Performance Based Standards (PBS)

# Design Approval Application Form

Part A

*Heavy Vehicle National Law* Section 22

*Heavy Vehicle (General) National Regulation* Section 4

V#app number#

*Note: Only PBS Assessors may submit this form*

**FOR OFFICE USE ONLY**

|  |  |
| --- | --- |
| **Assessor** | #assessor# |
| **Applicant** | #applicant# |
| **Vehicle** | #vehicle# |
| **Pre-Advised Design** | #preadvised# |
| **Received** | #date received# |
| **Processed** | #date processed# |

# APPLICATION AMENDMENT / VARIATION / CORRECTION SUMMARY

|  |  |  |
| --- | --- | --- |
| N | Brief Description | Date |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |

NOTES:

* All amendments/variations/corrections from the previous version should be marked on the form with yellow highlight for clarity throughout the application.
* Specify any specific route or bridge access requirements inAppendix 1**.**
* This application must be supported by detailed technical drawings which fully specify all dimensions necessary to define the vehicles, provided in Design Approval Application Form Part B.
* The drawings must include individual axle masses for GML, CML and HML/ QML (as applicable) for each proposed access level.
* Also attach to Part B a bridge assessment showing all extreme axle spacings, the relevant masses used in the analysis, and the relevant pass/fail for the proposed access levels.

# CONTACT DETAILS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Applicant | | | | |
| Company name |  | ABN |  | |
| Physical address |  | | | |
| Postal address |  | | | |
| Contact person |  | | | |
| Email |  | | | |
| Phone |  | Mobile |  | |
| Certifier |  | Applicant type | | Choose an item. |
| Assessor | | | | |
| Company name |  | ABN |  | |
| Physical address |  | | | |
| Postal address |  | | | |
| Assessor |  | Accreditation N |  | |
| Email |  | | | |
| Phone |  | Mobile |  | |
| Assessor job number |  | | | |

APPLICATION SUMMARY

|  |  |
| --- | --- |
| Application Type | **Yes/No** |
| New | No |
| Variation | No |
| Amendment | No |

Refer to the link for information on determining if this application is considered an Amendment or Variation to an existing Design Approval - [Design Approval Modification Process Information Sheet](https://www.nhvr.gov.au/files/202008-1165-pbs-design-approval-modification-process.pdf).

*Note: Pre-Advised designs are not permitted to be modified in such a way that the combination(s) would not continue to qualify for the Pre-Advised design approval process.*

# VEHICLE DESCRIPTION

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Vehicle Combination 1 | | | | | | | |
| Vehicle name | |  | | | | | |
| Load / Body description | |  | | | | | |
| Overall length x width x height (mm) | |  | | | | | |
| Access information | | Level \_ | | | Level \_ | | |
|  | | GML | CML/ QML | HML/ QML | GML | CML/ QML | HML/ QML |
| Mass limits | |  |  |  |  |  |  |
| Bridge | | Tier \_ | | | Tier \_ | | |
| Notes: |  | | | | | | |
| Vehicle Combination 2 | | | | | | | |
| Vehicle name | |  | | | | | |
| Load / Body description | |  | | | | | |
| Overall length x width x height (mm) | |  | | | | | |
| Access information | | Level \_ | | | Level \_ | | |
|  | | GML | CML/ QML | HML/ QML | GML | CML/ QML | HML/ QML |
| Mass limits | |  |  |  |  |  |  |
| Bridge | | Tier \_ | | | Tier \_ | | |
| Notes: |  | | | | | | |
| Vehicle Combination 3 | | | | | | | |
| Vehicle name | |  | | | | | |
| Load / Body description | |  | | | | | |
| Overall length x width x height (mm) | |  | | | | | |
| Access information | | Level \_ | | | Level \_ | | |
|  | | GML | CML/ QML | HML/ QML | GML | CML/ QML | HML/ QML |
| Mass limits | |  |  |  |  |  |  |
| Bridge | | Tier \_ | | | Tier \_ | | |
| Notes: |  | | | | | | |

# EXEMPTIONS

PBS vehicles are required to comply with the applicable provisions of the Australian Design Rules (ADRs), *Heavy Vehicle (Mass, Dimension and Loading) National Regulation*, and *Heavy Vehicle (Vehicle Standards) National Regulation*. Exemption must be requested from one or more of these if there is a conflict with the vehicle’s design. Check the items below for which exemption/s will need to be sought:

|  |  |
| --- | --- |
| Australian Design Rules - Exemptions | **Yes/No** |
| Relevant clause in the latest compilation of ADR43 | |
| Rule 43, Clause 6.1.1 (Length – Motor vehicles) | No |
| Rule 43, Clause 6.2.1 (Length – Trailers) | No |
| Rule 43, Clause 6.1.2 (Rear overhang – Motor vehicles) | No |
| Rule 43, Clause 6.2.3 (Rear overhang – Trailers) | No |
| Rule 43, Clause 6.1.3 (Height – Motor vehicles) | No |
| Rule 43, Clause 6.2.4 (Height – Trailers) | No |
| Rule 43, Clause 6.1.5 (Width – Motor vehicles) | No |
| Rule 43, Clause 6.2.6 (Width – Trailers) | No |
| Rule 43, Clause 6.2.2 (Drawbar length – Trailers) | No |
| Rule 43, Clause 9.4 (Retractable axles) | No |
| Rule 62, Clause 5.2 (Tow coupling overhang) | No |
| Rule 63, Clause 5.1 (Tow coupling location) | No |

|  |  |
| --- | --- |
| Heavy Vehicle (Mass, Dimension and Loading) National Regulation - Authorisations | Yes/No |
| Schedule 6, Section 3 (Length – General) | No |
| Schedule 6, Section 4 (Length – Trailers) | No |
| Schedule 6, Section 5 (Length – Rear overhang) | No |
| Schedule 6, Section 6 (Length – Trailer drawbars) | No |
| Schedule 6, Section 7 (Width) | No |
| Schedule 6, Section 8 (Height) | No |

|  |  |
| --- | --- |
| Heavy Vehicle (Vehicle Standards) National Regulation - Exemptions | **Yes/No** |
| Schedule 3, Section 29 (Attachment of couplings and drawbar eyes on road trains) | No |
| Schedule 3, Section 31 (Tow coupling overhang on road trains) | No |

# ADDITIONAL EXEMPTIONS

The following table lists the additional exemptions that cannot be granted under the PBS Scheme listed in Section 28 of the *Heavy Vehicle (General) National Regulation*. Check the items below for which exemption/s will need to be sought:

|  |  |
| --- | --- |
| Australian Design Rules - Exemptions | **Yes/No** |
| Relevant clause in the latest compilation of ADR43 | |
| Rule 43, Clause 7 (Axle configuration) | No |
| Rule 43, Clause 9 (Retractable axles) | No |

|  |  |
| --- | --- |
| Heavy Vehicle (Vehicle Standards) National Regulation - Exemptions | **Yes/No** |
| Schedule 2, Clause 32(3) (Axle configuration – heavy trailer) | No |

If required additional exemptions are not listed above, please provide details below.

|  |
| --- |
| Additional Exemptions Details |
|  |

# PRE-ADVISED SPECIFICATIONS

1. Overall combination length may exceed the maximum length prescribed by the PBS Network Classification Guidelines for the specified PBS level. In this case, a special operating condition will be included on the DA and VA stating that access to the road network at the specified PBS level will be subject to Road Manager consent.
2. Dangerous Goods combinations are permitted under the PA process.
3. Combinations requesting Level 1 approval are limited to 50.5t.
4. Applications requesting an approval under section 8 or 9 of the Heavy Vehicle (General) National Regulation or Vehicle Standards other than those stated in Section 28 of the *Heavy Vehicle (General) National Regulation* are excluded from the PA process.
5. Single axle steer - complying steer axle mass limit 6.5t; otherwise limited to 6t.
6. Single axle steer for a-double up to 7.1t for eligible vehicles in line with Schedule 1, Part 2 of the *Heavy Vehicle (Mass, Dimension and Loading) National Regulation.*
7. Twin-steer - if fitted with load sharing suspension mass limit 11t; otherwise limited to 10t.
8. Combinations fitted with single-drive axle, GCM is limited to 35t at Level 1 and 45t for Level 2-4.
9. Combinations fitted with tri-drive axle groups (all axles are driven) must have all driving axles distribute tractive forces such that the maximum difference in tractive force between any two driving axles is not greater than 10% of the total tractive force delivered by the whole drive axle group.
10. Combinations fitted with tridem drive axle groups (two axles are driven and one lazy axle) must not exceed the maximum GCM in accordance with the PBS Pavement Horizontal Loading requirements – 70t for Level 1, 85t for Level 2, 110t for Level 3 and 150t for Level 4.
11. Except for truck and dog combinations, optional trailer steerable axles are permitted. Note that quad-axle groups must have a steerable axle.
12. Optional retractable axles are permitted.

# PA TRUCK AND 3 OR 4-AXLE DOG

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Pre-Advised Design? | | | | | No |
| Truck | Trailer Front | | Trailer Rear | | |
| Single steer | Single axle | | Tandem-axle group | | |
| Twin steer | Tandem-axle group | |  | | |
| Single-axle drive group |  | |  | | |
| Tandem axle drive group |  | |  | | |
| Tri-axle drive group |  | |  | | |
|  | Level 1 | | Level 2 | | |
| Maximum height (m) | 4.3 | | 4.3 | | |
| Maximum width (m) | 2.5 | | 2.5 | | |
| Maximum mass (t) | 50.5 | | 67.5 | | |
|  | GML | CML | | HML | |
| Single steer axle (t) | 6.5 | 6.5 | | 6.5 | |
| Twin steer axle (t) | 11.0 | 11.0 | | 11.0 | |
| Single axle (t) | 9.0 | 9.0 | | 9.0 | |
| Tandem-axle (t) | 16.5 | 17.0 | | 17.0 | |
| Tri-axle (t) | 20.0 | 21.0 | | 22.5 | |
| Permitted Exemptions - ADR | | | | | |
| Rule 43, Clause 6.2.2 (Drawbar length – Trailers) | | | | | |
| Rule 43, Clause 9.4 (Retractable axles) | | | | | |
| Permitted Exemptions - HV(MDL)NR | | | | | |
| Schedule 6, Section 3 (Length – General) | | | | | |
| Schedule 6, Section 6 (Length – Trailer drawbars) | | | | | |

# PA TRUCK AND 5 OR 6-AXLE DOG

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Pre-Advised Design? | | | | | No |
| Truck | Trailer Front | | Trailer Rear | | |
| Single steer | Tandem-axle group | | Tri-axle group | | |
| Twin steer | Tri-axle group | |  | | |
| Single-axle drive group |  | |  | | |
| Tandem axle drive group |  | |  | | |
| Tri-axle drive group |  | |  | | |
|  | Level 2 | | | | |
| Maximum height (m) | 4.3 | | | | |
| Maximum width (m) | 2.5 | | | | |
| Maximum mass (t) | 78.5 | | | | |
|  | GML | CML | | HML | |
| Single steer axle (t) | 6.5 | 6.5 | | 6.5 | |
| Twin steer axle (t) | 11.0 | 11.0 | | 11.0 | |
| Single-axle (t) | 9.0 | 9.0 | | 9.0 | |
| Tandem-axle (t) | 16.5 | 17.0 | | 17.0 | |
| Tri-axle (t) | 20.0 | 21.0 | | 22.5 | |
| Permitted Exemptions - ADR | | | | | |
| Rule 43, Clause 6.2.2 (Drawbar length – Trailers) | | | | | |
| Rule 43, Clause 9.4 (Retractable axles) | | | | | |
| Permitted Exemptions - HV(MDL)NR | | | | | |
| Schedule 6, Section 3 (Length – General) | | | | | |
| Schedule 6, Section 6 (Length – Trailer drawbars) | | | | | |

# PA PRIME MOVER AND SEMITRAILER

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Pre-Advised Design? | | | | | No |
| Prime Mover | Semitrailer | | | | |
| Single steer | Single axle | | | | |
| Twin steer | Tandem-axle group | | | | |
| Single-axle drive group | Tri-axle group | | | | |
| Tandem axle drive group | Quad-axle group | | | | |
| Tri-axle drive group |  | | | | |
|  | Level 1 | | Level 2 | | |
| Maximum height (m) | 4.6 | | 4.6 | | |
| Maximum width (m) | 2.5 | | 2.50 | | |
| Maximum mass (t) | 50.5 | | 60.5 | | |
|  | GML | CML | | HML | |
| Single steer axle (t) | 6.5 | 6.5 | | 6.5 | |
| Twin steer axle (t) | 11.0 | 11.0 | | 11.0 | |
| Single axle (t) | 9.0 | 9.0 | | 9.0 | |
| Tandem-axle (t) | 16.5 | 17.0 | | 17.0 | |
| Tri-axle (t) | 20.0 | 21.0 | | 22.5 | |
|  | GML | | QML | | |
| Quad-axle (t) | 20.0 | | 27.0 | | |
| Permitted Exemptions - ADR | | | | | |
| Rule 43, Clause 6.2.1 (Length – Trailers) | | | | | |
| Rule 43, Clause 6.2.3 (Rear overhang – Trailers) | | | | | |
| Rule 43, Clause 6.2.4 (Height – Trailers) | | | | | |
| Rule 43, Clause 9.4 (Retractable axles) | | | | | |
| Permitted Exemptions - HV(MDL)NR | | | | | |
| Schedule 6, Section 3 (Length – General) | | | | | |
| Schedule 6, Section 4 (Length – Trailers) | | | | | |
| Schedule 6, Section 5 (Length – Rear overhang) | | | | | |
| Schedule 6, Section 8 (Height) | | | | | |

# PA B-DOUBLE

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Pre-Advised Design? | | | | | No |
| Prime Mover | Semitrailer | | | | |
| Single steer | Single axle | | | | |
| Twin steer | Tandem-axle group | | | | |
| Single-axle drive group | Tri-axle group | | | | |
| Tandem axle drive group | Quad-axle group | | | | |
| Tri-axle drive group |  | | | | |
|  | Level 1 | Level 2 | | Level 3 | |
| Maximum height (m) | 4.6 | 4.6 | | 4.6 | |
| Maximum width (m) | 2.5 | 2.5 | | 2.5 | |
| Maximum mass (t) | 50.5 | 85.0 | | 87.5 | |
|  | GML | CML | | HML | |
| Single steer axle (t) | 6.5 | 6.5 | | 6.5 | |
| Twin steer axle (t) | 11.0 | 11.0 | | 11.0 | |
| Single axle (t) | 9.0 | 9.0 | | 9.0 | |
| Tandem-axle (t) | 16.5 | 17.0 | | 17.0 | |
| Tri-axle (t) | 20.0 | 21.0 | | 22.5 | |
|  | GML | | QML | | |
| Quad-axle (t) | 20.0 | | 27.0 | | |
| Permitted Exemptions - ADR | | | | | |
| Rule 43, Clause 6.2.1 (Length – Trailers) | | | | | |
| Rule 43, Clause 6.2.3 (Rear overhang – Trailers) | | | | | |
| Rule 43, Clause 6.2.4 (Height – Trailers) | | | | | |
| Rule 43, Clause 9.4 (Retractable axles) | | | | | |
| Permitted Exemptions - HV(MDL)NR | | | | | |
| Schedule 6, Section 3 (Length – General) | | | | | |
| Schedule 6, Section 4 (Length – Trailers) | | | | | |
| Schedule 6, Section 5 (Length – Rear overhang) | | | | | |
| Schedule 6, Section 8 (Height) | | | | | |

# PA A-DOUBLE

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pre-Advised Design? | | | | | | | | No |
| Prime Mover | | | Semitrailer | | | Dolly | | |
| Steer | Drive | |
| Single | Single-axle | | Single axle | | | Tandem-axle group | | |
| Twin | Tandem axle | | Tandem-axle group | | | Tri-axle group | | |
|  | Tri-axle | | Tri-axle group | | |  | | |
|  | | Level 1 | | | Level 2 | | Level 3 | |
| Maximum height (m) | | 4.6 | | | 4.6 | | 4.6 | |
| Maximum width (m) | | 2.5 | | | 2.5 | | 2.5 | |
| Maximum mass (t) | | 50.5 | | | 85.0 | | 101.0 | |
|  | | GML | | | CML | | HML | |
| Single steer axle (t) | | 7.1 | | | 7.1 | | 7.1 | |
| Twin steer axle (t) | | 11.0 | | | 11.0 | | 11.0 | |
| Single axle (t) | | 9.0 | | | 9.0 | | 9.0 | |
| Tandem-axle (t) | | 16.5 | | | 17.0 | | 17.0 | |
| Tri-axle (t) | | 20.0 | | | 21.0 | | 22.5 | |
| Permitted Exemptions - ADR | | | | | | | | |
| Rule 43, Clause 6.2.1 (Length – Trailers) | | | | Rule 43, Clause 6.2.4 (Height – Trailers) | | | | |
| Rule 43, Clause 6.2.2 (Drawbar length – Trailers) | | | | Rule 43, Clause 9.4 (Retractable axles) | | | | |
| Rule 43, Clause 6.2.3 (Rear overhang – Trailers) | | | | Rule 63, Clause 5.1 (Tow coupling location) | | | | |
| Permitted Exemptions - HV(MDL)NR | | | | | | | | |
| Schedule 6, Section 3 (Length – General) | | | | | | | | |
| Schedule 6, Section 4 (Length – Trailers) | | | | | | | | |
| Schedule 6, Section 5 (Length – Rear overhang) | | | | | | | | |
| Schedule 6, Section 6 (Length – Trailer drawbars) | | | | | | | | |
| Schedule 6, Section 8 (Height) | | | | | | | | |
| Permitted Exemptions - HV(VS)NR | | | | | | | | |
| Schedule 3, Section 29 (Attachment of couplings and drawbar eyes on road trains) | | | | | | | | |
| Schedule 3, Section 31 (Tow coupling overhang on road trains) | | | | | | | | |

# TECHNICAL RESULTS TABLE

Fill the table below by:

* providing the GCM and Access level(s) used for this assessment;
* entering the result of each individual Performance Standard in the table below; and
* indicating the performance level achieved (L1, L2, L3, L4; P for Pass or F for Fail).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Technical Results Table | | | | |
| **Performance Standard** | **Performance results** | | **Performance level**  **(L1 to L4; P for Pass or F for Fail)** | |
| <GCM>t - L<\_> | <GCM>t - L<\_> |
| **Safety Standards** | | | | |
| 1. Startability |  |  |  |  |
| 1. Gradeability: | | | | |
| 1. Maximum grade |  |  |  |  |
| 1. Speed on a 1% grade |  |  |  |  |
| 1. Acceleration capability |  |  |  |  |
| 1. Tracking Ability on a Straight Path |  |  |  |  |
| 1. Low-Speed Swept Path |  |  |  |  |
| 1. Frontal Swing: | | | | |
| 1. Maximum Frontal Swing |  |  |  |  |
| 1. Maximum of Difference |  |  |  |  |
| 1. Difference of Maxima |  |  |  |  |
| 1. Tail Swing |  |  |  |  |
| 1. Steer-Tyre Friction Demand |  |  |  |  |
| 1. Static Rollover Threshold (Worst) |  |  |  |  |
| Static Rollover Threshold of last unit |  |  |  |  |
| 1. Rearward Amplification |  |  |  |  |
| 1. High-Speed Transient Off-tracking |  |  |  |  |
| 1. Yaw Damping Coefficient |  |  |  |  |
| 1. Directional stability under braking |  |  |  |  |
| **Infrastructure Standards** | | | | |
| 1. Pavement Vertical Loading |  |  |  |  |
| 1. Pavement Horizontal Loading |  |  |  |  |
| 1. Tyre Contact Pressure Distribution |  |  |  |  |
| 1. Bridge Loading | Tier/s | Tier/s |  |  |
| Notes: | | | | |

# DATA SOURCES AND ASSESSMENT METHOD

|  |  |
| --- | --- |
| Data Sources | |
| Mass properties |  |
| Dimensions |  |
| Suspension |  |
| Tyres |  |

|  |  |
| --- | --- |
| Assessment Method | |
| Identify the simulation software, simulation models, calculations and test methods used to assess each Performance Standard in accordance with the Standards and Vehicle Assessment Rules*.* | |
| Standards 1 to 3 |  |
| Standards 5, 7 to 14 |  |
| Standards 16 to 19 |  |
| Standard 20 |  |

# DECLARATION

|  |  |
| --- | --- |
| Assessor Declaration\* | |
| I hereby certify that the information required to complete this Application and information provided in this Design Approval Application Parts A and B and all supporting documents are complete and accurate. | |
| Name of Assessor |  |
| Date |  |
| Signature of Assessor |  |

|  |  |
| --- | --- |
| Applicant Declaration\* | |
| I hereby declare that all details provided in this application (Part A and Part B) are true and correct. | |
| Name of Applicant |  |
| Date |  |
| Signature of Applicant |  |

\* Giving false and misleading information is a serious offence (Section 702 of the *Heavy Vehicle National Law*). This applies to assessor and applicant alike. Penalties apply.

The NHVR is collecting your personal information to issue a PBS Design Approval under Chapter 1 of the *Heavy Vehicle National Law* and Section 4 of the *Heavy Vehicle (General) National Regulation*. We are authorised under the National Regulation to collect information we reasonably require to decide this application.

Where relevant, the NHVR may disclose your personal information to third parties, including law enforcement agencies authorised to enforce the *Heavy Vehicle National Law*, and other stakeholders such as road managers and PBS certifiers. Your privacy will be respected and your personal information will be handled and disclosed in accordance with the *Information Privacy Act 2009 (Qld)* and other relevant legislation.

# APPENDIX 1: TECHNICAL APPLICATION PROFILE

* Provide assessed worst case loading scenarios
* Note effects of unladen and partial loading conditions, as well as fluid slosh
* Specify maximum payload heights and payload types
* List operating conditions
* Any other special conditions or requirements

# APPENDIX 2: SENSITIVITY STUDIES AND FIELD TESTS UNDERTAKEN (IF APPLICABLE)