NHVR
National Heavy Vehicle Regulator

1 April 2025

Information Sheet | PBS Payload Management Procedure (PMP)

Audience: PBS Operators

This Information Sheet outlines the details of a Payload Management Procedure (PMP). It includes when and why a PMP is required and a guide to completing your PMP.

You can use a PMP template which can be filled out and adjusted to suit your needs. Note that there are two templates provided – for vehicles carrying containers and tankers.

Background

Providing a PMP is required if the following operating condition appears on your PBS Design Approval (DA):

"The operator will need to demonstrate how the final payload heights are managed prior to the issue of the Vehicle Approval. This information must be provided to the NHVR, and the results of the method used must be measurable and verifiable."

This condition requires a completed PMP to be supplied to the NHVR before your PBS Vehicle Approval can be issued.

Drivers must keep a copy of the PMP in their possession and be able to produce it if requested by compliance officers.

PMP Overview

Certain PBS vehicle combinations require a restriction on the maximum payload height to ensure safe operation and compliance within the PBS requirements for rollover stability.

A PMP is required for vehicles where easy roadside verification of the payload height is impractical. This is typically A-Doubles carrying shipping containers but can also be applicable to other vehicle and load types.

A correctly completed PMP document shows comprehension and compliance with maximum payload height restrictions.

Click here to access the Payload Management Procedure Information Video.

Why is a PMP Required?

The main reason for a PMP is to ensure PBS-approved vehicles operate safely within their rollover stability threshold. Rollover stability is a key safety measure as crashes that involve heavy vehicle rollover are strongly associated with severe injury and fatalities (Winkler et al, 2000).

Load Types

The rollover stability of a heavy vehicle is linked to its payload Centre of Gravity height (CoG). For vehicles carrying containers, the PBS Design Approval will typically outline two load types - Uniform Density and Mixed Freight.

Uniform Density payloads have the mass equally distributed throughout the volume of the load space. Examples of uniform density products include, but are not limited to - grain, gravel sand, boxed ceramic tiles and canned drinks.

Mixed Freight is a general type of payload with heavier items placed on the bottom of the load and lighter items on top. For example, a mix of boxes of different weights, with heavier boxes placed on the bottom while lighter boxes are placed on the top.

Uniform Density load type assumes the CoG height is the centroid of the load or 50% of the height of the load while Mixed Freight assumes the CoG height is at approximately 40% of the height of the load. For this reason, Uniform Density payloads will typically have a lower payload height limit compared with Mixed Freight.

Maximum payload heights can depend on the vehicle's mass e.g., at GML mass the maximum payload heights would be higher compared to HML.

An example of payload height limits on a PBS Design Approval for a vehicle carrying containers is shown below. Payload height limits are measured from the ground to the top of the payload inside the container.

PBS DA Payload height limits (m):

	Uniform Density Payload	Mixed Freight Payload
TCM ≤ GML	3.700	4.300
TCM ≤ CML	3.650	4.200
TCM ≤ HML	3.600	4.100

TCM - Total Combination Mass

When a PMP is NOT Required

A PMP is not required when the maximum payload height specified in the PBS Design Approval is equal to or less than 150mm of the vehicle's overall height. This is to accommodate for the top rail at the door opening and

for a workable space inside the container. This means that for a 4.3m high vehicle with payload heights at 4150mm or above, a PMP is not required.

PMP Requirements

The PMP must demonstrate how payload heights will be achieved and maintained and include the following:

- Key identifiers – your company name and the PBS design application number.
- A summary of payload height limits – as shown on the PBS Design Approval.
- Instructions on how the payload heights will be achieved and maintained – including outlining dimensions such as twistlock height, container floor thickness and how the internal load height was calculated.
- A statement that only personnel trained in the procedure may be involved in loading and operation of the PBS vehicle.
- Be signed and dated by an authorised person.

If you are unable to verify the payload height, such loads must not be transported on payload height restricted vehicles.

Chain of Responsibility (CoR)

A correctly completed PMP is evidence of an operator's awareness of payload height restrictions and acts as a risk management and communication tool through the chain of responsibility. Further details regarding managing the risks of transporting freight in shipping containers can be found here. For more information on Chain of Responsibility please visit the CoR page on our website.

Revision history	
First Published	April 2022

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