Pre-approvals for Restricted Access Vehicles

**MASS AND DIMENSION REQUIREMENTS FOR CLASS 1 RESTRICTED ACCESS VEHICLES**

The mass and dimension limits in the following tables are based on the following;

* The National Road Transport Commission (NRTC) “Recommended Conditions of Permit Travel” published in 1995 and based on a 1981 NAASRA Report. ( Tables 1 to 6 and Tables 8a and 8b)
* Queensland Overmass Permit Policy (Vehicle Limits Manual) single trip platform tables. (Table 7)
* Victorian All Terrain Crane Policy. (Table 9)
* National Transport Commission (Road Transport Legislation - Oversize and Overmass Vehicles Regulations) Regulations 2006. (Table 10 except SPV projection in front of steering wheel)
* NSW Oversize Notice (Table 10 – SPV projection in front of steering wheel). Note: Other jurisdictions allow similar dimensions under permit or notice.

Notes with regard to pre-approval reference vehicles:

1. All load carrying reference vehicles (LC1 -3) comply with 1995 NRTC requirements implemented by all jurisdictions.

Note: NRTC limits are based on acceptable loading for the following sub MS18 bridge design standards and allows travel over these structures without additional operating conditions such as low speed or centreline travel : NSW – 1927 DMR and 1938 DMR, Victoria - 1926 A and 1936 A, Queensland - A Class, SA - 1910 Pre Highway, WA – A and Tasmania – Crusher train.

1. With the exception of SPV projection in front of steering wheel all reference vehicles (SPV1 to 5, LC1 -3) comply with NRTC or NTC dimension requirements.
2. The SPV1 reference vehicle, pick and carry “Franna type” crane is exempted from NRTC and NTC  “projection in front of steering wheel” requirement in all jurisdictions.
3. The SPV1 and SPV2 reference vehicles comply with the NRTC mass requirements.
4. The SPV3 to 5 reference vehicles (All terrain cranes) do not comply with the NRTC gross mass (bridge loading) requirements, but operate in all jurisdictions under permit arrangements.
5. The platform masses in Table 7 have been assessed by Qld TMR (formerly Main Roads) as imposing infrastructure loading equivalent to the LC3 reference vehicle.

**MASS AND DIMENSION REQUIREMENTS FOR ALL CLASS 1 HEAVY VEHICLES**

**Mass Limits relating to Tyre Width**

**Mass Limits for Single Axles**

The mass on the single axle, fitted with 2, 4 or 8 tyres, of a class 1 heavy vehicle must not be more than the mass limits specified in Table 1.

**TABLE 1 - MASS LIMITS RELATING TO TYRE WIDTH – SINGLE AXLE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Tyre width of narrowest tyre on axle (mm) | | Mass limit (tonnes) | | |
| At least | but less than | 2 tyred axle | 4 tyred axle | 8 tyred axle |
| 190 | 228 | 4.5 | 9.0 | 18 |
| 228 | 254 | 5.0 | 9.5 | 19 |
| 254 | 279 | 6.0 | 10.0 | 20 |
| 279 | 305 | 6.5 | 11.0 | 22 |
| 305 | 330 | 7.0 | 12.0 | 24 |
| 330 | 356 | 7.5 | 13.0 | 26 |
| 356 | 381 | 8.0 | 14.0 | 28 |
| 381 | 406 | 9.0 | 14.0 | 28 |
| 406 | 458 | 10.0 | 14.0 | 28 |
| 458 | 508 | 11.0 | 14.0 | 28 |
| 508 |  | 12.0 | 14.0 | 28 |

**Mass Limits for Single Tyred Tandem and Tri Axle groups**

The mass on axle groups of a class 1 heavy vehicle must be no greater than the mass limits specified in Table 2.

**TABLE 2 – MASS LIMITS FOR SINGLE TYRED TANDEM AND TRI AXLE GROUPS**

|  |  |  |  |
| --- | --- | --- | --- |
| Tyre width of narrowest tyre on axle (mm) | | Mass limit (tonnes) | |
|
| At least | but less than | Tandem axle group with 4 tyres | Tri-axle group with 6 tyres |
| 381 | 406 | 16.5 | 22.0 |
| 406 | 431 | 17.0 | 23.0 |
| 431 | 458 | 17.5 | 24.0 |
| 458 | 482 | 18.0 | 25.0 |
| 482 | 508 | 18.5 | 26.0 |
| 508 |  | 19.0 | 27.0 |

**MASS REQUIREMENTS FOR LOAD CARRYING CLASS 1 HEAVY VEHICLES**

The notice is applicable to a load carrying Class 1 heavy vehicle consisting of a tandem drive prime mover towing:

* A semi trailer; or
* A low loader dolly and semi trailer; or
* A jinker; or
* A low loader dolly and a jinker; or
* A platform trailer fitted with 8 tyres per axle; or
* A low loader dolly and a platform trailer fitted with 8 tyres per axle.)

**Mass Limits – Prime Mover**

The axle/axle group masses of a prime mover must be no greater than the mass limits indicated in Table 3.

**TABLE 3 – PRIME MOVER**

|  |  |  |
| --- | --- | --- |
| Axle group | | Mass limit (tonnes) |
| Single Steer Axle |  | 6 |
| Twinsteer (Non load sharing) |  | 10 |
| Twinsteer (Load sharing) |  | 12 |
| Tandem axle Group -dual tyres | Maximum | 18.5 |
| Tri drive | Torque sharing | 25 |
| Non torque share | 20 |

**Mass Limits – Trailing Groups**

The mass on a trailer’s single axle or axle group must not be greater than the mass limits specified in Table 4 for:

* the single axle, or
* the axle group as described by the number of tyres, minimum ground contact and number and spacing of axles in that axle group.

**TABLE 4 -TRAILING GROUPS – MASS LIMITS**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Minimum axle group ground contact width (m) | Number and spacing of axles in axle group | | | | | | | | | | |
| 1 | 2@1.2 | 2@1.8 | 3@1.2 | Oversize triaxle 3 @ 1.2 > 3.2 overall | 3@1.8 | 4@1.2 | 4@1.6 | 4@1.2, 2.4, 1.2 | 5@1.2 | 5@1.8 |
| 4 tyred axle mass limit (tonnes) | | | | | | | | | | | |
| 2.4 | 9 | 18.5 | 18.5 | 25 | 27 | 27 | 30 | 30 | 35 | 35 | 43 if 3 axles have +ve steering |
| 8 tyred axle mass limit (tonnes) | | | | | | | | | | | |
| 2.4 | 12 | 21 | 21.5 | 25 | 27 | 27 | 30 | 30 | 35 | 35 | See platform tables |
| 2.6 | 12.5 | 21 | 23 | 26 | 28 | 29 | 31.5 | 31.5 | 36 | 36 |  |
| 2.7 | 12.5 | 21 | 24 | 27 | 29 | 31 | 33 | 33 | 37.5 | 37 |  |
| 2.8 | 13.5 | 22 | 25 | 28 | 30 | 33 | 34 | 34 | 39 | 39 |  |
| 2.9 | 13.5 | 23 | 26 | 29 | 31 | 34.5 | 35 | 35 | 40 | 40 |  |
| 3.0 | 15.5 | 24 | 27 | 30 | 32 | 36 | 36 | 36 | 41 | 41 |  |
| 3.1 | 15.5 | 25 | 28 | 31 | 33 | 37.5 | 37.5 | 37.5 | 42 | 42 |  |
| 3.2 | 16.5 | 26 | 29 | 32 | 34 | 39 | 39 | 39 | 43.5 | 43.5 |  |
| 3.3 | 16.5 | 27 | 30 | 33 | 35 | 40 | 40 | 40 | 44.5 | 44.5 |  |
| 3.4 | 16.5 | 27.5 | 30.5 | 34 | 36 | 41 | 41 | 41 | 46 | 46 |  |
| 3.5 | 16.5 | 28 | 31 | 35 | 37 | 42 | 42 | 42 | 47 | 47 |  |
| 3.6 | 17.5 | 28.5 | 31.5 | 36 | 38 | 43 | 43 | 43 | 48 | 48 |  |
| 3.7 | 17.5 | 29 | 32 | 37 | 39 | 44 | 44 | 44 | 49 | 49 |  |
| 3.8 | 18 | 30 | 33 | 38 | 40 | 45 | 45 | 45 | 50 | 50 |  |
| 3.9 | 18 | 30.5 | 33.5 | 39 | 40 | 46 | 46 | 46 | 51 | 51 |  |
| 4.0 | 18 | 31 | 34 | 40 | 40 | 47 | 47 | 47 | 52 | 52 |  |
| 4.1 | 18 | 31 | 34 | 40 | 40 | 48 | 48 | 48 | 53 | 53 |  |
| 4.2 | 18 | 31 | 34 | 40 | 40 | 48 | 49 | 49 | 54 | 54 |  |
| 4.3 | 18 | 31 | 34 | 40 | 40 | 48 | 50 | 50 | 55 | 55 |  |
| 4.4 | 18 | 31 | 34 | 40 | 40 | 48 | 51 | 51 | 56 | 56 |  |
| 4.5 | 18 | 31 | 34 | 40 | 40 | 48 | 52 | 52 | 57 | 57 |  |
| 4.6 | 18 | 31 | 34 | 40 | 40 | 48 | 52.5 | 52.5 | 57.5 | 57.5 |  |

**Mass Limits – Prime Mover Tandem Drive, Single Axle Dolly**

The sum of the masses on a prime mover tandem drive, single axle dolly combination as described by the number of tyres on each dolly axle, minimum dolly ground contact width and overall axle spacing must be no greater than the mass limits specified in Table 5 for the combination.

**TABLE 5 – PRIME MOVER TANDEM DRIVE – SINGLE AXLE DOLLY COMBINATION MASS LIMITS**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Minimum dolly ground contact width (m) | Overall Axle Spacing | | | | | | |
| 2.8 | 3.0 | 3.2 | 3.4 | 3.6 | 3.8 | 4.0 |
| Combination tandem drive - 4 tyred dolly axle mass limit (tonnes) | | | | | | | |
| 2.4 | 25 | 26 | 27 | 28\* | 29\* | 30\* | 30\* |
| Combination tandem drive - 8 tyred dolly axle mass limit (tonnes) | | | | | | | |
| 2.4 | 25 | 26 | 27 | 28 | 29 | 30 | 30 |
| 2.6 | 26 | 27 | 28 | 29 | 30 | 31 | 31 |
| 2.8 | 27 | 28 | 29 | 30 | 31 | 32 | 32 |
| 3.0 | 28 | 29 | 30 | 31 | 32 | 33 | 34 |
| 3.2 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| 3.4 | 30 | 31 | 32 | 33 | 34 | 35 | 36 |
| 3.6 | 31 | 32 | 33 | 34 | 35 | 36 | 36 |
| 3.8 | 31 | 32 | 33 | 34 | 35.5 | 36.5 | 36.5 |
| 4.0 | 31 | 32 | 33 | 34 | 35.5 | 36.5 | 36.5 |
| 4.2 | 31 | 32 | 33 | 34 | 35.5 | 36.5 | 36.5 |

****

**Mass Limits Prime Mover Tandem Drive, Tandem Axle Dolly**

The sum of the masses on a prime mover tandem drive, tandem axle dolly combination as described by the number of tyres on each dolly axle, minimum dolly ground contact width and overall axle spacing must be no greater than the mass limits specified in Table 5 for the combination.

**TABLE 6 - PRIME MOVER TANDEM DRIVE – TANDEM AXLE DOLLY COMBINATION MASS LIMITS**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dolly width | Overall Axle Spacing | | | | | | | | | | | | |
| 3.6 | 3.8 | 4.0 | 4.2 | 4.4 | 4.6 | 4.8 | 5.0 | 5.2 | 5.4 | 5.6 | 5.8 | 6.0 |
| Combination tandem drive - 4 tyred tandem axle dolly mass limit (tonnes) | | | | | | | | | | | | | |
| 2.4 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38\* | 39\* | 39.5\* | 40\* |
| Combination tandem drive - 8 tyred tandem axle dolly mass limit (tonnes) | | | | | | | | | | | | | |
| 2.4 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 39.5 | 40 |
| 2.6 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 40.5 | 41 |
| 2.8 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 41.5 | 42 |
| 3.0 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 42.5 | 43 |
| 3.2 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 43.5 | 44 |
| 3.4 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 43.5 | 45 | 45.5 |
| 3.6 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 46.5 |
| 3.8 | 35.5 | 36.5 | 37 | 38.5 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |
| 4.0 | 35.5 | 37 | 38 | 39 | 40.5 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 |
| 4.2 | 35.5 | 37 | 38 | 39.5 | 41 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 4.4 | 35.5 | 37 | 38 | 39.5 | 41.5 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 |
| 4.6 | 35.5 | 37 | 38 | 39.5 | 41.5 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |



**Mass Limits – Platform Trailers**

The mass on each axle of a platform trailer fitted with 8 tyres per axle must not be greater than the mass limit specified in Table 7 for the platform trailer’s description as defined by the minimum ground contact width, number of axles, and spacing of axles for the platform trailer.

**TABLE 7 – PLATFORM TRAILERS COMBINATION MASS LIMITS**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Minimum Ground Contact Width (m) | Number of axles @ 1.6 m axle spacing | | | | | | | | |
| 5, 6, 7, 8, 9 or 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| Maximum mass per 8 tyred axle (tonnes) | | | | | | | | |
| 3.4 | 11.5 | 10.1 | 9.8 | 9.1 | 8.4 | 7.8 | 7.3 | 6.9 | 6.6 |
| 3.5 | 12.4 | 10.9 | 10.6 | 9.9 | 9.1 | 8.4 | 7.9 | 7.4 | 7.1 |
| 3.6 | 13.3 | 11.6 | 11.3 | 10.6 | 9.8 | 9.0 | 8.5 | 8 | 7.6 |
| 4.0 | 13.3 | 11.6 | 11.3 | 10.6 | 9.8 | 9.0 | 8.5 | 8 | 7.6 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Minimum Ground Contact Width (m) | Number of axles @ 1.8 m axle spacing | | | | | | | | |
| 5, 6, 7, 8, 9 or 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| Maximum mass per 8 tyred axle (tonnes) | | | | | | | | |
| 3.4 | 13 | 11.6 | 10.3 | 9.5 | 8.8 | 8.2 | 7.8 | 7.4 | 7.2 |
| 3.5 | 14 | 12.4 | 11.1 | 10.2 | 9.4 | 8.8 | 8.4 | 8.0 | 7.8 |
| 3.6 | 15 | 13.3 | 11.9 | 10.9 | 10.1 | 9.5 | 9.0 | 8.6 | 8.3 |
| 4.0 | 15 | 13.3 | 11.9 | 10.9 | 10.1 | 9.5 | 9.0 | 8.6 | 8.3 |



**MASS REQUIREMENTS FOR CLASS 1 HEAVY VEHICLES THAT ARE SPECIAL PURPOSE VEHICLES (SPVS) OTHER THAN ALL TERRAIN CRANES**

**Axle and axle group masses**

The mass on a single axle or axle group for a special purpose vehicle, other than an all terrain crane, must not be greater than the mass limits specified in Tables 8a and 8b below.

**Table 8a – SPECIAL PURPOSE (NON LOAD CARRYING) VEHICLES (SPVs)**

|  |  |
| --- | --- |
| Axle Group | Mass Limits (tonnes) |
| Single axle (single tyres) | 12 |
| Single axle (dual tyres) | 12 |
| Twinsteer (Non load sharing) | 10 |
| Twinsteer (Load sharing) | 16 |
| Tandem axle group (single tyres) | 16 |
| Tandem axle group (wide single tyres) | 19 |
| Tandem axle group (dual tyres) 1.2 m spacing | 20+/-G\*(max 28) |
| Tandem axle group (dual tyres) 1.35 m spacing | 23+/-G\*(max 28) |
| Triaxle group (single tyres) | 21 |
| Triaxle group (wide single tyres) | 27 |
| Triaxle group (dual tyres) 1.2 m spacing | 25+/-G\*(max 37) |
| Triaxle group (dual tyres) 1.35 m spacing | 27+/-G\*(max 37) |
| Quadaxle group (dual tyres) | 30+/-G\*(max 40) |
| Trailing dolly | As above |

\*Value of +/-G is defined in following Total mass section.

T**able 8b – TRAILER MOUNTED SPECIAL PURPOSE (NON LOAD CARRYING) VEHICLES**

|  |  |
| --- | --- |
| Axle Group | Mass Limits (tonnes) |
| Single axle (single tyres) | 8 |
| Single axle (dual tyres) | 12 |
| Twinsteer (Non load sharing) | 10 |
| Twinsteer (Load sharing) | 16 |
| Tandem axle group (single tyres) | 16 |
| Tandem axle group (wide single tyres) | 19 |
| Tandem axle group (dual tyres) 1.2 m spacing | 20+/-G\*(max 28) |
| Tandem axle group (dual tyres) 1.35 m spacing | 23+/-G\*(max 28) |
| Triaxle group (single tyres) | 21 |
| Triaxle group (wide single tyres) | 27 |
| Triaxle group (dual tyres) 1.2 m spacing | 25+/-G\*(max 37) |
| Triaxle group (dual tyres) 1.35 m spacing | 27+/-G\*(max 37) |
| Quadaxle group (dual tyres) | 30+/-G(max 40) |

\*Value of +/-G is defined in following Total mass section.

**Total mass**

The total mass of a special purpose vehicle, other than an all terrain crane, must not be greater than the lowest of the following masses:

* The sum of the mass limit allowed for each single axle and axle group on the vehicle; or
* 70t; or
* The mass limit as determined by the following formulae:

Mass in tonnes = 3**L** + 15 **+/- G**;

where:

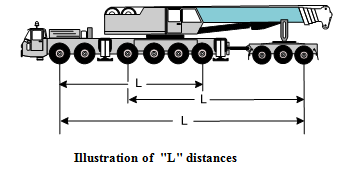
**L** is the extreme axle spacing of all combinations of axle groups; and

**+/-G** is a number of tonnes:

1. To be added at a rate of 1t for each 100mm by which the ground contact width of the heaviest axle group exceeds 2.5m; or
2. To be subtracted at a rate of 1t for each 100mm by which the ground contact width of the heaviest axle group is less than 2.5m.

(see following diagrams)





**MASS AND DIMENSION REQUIREMENTS FOR ALL TERRAIN CRANES**

**“All Terrain Crane”:** means a mobile crane fitted with multiple single axles supported by hydraulic

suspension, typically between three (3) and eight (8) single axles, several of which are steerable axles.

An all terrain crane must comply with the mass and dimension requirements specified in Table 9.

**Table 9 - All Terrain Crane Mass and Dimension Requirements**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Configuration | Minimum Wheelbase (m) | Minimum axle spacing (m) | Minimum Ground contact width (m) | Minimum tyre section width (mm) |
| 2 axle @ 12t (24t) | 2.5 | 2.5 | 2.4 | 525 |
| 3 axle @ 12t (36t) | 4.0 | 1.5 | 2.6 | 525 |
| 4 axle @ 12t (48t) | 5.0 | 1.5 between 1st & 2nd axles & between 3rd & 4th axles | 2.75 | 525 |
| 5 axle @ 10t (50t) | 7.65 | 1.65 | 2.75 | 445 |
| 5 axle @ 12t (60t) | 7.65 | 1.65 | 2.75 | 525 |

**DIMENSION LIMITS**

A class 1 heavy vehicle and any load must comply with the dimension requirements specified in Table 10 below.

**Table 10 – Dimension Limits**

|  |  |  |
| --- | --- | --- |
| **Category of Vehicle** | **Dimension** | **Limit** |
| Any class 1 heavy vehicle | Minimum distance between adjacent axles in an axle group | 1.2m |
| Any class 1 heavy vehicle | Width | 5.5m |
| Any class 1 heavy vehicle | Height | 5.0m |
| Any class 1 heavy vehicle combination | Length | 35m |
| SPV | Length | 14.5m |
| SPV | Rear overhang | Lesser of 4m or 90% of wheelbase |
| Semi trailer | Rear overhang | Lesser of 5.5m or 25% of the overall length of the laden combination |
| SPV | Projection in front of the centre of the steering wheel | 5.5m |

The centre lines of adjacent axles in an axle group on a class 1 heavy vehicle must be at least 1.2m apart.