

Code of Practice

Automotive Glass Replacement

New Zealand

*Compiled by the New Zealand Vehicle Glass Repair and
Replacement Safety Code of Practice Working Group*

The Code of Practice Automotive Glass Replacement New Zealand was created by the NZVGRR working group committee.

The NZVGRR Code of Practice represents the windshield replacement industry's best practices of windshield replacement practitioners, suppliers, and other interested parties.

This Code of Practice contains an industry consensus of recommended terminology, definitions, processes, and procedures. These recommendations reflect the expertise of the majority of NZVGRR working group members who hold a combined experience in the auto glazing industry.

This Code of Practice in general follows the Australian Standard 4739:2017 Direct glazed automotive glass replacement—Light vehicles

The NZVGRR working group welcomes any comments to any portion of this Code of Practice. Please contact Sue Kuiti by email to sue@supremescreens.co.nz

The NZVGRR working group committee approval of the Code of Practice does not necessarily imply that all working group members voted for its approval. At the time it approved this Code of Practice, the NZVGRR working group committee had the following members:

Glasscorp Limited
Instant Windscreens & Tinting
National Auto Glass Supplies
New Zealand Automobile Association Inc.
New Zealand Auto Glass Ltd
Novus Glass
Smith & Smith
Supreme Windscreens
Windscreens Direct

New Zealand Vehicle Glass Repair and Replacement Safety Code of Practice Working Group

Code of Practice Automotive Glass Replacement New Zealand

1 Scope and purpose

1.1 Scope

This Code of Practice specifies the procedure for the replacement of direct glazed automotive glass, addressing installation procedures, substrate suitability, product performance and ADAS requirements for motor vehicles. It addresses the following clause of the *Land Transport Rule: Glazing, Windscreen Wipe and Wash, and Mirrors 1999. 32012/1*.

2.2(1) The general safety requirements for glazing are:

- (a) glazing must be mechanically sound, strong, and securely affixed to the vehicle

The Code of Practice aims to ensure that when direct glazed automotive glass is replaced, the structural integrity, safety features, and the appearance of the vehicle are not compromised. The replacement direct glazed automotive glass will surpass or meet international crash tests and/or international standards.

The vehicles referred to in this Code of Practice are those defined in the *Land Transport Rule: Glazing, Windscreen Wipe and Wash, and Mirrors 1999. 32012/1*

Table 2.1 Requirements for Windscreens

MA—Passenger car.

MB—Forward control passenger vehicle.

MC—Off-road passenger vehicle.

MD – Light Omnibus (MD1, MD2, MD3, MD4).

ME – Heavy Omnibus.

NA—Light goods vehicle.

NB – Medium goods vehicle.

NC – Heavy goods vehicle.

1.2 Purpose

The Code of Practice specifies the procedure for the replacement of direct glazed automotive glass. The Code of Practice aims to ensure that when direct glazed automotive glass is replaced, the structural integrity, safety features, and the appearance of the vehicle are not compromised.

1.2.1 To provide guidelines and objectives for groups that supply products for the industry.

1.2.2 To promote public awareness of the need for safe installation procedures and ADAS calibration, which will reduce the risk of personal injury and/or death from traffic accidents.

1.2.3 To provide a comprehensive automotive glass replacement and ADAS calibration standard.

1.2.4 To achieve a higher degree of consistency among installation practices.

2 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this Code of Practice Automotive Glass Replacement New Zealand. At the time

of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this Code of Practice Automotive Glass Replacement New Zealand are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

AS/NZS Standards

- 2080.1995 Safety Glass for Land Vehicles
- 2366 Windscreen repairs
- 2366.1 Part 1: Repair procedures
- 2366.2 Part 2: Repair systems

AS 4739-2017– Direct Glazed Automotive Glass Replacement – Light Vehicles - *AS 4739-2017*

Land Transport Rule: Glazing, Windscreen Wipe and Wash, and Mirrors 1999. 32012/1 and its amendments (2/3/4)

Thatcham Research Code of Practice: For the Replacement & Refitting of Automotive Glazing for vehicles fitted with screen mounted Advanced Driver Assistance Systems (ADAS) – July 2016

US Federal Motor Vehicle Safety Standard 212

3 Definitions and Acronyms

3.1 Activator: A substance that stimulates or initiates a chemical process.

3.2 ADAS: Advanced Driver Assistance Systems; automated systems that enhance vehicle safety and assist in reducing driver error.

3.3 Direct Glazing adhesive bonding system: Compounds that are specifically engineered for the fixing of direct glazed automotive safety glass using chemical products, to bond direct glazed automotive safety glass.

3.4 anti-pinch mechanism: a feature that reverses the window or panel direction of travel when resistance is encountered.

3.5 ARG: automotive replacement glass.

3.6 butyl sealant: a copolymer of isobutylene and isoprene.

3.7 equivalent retention system: a system that has been certified by the retention system manufacturer or private labeller as appropriate for the specific application.

3.8 full cut: removing existing bead of adhesive to a height of approximately 1 to 2 mm wherever the residual bead is structurally sound, and the substrate condition is not defective.

3.9 initialize: a procedure that re-establishes proper operation of the intended function. Also used: initialization, re-initialization.

3.10 minimum drive-away strength: the minimum properties as defined and specified by the Direct Glazing adhesive system manufacturer or private labeller to meet the requirements of FMVSS 212 as it pertains to glass retention systems.

3.11 minimum drive-away time: the time necessary for a Direct Glazing adhesive system to attain minimum drive-away strength after an adhesive bonded glass part is set in place.

3.12 OE: original equipment.

3.13 OEM: original equipment manufacturer.

3.14 OEE: original equipment equivalent.

- 3.15 polysulfide adhesive:** an adhesive containing sulphur that cures to a cross-linked rubber compound.
- 3.16 polyurethane direct glazing adhesive:** a thermoplastic polymer adhesive produced by the condensation reaction of polyisocyanate and a hydroxyl containing material.
- 3.17 MS Polymer direct glazing adhesive:** a modified polymer adhesive produced by crosslinking the hydrolysis of silyl ethers.
- 3.18 primer:** an agent that is designed specifically by the Direct Glazing adhesive manufacturer to promote adhesion between the substrate and the adhesive and/or provide shielding from environmental factors.
- 3.19 private labeller:** any individual, corporation or the entity engaged in sale or distribution of a product labelled as its own but manufactured by any different entity.
- 3.20 recalibration:** the process by which a vehicle's Advanced Driver Assistance System is returned to the vehicle manufacturer's specifications.
- 3.21 retention system:** refers to any original equipment or equivalent method of glazing attachment.
- 3.22 those engaged in automotive glass replacement:** refers to any individual, business, or organization that replaces automotive glass; examples include but are not limited to individual technicians, automotive glass replacement businesses, automotive body shops, and dealerships.
- 3.23 compatible adhesive system:** refers to an Direct Glazing adhesive system that has been tested and proven to be compatible with the substrates &/or existing/previous Direct Glazing adhesive bonding system. The responsibility of ensuring compatibility remains with the installer of the replacement Direct Glazing adhesive bonding system. Note: If in doubt, seek guidance from your chosen Direct Glazing adhesive supplier.

4 Vehicle Assessment before Replacement

Those engaged in automotive glass replacement shall not undertake or complete any installation unless a thorough assessment of the vehicle has been made. If, after such assessment, it has been determined that:

- 4.1** Any discovered condition(s) such as rust on the vehicle could compromise the vehicle's retention system, the technician shall not undertake or complete the installation. The owner/operator then shall be so notified.
- 4.2** Where the vehicle has ADAS which could require recalibration after any automotive glass replacement, and the technician chooses not to follow the guidelines in 7.8, the technician shall not undertake or complete the installation. The owner/operator then shall be so notified.

5 Selection of Glass and Retention Systems

- 5.1** Those engaged in automotive glass replacement shall use retention systems that are produced under the ISO 9001 standard or any standard that contains the entire text of ISO 9001.
- 5.2** Those engaged in automotive glass replacement shall use glass products meeting the requirements of AS/NZS 2080.1995 Safety Glass for Land Vehicles
- 5.3** Those engaged in automotive glass replacement shall use either an OEM-approved retention system or equivalent retention system as certified in writing by the equivalent retention system manufacturer directly or through a private labeller.

The retention System (Direct Glazing bonding adhesive) must be compatible with the OEM System, surpassing or meeting international tests, FMVSS212.

5.4 Those engaged in automotive glass replacement shall use a suitable, and compatible, decontamination process to ensure appropriate bonding performance between glass and Direct Glazing adhesive system.

5.5 Those engaged in automotive glass replacement shall obtain and follow written comprehensive and current application instructions from the retention systems manufacturer or private labeller. These instructions shall include at least the proper use of the retention system, storage specifications, minimum drive-away time charts containing temperature and humidity variables if applicable, and any special procedures required for adverse weather conditions.

5.6 Those engaged in automotive glass replacement shall only use retention systems that have lot numbers and expiration dates printed on appropriate products.

5.7 Those engaged in automotive glass replacement shall use glass products compatible with and manufactured to OEE for the ADAS which may be affected/impacted by the glass replacement.

6 Installation Standards – Direct Glazing Adhesive Bonded

6.1 Those engaged in automotive glass replacement shall follow the Direct Glazing adhesive manufacturer's application instructions as provided by the manufacturer directly, or through the private labeller. All in-shop or mobile installations shall be performed under environmental and other conditions that are compatible with the application instructions.

6.2 Products shall be stored and controlled according to manufacturers' requirements as provided directly or through a private labeller on their Technical Data Sheet.

6.3 No automotive glass replacement shall be undertaken using a Direct Glazing adhesive bonding system that would not achieve minimum drive-away strength by the time the vehicle may be reasonably expected to be operated.

6.4 The vehicle owner/operator shall be notified prior to and after the installation process of the minimum drive-away time under the circumstances of the replacement.

6.5 Direct Glazing Adhesive shall be applied so that the finished bead cross-section profile and dimensions meet or exceed original equipment configuration or recommendation of Direct Glazing adhesive system manufacturer.

6.6 If the installation was direct glazed, then the glass shall be replaced with a suitable Direct Glazing adhesive bonding system, providing that system is two way compatible.

6.7 All glass parts shall be traceable to the installation part number.

6.8 No product that has exceeded the manufacturer or private labeller's stated expiration date, open shelf life, or active shelf life shall be used.

6.9 All supplemental mechanical glass retention devices shall be replaced to original equipment specifications.

6.10 Rusted and freshly painted aperture

The following is required for a rusted aperture:

(a) New Direct Glazing adhesive shall not be applied to a rusted aperture. The installation shall only be completed when surface rust has been removed and the aperture is back to a bright metal finish and primed with a blackout primer and/or painted.

(b) If the rust is extensive and there are holes in the aperture the glass shall not be installed until the aperture has been professionally repaired and re-painted.

(c) In the case of repainted apertures (after rust repairs or panel work), ensure the paint has sufficient time to dry (as per manufacturer's instructions).

6.11 When those engaged in automotive glass replacement correct inappropriate glass installations, they shall remove any inappropriate materials that would compromise the retention system. They shall fully correct any adverse glass installation related condition(s) caused by the use of inappropriate materials or methods, and they shall use appropriate methods described elsewhere within clause 5 of this document.

6.12 When sealing air or water leaks within a Direct Glazed adhesive retention system, only a compatible Direct Glazed adhesive system shall be used.

6.13 Only the full cut method should be used for adhesive retention systems.

7 Additional Requirements

7.1 All mechanically fastened automotive glass parts shall be replaced according to original equipment specifications.

7.2 Glass parts, including custom cut parts, shall be marked in compliance with the certification requirements specified in *Land Transport Rule: Glazing, Windscreen Wipe and Wash, and Mirrors 1999. 32012/1*

7.3 Those engaged in automotive mirror replacement shall install external and internal replacement mirrors that meet or exceed original equipment specifications and the requirements of *Land Transport Rule: Glazing, Windscreen Wipe and Wash, and Mirrors 1999. 32012/1*

7.4 Notification of defective product:

7.4.1 A failure or defect in any product used or intended for use in the automotive glass replacement process that could jeopardize customer safety shall be reported promptly to the manufacturer or supplier of the product and customer advised not to use vehicle on road.

7.4.2 Any product installed by those engaged in automotive glass replacements that is discovered to be defective or which is determined could jeopardize customer safety shall be immediately reported to the customer.

7.5 Those engaged in automotive glass replacement shall not introduce any chemical agents, such as cleaners, solvents, lubricants, release agents, or utilize any installation practice, which will adversely affect the glass retention system.

7.6 Those engaged in automotive glass replacement shall create and retain records of each auto glass replacement for a period of at least three years from the date the work was completed sufficient to demonstrate compliance with this standard. Records, either electronic or hard copy shall be legible, easily identifiable and readily available.

7.7 Those engaged in the repair, removal, or replacement of motorized windows and/or panels in automobiles that are equipped with anti-pinch mechanisms shall reset, initialize, and/or confirm their proper operation before the vehicle is released to its owner/operator. If the reset operation cannot be completed for any reason, the vehicle owner/operator shall be informed of the failure to reset the system. In addition, the owner/operator shall be instructed to seek out a facility equipped to reset the system. The replacement glass installer is not responsible for the selection of any reset facility.

7.8 If the vehicle has an ADAS, it may require recalibration after any automotive glass replacement. Those engaged in automotive glass replacement who elect to provide recalibration services may only complete the recalibration if they obtain and use OEE and are trained personnel and provide the outcome of the recalibration to the

owner/operator. The Technician should refer to the *Thatcham Research: Code of Practice for the replacement and refitting of automotive glazing for vehicles fitted with screen mounted ADAS*, for current best practice guidance.

If these conditions cannot be met, or if the automotive glass installer does not provide recalibration services, the automotive glass installer will undertake to ensure the calibration is completed, either by another automotive glass installer who completes calibration or by an OE Dealership, PRIOR to the vehicle being returned to the owner/driver.

This is to ensure all safety features, are fully operational, in line with vehicle manufacturer specifications and requirements post a windscreen replacement.

In all cases of calibration, an ADAS Calibration certificate must be issued upon successful completion of the calibration by the automotive glass installer or OE dealership.

8 Education

8.1 Technicians installing replacement automotive glass shall be appropriately trained for the tasks they are required to perform. Such training shall include, at a minimum, completion of a comprehensive training program and an ongoing training component. The program shall include, among other things:

- a) AGR safety issues.
- b) An understanding of correct installation standards and procedures.
- c) Relevant technical specifications.
- d) Direct Glazing Adhesive System Manufacturer specific comprehensive retention system training.
- e) The opportunity to apply and demonstrate the skills technicians learn.
- f) ADAS component training for removal and installation.

References:

American National Standard – Automotive Glass Replacement Safety Standard (AGRSS)
ANSI/AGSC/AGRSS 004-2018

Australian Standard – Direct Glazed Automotive Glass Replacement – Light Vehicles
AS 4739-2017

Thatcham Research Code of Practice: For the Replacement & Refitting of Automotive Glazing for vehicles fitted with screen mounted Advanced Driver Assistance Systems (ADAS)