BS EN 13124-1:2025

BSI Standards Publication

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

Part 1: Shock tube

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National foreword

This British Standard is the UK implementation of EN 13124-1:2025. It supersedes BS EN 13124-1:2001, which is withdrawn.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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Supersedes EN 13124-1:2001

English Version

Windows, doors, shutters and curtain walling - Explosion resistance - Test method - Part 1: Shock tube

Fenêtres, portes, fermetures et façades rideaux - Résistance à l'explosion - Méthode d'essai - Partie 1: Tube à effet de souffle (shock tube)

Fenster, Türen, Abschlüsse und Vorhangfassaden - Sprengwirkungshemmung - Prüfverfahren - Teil 1: Stoßrohr

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European foreword

This document (EN 13124-1:2025) 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of an identical text or by endorsement, at the latest by May 2026 and conflicting national standards shall be withdrawn at the latest by May 2026.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 13124-1:2001.

EN 13124-1:2025 includes the following significant technical changes with respect to EN 13124-1:2001:

— 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 the requirements for test setup and its connection to the test sample;

— editorial changes.

The EN 13124 series of standards *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.

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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, Türkiye and the United Kingdom.

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1 Scope

This document defines a test method to permit a classification according to EN 13123-1:2025 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 13124-2:2025, *Windows, doors, shutters and curtain walling — Explosion resistance — Test method — Part 2: Arena test*

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

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3.4
explosion pressure resistance
EPR
resistance offered by the test specimen against a defined blast wave, characterized by peak positive reflected pressure, peak positive specific impulse and positive duration

3.5
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 by the test specimen when it is positioned at the end of the shock tube.

3.6
positive reflected pressure
$\boldsymbol{p_r}$
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.

3.7
peak positive reflected pressure
$\boldsymbol{p_{max}}$
pressure above the ambient atmospheric pressure at the time of arrival of the pulse at the test specimen

3.8
internal pressure
pressure that is recorded in 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.

3.9
pressure trace
graph of the pressure plotted against time

[SOURCE: EN 13123-1:2025, Figure 1]

3.10
duration
time period of the first positive phase of the pressure trace (t_+)

3.11
peak positive reflected specific impulse
$\boldsymbol{i_+}$
parameter that is derived from the area under the pressure trace during the first positive phase duration

[SOURCE: EN 13123-1:2025, Figure 1]

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