

# Advice to Livestock Carriers

## Incomplete or inaccurate S10 modification plates

The Department of Transport and Main Roads (TMR) wrote to you in September 2015 regarding modification plates for S10 Concessional Livestock Loading – Vehicle Rating certification. Livestock carriers were advised that the modification plates may not have been completed correctly prior to them being attached to their vehicles.

TMR is now providing further advice to assist approved persons (APs) when completing modification plates under the S10 Concessional Livestock Loading – Vehicle Rating requirements. This advice includes responses to Frequently Asked Questions (FAQs), further examples of modification plates for a variety of vehicle configurations and a list of abbreviations in use within the S10 code. This information is being sent to livestock carriers to assist them in determining if the modification plates on their vehicles meet the S10 requirements.

### FAQs

#### FAQ-1. Does an AP need to obtain a weighbridge certificate at time of assessing a vehicle?

**Response:** *The AP needs unladen/tare mass data from a reliable source. Sourcing it from a weighbridge certificate, obtained as close to the time of certification as practicable, is one method. Vehicle manufacturer's documented specification of tare mass may be another source, provided it can be verified that the vehicle is not modified in any way that affects its original tare mass.*

#### FAQ-2. If a weighbridge certificate is obtained, how is the combined weight of fuel, water etc. removed to obtain the correct tare mass?

**Response:** *In the case of prime-movers and rigid trucks, this is easily resolved. Fuel tanks can be filled to their nominal capacity before weighing on the weighbridge. Weights obtained this way may be used directly as **unladen** weights in S10 calculations.*

*For trailers also the same procedure could be followed. In addition, trailer's tare mass can be estimated by subtracting the weight of the total quantity of fuel and/or water in the tanks from the measured unladen weight. For this, it is necessary to know the nominal capacity of the fuel/water tank(s). Fuel and water density mentioned in S10 code should be used.*

#### FAQ-3. If the truck manufacturer rates the single steer axle at more than 7000 kg, why am I restricted to putting 7000 kg on the mod plate?

**Response:** *It is the requirement in S10 code that single steer axle load is not to exceed 7000 kg. Hence, APs are required to show on mod plate the lesser of (a) the single steer axle rating and (b) 7000 kg limit set by S10 code.*

#### FAQ-4. If I am not sure what an abbreviation means in the Code of Practice, where do I go for assistance?

**Response:** *See attached complete list of the abbreviations used in the S10 code. If there are still any doubts, contact can be made by phone on (07) 3114 5844 or by email at [vehiclestandards@tmr.qld.gov.au](mailto:vehiclestandards@tmr.qld.gov.au)*

**FAQ-5.** If I need help completing the paperwork/mod plate for S10, can I ring or email someone for assistance?

**Response:** Yes, you can contact your nearest Approved Person-Engineer if you require a professional engineering service to check and verify your calculations. If you have any questions regarding paperwork, administration of S10 code or mod plate in general, you can contact AP Administrator by email at [AP@tmr.qld.gov.au](mailto:AP@tmr.qld.gov.au). If you have any technical queries about the S10 code, contact can be made by phone on (07) 3114 5844 or by email at [vehiclestandards@tmr.qld.gov.au](mailto:vehiclestandards@tmr.qld.gov.au)

**FAQ-6.** Is it true that the information required to be shown on S10 mod plate against “mod codes” is indicative only and may not be usable for roadside enforcement?

**Response:** This is not true. The information shown against “mod codes” can and will be used for roadside enforcement, particularly the rating information for all axles/axle-groups. Such information may also be used to investigate if S10 certification is done correctly.

**FAQ-7.** What is GTM and how is it calculated?

**Response:** GTM stands for Gross Trailer Mass. It is a defined term in the ADR system.

**Gross Trailer Mass** is defined as the mass transmitted to the ground by the axle or axles of the trailer when coupled to a drawing vehicle and carrying its maximum load approximately uniformly distributed over the load bearing area, and at which compliance with the appropriate Australian Design Rules has been or can be established.

In other words, GTM is the load on axle-group when a trailer is uniformly loaded to its ATM. GTM is specified by the trailer manufacturer. However, specifying GTM, unlike ATM, is optional. When the GTM specification for a trailer is not available, it can be calculated by subtracting from the trailer’s ATM, the load on its tow coupling when the trailer is uniformly loaded to its ATM. In determining the required load carrying capacity of the trailer axle/ axle-group, it is safer to require that the trailer axle/ axle-group be capable of supporting its ATM.

**FAQ-8.** What is the ATM and how is it calculated?

**Response:** The ATM is the total mass of the laden trailer when carrying the maximum load **recommended by the manufacturer**. This includes any mass imposed upon the drawing vehicle when the combination vehicle is resting on the horizontal supporting plane.

As explained above, GTM is the load on trailer axle/ axle-group when the trailer is uniformly loaded to its ATM.

**FAQ-9.** How is the axle or axle-group rating calculated?

**Response:** The axle or axle-group rating is specified by the vehicle manufacturer to indicate that the load on axle or axle-group should not exceed that rating. Hence the rating information shown on S10 plate must be sourced from the vehicle manufacturer’s specifications. This rating is not calculated by the S10 Approved Person. If the axle or axle-group load exceeds the rating, it may result in overloading & failure of components; it may also result in poor & inadequate braking, giving rise to safety concerns.

**FAQ-10.** What if the vehicle combination is found to exceed the manufacturers’ specifications?

**Response:** If the vehicle combination exceeds the manufacturer’s rating, it may result in overloading & failure of components; it may also result in poor & inadequate braking, giving rise to safety concerns. This becomes a safety issue and compliance action may be taken. Overloading may also void insurance cover and warranty claims.

## Modification Plate S10

### Prime Mover

Modification Plate			
		<b>Accreditation Number</b>	Approved Persons MA number
<b>Date:</b>	DD/MM/YYYY	<b>Cert. No.</b>	Mod Cert number
<b>Modification By:</b>	The name of the person/business that carried out the modification		
<b>Mod Codes:</b>	Note-1		
<b>VIN/Chassis No:</b>	To be taken from the actual vehicle/trailer		
<b>Tyre Sizes</b>	Note-2		
<b>Mod Seating Capacity</b>	N/A		
<b>Mod GVM</b>	Note-3	<b>Mod GCM</b>	Note-4
<b>Mod GTM</b>	N/A	<b>Mod ATM</b>	N/A

*It is acceptable to show all the ratings information in tonnes or kg, provided all the information is consistently in tonnes or kg.*

#### Note-1:

Show tare mass, front axle rating and rear axle rating in tonnes.

Tare mass is as measured on a certified weigh bridge.

Front and rear axle ratings are as specified by the vehicle manufacturer.

If front axle rating is more than 7000 kg, the mod plate should only show 7000 kg. If front axle rating is less than 7000 kg, then show the smaller amount.

Example- **S10 - T11.2 F6.9 R21.5**

#### Note-2:

Show sizes of the front and rear tyres fitted.

Example- **F 295/80R22.5 R11R22.5**

#### Note-3:

Show modified GVM sourced from S1 certification. If GVM is not modified, show original GVM with prefix "OE".

Example- Mod GVM **26.5** or Mod GVM **OE25.8**

#### Note-4:

Show modified GCM sourced from S1 certification. If GCM is not modified, show original GCM with prefix "OE".

Example- Mod GCM **106** or Mod GCM **OE90**

## Modification Plate S10

### Rigid Truck

Modification Plate			
		<b>Accreditation Number</b>	Approved Persons MA number
<b>Date:</b>	DD/MM/YYYY	<b>Cert. No.</b>	Mod Cert number
<b>Modification By:</b>	The name of the person/business that carried out the modification		
<b>Mod Codes:</b>	Note-1		
<b>VIN/Chassis No:</b>	To be taken from the actual vehicle/trailer		
<b>Tyre Sizes</b>	Note-2		
<b>Mod Seating Capacity</b>	N/A		
<b>Mod GVM</b>	Note-3	<b>Mod GCM</b>	Note-4
<b>Mod GTM</b>	N/A	<b>Mod ATM</b>	N/A

*It is acceptable to show all the ratings information in tonnes or kg, provided all the information is consistently in tonnes or kg.*

#### Note-1:

Show tare mass, front axle rating and rear axle rating in tonnes.

Tare mass is as measured on a certified weigh bridge.

Front and rear axle ratings are as specified by the vehicle manufacturer.

If front axle rating is more than 7000 kg, the mod plate should only show 7000 kg. If front axle rating is less than 7000 kg, then show the smaller amount.

Example- **T11.2 F6.9 R21.5**

\*Regulation mass limit on twin-steer axle group is 10,000 kg without Road Friendly Suspension and 11,000 kg with Road Friendly Suspension.

#### Note-2:

Show sizes of the front and rear tyres fitted.

Example- **F 295/80R22.5 R11R22.5**

#### Note-3:

Show modified GVM sourced from S1 certification. If GVM is not modified, show original GVM with prefix "OE".

Example- Mod GVM **26.5** or Mod GVM **OE25.8**

#### Note-4:

Show modified GCM sourced from S1 certification. If GCM is not modified, show original GCM with prefix "OE". Example- Mod GCM **106** or Mod GCM **OE90**

## Modification Plate S10

### Semi Trailer

Modification Plate			
		<b>Accreditation Number</b>	Approved Persons MA number
<b>Date:</b>	DD/MM/YYYY	<b>Cert. No.</b>	Mod Cert number
<b>Modification By:</b>	The name of the person/business that carried out the modification		
<b>Mod Codes:</b>	Note-1		
<b>VIN/Chassis No:</b>	To be taken from the actual vehicle/trailer		
<b>Tyre Sizes</b>	Note-2		
<b>Mod Seating Capacity</b>	N/A		
<b>Mod GVM</b>	N/A	<b>Mod GCM</b>	N/A
<b>Mod GTM</b>	Note-3	<b>Mod ATM</b>	Note-4

*It is acceptable to show all the ratings information in tonnes or kg, provided all the information is consistently in tonnes or kg.*

#### Note-1:

Tare mass is as measured on a certified weigh bridge.

Axle ratings are as specified by the vehicle manufacturer. This is NOT the difference between ATM and King Pin Load or 15t.

King Pin Load is as calculated in S10 analysis. This is NOT the King Pin Rating.

Example- **T11.2 R21.5 KP12.3**

#### Note-2:

Show size of tyres fitted.

Example- **R 295/80R22.5**

#### Note-3:

Show modified GTM sourced from S7 certification. If GTM is not modified, show original GTM with prefix "OE". If GTM information is not available, leave this space blank.

Example- Mod GTM **26.5** or Mod GTM **OE25.8**

#### Note-4:

Show modified ATM sourced from S7 certification. If ATM is not modified, show original ATM with prefix "OE". Example- Mod ATM **45** or Mod ATM **OE40**

## Modification Plate S10

### Dog Trailer

Modification Plate			
		<b>Accreditation Number</b>	Approved Persons MA number
<b>Date:</b>	DD/MM/YYYY	<b>Cert. No.</b>	
<b>Modification By:</b>	The name of the person/business that carried out the modification		
<b>Mod Codes:</b>	Note-1		
<b>VIN/Chassis No:</b>	To be taken from the actual vehicle/trailer		
<b>Tyre Sizes</b>	Note-2		
<b>Mod Seating Capacity</b>	N/A		
<b>Mod GVM</b>	N/A	<b>Mod GCM</b>	N/A
<b>Mod GTM</b>	Note-3	<b>Mod ATM</b>	Note-4

*It is acceptable to show all the ratings information in tonnes or kg, provided all the information is consistently in tonnes or kg.*

#### Note-1:

Tare mass is as measured on a certified weigh bridge.

Axle ratings are as specified by the vehicle manufacturer.

Example- **T11.2 F 21.5 R21.5**

#### Note-2:

Show sizes of the front and rear tyres fitted.

Example- **F 295/80R22.5 R 295/80R22.5**

#### Note-3:

Show modified GTM sourced from S7 certification. If GTM is not modified, show original GTM with prefix "OE". If GTM information is not available, leave this space blank.

Example- Mod GTM **F26.5 R26.5** or Mod GTM **FOE25.8 ROE25.8**

#### Note-4:

Show modified ATM sourced from S7 certification. If ATM is not modified, show original ATM with prefix "OE". Example- Mod ATM **45** or Mod ATM **OE40**

## Modification Plate S10

### Tandem axle converter dolly

Modification Plate			
		<b>Accreditation Number</b>	Approved Persons MA number
<b>Date:</b>	DD/MM/YYYY	<b>Cert. No.</b>	Mod Cert number
<b>Modification By:</b>	The name of the person/business that carried out the modification		
<b>Mod Codes:</b>	Note-1		
<b>VIN/Chassis No:</b>	To be taken from the actual vehicle/trailer		
<b>Tyre Sizes</b>	Note-2		
<b>Mod Seating Capacity</b>	N/A		
<b>Mod GVM</b>	N/A	<b>Mod GCM</b>	N/A
<b>Mod GTM</b>	Note-3	<b>Mod ATM</b>	Note-4

*It is acceptable to show all the ratings information in tonnes or kg, provided all the information is consistently in tonnes or kg.*

#### Note-1:

Tare mass is as measured on a certified weigh bridge.

Axle ratings are as specified by the vehicle manufacturer.

Example- **T11.2 R21.5**

#### Note-2:

Show size tyres fitted.

Example- **R 295/80R22.5**

#### Note-3:

Show modified GTM sourced from S7 certification. If GTM is not modified, show original GTM with prefix "OE". If GTM information is not available, leave this space blank.

Example- Mod GTM **26.5** or Mod GTM **OE25.8**

#### Note-4:

Show modified ATM sourced from S7 certification. If ATM is not modified, show original ATM with prefix "OE".

Example- Mod ATM **45** or Mod ATM **OE40**

<b>S10 ABBREVIATIONS</b>	
Alt	Rear axle load (on lead trailer) due to Kingpin load from second trailer of B-double
Dcfw	Distance between fifth-wheel turntable centre and rear overhang reference line
Dfw	Distance between kingpin centre line and rear overhang reference line (for B-Double lead trailer)
Dfw	Dolly axle load due to fuel + water
Dli	Dolly axle load due to livestock that is, 15t from the semitrailer kingpin. This assumes dolly fifth-wheel turntable is at the centreline of its axle group.
Drw	Distance between fifth-wheel turntable centre and rear overhang reference line (for B-Double lead trailer)
Dt	Dolly axle load due to tare mass
Dun	Dolly axle load due to unladen mass that is, Dt + Dfw
F	Front Axle Rating (the lesser of manufacturer's rating or 7000 kg maximum load)
Ffw	Front axle load due to fuel + water
Fli	Front axle load due to livestock
Frad	Distance between front axle group centre line and rear overhang reference line (prime-mover, truck and dog trailer)
Ft	Front axle load due to tare mass
Fun	Front axle load due to unladen mass that is, Ft + Ffw
Kfw	Kingpin load due to fuel + water
Kli	Kingpin load due to livestock
KP	Kingpin Load
KPit	Kingpin load (on lead trailer) due to Kingpin load from second trailer of B-double
Krad	Distance between kingpin and rear overhang reference line (semitrailer)
Kt	Kingpin load due to tare mass
Kun	Kingpin load due to unladen mass that is, Kt + Kfw
PFWF	Principal Fuel + Water (loading) Factor
PLF	Principal livestock loading factor. This is the sum of the products of individual loading area and its distance from rear overhang reference line
R	Rear Axle Rating
Rfw	Rear axle load due to fuel + water
Rli	Rear axle load due to livestock
Rt	Rear axle load due to tare mass
Run	Rear axle load due to unladen mass that is, Rt + Rfw
T	<b>Tare Mass</b>
TFWM	Total Fuel + Water Mass
TLA	Total livestock loading area. This is sum of the deck areas
TLM	Total livestock mass. This is to be computed using (TLA X 840/n) where n is number of decks