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Interested committees:

Title: Draft BS EN 13124-2 . Windows, doors, shutters and curtain walling. Explosion resistance. Test method. Part 2. Arena test.

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- iii) requires additional national guidance or information

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

English Version

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

Portes, fenêtres et fermetures - Résistance à l'explosion
- Méthode d'essai - Partie 2: Essai en plein air

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

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 33.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (prEN 13124-2:2023) 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 document is currently submitted to the CEN Enquiry.

This document will supersede EN 13124-2:2004.

In comparison with the previous edition EN 13124-2:2004, the following technical modifications have been made:

- inclusion of façade testing;
- inclusion of hazard classes and the measurement connected to them;
- addition of term 3.7.3 “internal pressure”;
- addition of test procedures for open condition;
- 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.*

1 Scope

This document specifies a conventional test procedure to permit classification of the explosion resistance of windows, doors, shutters, together with their infills, as well as curtain walling elements.

This document concerns a method of test against blast waves produced by high explosives in an arena test. The loading categories are defined by pressure and impulse parameters and represent free-field high explosive events caused by:

- 3 kg to 20 kg (TNT equivalent) at stand-off distances from 3 m to 9 m, described by the fixed loading levels PXR 1 to PXR 7;
- 100 kg to 500 kg (TNT equivalent) at stand-off distances from about 15 m to 30 m, described by the fixed loading levels VXR 1 to VXR 7.

It produces a classification according to prEN 13123-2:2023.

Scenarios characterized by specified blast parameters for other high explosive scenarios, can also be specified.

Blast loads which cannot be produced in an arena test might be produced by a shock tube test following prEN 13123-1:2022 and prEN 13124-1:2022.

This document is applicable to blast waves generated by explosions in an arena test facility to produce high explosive blast loads on windows, doors and shutters as well as curtain walling systems, complete with their frames, infills and fixings, for use in both internal and external locations in buildings. It gives no information on the explosion resistance capacity of the wall or other surrounding structure.

This document covers only the behaviour of the complete test specimen including infill, frame and fixings as tested. It gives no information on the ability of the surrounding wall or building structure to resist the direct or transmitted forces.

If the windows, doors, shutters and curtain walling components are intended for specific conditions of climate, specific test conditions can be required.

Requirements for the performance of opening and locking mechanisms or for testing in an open condition can also be specified. It gives no information on the behaviour of the test specimens subjected to other types of loading.

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.

prEN 13123-1:2022, *Windows, doors, shutters and curtain walling — Explosion resistance — Requirements and classification — Part 1: Shock tube*

prEN 13123-2:2023, *Windows, doors, shutters and curtain walling — Explosion resistance — Requirements and classification — Part 2: Arena test*

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

ISO 16934, *Glass in building — Explosion-resistant security glazing — Test and classification by shock-tube loading*

3 Terms and definitions

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

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

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

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 shall be the reflected pressure experienced by the test specimen when it is positioned at the end of the shock tube.

3.7.1

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.