

Information for PBS Assessors and Certifiers | IPAC-5

Audience: Assessors

X-Y Rule check on PBS Design Approvals

This IPAC provides advice to PBS Assessors about X-Y Rule requirements on PBS Design Approvals (DA).

Background

To ensure consistency of DA applications and to ensure compliance with the PBS Standards, Assessors are required to record X-Y Rule compliance evidence in a consistent manner as outlined below.

The requirements outlined in this document will start from **Monday 24 May 2021**.

X-Y Rule

The X-Y Rule, also known as the 'clear spacing' rule, is defined in Schedule 6, Section 10 of *Heavy Vehicle (Mass, Dimension and Loading) National Regulation (MDL)*. It applies to B-double combinations with 2 tri-axle groups wherein the axle groups must be positioned so that the following formulae are complied with:

$$X - Y \leq 1$$

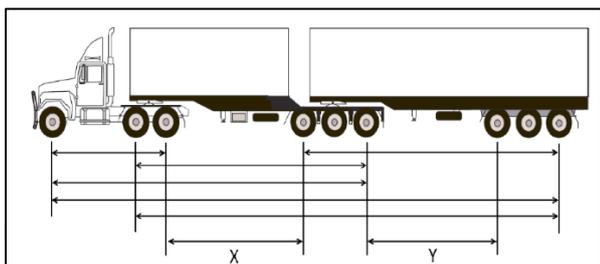
$$Y - X \leq 1.3$$

Where—

X is the distance in metres between the centre-lines of the last axle of the prime mover and the first axle of the lead trailer.

Y is the distance in metres between the centre-lines of the last axle of the lead trailer and the first axle of the rear trailer.

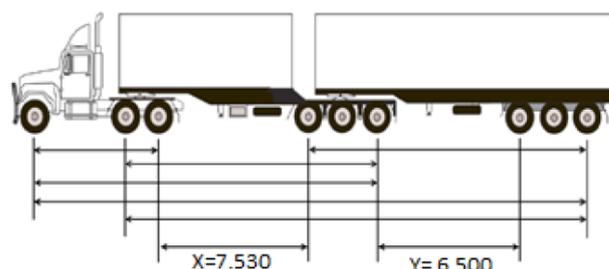
An example of the X and Y values is shown in the following figure:



X-Y Rule rounding

The MDL states that the **X** and **Y** values are **measured in metres and are rounded to the nearest tenth of a metre**.

Consider the following example:



The calculated X value is 7530mm, reported value should be **X = 7.5m**.

The calculated Y value is 6500mm, reported value should be **Y = 6.5m**.

Tier 1 compliance check

Under the PBS Standards and Vehicle Assessment Rules, existing clear spacing rules apply when checking Tier 1 bridge compliance. B-Double (3-3) combinations that do not comply with the X-Y Rule will require a Tier 2/3 bridge assessment.

Design Approval requirements

DA applications for B-Double (3-3) combinations must include the dimensions for the X and Y values, along with the result of the formulae compliance checks on the bridge (axle-spacing) drawing. If the vehicle is non-compliant the following statement must be included:

This vehicle combination does not comply with the X-Y Rule and will require a Tier 2 or 3 bridge assessment.

For DAs with dimensional ranges, the minimum possible X and Y values are to be used.

As-built combinations

All as-built B-Doubles (3-3) will be checked for compliance with the X-Y Rule. If the vehicle complies with the Tier 1 formulae and the X-Y Rule is satisfied, then the PBS Vehicle Approval (VA) will be issued at Tier 1.

Otherwise, if the vehicle complies with the Tier 1 formulae but the X-Y Rule is not satisfied the PBS VA will be issued with Tier 2/3 bridge assessment requirement.

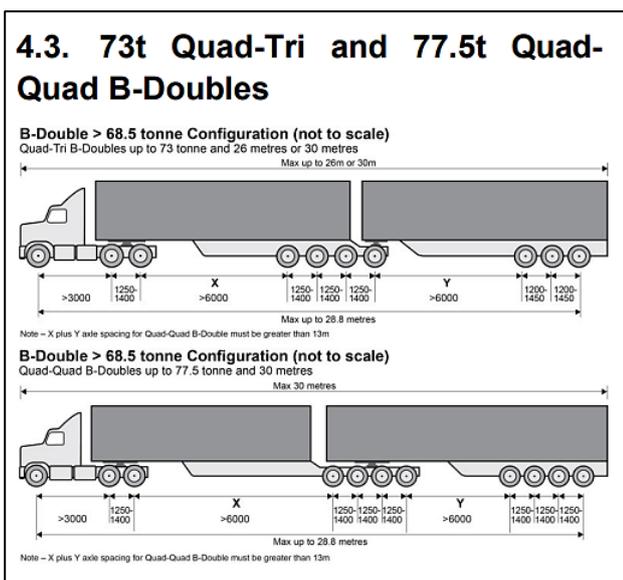
Other combinations with 2 tri-axle groups

It is encouraged that all vehicles with 2 consecutive tri-axle groups include X-Y Rule compliance information as some jurisdictions apply the requirements to all vehicles of this type. While this is not a PBS requirement, in order to avoid delays when applying for an access permit, it is strongly recommended that this information be included for all vehicles with 2 tri-axle groups.

Inclusion of X and Y values for other combination types

Some jurisdictions are using modified versions of the Clear Space Rule. For example, [Victoria’s High Productivity Freight Vehicle \(HPFV\) policy](#) stipulates minimum requirement for the X and Y values but, unlike the MDL, does not require the values to be rounded to the nearest tenth of a metre or meet a ratio requirement.

An extract from Victoria’s HPFV policy:



For DA applications where the vehicle is likely to operate in Victoria or in other states with similar requirements, it is acceptable to include the specific modified X and Y values. Note that this is in addition to the standard MDL X and Y values.

IPACS: Revision history	
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