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Vehicle Standards Information 1

June 2021 | This information sheet supersedes all previous copies of VSI 1.

Bull Bars

This Vehicle Standards Information sheet outlines the requirements when modifying a vehicle by fitting a bull bar.

This information sheet applies to vehicles with a gross vehicle mass (GVM) of 4.5 tonne or less. For heavy vehicle requirements please refer to the National Heavy Vehicle Regulator website www.nhvr.gov.au

Introduction

Regulation 252 of the *Road Safety (Vehicles) Interim Regulations 2020* requires all modifications to a vehicle to either have specific approval from VicRoads or to be carried out in accordance with guidelines published by VicRoads. Fitting a bull bar to a motor vehicle is a modification.

This document is a published guideline for the purposes of Regulation 252.

Vehicle Standards requirements are subject to change. Check the VicRoads website to ensure you are working from the most recent version of this Vehicle Standards Information (VSI) sheet before proceeding with modifications.

Bull bars are often fitted in an attempt to limit damage in a collision with an animal (e.g. a kangaroo) and to protect the vehicle from scrub and bushes when driven off road on overgrown tracks.

A bull bar can also be used as a mounting point for driving lights, recovery winches or other equipment.

Do you really need to fit a bull bar?

Laboratory testing demonstrates that most types of bull bars increase the likelihood of serious injury and fatality to pedestrians and other vulnerable road users. A bull bar may increase the damage to the attached vehicle if involved in frontal crashes at anything more than a moderate speed, it also increases the damage to other vehicles involved in a frontal crash.

A bull bar may change the designed impact absorption of a vehicle's front structure, which is intended to crumple in a collision to minimise forces imposed on the vehicle's occupants. A bull bar may also affect the operation of air bag systems.

Bull bars should only be fitted to vehicles that are typically used in rural or off-road areas.

Safer bull bars

A newer style of bull bar such as the nudge bar, and those made of advanced polymers, are typically smaller and use lighter materials.

Bull bars that comply with clause 3.2 of Australian Standard 4876.1-2002 have been tested to confirm they provide a higher level of pedestrian safety than a traditional bull bar.

Bull bar requirements

If a bull bar is to be fitted to a vehicle the following requirements, consistent with the Standards for Registration, must be complied with in order for it to be considered an approved modification.

The bull bar must meet the design requirements of sections 1, 2 and 3.1 of Australian Standard AS 4876.1-2002 Motor vehicle frontal protection systems. Note that the Australian Standard covers typical vehicle frontal protection systems including bumper replacements.

A bull bar that complies with the Australian Standard generally follows the shape of the vehicle to which it is fitted and does not have forward facing protrusions or sharp edges. Examples of acceptable and unacceptable bull bars are shown in Figures 1 through 8.

- The bull bar manufacturer or importer must ensure that the bull bar is designed and fitted so that the safety systems of the vehicle are not adversely affected. It must be firmly and securely mounted and supported and must not constitute a danger to other road users. The bull bar must be mounted using the attachment points provided by the vehicle manufacturer.
- The bull bar must be designed and mounted to avoid misaligning loads that may prevent the vehicle structure and airbag system from functioning effectively in a crash.
- The bull bar must not obstruct the forward vision of the driver. It must also not project further beyond the front of the vehicle than is necessary. When looking across the top of the bull bar the requirements of VSI 29 *Drivers Field of View Requirements* must be met.
  Refer to **Figure 1 – Forward View of the Road** and **Figure 5 – Offset**.

- The bull bar and any fittings, hooks or attachments must not have any sharp edges, corners or protrusions, nor should it extend unduly beyond the side profile of the vehicle.
- Where the bull bar mounts to the vehicle, the attachment points should be set apart from any airbag sensors that may be present on the front structure of the vehicle. Refer to manufacturers' recommendations where available.
- The bull bar, together with its mountings and any winch or other equipment and fittings, must be taken into account for vehicle dimensions.
  Refer to **Figure 2 – Vehicle Width** and **Figure 3 – Corners and Edges**.
- All exposed sections of the bull bar and fittings must be radiused and deburred.
- The bull bar forward and side members should be designed to minimise the risk of injury to any person who may come into contact with the bull bar.
  Refer to **Figure 4 – End Shape**.
- The bull bar must not slope forward away from the vehicle beyond the allowed offset.
- If the bull bar is offset forward from its point of connection, the offset does not exceed 75mm or 9 degrees. The forward offset is measured between the front face of the topmost horizontal member and the most forward point of either the bull bar's supporting member (which can be the bumper or the horizontal channel where the bull bar has replaced the bumper), or a horizontal member whose base is not more than 100mm above the supporting member. (This horizontal member is frequently used to support additional lights and is often called the "the spot light tube".
  Refer to **Figure 5 – Offset**.
- The bull bar or fittings must not obstruct or affect the performance or visibility of head lamps, parking lamps, turn signal lamps or other mandatory lamps. Where a lamp has been obscured, an auxiliary set of ADR compliant lamps may be fitted to the bull bar.
  Refer to **Figure 6 – Lights**.
- The vehicle number plate must not be obscured by the bull bar. The number plate must be no more than 1.3m above the ground when the vehicle is on a level surface and must be visible from 20 metres within the shaded arc 'A'.
  Refer to **Figure 7 – Number Plate**.
- The front axle rating must not be exceeded when the vehicle is loaded at GVM.
- Fittings such as driving lamps, LED light bars, fishing rod holders or any brackets must be fitted rearward of the front face of the bull bar. Brackets, fittings attached to the brackets and other components that protrude above the top of the bull bar must have no exposed sharp edges. Any equipment fitted to a bracket may only protrude forward of the bull bar by the minimal amount necessary and must not have any sharp edges or be considered an unsafe projection.
  Refer to **Figure 8 – Brackets**.

Australian Design Rule (ADR) compliance

A vehicle fitted with a bull bar must continue to comply with all ADRs applicable to it at the time of manufacture. Vehicles fitted with an airbag or manufactured to comply with frontal crash test requirements in the ADRs, can only be fitted with a bull bar which:

- has been certified by the vehicle manufacturer as suitable for that vehicle;
- was designed by the bull bar manufacturer for the model of that vehicle; or
- has been demonstrated by the bull bar manufacturer to not adversely affect the vehicle's compliance with front crash test requirements or interfere with any critical airbag calibration or deployment timing as the case may be.

ADR 69 Full Frontal Occupant Protection applies to all new model passenger cars manufactured on or after 1 July 1995. ADR 69 applies to all new model off-road passenger cars and light commercial vehicles up to 2.7 tonnes GVM manufactured on or after 1 January 1998.

ADR 73 Offset Frontal Impact Occupant Protection applies to all new model passenger cars not exceeding 2.5 tonnes GVM, manufactured on or after 1 January 2000.

Note

Advanced vehicle safety technologies
Many vehicles are now being equipped with advanced vehicle safety technologies that offer potentially life-saving crash avoidance assistance to the driver. These technologies, such as Auto Emergency Braking, Adaptive Cruise Control and Lane Support Systems, rely on an array of sensors and cameras. Care should be taken so that a bull bar does not interfere with the operation of these sensors and safety systems.

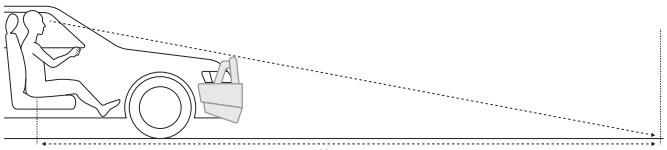
For further information

Further information is available on the VicRoads website: **vicroads.vic.gov.au** or by calling VicRoads on **13 11 71** (TTY **13 36 77**, Speak and Listen **1300 555 727**).

Figure 1: Forward View of the Road

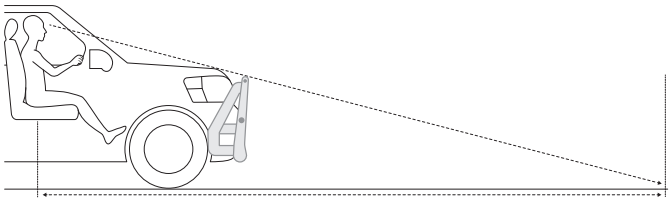
Forward view of the road

Acceptable
Drivers view unobstructed



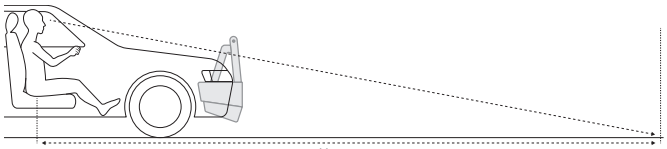
Forward view of the road

Acceptable
Drivers view unobstructed



Forward view of the road

Unacceptable
Drivers view obstructed



Forward view of the road

Unacceptable
Drivers view obstructed

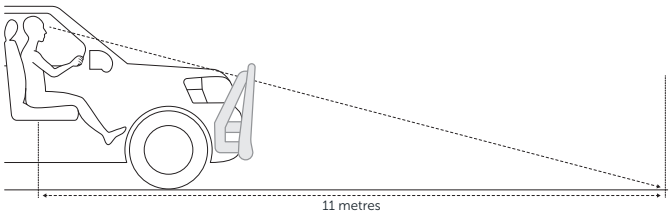
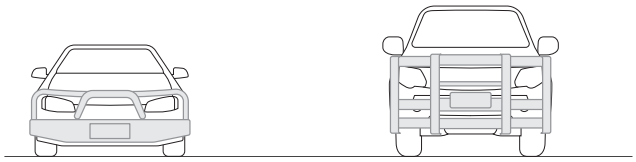


Figure 2: Vehicle Width

Vehicle width

Acceptable
Within overall width of vehicle including mirrors



Vehicle width

Unacceptable
Exceeds overall width of vehicle including mirrors

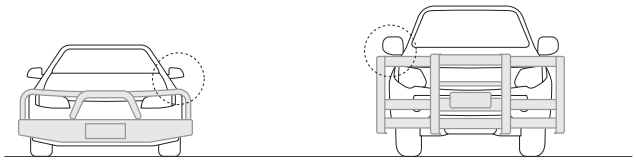
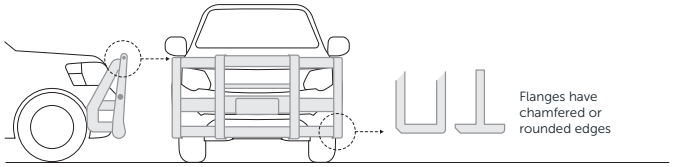


Figure 3: Corners and Edges

Corners and edges

Acceptable
Rounded frame ends; rounded corners and edges



Corners and edges

Unacceptable
Square or angled frame members; sharp corners or edges

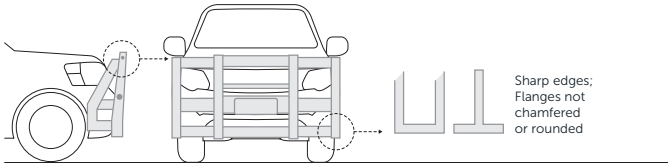
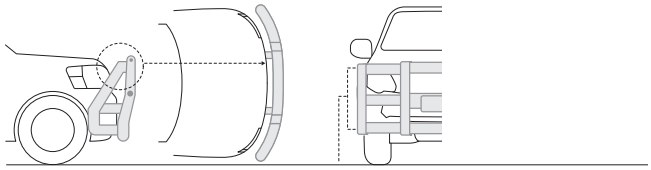


Figure 4: End Shape

End shape

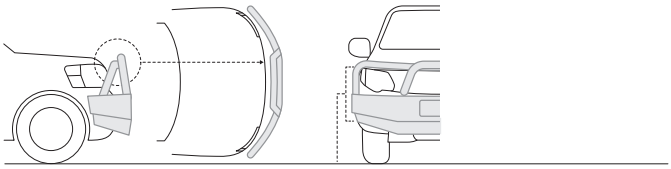
Acceptable
Frame generally follows vehicle shape;
bumper bar wrapped around side of vehicle



Closed frame ends

End shape

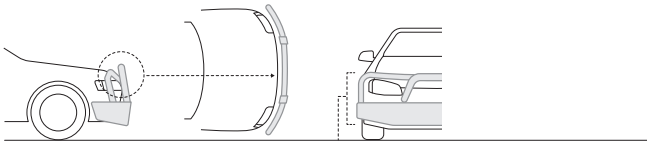
Acceptable
Frame generally follows vehicle shape;
bumper bar wrapped around side of vehicle



Closed frame ends

End shape

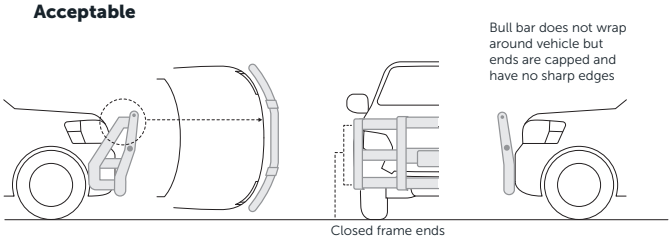
Acceptable
Frame generally follows vehicle shape;
bumper bar wrapped around side of vehicle



Closed frame ends

End shape

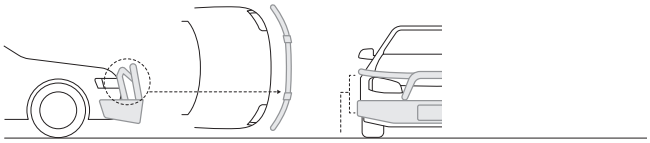
Acceptable



Closed frame ends

End shape

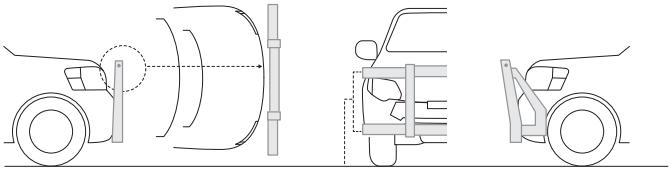
Unacceptable
Space between car and bumper bar excessive



Open frame ends

End shape

Unacceptable
Frame does not generally follow vehicle shape

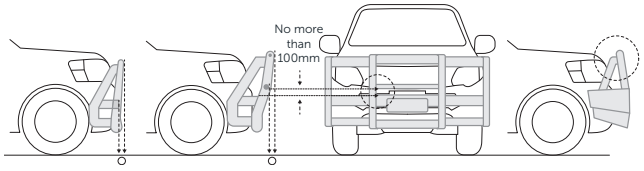


Open/sharp frame ends

Figure 5: Offset

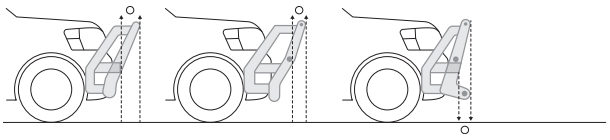
Offset

Acceptable
Offset 'O' does not exceed 75mm (approx. 9°)



Offset

Unacceptable
Offset 'O' exceeds 75mm (greater than 9°)



Offset

Unacceptable
Offset 'O' exceeds 75mm (greater than 9°)

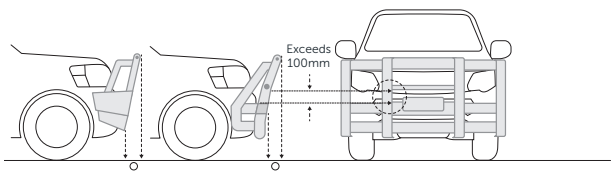
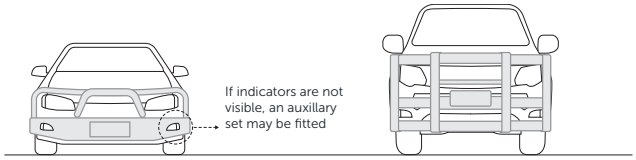


Figure 6: Lights

Lights

Acceptable
All of the vehicle's mandatory front lights are visible



Lights

Unacceptable
Any of the vehicle's mandatory front lights, including indicators, are obscured (no auxiliary added)

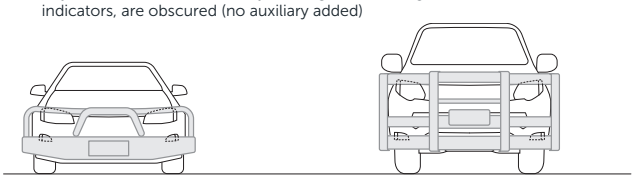
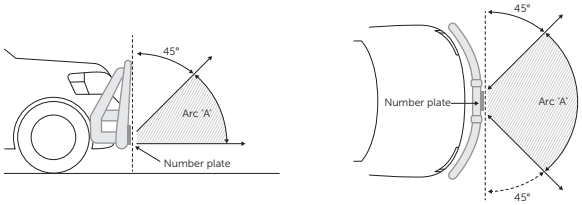


Figure 7: Number Plate

Number plate

Acceptable
Number plate fully visible from 20 metres within shaded arc 'A'



Lights

Unacceptable
Number plate not fully visible from 20 metres at all points within arc 'A'

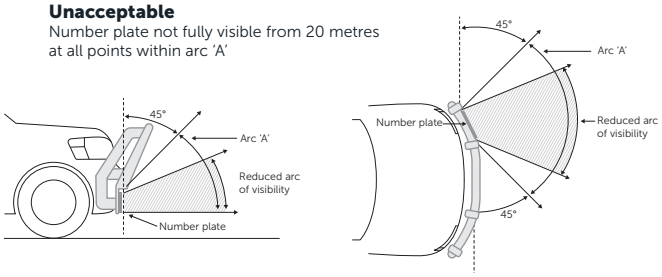
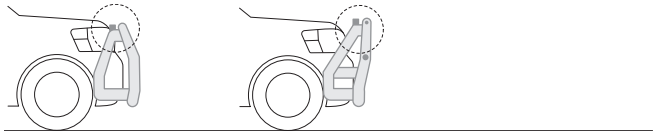


Figure 8: Brackets

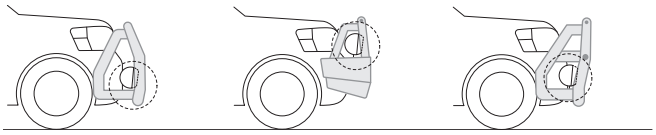
Brackets

Acceptable
Unexposed bracket/s



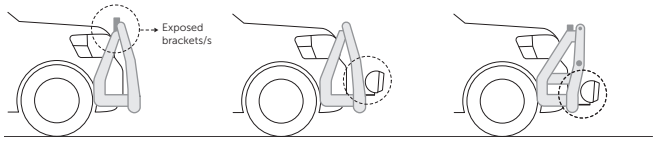
Brackets

Acceptable
Brackets that do not project beyond front face of VFPS



Brackets

Unacceptable
Brackets projecting forward of VFPS



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