference air permeability at 100 Pa $m^3/(h \cdot m)$	Maximum test pressure Pa
1	12,50	150
2	6,75	300
3	2,25	600
4	0,75	600

NOTE This table also applies to internal pedestrian doorsets upon customer's request.

4.6.2 Classification for internal pedestrian doorsets

Table 4 — Reference air permeability related to opening joint length

Class	Reference air permeability at 100 Pa $m^3/(h \cdot m)$	Maximum test pressure Pa
A	12,50	100
B	6,75	100
C	2,25	150
D	0,75	150

4.7 Relation between the classifications based on the overall area and the length of the opening joint

If a specimen is classified according to the overall area and the length of the opening joint, which give:

— the same class, the specimen shall be classified in one and the same class;

— two adjacent classes, the specimen shall be classified in the most favourable class (with lower rate);

— a difference of two classes, the specimen shall be classified in the mean class;

— a difference of more than two classes, the specimen shall not be classified.

NOTE For windows without any opening parts, no classification regarding the length of the opening joint will be made.

If a window or a pedestrian doorset does not reach at least class 1 respectively class A based on both the overall area and the length of opening joint, when tested either with positive or negative pressure, it shall not be classified. There shall be no individual classification for either positive or negative pressure. Therefore it is necessary to evaluate each test separately.

That means:

— positive pressure based on the overall area;

— negative pressure based on the overall area;

— positive pressure based on the length of opening joint, not applicable for fixed windows;

— negative pressure based on length of opening joint, not applicable for fixed windows.

Every classification shall reach at least class 1 respectively class A.

The overall classification is the numeral average of the two air permeability values (m^3/h) at each pressure step tested according to EN 1026. The results, related to the overall area and the length of opening joint, shall be summarized as stated above. But only if all test results have reached a classification of class 1 respectively class A or better an overall classification of class 1 respectively class A will be possible.

5 Classification report

In addition to the information given in the test report, at least the following shall be recorded:

— the classification of the specimen according to:

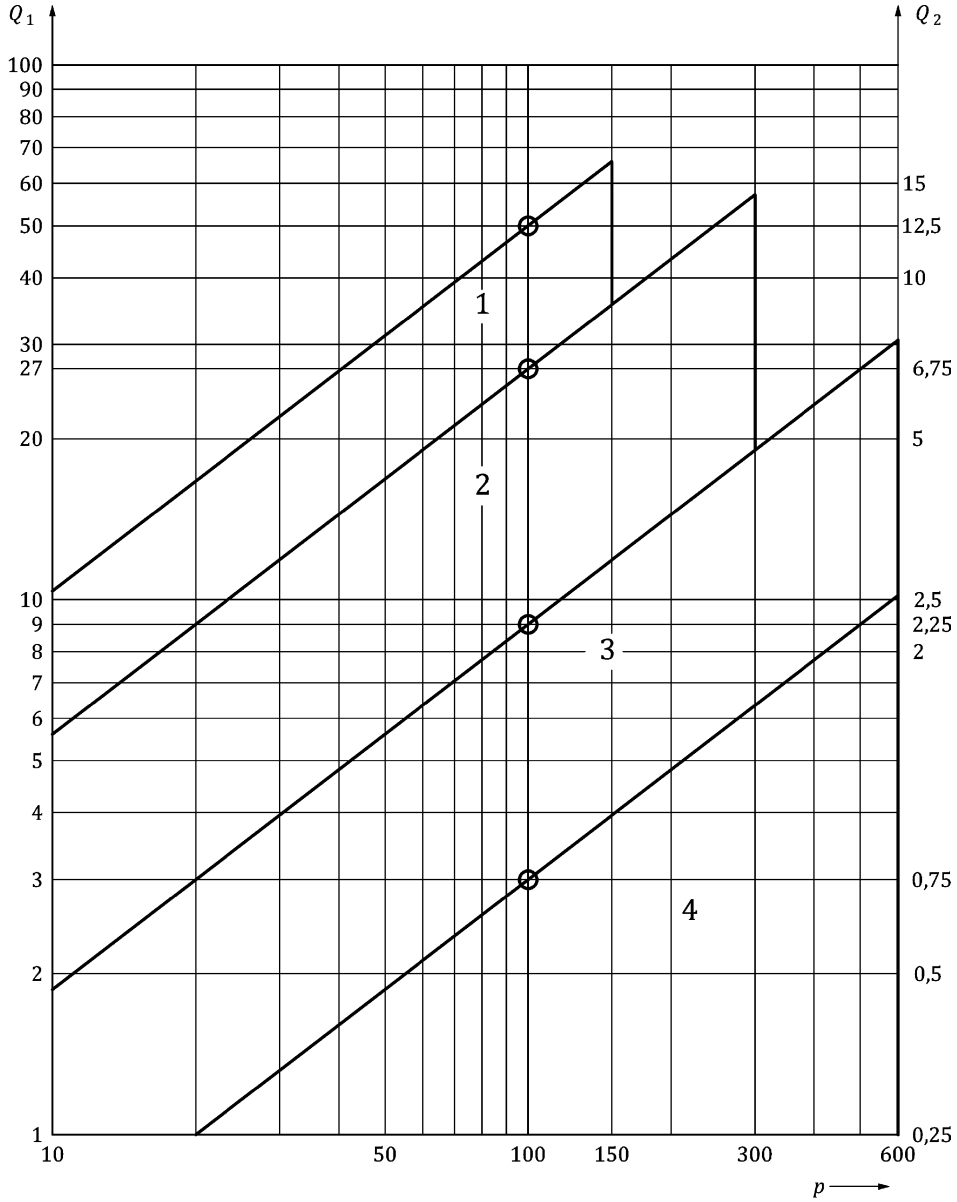
  — the overall area;

  — the length of opening joint(s);

— the final classification of the specimen.

Annex A
(normative)

Upper limits of classes for windows, external and internal pedestrian doorsets



Key

Q1 total air permeability (m3/(h · m²)) (cubic metre per hour and per square metre) of overall area;

Q2 total air permeability (m3/(h · m)) (cubic metre per hour and per metre) of opening joint(s);

p pressure, in Pascal (Pa)

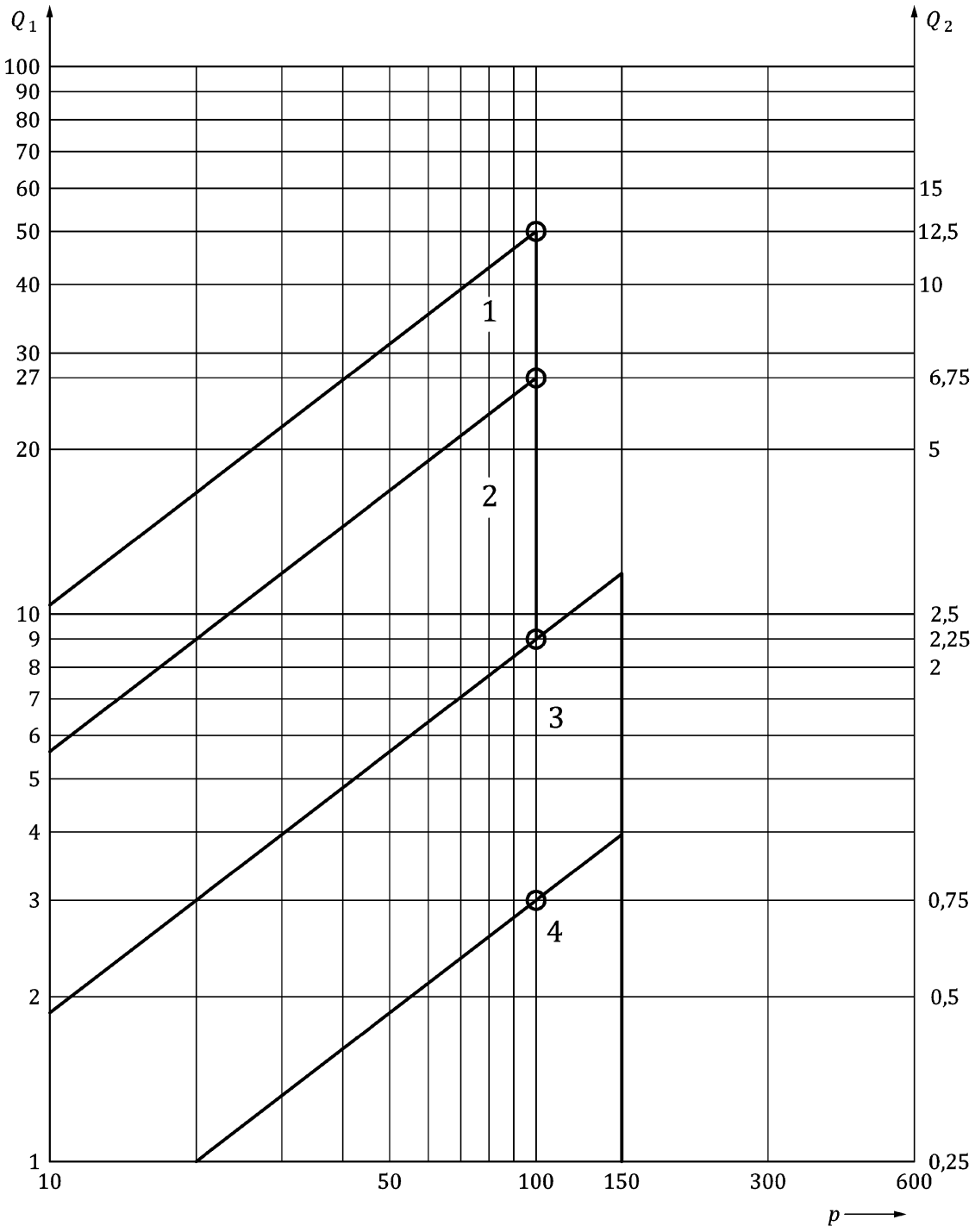
1 class 1

2 class 2

3 class 3

4 class 4

Figure A.1 — Upper limits of classes for windows and pedestrian doorsets



Key

Q1 total air permeability in (m3/(h · m²)) (cubic metre per hour and per square metre) of overall area;

Q2 total air permeability in (m3/(h · m)) (cubic metre per hour and per metre) of opening joints;

p pressure, in Pascal (Pa);

1 class A

2 class B

3 class C

4 class D

Figure A.2 — Upper limits of classes for internal pedestrian doorsets

This page deliberately left blank

This page deliberately left blank

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards -based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at bsigroup.com/standards or contacting our Customer Services team or Knowledge Centre.

Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at bsigroup.com/shop, where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

Copyright in BSI publications

All the content in BSI publications, including British Standards, is the property of and copyrighted by BSI or some person or entity that owns copyright in the information used (such as the international standardization bodies) and has formally licensed such information to BSI for commercial publication and use.

Save for the provisions below, you may not transfer, share or disseminate any portion of the standard to any other person. You may not adapt, distribute, commercially exploit, or publicly display the standard or any portion thereof in any manner whatsoever without BSI's prior written consent.

Storing and using standards

Standards purchased in soft copy format:

- A British Standard purchased in soft copy format is licensed to a sole named user for personal or internal company use only.
- The standard may be stored on more than 1 device provided that it is accessible by the sole named user only and that only 1 copy is accessed at any one time.
- A single paper copy may be printed for personal or internal company use only.

Standards purchased in hard copy format:

- A British Standard purchased in hard copy format is for personal or internal company use only.
- It may not be further reproduced – in any format – to create an additional copy. This includes scanning of the document.

If you need more than 1 copy of the document, or if you wish to share the document on an internal network, you can save money by choosing a subscription product (see 'Subscriptions').

Reproducing extracts

For permission to reproduce content from BSI publications contact the BSI Copyright & Licensing team.

Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to bsigroup.com/subscriptions.

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member**.

PLUS is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit bsigroup.com/shop.

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email subscriptions@bsigroup.com.

Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

Useful Contacts

Customer Services
Tel: +44 345 086 9001
Email (orders): orders@bsigroup.com
Email (enquiries): cservices@bsigroup.com

Subscriptions
Tel: +44 345 086 9001
Email: subscriptions@bsigroup.com

Knowledge Centre
Tel: +44 20 8996 7004
Email: knowledgecentre@bsigroup.com

Copyright & Licensing
Tel: +44 20 8996 7070
Email: copyright@bsigroup.com

BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK

bsi.