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AS 2343, Part 1—1983
UDC 691.6:666.155

see also AS 2343MF-1980 Diagrams of mounting frames for testing sheet security materials

Under Revision See DR 96419

Australian Standard 2343, Part 1—1983

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BULLET-RESISTANT PANELS FOR INTERIOR USE

Part 1—GLAZING PANELS

STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter

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This Australian standard was prepared by Committee MS/43, Bullet-resistant Glazing Panels. It was approved on behalf of the Council of the Standards Association of Australia on 25 January 1983 and published on 5 April 1983.

The following interests are represented on Committee MS/43:

Aluminium Development Council

Australian Bankers Association

Australian Bank Employees Union

Confederation of Australian Industry

Department of Defence

Federated Glass Merchants Association

Plastics Institute of Australia Incorporated

Police Department, N.S.W.

Victoria Police

AUSTRALIAN STANDARD

BULLET-RESISTANT PANELS FOR INTERIOR USE

Part 1
GLAZING PANELS

AS 2343, Part 1—1983

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PREFACE

This edition of this standard was prepared by the Association's Committee on Bullet-resistant Glazing Panels to supersede AS 2343—1980.

This edition incorporates several changes to Table B1, Test Conditions. A uniform tolerance is specified for the required velocity at each level of attack. The ammunition specified for Class S0 has been changed from No 6 shot to SG shot as this is more representative of the actual threat likely to be faced. Barrel length for the various weapons is no longer specified as this is a superfluous requirement given that velocity and ammunition are specified.

The methods for measuring velocity given in Appendix C have been updated in line with current practice.

The standard was originally prepared following a request from the Department of Defence Materials Research Laboratories. It is based on BS 5051, Security Glazing, Part 1: Bullet-resistant Glazing for Interior Use.

The standard specifies requirements and test methods for bullet-resistant glazing panels for interior use that are designed to provide protection against the effects of ballistic attack involving the use of firearms. Bullet-resistant glazing panels may also be resistant to many forms of manual attack.

It classifies bullet-resistant glazing panels according to their performance in preventing penetration by projectiles discharged from firearms under controlled conditions. Requirements for opaque panels are specified in AS 2343, Part 2.*

Some bullet-resistant glazing panels have been used in service for more than 12 years and are known to have maintained their resistance to penetration over this period. However, new materials are being developed and a safeguard against the possibility of inadequate bullet-resistant service life is required. Six months' exposure to external weathering prior to bullet-resistance testing has been specified in the expectation that this will exclude glazing panels which would have inadequate service life for interior use.

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*In course of preparation.

AS 2343.1/AMDT 1/1983-05-02

STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter

AMENDMENT No 1
to
AS 2343, Part 1—1983
BULLET-RESISTANT PANELS FOR INTERIOR USE
PART 1—GLAZING PANELS

CORRECTION

SUMMARY: This correction applies to Table B1.

Published on 2 May 1983.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
BULLET-RESISTANT PANELS FOR INTERIOR USE

PART 1—GLAZING PANELS

FOREWORD

The first requirement of a bullet-resistant glazing panel is to prevent penetration by projectiles discharged from firearms. Protection from splinters that may be ejected from the rear surface when the panel is attacked is also necessary.

Bullet-resistant glazing panels can be fitted to a wide variety of windows, counter screens, partitions, etc; consequently, it is not possible to specify instructions for installation in this standard. Nevertheless, it should be recognized that the degree of protection depends as much upon the design, fixing and maintenance of the window, counter screen or partition as it does upon the bullet-resistant glazing panel itself. Accordingly, the frames or other areas surrounding the bullet-resistant glazing panel should provide as high a level of protection as the panel and the frame should also provide sufficient overlap to prevent dislodgement of the panel during attack.

Where the bullet-resistant glazing panel is not installed by the manufacturer, it is essential that adequate instructions for installation are provided by the manufacturer. The bullet-resistant glazing panel must be correctly installed according to its design characteristics. For example, installation may necessitate the provision of air gaps of specific distances between the various sheets or panels of glazing material. In some cases, it may be necessary to orientate the bullet-resistant glazing panel in relation to the expected direction of attack.

SPECIFICATION

1 SCOPE. This standard specifies requirements for bullet-resistant glazing panels according to their performance in preventing penetration by projectiles discharged from firearms under controlled conditions. It applies to bullet-resistant glazing panels for interior use at ambient temperature, i.e. 20 ± 10°C.

This standard does not include a requirement for the retention of bullet-resistant properties for a stated period of time nor requirements for certain other aspects such as the durability of the glazing.

NOTE: Glazing panels that are much smaller than the type test samples, as described in this standard, may provide less protection in service than is indicated by the performance of the samples.

2 DEFINITION. For the purpose of this standard, the following definition applies:

Bullet-resistant glazing panel—a complete bullet-resistant unit which is classified (see Clause 3) according to its resistance to ballistic attack by firearms.

3 CLASSIFICATION. Bullet-resistant glazing panels shall be classified according to their resistance to ballistic attack (see Table B1) from firearms as follows:

(a) *Resistance to hand guns and rifles.*

(i) Class G0—resistant to attack by a 9 mm military parabellum hand gun.

(ii) Class G1—resistant to attack by a 357 magnum hand gun.

(iii) Class G2—resistant to attack by a 44 magnum hand gun.

(iv) Class R1—resistant to attack by a 5.56 mm rifle.

(v) Class R2—resistant to attack by a 7.62 mm rifle.

NOTES:

1. A panel complying with the requirements of one of the classes of category G will comply with the requirements of other lower numbered classes of category G; e.g. a panel complying with the requirements of Class G2 also complies with the requirements of Class G1 and Class G0.
2. A panel complying with the requirements of either Class R1 or Class R2 will also comply with the requirements of Class G0, Class G1 and Class G2. A panel complying with the requirements of Class R2 will also comply with the requirements of Class R1.

(b) *Resistance to shotguns.*

(i) Class S0—resistant to attack by a 12 gauge shotgun (full choke) firing shot.

(ii) Class S1—resistant to attack by a 12 gauge shotgun (full choke) firing a single slug.

NOTES:

1. A panel complying with the requirements of Class S1 will also comply with the requirements of Class S0.
2. A panel complying with the requirements of Class S0 or Class S1 will not necessarily comply with the requirements of one or more classes of either category G or R for hand guns and rifles.

4 CONSTRUCTION. Bullet-resistant glazing panels shall have a clarity and light transmission in accordance with good architectural practice for the type of installation involved and shall be made from any number of sheets of rigid, solid glazing material of any of the following types:

(a) Plastics or glass materials.

(b) Laminates of plastics materials.

(c) Laminates of glass and plastics materials.

The glass and plastics layers of the laminates may be bonded together or may be separated by air spaces and held in position at the edges.

NOTE: It is not the intention of this standard to restrict the design of bullet-resistant glazing panels. The most important factor is that protection is provided against the specified level of ballistic attack. Consequently, the bullet-resistant glazing panel may consist either of any number of sheets of glazing material essentially designed as a single unit, or of any number of such units often designed to be installed with an air gap of a specified distance between them.

5 PERFORMANCE. When a bullet-resistant glazing panel is tested for resistance to attack in accordance with Appendix B, the projectile shall not pass through the panel nor shall any splinters from the panel perforate the witness card.

6 MARKING.

6.1 General Requirements. Bullet-resistant glazing panels shall be clearly marked by the appropriate method (see Clause 6.2) with the following information:

(a) The manufacturer's name or trademark.

(b) The words 'bullet resistant'.

(c) The classification of the bullet-resistant glazing panel (see Clause 3). Where a panel complies with the requirements of more than one class, it shall be designated by the appropriate letters, e.g. S1/R2.

(d) The words 'public side' on the side of the bullet-resistant glazing panel designed to face the direction of attack.

(e) The date of manufacture (to the nearest 3 months).

NOTE: Manufacturers who place the number of this Australian standard on bullet-resistant glazing panels, packaging or literature related thereto should ensure that the panels are manufactured to comply with the standard.

Attention is particularly drawn to the scheme for independent assurance provided by the AS Mark which is a registered certification trademark owned by the Standards Association of Australia and which is available for use with suitable Australian standards.

The presence of the AS Mark on or in relation to a product is an assurance that the goods have been produced under a system of supervision, control and testing applied during manufacture and including periodical inspections at the manufacturer's works in accordance with the certification mark scheme of the SAA.

The AS Mark can be used only by manufacturers licensed under the certification mark scheme operated by the SAA, and only when accompanied by the number of the relevant Australian standard. It will usually be a requirement that the words 'Manufactured to Australian Standard' accompany the number of the standard and enclose the Mark as shown below; however, this is a matter for negotiation with the Association.

Further particulars of the terms of licence and suitability of this standard for certification purposes may be obtained from the Quality Assurance and Certification Department, Standards Association of Australia, 80 Arthur Street, North Sydney, N.S.W., 2060.