Measurement adjustment

Measurement adjustment is a nationally agreed process that**only** applies when an authorised officer measures or weighs a heavy vehicle for compliance and enforcement purposes

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Applying a measurement adjustment

The application of a measurement adjustment recognises that a dimension or mass assessment outcome may vary from time to time, due to:

- the weighing and measuring equipment used
- the inspection site characteristics
- measuring methods
- the conditions under which the measurements are made.

Applying an agreed adjustment to account for possible variations allows the measurement to be based on the highest degree of accuracy achievable at any time and provides fairness to the outcome of the measurement process. The measurement adjustment process also provides fairness to industry and legal certainty in considering enforcement action.

Measurement adjustment is **not** a dimension or mass tolerance for industry to use.

Parties in the Chain of Responsibility (CoR) have a duty to ensure that, so far as is reasonably practicable, vehicles are loaded and operated within their **permissible** limits.

Dimension measurement adjustment (DMA)

How is dimension measurement adjustment applied?

DMA relies on two key concepts:

- **measured dimension (MD)** - the reading obtained from the measuring device
- **assessed dimension (AD)** - the measured dimension minus the relevant DMA.

The assessed dimension is determined by deducting the DMA from the measured dimension.

MD – DMA = AD

Any enforcement action taken will be based on the assessed dimension. The assessed dimension is compared with the permissible dimension limit and risk category breakpoints to determine the severity of any offence that may have occurred.

Table 1 – Dimension measurement adjustments

Dimension measured	Categories, measurements and applications	
Height	Category 1 - 30mm All height measurements where: • the site is an even surface; • the highest point can be identified by line of sight; and • the highest point is accessible with a height stick.	Category 2 - 100mm All height measurements that do not meet Category 1
Width	Category 1 - 20mm All width measurements	
Length	Category 1 - 100mm Vehicles that are not eligible to operate over 26 metres in length	Category 2 - 300mm Vehicles that are eligible to operate over 26 metres in length

Mass measurement adjustment (MMA)

How is mass measurement adjustment (MMA) applied?

MMA relies on two key concepts:

- **measured mass (MM)** - the reading obtained from the weighing equipment
- **assessed mass (AM)** - the measured mass minus the relevant MMA.

The assessed mass is determined by deducting the MMA from the measured mass.

MM - MMA = AM

The relevant MMA for each axle (or axle group) mass and gross mass is calculated based on:

- axle group configuration, including the number of tyres
- the inspection site category
- the number of vehicle movements required to weigh the vehicle.

Any enforcement action taken will be based on the assessed mass. The assessed mass is compared with the permissible mass limit and risk category breakpoints to determine the severity of any offence that may have occurred.

Table 2 - Mass measurement adjustments

Axle group	Site category		
	1	2	3
Single axle with single tyres	0.3t	0.3t	0.4t
Twin-steer or tandem axle with single tyres or a combination of single and dual tyres	0.3t	0.4t	0.5t
Single axle with dual tyres	0.4t	0.4t	0.5t
Tandem axle with dual tyres	0.5t	0.5t	1.0t
Tri-axle, quad axle or grouped axle (a grouped axle configuration refers to more than four axles in a group fitted to a trailer that is not a dog trailer).	0.5t	0.5t	1.0t
Gross mass	0.25t	0.5t	1.0t

The mass adjustment only applies where mass is physically weighed on site. Where mass is not weighed but is calculated by other means, the mass adjustment does not apply.

Oversize overmass (OSOM) mass measurement adjustment

The mass measurement adjustment is calculated differently for OSOM compared to other heavy vehicles.

How is mass measurement adjustment (MMA) applied?

OSOM MMA relies on two key concepts:

- **measured mass (MM)** - the reading obtained from the weighing equipment
- **assessed mass (AM)** - the measured mass minus the relevant MMA.

The assessed mass is determined by deducting the MMA from the measured mass.

MM - MMA = AM

The relevant MMA for each axle (or axle group or grouped axle) mass and gross mass is calculated based on:

- the inspection site category
- the type of axle configuration
- the vehicle unit
- weighing method used (fully or partial blocked).

The MMA is only applied **once** to an axle, axle group, grouped axle or gross mass. The number of OSOM vehicle movements required to weigh the complete OSOM vehicle **does not** multiply the MMA applied. Where a percentage is used to calculate an MMA, the MMA is to be rounded up to the next half tonne.

Table 3 - OSOM mass measurement adjustments - fully blocked

The fully blocked weighing method is where all axles that form part of the OSOM vehicle/combination are weighed at the same height.

Axle group	Site category		
	1	2	3
Single steer axle	0.3t	0.3t	0.4t

Axle group	Site category		
	1	2	3
Twin steer axle group	0.3t	0.4t	0.5t
Drive axle group (tandem or tri-axle)	0.5t	1.0t	1.0t
Dolly axle group (single or tandem)	0.5t	1.0t	1.0t
Trailer axle group/grouped axle	3.0% of measured mass	3.5% of measured mass	3.5% of measured mass
Any number of axles or wheels	1.5% of measured mass	1.5% of measured mass	1.5% of measured mass
Gross mass			

Table 4 - OSOM mass measurement adjustments - partial blocked

The partial blocked weighing method is where all axles that form part of an OSOM vehicle unit (prime mover or a dolly or a trailer) being weighed are weighed at the same height.

Axle group	Site category		
	1	2	3
Single steer axle	0.3t	0.3t	0.4t
Twin steer axle group	0.3t	0.4t	0.5t
Drive axle group (tandem or tri-axle)	1.3t	1.3t	1.3t
Dolly axle group (single or tandem)	1.3t	1.3t	1.3t
Trailer axle group/grouped axle	3.5% of measured mass	4.5% of measured mass	4.5% of measured mass
Any number of axles or wheels	3.5% of measured mass	3.5% of measured mass	3.5% of measured mass
Gross mass			

Inspection site categories

Inspection sites used for weighing heavy vehicles are classified into three categories based on their physical characteristics.

- **Category 1 site** - inspection sites that include a weighbridge facility will generally meet the physical characteristics required to be classified as a Category 1 site.
- **Category 2 site** - purpose-built roadside inspection sites will generally meet the physical characteristics required to be classified as a Category 1 or 2 site.
- **Category 3 site** - mobile intercept sites generally meet the physical characteristics required to be classified as a Category 3 site.

Additional information is available in the Austroads reportAP-R555-17 Development of National Mass Assessment Procedures for Oversize Overmass Vehicles. To read the report, you will need to register for an account with Austroads.