

## Technical bulletin 4: Heavy vehicle alterations and modifications that may affect the brakes

*This technical bulletin replaces Technical bulletin 4: Modification thresholds for the Heavy Vehicle Brakes Rule and Technical bulletin 16: Engineers' responsibilities for modifications that may affect a heavy vehicle's brakes*

### Heavy vehicle specialist certifier responsibilities

A heavy vehicle brake system can be modified directly, or the vehicle may have a modification carried out on it that indirectly affects the brake system.

All modifications affecting the brake system (direct or indirect) must still ensure the brake system continues to meet the applicable requirements of the Land Transport Rule: Heavy Vehicle Brakes 2006 (HVBR).

All heavy vehicle brake modifications (direct or indirect), except those specifically provided for in the HVBR, must be certified by a heavy vehicle specialist certifier (HVSC) with the brake (HVEK) category. No other category of HVSC can certify heavy vehicle brakes.

**When** a modification (direct or indirect) requires brake certification, the lead HVSC for a project must ensure that brake certification is carried out and that an HVEK LT400 is issued prior to HVSC certification for the finished project. The responsibility for obtaining brake certification cannot be delegated to another certifier or the vehicle owner or any other entity.

### HVEK Brake certification category

Brake certification for any heavy vehicle manufactured or modified in New Zealand and any heavy vehicle imported into New Zealand that has been modified after its original equipment (OE) manufacture (**Note 1**) can only be performed by an HVEK category certifier.

### Use of Statement of Design Conformity (SoDC) or Design Certificates (DC)

When an engineering certifier issues a SoDC (or DC) for a modification that may affect the brakes, they must either determine compliance with the requirements of this technical bulletin or include specific instructions in the SoDC (or DC) to ensure compliance with the requirements of this technical bulletin.

### Modifications that always require an LT400 by an HVEK

- A heavy vehicle that has had its braking system or any component of that system modified in any way which may affect continued compliance with the HVBR. This includes any modification after OE manufacture (**Note 1**), **or** since entering service **or** since being last certified.
- A wheelbase alteration to a new standards compliant vehicle (**Note 2**) under-going entry certification, that is **not** supported with Acceptable Documentation (**Note 3**) from the OE manufacturer.
- A wheelbase alteration to any vehicle since entering service **or** since last certified by an HVEK certifier.
- Any alterations or modifications to the vehicle:

- a. where the vehicle's original manufactured axle has changed, e.g., changing an axle to a different make, configuration or specification, **or**
- b. where the vehicle's original manufactured axle rating or GVM is changed, except where an axle rating or GVM decrease is applied to a standards compliant NB or NC class vehicle **or**
- c. where the vehicle is converted from non-towing to towing or from rigid to tractor unit or vice versa, **or**
- d. where the vehicles originally manufactured axle configuration is changed to another configuration, e.g., it has been changed from a 4x2 to 6x2 or any other combination.

**Note;** When certifying the changes in (c) or (d) for an EBS/ESC equipped vehicle, the HVEK certifier must have evidence that the new configuration remains compliant with the standard it was manufactured to and confirmation from the OE manufacturer's representative **or** the brake system manufacturer that the control software has been updated or is re-confirmed.

- A heavy vehicle that has been brake certified to the Heavy Vehicle Brake Code, Second Edition (Schedule 4) and it cannot be established what friction material was used.

The vehicle may be re-certified to its original Brake Code Mass using an alternative friction material provided no other alterations or modifications are made. This requires the original brake coding to be re-confirmed with the new friction material by an HVEK certifier trained or experienced with previous brake coding (NZHVBC) using a Waka Kotahi approved Brake Calculator. Brake torque data, meeting the requirements of the HVBR must be used for the calculation and an LT400 issued confirming compliance with the Code.

**Note:** vehicles that were brake-coded to any of the earlier versions of the Brake Code (including the Interim Performance Specification for Heavy Vehicle Braking, and the Heavy Vehicle Braking Specification of 6 December 1988) that are modified, must meet the requirements of the HVBR.

- A brake-coded heavy vehicle that has had its braking system modified, even if its compliance curves remain within the braking rate and adhesion utilisation requirements of the Brake Code. The resultant vehicle is outside its original Brake Code certification and must be re-certified to Schedule 5 and issued an LT400.
- An air-operated spring parking brake that has been retrofitted to a vehicle to replace a wind-on parking brake must be certified by an HVEK.  
**Note:** provided the retrofitted spring brake chamber provides the same service brake performance as the original and no other modification is made to the service brake, compliance to Schedule 5 is not required.

### **Modifications that do not require an LT400 by an HVEK**

Only modifications that are exempted as per clause 8.2(1) of the HVBR do not require certification from an HVEK certifier:

1. Where the vehicle has had an adjustment to the brake system threshold pressure to comply with 7.1(8) or 7.2(5) of the HVBR, provided this does not affect the service brake performance. e.g. a change in the relay valve characteristics.

2. Where an air brake coupling device on a powered vehicle has been fitted in accordance with the manufacturers recommendations or where it has been replaced for the purposes of complying with 7.3 of the HVBR.
3. Where a park brake valve has been fitted to a powered vehicle to allow any towed trailer/s park brake to operate.

**Other certification categories where an alteration or modification may affect the brake of a vehicle.**

**Towing Connection Certifier's Responsibilities.**

**When** HVEK certification is required, the towing connection certifier will be the lead HVSC and must ensure brake certification is carried out prior to issuing an LT400 certification for the towing connection.

**Standards Compliant Vehicle (brakes) post 1/7/2008.**

When a towing connection to tow another heavy vehicle is fitted to a standards compliant vehicle (**Note 2**) with OEM installed trailer brake supply and control circuits, the towing connection certifier may rely on Acceptable Documentation (**Note 4**) to prove compliance with section 7 of the HVBR (therefore HVEK certification is not required) and issue an LT400 for the towing connection. The documentation must be retained in the certification file.

**Note:** An approved air brake coupling device (see the HVBR) may be fitted at the same time as the towing connection provided OEM installed trailer brake supply and control circuits are utilised. HVEK certification is not required, but compliance with section 7.3 of HVBR must be confirmed by the towing connection certifier and recorded in the certification file.

**Non-Standards Compliant Vehicle (brakes) pre 1/7/2008.**

When a towing connection to tow another heavy vehicle is fitted to a non-standards compliant vehicle the towing connection certifier must ensure HVEK certification is complete before issuing an LT400 for the towing connection.

**Any Other Vehicle (not included above).**

When a towing connection is fitted to any other vehicle to tow another heavy vehicle it must have HVEK certification.

**Note:** Where an existing certified or approved ECE compliant 5<sup>th</sup> wheel is recertified or replaced, and the brakes are not affected, HVEK certification is not required.

**Chassis Certifier's Responsibilities.**

**When** HVEK certification is required, the chassis certifier will be the lead HVSC and must ensure brake certification is carried out prior to issuing an LT400 certification for their work.

When an air supply is provided by the vehicle manufacturer for an auxiliary purpose, the chassis certifier can accept an added air powered auxiliary without requiring HVEK certification. The added air supply must comply with HVBR requirements and not be able to degrade the function or performance of the braking system through use or a fault.

### Note 1

**OE manufacturer** means the original manufacturer of the vehicle. It does not mean:

- a second or third stage manufacturer, modifier or body builder
- a local dealer or reseller or parallel importer of the vehicle
- a VIN issuer, except when the VIN was issued by a regulator e.g. Waka Kotahi, in which case the regulator may nominate the manufacturer

### Note 2

**Standards compliant** means a vehicle which, when it went through entry certification on or after 1 July 2008, was manufactured and is in compliance with one of the international standards approved in clause 2.5(2) of the HVBR, or being a vehicle manufactured or modified in New Zealand after 1 March 2007, was certified as compliant with Schedule 5 of the HVBR.

### Note 3

**Acceptable Documentation:** The OE manufacturer or for the purposes of this bulletin the approved representative of the OE manufacturer has supplied auditable documentation that supports the alteration or modification being carried out. **Statements from local dealers, or departments not responsible for confirming compliance, e.g. sales, service, marketing or help desks, are not acceptable.**

Acceptable Documentation must:

- be issued from the OE manufacturer or for the purposes of this bulletin the approved representative responsible for compliance and approvals, e.g. the homologation department, **and**
- clearly identify the name, position, contact details and signature of the person providing the documents, **and**
- include official manufacturer's guidance for the body builder, or modifier or certification engineer that lists the model and sub-model of the vehicle, **and**
- confirm that the vehicle remains compliant with the brake standard, or a later version of the standard, that the vehicle originally complied with when manufactured.

### Note 4

**Acceptable Documentation (for towing connections only):** The OE manufacturer or for the purposes of this bulletin an approved representative of the OE manufacturer has supplied a Statement of Compliance (SOC) that includes,

- the duty of the vehicle e.g., Rigid, Tractor, **and**
- the brake standard the vehicle complies with, **and**
- confirms the vehicle has OEM installed trailer brake supply and control circuits, **and**
- confirms the vehicle has tractor protection, **and**
- confirms the vehicles wheelbase, **and**
- confirms the air brake coupling meets the requirements of the HVBR (if fitted prior to the towing connection).

A Sample SOC is provided in this link

<https://vehicleinspection.nzta.govt.nz/resources/content/statement-of-compliance>