DESIGN REQUIREMENTS FOR TRAILERS BRAKES UP TO 4.5 TONNES '*ATM*'

Every trailer over 0.75 Tonne GTM must be equipped with an efficient '*Service Brake System'* which, with the exception of trailers equipped with an *'Over-run Braking System'*, must be designed so that the braking force can be progressively increased and decreased by means of the '*Control Signal'* from the towing vehicle.

For trailers up 2 tonnes GTM, an efficient braking system is considered to have brakes operating on the wheels of at least one axle. Over-run brakes may only be used on trailers that do not exceed 2 tonnes GTM.

In the case of trailers with a '*Gross Trailer Mass'* of greater than 2 tonne, the '*Brake System'* must operate on all wheels.

The '*Brake System'* on trailers with a '*Gross Trailer Mass'* up to 2 tonnes may be actuated for both '*Service Brake System'* and '*Secondary Brake System'* by the over-run of the trailer.

Every trailer having a '*Gross Trailer Mass'* over 2 tonnes must be equipped with an efficient '*Emergency Brake Sys-tem'* which will cause immediate automatic application of its '*Brakes'* in the event of the trailer accidentally becoming disconnected from the drawing vehicle. '*Brakes'* so ap-plied must remain applied for at least 15 min -utes.

Trailer ATM (kg)	Chain Size Classifi-cation (kg) AS4177.4-204	Chain min Proof Load (kN/t) (Strength)	D Shackle Size Classifi-cation AS2741-2002	D shackle Working Load Limit (WLL in kg) (Strength)
1 – 1000	1000	4.9 / 0.49	6mm,	500, 750
1001 –	1600	7.9 / 0.8	10mm	1000
1601 – 2500	2500	12.3 / 1.25	11mm	1500
2501 – 3500	3500	17.2 / 1.75	13mm	2000

Table 1 – Safety Chain & D Shackle Matrix (Guide)

Tare

Unladen weight of trailer.

Aggregate Trailer Mass (ATM)

The total mass of the laden trailer when carrying the maximum load recommend-ed by the manufacturer. This includes any mass imposed upon the drawing vehicle when the combination vehicle is resting on the horizontal supporting plane.

Gross Trailer Mass (GTM)

The mass transmitted to the ground by the axle or axles of the trailer when cou-pled to a drawing vehicle and carrying its' maximum load approximately uni-formly distributed over the load bearing area.

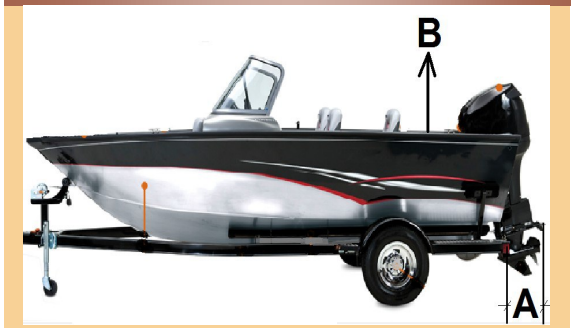
FAQ

Towing & Loading Guide Recreational Vessels

PREPARED BY WATER POLICE AS A GUIDE ONLY

Queensland Police Service Sep 2015

Full and Comprehensive details can be located on the Department Of Transport and Main Roads Web site or by visiting any TMR office.



Rear Overhang Boat Trailers

With reference to distance **"A"** depicted in the diagram.
A vessel on a trailer with motor attached is classed as the indivisible load on the trailer. If your vessel, Including the outboard motor or out-board leg extends more than 1200 Millimetres past the last point of the trailer you must affix a brightly coloured red or red/ yellow or yellow flag of at least 450 millimetres square to the last point of the load.

Tying Down Your Load

All vessels carried on a trailer are required to be adequately secured to the trailer whilst travelling on a roadway.
REQUIRMENT
A winch cable, strap or wire rope affixed from the winch post of the trailer to the bow of the vessel.
A safety chain of good quality is to be attached to the vessel and fixed to the winch post separate to the winch.

The rear of the vessel is to be secured to the trailer by means of an appropriate fastening device over the stern area of the vessel or from a designated tie down affixed to the vessels stern, to the trailer.
The preferred fastening device, is an appropriately load rated ratchet type strap. Strap ratings are normally marked on the sales packaging.
A rope of suitable load rating can be used but has a much lesser load rating than the preferred strap.
As a rule of thumb, for standard type rope, the load rating is normally the Diameter of the rope squared i.e. 10mm rope will have a load rating of 100kg.
This does not apply to all types of rope.

Rear Tie Down "B"

The strap used to secure the rear of the vessel to the trailer must meet or exceed a load capacity of 20% of the total mass of the load in the direction of **"B"**
Example for B. If the weight of your vessel (the load) is 1000kg then the strap must have a load rating of 200kg or above.

Cover or Secure Your Load

The vessel is the load on your trailer. The load also includes all items attached to or carried within the vessel. All items that are not permanently fixed to the vessel must be secured in a way that prevents them from being ejected by road movement or wind effects. For Example, Fishing rods lying on the floor must be physically attached to the vessel. An esky sitting on the floor must be secured to prevent movement. Life Jackets must be stowed in a fashion that prevents them from being ejected. To Comply you can remove the objects and stow them in the tow vehicle or attach them by a physical means (strap / tie down) to the vessel. If there are a number of items in the vessel it is recommended that the load be covered by either a cargo net or vessel cover.

"D" Shackles and Safety Chains

Transport and Main Roads requires that "D" Shackles, used to connect a trailer safety chain(s) to the towing vehicle, MUST have strength that is compatible with the safety chain (fit for purpose).

THIS CAN BE ENSURED IN TWO WAYS

1. Use of "D" Shackles that comply with Australian Standards (See matrix back page) and having the appropriate makings in one way. (TMR) recommends this.

2. Select a "D" shackle of REPUTED brand (ie: A tow bar manufacturer) so the part has its BRAND NAME / MODEL permanently marked on it.

Stainless Steel "D" shackles and padlocks are NOT to be used.

Trailers ATM over 2 Tonne must be fitted with safety chains that are marked in accordance with the relevant Australian Standard and (or cables as applicable) complying with the following:
Trailers that do not exceed 2.5 tonnes ATM must have at least one safety chain complying with Australian Standard AS 4177.4-1994 or Australian Standard AS 4177.4-2004 '
Trailers over 2.5 tonnes and not exceed 3.5 tonnes ATM must have two safety chains of designation of 3500 kg complying with Australian Standard AS 4177.4-1994 or Australian Standard AS 4177.42004