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Australian Standard®

**Repair of laminated glass
windcreens fitted to road vehicles**

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The following interests are represented on Committee ME/55:

Australian Automobile Association
Australian Federation of Consumer Organizations
Australian Road Research Board
Confederation of Australian Industry
Department of Defence
Department of Transport and Communications
Federal Chamber of Automotive Industries
Federation of Automotive Products Manufacturers
Railways of Australia Committee
Roads and Traffic Authority of New South Wales
Transport Department, Tasmania
University of Melbourne
Victoria Police
Western Australia Police Department

Additional interests participating in the preparation of this Standard:

Motor Traders Association of New South Wales
State Chamber of Commerce and Industry, N.S.W.
University of New South Wales

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**Repair of laminated glass
windcreens fitted to road vehicles**

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PREFACE

This Standard was prepared by the Standards Australia Committee on Safety Glass for Land Transport, to give procedures and limits for laminated glass windscreen repairs in order that road safety is maintained.

The repair limitations which are incorporated in this Standard have been based on considerations of the following:

- (a) Proposals by commercial windscreen repair and windscreen replacement organizations.
- (b) Demonstrations of commercial windscreen repair techniques, and inspection of repairs.
- (c) Technical arguments put by committee members relating to visual performance.
- (d) Correspondence from interested individuals and organizations, including the 'Technischer Ueberwachverein Rheinland' (TUV-Rhineland), the official technical service for all matters relating to vision in vehicles in the Federal Republic of Germany.

The proposals considered ranged from no repairs permissible to virtually unlimited repairs. The limits included in this Standard have been chosen with due attention to the safety aspects on one hand, and on the other, the demonstrable economic benefits of repairs in appropriate cases instead of windscreen replacement. These limits are considered to be somewhat conservative in a field where new technology is expected to improve road safety, but this cannot be guaranteed. If practical experience with the Standard indicates the desirability of a more liberal approach in due course, an amendment to the Standard will be undertaken, unless new technical requirements emerge in the meantime.

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STANDARDS AUSTRALIA

Australian Standard

Repair of laminated glass windscreens fitted to road vehicles

1 SCOPE. This Standard specifies requirements for the repair of cracks, 'bullseyes', and similar damage on laminated glass windscreens of road vehicles, other than the repair of scratches and sandblasting.

The Standard applies to the repair of laminated glass windscreens as specified in AS 2080 or ADR 8/..*, by filling and gluing the cracks and depressions with suitable substances in order to minimize loss of optical clarity and restore mechanical properties of the damaged area on the windscreen. It specifies that windscreen repairs shall be carried out by commercial organizations having suitably trained operators and specialized equipment for processes such as vacuum outgassing of the damaged area, pressure insertion of the repair compound, and ultraviolet curing of the compound.

Appendix A sets out the procedure for determining the shear strength of the repair resin.

NOTES:

1. Repairs conducted using Resins with a shear strength in excess of 14 MPa, when tested in accordance with Appendix A, may exceed the repair limits specified in this Standard. Such repairs are outside the Scope of this Standard (see Clause 6.1).
2. Appendix B gives guidelines for the optical inspection of repairs.
3. Reports and records which are to be kept by the professional repairer are specified in Appendix C.
4. 'Do-it-yourself' windscreen repair kits may give inferior results which compromise road safety and are therefore discouraged.

2 REFERENCED DOCUMENTS. The following documents are referred to in this Standard:

AS

1680 Code of practice for interior lighting and the visual environment

2080 Safety glass for land vehicles

ADR

8/..* Australian Design Rule 8/.., 'Safety glazing material'

3 DEFINITIONS. For the purpose of this Standard the definitions below apply:

3.1 Driver's seating reference plane—the vertical longitudinal plane through the geometric centre of the vehicle driver's seating position.

3.2 Dull spot—a small translucent zone in the windscreen present after a successful (previous) repair (see Clause 7(b)).

3.3 Gross vehicle mass (GVM)—the maximum laden mass of a motor vehicle as specified by the manufacturer.

3.4 Laminate bonding layer—the original bonding layer between two layers of glass that form a laminated windscreen, e.g. a polyvinylbutyral (PVB) layer.

3.5 New damage—the damage being considered for repair as opposed to a previous repair (that may be evident due to a dull spot, see Clause 3.2).

3.6 Outer layer of glass—the outside layer of the windscreen where damage has been inflicted externally, or (in rare occurrences) the inside layer of the windscreen where damage has been inflicted internally.

3.7 Resin—the repair material that is applied in the damaged area of the windscreen (and cured) to restore the strength and minimize any loss of optical clarity of the windscreen.

3.8 Shall—indicates that a statement is mandatory.

3.9 Should—indicates a recommendation.

4 DAMAGE TYPES AND DIMENSIONS.

4.1 General. Laminated glass windscreen damage for the purpose of this Standard is categorized into four fundamental characteristics referred to as a crack, a star, a bullseye, or a crater. The damage may consist of a single or a multiple incidence of these characteristics. Damage only to the outer layer of glass (see Clause 3.6), where there is no significant damage to the laminate bonding layer, is repairable. The fundamental characteristics and combination damage (where more than one characteristic is present in a single damage) are fully described in Clauses 4.2 to 4.6, and include the methods to be used in determining the size of the damage.

* The abbreviation 'ADR 8/..' indicates the version of ADR 8/.. current at the date of manufacture of the vehicle or the windscreen.