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Glass in building — Vacuum insulating glass —

Part 4: Pendulum impact testing and classification

Verre dans la construction — Vitrage isolant à lame de vide —
Partie 4: Essai de choc au pendule et classification

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Foreword

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This document was prepared by Technical Committee ISO/TC 160, *Glass in building*.

A list of all parts in the ISO 19916 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

Accidental human impact with glass panes can be a source of injury. The classification of glass in terms of its ability to withstand impact and the consequences of the glass breaking under such impact has been considered in many countries. The use of a soft body impactor to represent a human body has enabled regulators, code officials and other control organizations to specify glazing that reduces the risk of cutting and piercing injuries.

This document is based on relevant parts of the test and classification methods described in ISO 29584:2015.

ISO 29584:2015 cannot be directly applied to vacuum insulating glass. In this document, vacuum insulating glass is categorised into two groups: Group 1 (with laminated glass or film-backed glass) in which no shear or opening can occur, and Group 2 (without laminated glass or film-backed glass) in which disintegration can occur when broken after impact. Performance classification is given for Group 1 as two panes separated by a vacuum layer and for Group 2 as the complete vacuum insulating glass.

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Glass in building — Vacuum insulating glass —

Part 4:
Pendulum impact testing and classification

1 Scope

This document specifies a method to evaluate, by means of impactors described in ISO 29584:2015, safe breakage characteristics of vacuum insulating glass (VIG) products intended to reduce cutting and piercing injuries to persons through accidental impact.

This document does not specify the intended use of the products, but provides a method of classification in terms of the performance of the products being tested. The impact energy used for the various levels of classification are designed to provide the intended user or the legislator with the information to assist in defining the level of safety and protection required relative to the intended location at which the selected safety glass is to be used.

The products to which this document is applicable are:

— VIG without further processing (Group 2);

— VIG processed into a laminated glass (Group 1);

— VIG backed with an adhesive (safety) film (Group 1).

Insulating glass units incorporating VIG are excluded from this document.

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.

ISO 19916-1, *Glass in building — Vacuum insulating glass — Part 1: Basic specification of products and evaluation methods for thermal and sound insulating performance*

ISO 29584:2015, *Glass in building — Pendulum impact testing and classification of safety glass*

ISO 12540:2017, *Glass in building — Tempered soda lime silicate safety glass*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 19916-1, ISO 29548:2015 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/

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