

Vehicle Standards Guide 12 (VSG-12)

Truck-mounted attenuators

This guide provides advice to heavy motor vehicle owners, operators and modifiers about the fitting and use of truck-mounted crash attenuators (attenuators).

Introduction

The use of attenuators in the road construction and maintenance, traffic control and incident response sectors has steadily increased and is now a regular part of ensuring the safety of those working on and near roads.

Fitting an attenuator can result in the heavy motor vehicle exceeding dimension limits for rear overhang and overall length when deployed. The National Heavy Vehicle Regulator (NHVR) has issued the *National Heavy Vehicle Standards (Truck-mounted attenuator) Exemption Notice 2022 (No. 1)* (the notice) to provide the necessary exemptions from the heavy vehicle standards.

Fitting an attenuator

Fitting an attenuator to a heavy motor vehicle is considered a modification under the *Heavy Vehicle National Law (HVNL)* and requires approval by a suitably qualified approved vehicle examiner (AVE). As fitting an attenuator results in the vehicle exceeding dimension limits when deployed, an exemption is required before the modification can be assessed and approved. Under the notice, an AVE can approve this modification if it complies with the conditions of the notice. Depending on what is required to fit the attenuator, there may be a number of modifications that require approval, including:

Fitting a body

Generally, the fitting of an attenuator is approved under *Vehicle Standards Bulletin 6: National Code of Practice for Heavy Vehicle Modifications (VSB6) Modification Code J1 Body Fitment*. When designing the installation, it is important to take into account the position of the attenuator on the vehicle and ensure when the attenuator is deployed:

- in any position, the minimum front axle load is suitable to allow effective steering and braking.
- the mounting location of the attenuator on the vehicle does not result in the vehicle becoming unstable or unsafe.

Note: The Performance Based Standards (PBS) Steer tyre friction demand standard may be used as a reference guide regarding steer axle loading.

- lighting, reflectors and rear marking plates required by the *Heavy Vehicle (Vehicle Standards) National Regulation* (the National Regulation) must be fitted to the rear of the attenuator/vehicle so the vehicle complies both when the attenuator is stowed (raised) and deployed (lowered).

Chassis modifications

If the installation of the attenuator requires any modifications to the vehicle's chassis, including drilling of holes or installation of additional cross members, these modifications must be carried out in accordance with VSB6 Modification Code H4 *Chassis Frame Alteration*.

Harness seatbelt installation

In some cases, the attenuator manufacturer will install a harness type seatbelt designed for use while the attenuator is deployed. The NHVR would consider this a minor modification, and would not require certification provide all of the following conditions were met:

- a complying seatbelt is also installed at the seating position
- the seatbelt harness or any associated mounting frame does not interfere with the normal operation of the seat or complying seatbelt
- the seatbelt harness anchorages or any associated mounting frame do not reduce the structural integrity of the seat or complying seatbelt's anchorages
- structural modifications to the cabin are not required to fit the seatbelt harness anchorages or any associated mounting frame, and
- a label is affixed in a readily visible position advising that the harness type seatbelt is only to be used when the attenuator is deployed.

If any anchorage, seat or seatbelt requires modification, they must be certified by an AVE using the appropriate VSB6 modification code.

Note: Harness type seatbelts described above are only to be used while the attenuator is deployed are not considered to be complying seatbelts. The NHVR do not provide any specifications (forces, anchorage requirements, etc) for these harness seatbelts.

Vehicle dimensions

When designing or installing an attenuator, it is important to ensure that the completed vehicle complies with the dimension requirements of the notice. The dimension exemptions in the notice only apply when the attenuator is deployed. This means that when the attenuator is stowed, the vehicle must continue to comply with all regulation dimension requirements. When deployed, a vehicle may have a rear overhang of up to 7.6 m and may be up to 15m in overall length.

Warning light

A vehicle fitted with an attenuator must be fitted with a flashing warning light to ensure other road users are made aware of the vehicle's presence. A warning light must:

- be visible for at least 500m in all directions. If it is not possible to achieve this with one flashing light, additional flashing lights must be used until the 500m visibility requirement is met
- not be a strobe light
- the light must emit a yellow-coloured light of rotating and flashing effect
- flash at between 120 and 240 times each minute
- must not be a strobe light; and
- must not be of an intensity that is likely to dazzle another road user.
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Warning pattern

To ensure the attenuator is easily seen, the notice requires that it be fitted with a warning pattern on both sides and the rear (in the deployed configuration). Each warning pattern must cover an area of at least 0.16m² and have diagonal stripes that are at least 100mm wide alternately coloured either:

- red and white
- black and white
- red and yellow; or
- black and yellow.



Figure 1. Examples of warning patterns

If reflective material is used in the warning pattern, the colour of reflectors used must comply with the *National Regulation*:

- only yellow reflectors may be fitted to the side of a vehicle.
- Only white reflectors may be fitted to the front of a heavy vehicle.
- only red reflectors may be fitted to the rear of a heavy vehicle.

Example: If the red and yellow warning pattern was fitted to the rear of a vehicle only the red striping would be permitted to be a reflective material.

Using an attenuator

Under the notice, the attenuator may only be deployed when the vehicle is actively engaged in an approved task.

Note: The notice defines an approved task as when the attenuator is engaged in a road construction, repair or maintenance, traffic control operations or road incident response task.

At all other times when the vehicle is on a road, the attenuator must be in the stowed position and comply with all dimension requirements.

When the attenuator is deployed, the flashing warning light/s must be switched on.

Note: Typically, when an attenuator is deployed the road is considered closed and an access authority is not required.

However, if unsure the operator of the vehicle should enquire with the road authority to determine if an access authority needs to be obtained prior to deploying the attenuator.

Chain of Responsibility

Under the Chain of Responsibility (CoR) laws, relevant parties in the transport supply chain have a duty to ensure the safety of their transport activities.

Parties in the chain have an obligation to eliminate or minimise potential harm or loss (risk) by doing all that is reasonably practicable in their business to ensure safety.

Implementing a system to ensure you are informed of changes to the vehicle safety standards and apply these to your business can support transport safety.

Complying with the Heavy Vehicle National Law

The operator of a heavy vehicle must ensure their vehicle complies with the *Australian Design Rules* (ADRs) and *the National Regulation*. Using or permitting another person to use a defective heavy vehicle on a road is an offence.

A defective heavy vehicle is a vehicle that:

- does not comply with the heavy vehicle safety standards; or

- has a part that does not perform its intended function; or
- has deteriorated to an extent that it cannot be reasonably relied on to perform its intended function.

Penalties can include on-the-spot fines or prosecution. Formal warnings or a defect notice may also be issued. For more information see the Heavy vehicle defects— Compliance and enforcement bulletin at www.nhvr.gov.au/ce-bulletins.

For more information:

Subscribe: www.nhvr.gov.au/subscribe

Visit: www.nhvr.gov.au/hvmodifications

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