AS 1288—2006

Australian Standard™

Glass in buildings—Selection and installation

This Australian Standard was prepared by Committee BD-007, Glazing and Fixing of Glass. It was approved on behalf of the Council of Standards Australia on 28 November 2005.
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The following are represented on Committee BD-007:

Australian Building Codes Board
Australian Chamber of Commerce and Industry
Australian Glass and Glazing Association
Australian Industry Group
Australian Institute of Building Surveyors
Australian Shop and Office Fitting Industry Association
Australian Window Association
Building Research Association of New Zealand
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee BD-007, Glazing and Fixing of Glass, to supersede AS 1288—1994.

The objective of this Standard is to provide uniform direction for the use and installation of glazing throughout Australia to allow its use in legislation, and to clarify technical definitions.

This Standard will be referenced in the Building Code of Australia 2006; thereby superseding AS 1288—1994, which will be withdrawn in 12 months from the date of publication of this Standard.

When revising this Standard, consideration was given to the existing human impact safety requirements of AS 1288—1994 and NZS 4223.3:1999 *Code of practice for glazing in buildings* Part 3: *Human impact safety requirements*, as well as BS 6262-4, *Glazing for buildings*, Part 4: *Safety related to human impact*.

There was also a need to recognize that accidents involving glass continued at a high rate and at a considerable cost to the community. With these factors in mind, changes were made that have resulted in the introduction of increased areas of safety glass and the reduction of areas of ordinary glass in locations where accidents are known to occur at greater frequency. The Standard has also been closely aligned with international practice by the adoption of selected criteria from international Standards.

The change to ultimate limit state design in the new wind code has necessitated the corresponding upgrading of the wind loading charts. The new charts are based on the increased ultimate limit state wind loads. The committee has taken this opportunity to improve the design charts to include basic criteria such as the influence of aspect ratio and slenderness factor. The charts are unique as they incorporate all relevant aspects that influence the performance of glass in the one chart for each glass type and thickness.

The most significant changes of this revision include the following:

(a) Change from permissible design stresses for wind loading to Ultimate Limit State design.

(b) New design charts for wind loading based on ULS and taking into consideration panel aspect ratio.

(c) Introduction of new and increased areas of safety glass in locations subject to high risk of human impact.

(d) New section on installation requirements for glass.

(e) New sections and detailed specifications for overhead glazing, balustrades, faceted glazing and fin-supported glazing.

The Committee considers that this Standard represents the best compromise that can be presented at this time. Further research and testing for safety will possibly result in changes which will be incorporated in future editions. It makes recommendations for design and installation practice based on proven techniques but does not restrict the adoption of materials or methods of design that can be shown to the satisfaction of the responsible authority to provide no lesser standard of materials, designs or constructions than obtained by using the procedures specified herein.

Notes to the text contain information and guidance. They are not an integral part of the Standard.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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FOREWORD

Due to the revision of AS 1170.2—1989, *Minimum design loads on structures–Wind loads* to include limit states design, it became necessary for AS 1288 to be revised. The rationale used in the revision of AS 1288 to include the ultimate design strength of glass is given below.

The Building Code of Australia (BCA) sets the importance levels and annual probability of exceedance for wind, snow and earthquake actions applicable to buildings and structures.

Design wind speeds depend on the importance levels of the buildings as well as the wind region for the building, resulting in increased risk of glass breakage for glazing in lower importance levels.

The previous edition of AS 1288 gave permissible design stresses for wind load as 16.7 MPa for glass ≤6 mm thickness and 15.2 MPa for glass >6 mm thickness. However, since the publication of the previous edition in 1994, further research was carried out and it was found that the stresses varied considerably with panel aspect ratio and glass thickness.

The charts in this edition are based on ULS stresses of 27.0 MPa, for the thickest glass (25 mm) and 41.0 MPa for the thinnest glass (3 mm). It was also agreed that glass edge design stresses are to be 80% of the mid-span (i.e. away from edges) stresses. The limiting design stresses for each glass thickness used in developing the design charts are given in Appendix B.

STANDARDS AUSTRALIA

Australian Standard

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard sets out procedures for the selection and installation of glass in buildings, subject to wind loading, human impact, and special applications such as overhead glazing, balustrades and glass assemblies.

Glass strength requirements are given for glazing, based on the tensile stresses developed on the surface of the glass.

This Standard does not cover the following:

(a) Glazing in lift cars and lift wells (see Note 1).

(b) Furniture glass, cabinet glass, vanities, glass basins, refrigeration units, internal glass fitments and internal wall mirrors not specifically covered by Section 5 (see Note 2).

(c) Buildings and structures with no public access intended for horticultural or agricultural use.

(d) Windows and doors in heritage buildings as defined by the relevant State or Territorial authority (see Note 3).

(e) Restoration and or repairs to existing leadlights.

(f) Special glazing applications which might fail due to the stresses other than tensile stresses, such as shear stresses.

NOTES:

1 For glazing in lift cars and lift wells, see AS 1735.2 (Appendix H)

2 For further guidance see HB 125.

3 The traditional use of these buildings suggests their current construction and glazing practices are acceptable. However, consideration should always be given to the brittle nature of glass and the consequences of its breakage.

4 In Australia, legislation requires products to be ‘fit for purpose’. Where glazing is replaced because of breakage or any other reason, it is recommended that the replacement glass comply with the requirements of the relevant sections of this Standard, unless otherwise permitted by the relevant legislation.

1.2 APPLICATION

The thickness and type of glass required shall be determined on the basis of all the following criteria:

(a) For installations subject to wind loading, glass to be selected using either first principles as set out in Section 3, or using the simplified design as set out in Section 4.

NOTE: Section 4 may give a more conservative design solution.

(b) For human impact considerations, glass to be selected according to Section 5.

(c) For overhead glazing, glass to be selected according to Section 6.

(d) For balustrades, glass to be selected according to Section 7.

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