



BSI Standards Publication

Windows, doors, shutters and curtain walling — Explosion resistance — Test method

Part 2: Arena test

National foreword

This British Standard is the UK implementation of EN 13124-2:2025. It supersedes BS EN 13124-2:2004, which is withdrawn.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 committee manager.

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Amendments/corrigenda issued since publication

Date	Text affected
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English Version

Windows, doors, shutters and curtain walling - Explosion resistance - Test method - Part 2: Arena test

Fenêtres, portes, fermetures et façades rideaux -
Résistance à l'explosion - Méthode d'essai - Partie 2 :
Essai en arène

Fenster, Türen, Abschlüsse und Vorhangfassaden -
Sprengwirkungshemmung - Prüfverfahren - Teil 2:
Freilandversuch

This European Standard was approved by CEN on 29 September 2025.

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COMITÉ EUROPÉEN DE NORMALISATION
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 13124-2:2025) 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of an identical text or by endorsement, at the latest by May 2026 and conflicting national standards shall be withdrawn at the latest by May 2026.

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 13124-2:2004.

EN 13124-2:2025 includes the following significant technical changes with respect to EN 13124-2:2004:

- inclusion of testing of curtain walling;
- inclusion of hazard classes and the measurement connected to them;
- revision and addition of terms and definitions;
- addition of test procedures for open condition;
- addition of the requirements for test setup and its connection to the test sample;
- editorial changes.

The document series EN 13124 *Windows, doors, shutters and curtain walling — Explosion resistance — Test method* currently consists of:

- *Part 1: Shock tube;*
- *Part 2: Arena test.*

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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1 Scope

This document defines a test method to permit a classification according to EN 13123-2:2025 for explosion resistance of windows, doors, shutters as well as curtain walling elements, complete with their frames, infills and fixings. This document gives no information on the ability of the surrounding wall or building structure to resist the direct or transmitted forces.

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 12216, *Shutters, external blinds, internal blinds — Terminology, glossary and definitions*

EN 12519, *Windows and pedestrian doors — Terminology*

EN 13119, *Curtain walling — Terminology*

EN 13123-1:2025, *Windows, doors, shutters and curtain walling — Explosion resistance — Requirements and classification — Part 1: Shock tube*

EN 13123-2:2025, *Windows, doors, shutters and curtain walling — Explosion resistance — Requirements and classification — Part 2: Arena test*

EN 13124-1:2025, *Windows, doors, shutters and curtain walling — Explosion resistance — Test method — Part 1: Shock tube*

EN 13164, *Thermal insulation products for buildings — Factory made extruded polystyrene foam (XPS) products — Specification*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12216, EN 12519, EN 13119 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp/>

— IEC Electropedia: available at <https://www.electropedia.org/>

3.1

test specimen

window, door, shutter or curtain walling specimen, which is prepared and submitted for testing

3.2

attack face

face of the test specimen, which is designed to face the explosion

3.3

rear face

opposite side of the test specimen to the attack face

3.4**reaction structure**

robust structure in which a test specimen can be mounted for blast testing

3.5**gauge block**

structure providing a plane non-deforming surface positioned at the same stand-off distance as the test sample, on which reflected pressure gauges can be mounted

3.6**explosion pressure resistance****PXR/VXR**

resistance offered by the test specimen against a defined blast wave, characterised by peak positive reflected pressure and peak positive specific impulse

3.7**blast wave**

explosion pressure wave loading on the test specimen

Note 1 to entry: The pressure recorded and referred to is the reflected pressure experienced at the centre of the test specimen.

3.8**positive reflected pressure** **p_r**

pressure that occurs when a blast wave strikes the surface of a target, which obstructs the flow

Note 1 to entry: The blast wave moving through the air impacts the test specimen and is reflected producing a pressure on the surface of the test specimen having a higher value than would have occurred within an unobstructed flow.

3.9**peak positive reflected pressure** **p_{max}**

pressure above the ambient atmospheric pressure at the time of arrival of the pulse at the test specimen

3.10**internal pressure**

pressure that is recorded inside the test cubicle

Note 1 to entry: For both closed and open windows, this pressure is measured 1 m behind the inner face of the test specimen. This is measured from the inner glass surface or the inner face of the door.

3.11**pressure trace**

graph of the pressure plotted against time

Note 1 to entry: See EN 13123-2:2025, Figure 1.

3.12**duration**

time period of the first positive phase of the pressure trace (t_+)

3.13

peak positive reflected specific impulse

i_+

parameter that is derived from the area under the pressure trace during the first positive phase duration

Note 1 to entry: See hatched area in EN 13123-2:2025, Figure 1.

3.14

clearing

occurrence when an incident blast wave interacts normally with the front face of a finite structure and rarefaction waves are formed at the free edges, which propagate towards the centre of the front face reducing the reflected impulse

3.15

top corner of the test specimen

extreme point on the test specimen at which the test impulse is assessed to ensure clearing effects are managed

3.16

expected value at the test corner

expected blast parameters at the top corner of the test specimen

Note 1 to entry: The expected blast parameters at the top corner of the test specimen are the peak positive reflected pressure and the peak positive reflected specific impulse that would be expected at the top corner of the test specimen if it were mounted in a semi-infinite façade, and the blast parameters at the centre of the test specimen are the specified blast parameters.

3.17

stand-off distance

horizontal distance from the centre of the charge to the face of the test specimen

3.18

charge height

vertical distance between the centre of the charge and the surface of the test range

3.19

witness panel

panel of deformable material positioned behind the test specimen in order to register the incidence of material forcibly detached from the test specimen during test

Note 1 to entry: The composition and location of the witness panel is described in 6.4, e).

3.20

penetration

indentation in the foil, cartridge paper or plain surface of the witness panel caused by the impact of any material as a result of the blast

3.21

perforation

hole completely through the foil, cartridge paper or witness panel caused by the impact of any material as a result of the blast