



LVV Certification of Security Vehicles

Introduction:

Security vehicles are generally vans that have been modified for the purposes of transporting money and valuable goods. These modifications include:

- a thicker 'bulletproof' windscreen; and
- blanking of rear and side windows; and
- fitting of polycarbonate side windows; and
- modified door locks for secure entry from outside the vehicle; and
- addition of an internal bulkhead behind the driver's seat; and
- addition of rear seating and seatbelt anchorages in the cargo area.

Forms were previously issued for some of these vehicles by the Land Transport Safety Authority giving a small number of specific vehicles exemption from meeting the requirements of the *1999 Land Transport Rule: Glazing, Windscreen Wipe and Wash, and Mirrors 1999* relating to compliance with an approved vehicle standard for the windscreen. Apart from a copy of the exemption, these modified vehicles have never undergone a formal approval process. Land Transport NZ have now requested LVVTA to deal with security vehicles under the LVV Code.

Technical Requirements:

Windscreens

Non-approved types:

Two types of modified windscreens are known to have been fitted to earlier vehicles:

- some were fitted with flat glass manufactured to meet a bullet-proof standard, probably unmarked with any automotive standard; and
- a firm in Southland was for some time bonding two regular windscreens together to make a thicker one. Two original standard markings may be visible, even though the new windscreen no longer complies. The two bonded screens are unlikely to fit the OE mounting aperture correctly and are said to suffer from delamination problems.

The earlier flat glass windscreens probably required modified windscreen wipers and may exhibit coverage problems or uneven contact with the glass.

None of the windscreens specified above may be approved under the Low Volume Vehicle Code.

Approved types:

Most affected vehicles have had windscreens manufactured by Glasshape, of Penrose, Auckland. They are either:

- 21 mm thick, comprising 3 layers of 6mm glass and 2 intermediate layers; or
- 24.5 mm thick, comprising 4 layers of 5mm glass and 3 intermediate layers.

Although Glasshape manufactures regular automotive windscreens using the same materials and processes to an approved automotive standard, the additional thickness of the security windscreens means that they do not comply with those standards. The windscreens are made up in such a way that the outer two layers fit the normal OE aperture, while the inner two layers for 24.5 mm thickness and one layer for 21 mm thickness are a little smaller in width and height and fit within the windscreen aperture. This allows the use of unmodified windscreen wipers.

Correct attachment and bonding of these windscreens is critical, as they weigh in the order of 120 kg, and are sized up to 1800 x 900 mm. At least a 12 mm lip is required around the edge of the windscreen in order for the urethane sealant to have sufficient bond strength.

Glasshape has supplied a Certificate of Conformity dated 20th December 2004 for their windscreens listing all production numbers. This Certificate is attached to this Information Sheet. Each windscreen installed after this date will have its own certificate issued by Glasshape, a copy of which is to be attached to the LVV Certification Formset.

The LVV Certifier is required to ensure that the individual windscreen serial number present on the vehicle is listed on the attached Glasshape Certificate of Conformity. If the number is not listed, an individual Certificate of Conformity must be provided by Glasshape for that windscreen serial number.

Alternatively, an exemption form issued by Land Transport New Zealand for the vehicle's windscreen is acceptable, and a copy is to be attached to the LVV Certification Formset. An example of this form is attached to this Information Sheet.

Blanking of side windows

Blanking of side and rear windows is a common modification to vans, and should be carried out in a secure and tradesman-like manner. The blanking may be done by using either alloy sheet or panel steel.

Fitting of polycarbonate side windows

Alternative glazing fitted to motor vehicles must be made from mar-resistant polycarbonate material, and suitable types are Lexan MR series or Cyrolon AR series. (MR = mar-resistant, AR = abrasion-resistant). These windows must be etched or engraved with the material type on the front lower corner of each side window.

The alternative glazing must be properly fixed and secured, and there must be no deterioration of the surface such as scratches and hazing that could reduce visibility.

The usual thickness of the side window glazing in these vehicles is 10 to 12 mm.

Modified door locks for secure entry from outside the vehicle

These vehicles may be fitted with an aftermarket locking system comprising either a security key or a keyless remote device to open the doors from the outside. The mechanically operated interior handles must remain operational from within the vehicle at all times without the use of a key. The OE exterior handles are disabled, and may be removed or left in place.

Addition of an internal bulkhead behind the driver's seat

The internal bulkhead gives the driver visual security when the rear section of the vehicle is open for cargo access as well as preventing cargo from penetrating the occupant area. The bulkhead is usually made from 1.2 mm panel steel or similar.

Addition of rear seating and seatbelt anchorages in the cargo area

A seat with seatbelt anchorages is sometimes added in the rear cargo area for transporting security personnel. Seatbelts must be fitted according to the tables on page 7-5-2 of the VIRM. Existing LVV Standards for Seats & Seat Anchorages and Seatbelt Anchorages are applicable, as well as the LVV Interior Impact Standard to ensure no sharp projections are within the occupant zones.

Security Vehicle LVV Certification Procedure:

- These modifications can be LVV certified by any LVV Certifier holding Category LVV 1C – 'Modified Production – Structures'.
- Each affected vehicle must be modified and LVV certified according to the following procedure, using LVV Formset FS031.

Note that the photographs in this procedure may be viewed and printed via the LVVTA website (www.lvvta.org.nz), and are much clearer in colour.

Windscreen

- 1) Check the windscreen for manufacturer's markings or standards markings (*Photo A*).

Glasshape mark all windscreens with their details and the date in reverse order, followed by the thickness and possibly a production number for that day's production.

For example:

Laminated

Safety Glass

Glasshape

Auckland

NZ

408032/21/x = 23/08/04 / 21 mm / x= possible sequential number

A LVV Certifier is to check that the windscreen presented either:

- is included within a blanket Letter of Conformity from Glasshape listing the vehicle makes, models and windscreen serial numbers relating to windscreens installed before 20th December 2004; or
- is accompanied by an individual Letter of Conformity from Glasshape that records the windscreen serial number for the windscreen in question; or

- is accompanied by a Land Transport Safety Authority Exemption form for the vehicle as exemption from the Land Transport Rule: *Glazing, Windscreen Wipe and Wash, and Mirrors 1999*. If neither the Glasshape marking nor a Land Transport Safety Authority Exemption form apply, the windscreen cannot be accepted.
- 2) Examine the optical qualities of the windscreen. It must:
- be clear, clean and untinted (apart from an anti-glare band on the upper edge); and
 - not exhibit delamination; and
 - have no unusual shape changes; and
 - not display forward vision distortion when viewed directly through the windscreen. (Some distortion is normal and acceptable when viewed at an angle).
- 3) Examine the attachment of the windscreen to the vehicle (*Photo B*). It must:
- have been installed by a professional windscreen installer; and
 - not show evidence of bonding failure.

For windscreens installed after 20th December 2004, request details from the installer of the installation method and bonding agent used and attach to the formset. Acceptable bonding agents are Sikaflex -296 and SikaTack -Drive.

Windscreen wipe & wash

- 4) Check the operation of the windscreen wipers. The system must:
- operate normally without lifting from the glass; and
 - give correct coverage; and
 - park correctly; and
 - incorporates a washing system that operates correctly.

Side window blanking

- 5) Examine the side window blanking. It must have been carried out in a tradesman-like manner. (*Photo C*).

Alternative glazing

- 6) Examine the alternative glazing in the side windows. It must:
- be marked with an approved type such as Lexan MRxx or Cyrolon ARxx; and
 - be properly fixed and secured; and
 - have no deterioration of the surface such as scratches and hazing that could reduce visibility.

External door locks

- 7) Examine the modified door locking system (*Photo D*). If modified, it must:
- allow access from outside the vehicle using a special key or electronic device; and
 - internal mechanical door handles must remain operable; and
 - the exterior door handles may be removed or left in place.

Addition of an internal bulkhead behind the driver's seat

- 8) Examine the internal bulkhead, if fitted. It must have been installed in a tradesman-like manner.

Interior Impact

- 9) Ensure that any additional fixed components installed such as cabinets or safes etc, are attached securely so that they will not become detached in the event of a 20g deceleration, and any other items are contained such that they will not injure an occupant in a 20g deceleration. Any additional components must be clear of the A-Zone (as specified in the LVV Interior Impact Standard 155-40) of any seating position.

Addition of rear seating and seatbelt anchorages in the cargo area

- 10) If seats or seatbelt anchorages have been fitted (*Photo E*), in addition to FS031, attach the following applicable formsets:
- FS030-Seats and Seat Anchorages
 - FS016-Seatbelt Anchorages
 - FS021-Interior Impact
- 11) **The LVV certifier is to fill out the 'base formset' recording:**
- **'SECURITY VAN' in 'Body Style'; and**
 - **the major modifications and the marked windscreen numbering in the 'Cons Body/Chassis' section (for example 'NON-OE W-SCREEN # 102041-21'; and**
 - **'VALID FOR LICENSED SECURITY OPERATOR ONLY' should be noted at the very bottom of the FS012 (data sheet) to remind the Plate Administrator to record this into the 'Exemptions' field of the Certification Plate.**
- 12) **The LVV certifier is to forward the 'base' formset together with the FS031 Formset to the Land Transport NZ plate administrator with the normal LVV Certification Plate fees.**

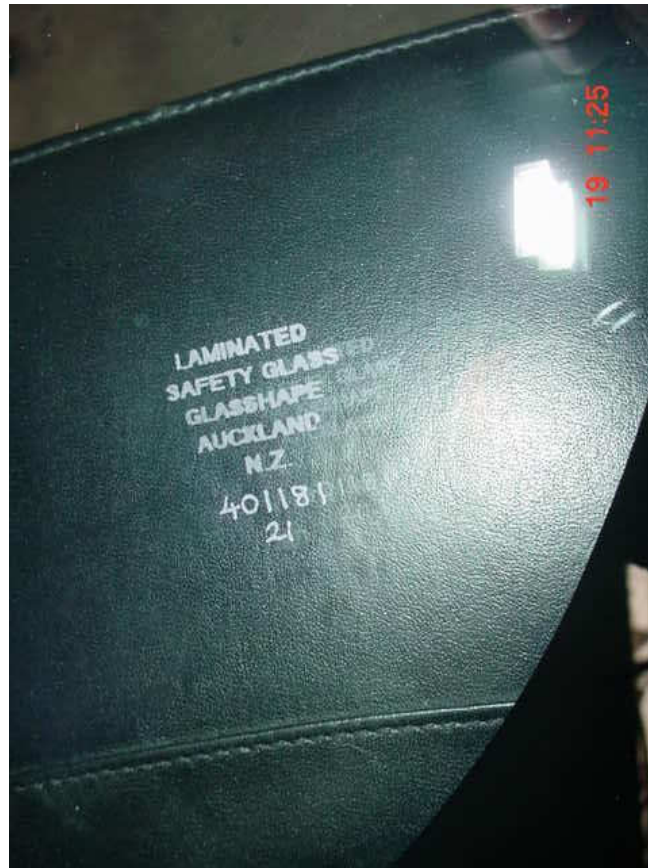
Attachments:

- Glasshape Certificate of Conformity dated 20th December 2004
- Land Transport NZ sample Exemption form for vehicle AGL334

If you have any queries or require any further clarification relating to this Information Sheet, please feel free to contact Doug St George at the LVVTA office on (09) 268-9550.

Tony Johnson
Chief Executive Officer
Low Volume Vehicle Technical Association, Inc

Photographs



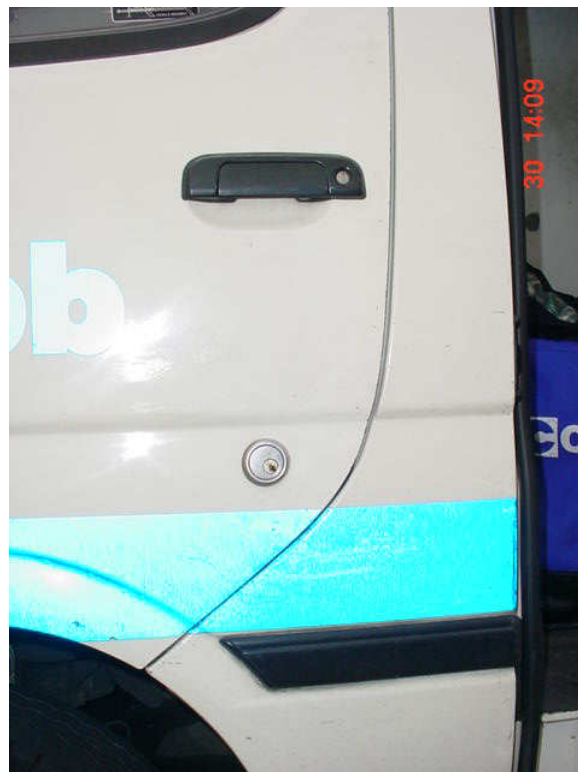
A) Glasshape numbering on windscreen



B) View of edge of 21 mm windscreen (3 layers). Two layers fit the OE windscreen mount, the other layer fits within the inside windscreen aperture.



- C) This vehicle had two rear side windows; one has been fitted with a metal screen, the other with a riveted blanking plate.



- D) Modified exterior door locks, handles are disabled. The rear door had a similar lock fitting.



- E) Retro-fitted seat in cargo area. No seatbelt is fitted in this example, being an NA Class vehicle manufactured before 1/10/2003, but lap and diagonals would be required for those manufactured after 1/10/2003.