|  |  |
| --- | --- |
| Vehicle and modifier details | Report no.: |
|  |
| |  |  |  | | --- | --- | --- | | Vehicle make: | Vehicle model: | Month and year of manufacture: | |  |  |  | | VIN (if applicable): | Vehicle chassis no. (if applicable): | Vehicle modifier (company name): | |  |  |  | | |

### VMLS details

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type (i.e., platform, slewing crane): | Make: | | Serial no.: | |
|  |  | |  | |
| Manufacturer’s capacity: | No. of stabilisers: | | Chassis material: | |
|  |  | |  | |
| Reinforcing/sub-frame material: | | | Reinforcing/sub-frame material yield stress: | |
|  | | |  | Mpa |
| Weld strength: | Loader capacity: | | Chassis material yield stress: | |
|  |  | kg |  | Mpa |

### Comments:

|  |
| --- |
|  |

Basis for calculation

|  |  |
| --- | --- |
| **Units** |  |
| **WB** = Wheelbase (mm) | **MVLS** = Mass of vehicle lifting system (kg) |
| **MT** = Mass total of body and payload excluding MVLS (kg) | **MB** = Mass of body only (kg) |
| **MF** = Mass of body and payload of front (kg) | **LF1** = Length forward of load centre of body load to front axle centre line (mm) |
| **MR** = Mass of body and payloadon the rear axle (kg) | **LF2** = Length forward of centre of gravity of vehicle lifting system (mm) |
| **Formulae** |  |
| For body and load [MF1 = MT - MR1] MR1= | For vehicle lifting system [MF2 = MVLS - MR2] MR2 = |

### Load distribution

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Load distribution | Front axles | | Rear axles | | Total | |
| Cab chassis mass kg |  | |  | |  | |
| Equipment, body & payload **MT** kg | MF1 = |  | MR1 = |  | MT = |  |
| Vehicle lifting system **MVLS** kg | MF2 = |  | MR2 = |  | MTGL = |  |
| Total **A** kg |  | |  | |  | |

### Calculations

Load reactions

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Loader stowed: |  | kNm | Critical stresses: |  | | MPa | |
| Loader fully extended (at max. capacity load): |  | kNm | Factor of safety on yield: |  | |  | |
| Section modulus distribution: |  | mm | Location of welded joints\*: |  | | | |
| Max. bending moment: |  | kNm | Stress at welded joints: |  | | MPa | |
|  |  |  | \*description OR distance (mm) | |  | |  |

Vehicle rating

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Load distribution | | Front axles | | | Rear axles | | Total | |
| Manufacturer’s rating **B** kg | |  | | |  | |  | |
| Tyre capacity **C** kg | |  | | |  | |  | |
| Legal load limit **D** kg | |  | | |  | |  | |
| Unladen distribution | | Front axles | | | Rear axles | | Total | |
| Cab chassis mass kg | |  | | |  | | MFT = |  |
| Body kg | |  | | |  | | WB = |  |
| Vehicle loading system kg | | MF2 = |  | | MR2 = |  | MTGL = |  |
| Total kg | |  | | |  | |  | |
| **1.** Total A must not exceed ratings B, C or D. | **2.** Neither the laden nor unladen mass distribution should cause the vehicle to become unstable or unsafe. The front axle mass should not be less than the manufacturer’s front axle tare mass under any loading. | | | | | | | |
|  | | | | | | | | |
| Combined section modulus distribution | | | | x 103mm3 | | | | |

**On-road chassis loadings**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Bending moment distribution: |  | kNm | Critical stress: |  | MPa |
| Bending moment at critical section: |  | kNm | Factor of safety on yield: |  |  |
| Illustrate chassis loadings here: | | | | | |

### Authorisation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Other than modification criteria, if the answer to any relevant question is NO the modification is not acceptable.** | | | | |
| **Comments:** |  | | | |
| Examined by: | | Company (if applicable): | | AVE no.: |
|  | |  | |  |
| Signed: | | Modification certificate no.: | Modification plate no.: | Date: |
|  | |  |  |  |