

Glass in building - Security glazing - Testing and classification of resistance against explosion pressure

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English Version

Glass in building - Security glazing - Testing and classification of resistance against explosion pressure

Verre dans la construction - Vitrage de sécurité - Mise à
essai et classification de la résistance à la pression
d'explosion

Glas im Bauwesen - Sicherheitssonderverglasung -
Prüfverfahren und Klasseneinteilung des Widerstandes
gegen Sprengwirkung

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Foreword

This document (EN 13541:2012) has been prepared by Technical Committee CEN/TC 129 "Glass in building", the secretariat of which is held by NBN.

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of an identical text or by endorsement, at the latest by August 2012, and conflicting national standards shall be withdrawn at the latest by August 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13541:2000.

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Introduction

The choice of an explosion pressure resistant glazing material (e.g. security and/or anti terrorism glazing product) in an individual case should be established by the user. Experts in the field of explosions are able to determine in most situations the expected level and duration of the shock wave, based on the type of explosion and the distance from the heart of the explosion.

The classification of explosion pressure resistance is based on the maximum overpressure of the reflected shock wave and the duration of the overpressure phase.

1 Scope

This European Standard specifies a test method, performance requirements and classification for explosion pressure resistant glazing for use in buildings.

The explosion pressure resistant glazing is intended to offer resistance against explosives with respect to human safety.

This European Standard concerns a method of test against blast waves generated using a shock tube or similar facility to simulate a high explosive detonation.

The classification is only valid for tested glass sizes of about 1 m². Based on theoretical considerations and/or experimental work, the results can be used for estimating the explosion-pressure-resistance of other glass sizes.

NOTE 1 The resistance classes are not assigned to specific situations. For each individual case the individual who specifies, if necessary with the help of experts in the field of explosion, should be consulted.

NOTE 2 The protection provided by explosion-resistant-glazing not only depends on the product itself, but also on the design and fixing of the glass.

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.

ISO 48, *Rubber, vulcanized or thermoplastic — Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

3 Terms and definitions

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

3.1

explosion pressure resistant glazing

security glazing that affords a defined resistance against a specified explosive blast

NOTE The glass and/or plastics component of an explosion pressure resistant glazing unit may be separated by air spaces.

3.2

sample

number of nominally identical glazing units on which type testing is performed for a certain explosion pressure class

3.3

shock tube

tube with sufficient dimensions and rigidity in order to generate a plane shock wave as from a spherical detonation

3.4

test piece

one member of the sample prepared for testing