ULC
STANDARD

ULC-S332:1993-R2016
(Reaffirmed 2016)

STANDARD FOR BURGLARY RESISTING GLAZING MATERIAL

Prepared and Published by:

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The intended primary application of this standard is stated in its scope. It is important to note that it remains the responsibility of the user of the standard to judge its suitability for the particular application.

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ICS 13.310

Prepared and Published by:

ULC Standards
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First Edition . . . . . Septmber 1993
REAFFIRMED . . . . . FEBRUARY 2016

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STANDARD FOR BURGLARY RESISTING GLAZING MATERIAL

PREFACE

This is the Reaffirmation of the First Edition of the Standard for Burglary Resisting Glazing Material, ULC-S332.

This Edition of the Standard has been formally approved by the ULC Standards Committee on Physical Security Equipment.

This Standard has been developed in compliance with the requirements of SCC for accreditation of a Standards Development Organization.

Only metric SI units of measurement are used in this Standard. If a value for measurement is followed by a value in other units in parentheses, the second value may be approximate. The first stated value is the requirement.

In Canada, there are two official languages, English and French. All safety warnings must be in French and English. Attention is drawn to the possibility that some Canadian authorities may require additional markings and/or installation instructions to be in both official languages.

This First Edition National Standard of Canada has been reaffirmed.

Attention is drawn to the possibility that some of the elements of this Canadian standard may be the subject of patents rights. ULC Standards shall not be held responsible for identifying any or all such patents rights.

Requests for interpretation of this Standard should be sent to ULC Standards. The requests should be worded in such a manner as to permit a “yes” or “no” answer based on the literal text of the requirement concerned.

The review and action to revise or reaffirm this Standard will not exceed 5 years from the date of publication, unless the Standard is identified as fitting within a stabilized category, whereby the review will commence within the appropriate time frame set out by ULC Standards.

This Standard is intended to be used for conformity assessment.

1. SCOPE

1.1 These requirements cover clear or translucent *glazing material* intended for *indoor use*, *outdoor use*, or *indoor/outdoor* use as a substitute for, or in combination with plate glass show window panels.

1.2 The material is intended to resist burglarious attacks of the *hit-and-run* type.

2. GLOSSARY

2.1 For the purposes of this Standard, the definitions (in *italic* print) shall apply.

2.2 *GLAZING MATERIAL* - A laminated assembly of plate glass and plastic, or plastic alone, designed to resist burglarious attack of the *hit-and-run* type.

2.3 *HIT-AND-RUN* - An attack not exceeding a duration of 60 s intended to create an opening of 45 cm^2 in the *glazing material*.

2.4 *INDOOR USE* - Both sides of the panel with the *glazing material* in the interior of a climate controlled area.

2.5 *INDOOR/OUTDOOR USE* - Encompasses both *indoor use* and *outdoor use*.

2.6 *OUTDOOR USE* - One or both sides of the panel with the *glazing material* exposed to the exterior ambient conditions.

2.7 *THERMAL CONDITIONING* - Sample conditioned at the specified temperatures for at least 24 h prior to testing.

3. INSTALLATION INSTRUCTIONS

3.1 A copy or draft of the installation instructions intended to accompany the glazing material, or equivalent information, shall be used as a guide in the examination and test of the glazing material.

3.2 The instructions shall include such directions and information as deemed by the manufacturer to be necessary for the proper and safe installation and maintenance of the glazing material.

4. DESIGN AND CONSTRUCTION

4.1 The *glazing material* shall have the composition and be fabricated in a uniform manner with no defects or visible imperfections so as to assure the necessary strength and durability when tested in accordance with these requirements.

4.2 Material may be tested for *indoor use*, *outdoor use*, or *indoor/outdoor use*.

5. PERFORMANCE

5.1 GENERAL

5.1.1 Representative samples of each design shall be subjected to the following tests:

A *INDOOR USE*: Multiple Impact Test, Subsection 5.2; Thermal Conditioning Test for Indoor Use, Subsection 5.4; and High-Energy Impact Test, Subsection 5.5;

B *OUTDOOR USE*: Multiple Impact Test, Subsection 5.2; Thermal Conditioning Test for Outdoor Use, Subsection 5.3; High-Energy Impact Test, Subsection 5.5; and

C *INDOOR/OUTDOOR USE*: Shall be subjected to all the tests specified in Subsections 5.2 through 5.5.

5.1.2 A minimum of 37 samples of each design, 600 mm by 600 mm shall be supplied. The samples shall be fully representative of production *glazing material*.

5.1.3 If the steel ball falls outside the 125 mm diameter circle or if the test sample is damaged in handling during any of the impacts tests specified in Subsections 5.2 through 5.5, the results shall be considered inconclusive and the test(s) shall be repeated using a reserve sample.

EXCEPTION: The test could be continued until five impacts have fallen within the 125 mm circle or the sample fails.

5.1.4 The steel ball shall not penetrate the *glazing material* on any one of the five impacts on nine of the ten samples tested. Penetration is considered to occur if the ball passes completely through the *glazing material*.

EXCEPTION: The steel ball shall not penetrate the glazing material on any of the three samples used during the High Energy Impact Test, Subsection 5.5.

5.2 MULTIPLE IMPACT TEST

5.2.1 The *glazing material* shall be capable of withstanding five 68 J impacts as produced by dropping an 83 mm diameter hardened smooth steel ball with a mass of 2.3 kg through a vertical distance of 3 m.

5.2.2 The test shall be conducted on ten samples of the *glazing material* maintained at a room temperature of 21 $\pm$ 1°C.

5.2.3 The samples of the *glazing material* shall be mounted horizontally in a frame so as to provide uniform clamping on all four edges of the materials with an unsupported area of 560 mm by 560 mm.