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Extract taken: from NZTA Vehicle Portal > VIRMs > Heavy vehicle specialist certification > Introduction > Appointments

## 6 Appointments

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- [Permitted certifications](#)
- [HMxD manufacturer inspection organisation \(IO\) requirements](#)
- [HMxD manufacturer vehicle inspector \(VI\) requirements](#)

There are currently seven different technical certification categories of HV certifier. The NZTA assesses and qualifies four and the other three are assessed by external organisations, with final approval the responsibility of the NZTA.

The categories that the NZTA assess are:

- chassis modification
- towing connections
- load anchorages, and
- swept path analysis.

Those assessed by external organisations are:

- log bolster attachments
- brake modifications
- static rollover threshold.

## Fit and proper criteria

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All persons appointed as HV certifiers are required to be and to remain 'fit and proper persons'. The criteria considered for this include:

- a) relevant criminal convictions
- b) transport-related offences
- c) relevant warnings, penalties and disciplinary actions imposed
- d) relevant complaints
- e) the interest of the public and land transport safety.

## Engineering certifier requirements

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All HV engineering certifiers must:

- a) have a minimum qualification of NZCE (mechanical, civil or aviation) or approved equivalent > (minimum Level 6 Diploma, except where specialist knowledge and experience is deemed acceptable by the NZTA. In special circumstances and upon application a Level 5 Diploma may be considered. Overseas qualifications must be referred to the New Zealand Qualifications Authority (NZQA), who will determine the New Zealand equivalent, if available.
- b) have knowledge of the requirements specified in:
  - i. this manual, VIRM: Heavy vehicle specialist certification
  - ii. the relevant parts of the [Land Transport Act 1998](#)
  - iii. the [Land Transport Rule: Vehicle Standards Compliance 2002](#)
  - iv. Other relevant [Land Transport Rules](#).

Applicants for appointment as HV engineering certifiers will be assessed on their understanding of design principles for their category and their knowledge of the general and New Zealand requirements for heavy vehicles.

## Load anchorage engineering certifiers (HVEA)

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### Scope

All anchorages for securing loads to vehicles, excluding logging bolsters. Certifiers shall use the latest version of any standard except where permitted otherwise in the Rule.

### Experience requirements

Relevant work experience in the design or fabrication of load anchorages. Working knowledge of the following documents:

1. [Land Transport Rule: Heavy Vehicles 2004](#) and its amendments
2. Welding in the transport industry (see [Technical bulletin 13](#))
3. NZS 5444: Load Anchorage Points for Heavy Vehicles
4. NZS 5413: Stock Crates
5. AS/NZS 1554: Structural Steel Welding (parts 1 and 4 as appropriate)
- 6 AS/NZS 1665: Welding of Aluminium structures

7. AS 3990: Mechanical Equipment – Steelwork (supersedes AS 1250)
8. ISO 1161: Series 1 Freight Containers – Corner Fittings – Specification
9. AS/NZS 2980: Qualification Tests for Metal Arc Welders
10. AS/NZS 4380: Cargo restraint systems – Webbing load restraint systems.

## Towing connections engineering certifier (HVET)

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### Scope

All towing connections between vehicles. This includes fifth wheels, fifth-wheel kingpins, towbars, drawbeams and drawbars.

### Experience requirements

Relevant work experience in the design or fabrication of towing connections. Working knowledge of the following documents:

1. [Land Transport Rule: Heavy Vehicles 2004](#) and its amendments
2. Welding in the transport industry (see [Technical bulletin 13](#))
3. NZS 5446: Heavy vehicle towing connections – Drawbeams and drawbars
4. NZS 5450: Specification for Coupling Devices for Articulated Vehicles – Fifth Wheel Assemblies
5. NZS 5451: Specification for Coupling Devices for Articulated Vehicles – Fifth Wheel Kingpins
6. AS/NZS 4968, Heavy-vehicles – Mechanical coupling between articulated vehicle combinations
7. AS 2174, Articulated vehicles – Mechanical coupling between prime movers and semitrailers
8. AS 3990: 1993, Mechanical Equipment – Steelwork
9. AS/NZS 1554: Structural Steel Welding (parts 1 and 4 as appropriate)
10. AS/NZS 1665: Welding of Aluminium structures
11. AS/NZS 2980: Qualification Tests for Metal Arc Welders
12. NZS 5467: Code of Practice for Light Trailers
13. ISO 1102: Commercial Road Vehicles – Mechanical Connections between Towing Vehicles and Trailers–50mm Drawbar Couplings
14. AS 1110: ISO Metric Hexagon Precision Bolts and Screws
15. AS/NZS 4291.1: Mechanical properties of fasteners
16. AS 2213: 50mm Pin-Type Couplings and Drawbar Eyes for Trailers
17. BS 5400: Part 10, Code of Practice for Fatigue
18. BS 7608: Code of Practice for Fatigue Design and Assessment of Steel Structures.

## Chassis modification and repair engineering certifier (HVEC)

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### Scope

Chassis modification includes rollover strength for PSVs, steering conversions, chassis modifications and repairs, design of new chassis and ratings, mounting of cranes and other equipment, modifications and repairs to drive trains and axles, and seatbelt anchorage design.

### Experience requirements

Relevant work experience in the design, modification and fabrication of vehicles and vehicle components. Working knowledge of the following documents:

1. [Land Transport Rule: Vehicle Standards Compliance 2002](#) and its amendments
2. [Land Transport Rule: Heavy Vehicles 2004](#) and its amendments
3. Welding in the transport industry (see [Technical bulletin 13](#))
4. AS/NZS 1554: Structural Steel Welding (parts 1 and 4 as appropriate)
5. AS/NZS 1665: Welding of Aluminium structures
6. AS/NZS 2980: Qualification Tests for Metal Arc Welders
7. AS 3990: 1993, Mechanical Equipment – Steelwork
8. Ladder frame chassis design guide (joint MoT/IRL document)
9. BS 5400: 1980, Part 10, Code of Practice for Fatigue
10. BS 7608: 1993 Code of Practice for Fatigue, Design and Assessment of Steel Structures
11. AS 1110: ISO Metric Hexagon Precision Bolts and Screws
12. AS/NZS 4291.1: Mechanical properties of fasteners
13. Low Volume Vehicle Code.

## Brake engineering certifier (HVEK)

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### Scope

All heavy vehicle brake system design and modification

## Experience requirements

Relevant work experience in the design and modification of braking systems. Passed Heavy Vehicle Brake course and exam as approved by the NZTA. Working knowledge of the following documents:

1. [Land Transport Rule: Heavy Vehicles Brakes 2006](#) and its amendments, including Schedule 5
2. [Land Transport Rule: Vehicle Standards Compliance 2002](#) and its amendments
3. Access to the New Zealand brake calculator or an approved proprietary device.

## Bolster attachment engineering certifier (HVEL)

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### Scope

All logging bolster attachments, modifications and repairs.

### Experience requirements

The certifier must:

1. be an appointed HVEC certifier with sufficient (three years or more) experience in the transport industry in manufacturing, supervision, quality control or drafting in a similar area:
2. have passed the log bolster attachment course and exam set by the Log Transport Safety Council
3. have a working knowledge of [Land Transport Rule: Heavy Vehicles 2004](#) and its amendments
4. have a working knowledge of Log Transport Safety Council: Log Bolster Attachment Code.
5. have a working knowledge of Welding in the transport industry (see [Technical bulletin 13](#))
6. have a working knowledge of AS/NZS 1554: Structural Steel Welding (parts 1 and 4 as appropriate)
7. have a working knowledge of AS/NZS 1665: Welding of Aluminium structures
8. have a working knowledge of AS/NZS 2980: Qualification Tests for Metal Arc Welders
9. have a working knowledge of AS 3990: 1993, Mechanical Equipment – Steelwork
10. have a working knowledge of BS 5400: 1980, Part 10, Code of Practice for Fatigue
11. have a working knowledge of BS 7608: 1993 Code of Practice for Fatigue, Design and Assessment of Steel Structures
12. have a working knowledge of AS 1110: ISO Metric Hexagon Precision Bolts and Screws
13. have a working knowledge of AS/NZS 4291.1: Mechanical properties of fasteners

## Static rollover threshold engineering certifier (HVSx)

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### Scope

Measure and input vehicle data into a computer program to establish a stability angle. There are currently three different certification categories for SRT calculation

- SRT level 1
- SRT level 2
- SRT level 3.

### Experience requirements

For those wishing to qualify as NZTA approved and appointed inspectors there are two tests:

- basic for level 1 inspectors and
- advanced for level 2 inspectors.

**Level 1** certifiers use the SRT calculator software but are limited to simpler cases. For certification purposes a level 1 certifier may use all the features of the calculator except Load category 'Other', which requires the calculation of the payload centre of gravity and the 'user defined' suspension options, which requires the obtaining and interpretation of suspension parameters.

**Level 2** certifiers also use the SRT calculator software but have all options available.

**Level 3** certifiers may be approved by the NZTA to use alternative methods of determining SRT. These could include tilt table testing or computer simulation.

Within the framework of the two levels of certification, there are four parties that may be involved in gathering the data for SRT certification, namely:

1. Operator: may provide tare axle weight data and may nominate load type (Uniform density/ Mixed freight/ Other) on which the certification is to be based except where this is defined by the NZTA.
2. Level 1 SRT inspectors: typically these are individuals who have passed the level 1 SRT training but have not been authorised by the NZTA to be certifiers.
3. HVS1 certifiers: typically these are individuals who have passed the level 1 SRT training and have been appointed by the NZTA to act as certifiers under the NZTA's Notice of Appointment.
4. HVS2 certifiers: typically individuals who have passed both the level 1 and level 2 SRT training and have been appointed by the NZTA to act as certifiers.

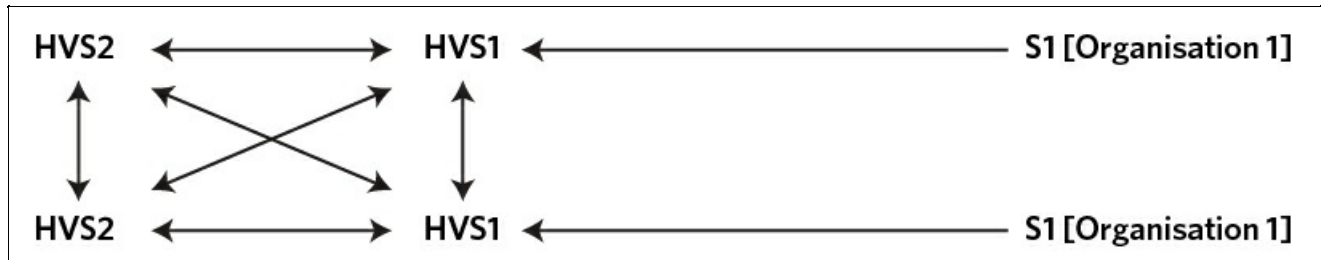
Information and measured vehicle data may be shared between the last three parties as indicated in the diagram below. In this diagram S1 refers to Level 1 SRT inspectors, while HVS1 and HVS2 refers to the certifiers. The arrows indicate allowable paths of information and data transfer. Thus a Level 1 certifier, HVS1, may receive vehicle data that has been obtained by a Level 1 SRT inspector and use these data to undertake a level 1 certification without personally inspecting the vehicle and making the measurements. However, the HVS1 certifier is ultimately responsible for the accuracy of the SRT certificate issued and must ensure that the S1 inspector is appropriately qualified and

competent.

Although the allowable data transfers do permit the transfer of information from HVS1 certifiers to HVS2 certifiers, this can only be within the scope of the HVS1's demonstrated level of competence. Thus a level 2 certification which requires an HVS2 certifier will also require that the vehicle is inspected by an HVS2 certifier.

When the certifier issues an SRT certificate he must also issue an LT400 to accompany it.

For some vehicles, the SRT certification process will lead to some vehicle or suspension modifications being undertaken in order to improve the vehicle's stability and allow it to maintain its load carrying capacity while achieving the required SRT. These vehicle modifications will generally require certification by an NZTA- approved certifying engineer and will require the issuing of an LT400 detailing the modifications made. Although the certification of the vehicle modifications and the SRT certification may be undertaken by the same engineer certifier, if he is appropriately qualified, two separate LT400s are required, one for the vehicle modifications and one for the SRT.



## Dynamic Performance engineering certifier (HVPx)

### Scope

To confirm swept path and dynamic vehicle performance by calculation using approved software or by physical testing. There are two different certification categories for Swept Path/Dynamic Performance

- HVP1 – Swept Path Certification
- HVP2 – Dynamic Vehicle Performance (PBS)

### Experience requirements

For those wishing to qualify as NZTA approved and appointed inspectors in either of these categories there are some prerequisites. The certifier must:

1. be an appointed HVEC certifier with sufficient (one year for HVP1 or three years or more for HVP2) experience in the transport industry in manufacturing, supervision, quality control or drafting in a similar area:
2. for HVP1 & 2 have access to and be able to prove competence operating appropriate computer software (such software to be advised to the NZTA who will rule on its suitability) and/or the ability to carry out appropriate physical testing.
3. have attended and passed any course and/or exam set or approved by the NZTA
4. have a working knowledge of [Land Transport Rule: Vehicle Dimensions and Mass 2016](#) and its amendments
5. have a working knowledge of [Land Transport Rule: Heavy vehicles 2004](#) and its amendments

**HVP1** certifiers use appropriate software or physical testing to provide Swept Path Certificates to either or both of Schedule 8 or Schedule 9 of [Land Transport Rule: Vehicle Dimensions and Mass 2016](#)

**HVP2** certifiers also use the appropriate software and/or physical testing to provide dynamic vehicle performance analysis for proposed high productivity vehicles, either new pro-forma or bespoke designs within the limits set by the [Land Transport Rule: Vehicle Dimensions and Mass 2016](#) and its amendments.

## HV manufacturer certifier (HMxD)

### Scope

As different from the HV engineering certifier, the HV manufacturer certifier responsibility is split between an HV manufacturer inspecting organisation (IO) and an HV manufacturer vehicle inspector (VI). Each of these roles is vital and interdependent. A HV manufacturer certifier IO cannot certify a heavy vehicle while a HV manufacturer certifier VI can only certify a heavy vehicle within the requirements of the VIRM and Memos if s/he is in the employ of a manufacturing certifier IO and the NZTA has a record of this employment.

There are currently five different HV manufacturer certification categories:

- chassis modification (HMCD)
- towing connections (HMTD)
- load anchorages (HMAD)
- log bolster attachments (HMLD)
- heavy vehicle brakes (HMKD)

### Permitted certifications

Where permitted, all work certified by the manufacturing certifier VI at the approved manufacturing certifier IO premises is to be certified with either:

- a Statement of Design Compliance (SoDC), issued by an engineer certifier, or
- for load anchorages, to the designs in NZS 5444, or
- for worn or damaged fifth wheels, replaced to the fifth wheel manufacturer's instructions for replacing bolt on components, or
- for worn or damaged kingpins, replaced according to the kingpin manufacturer's instructions on replacement, or
- to NZTA approved pre-engineered solutions
- a design certificate for batch built or standard components (refer [Technical bulletin 5](#))

### HMxD manufacturer inspection organisation (IO) requirements

The manufacturing certification process is made up of two parts. The HV manufacturer certifier (VI), whose task is to ensure that any certification that they sign off is correct to the Design Certificate or SoDC, and the HV manufacturer IO responsible for ensuring that the certifications carried out in their name, meet requirements. The HV manufacturer IO must also ensure that any HV manufacturer VI in their employ has all the appropriate tools and equipment to carry out the certification that they hold the categories for.

There are separate skills and knowledge requirements for appointment by the Transport Agency as an HV manufacturer IO or HV manufacturer VI and these must be demonstrated following appropriately targeted training programmes. Once qualified and appointed as an HV manufacturer IO, a manufacturing or repair organisation must employ one or more appropriately qualified HV manufacturer VIs to carry out certifications on their behalf. Similarly, once appointed, a HV manufacturer certifier VI, must be employed by an HV manufacturer certifier IO before they can carry out certifications.

The authorised HV manufacturer IO is the company or entity responsible for the structural work carried out on a heavy vehicle (not the CEO) and the application must be signed by an appointed office holder of the company who can sign on behalf of the company (Director etc) accompanied by the company seal in the case of a registered company. Each location that is involved with manufacturing certification operations must have an individual appointment. The IO is responsible for ensuring that:

- the HV manufacturer IO maintains Professional Indemnity & Public Liability insurance, acceptable to the Agency.
- the HV manufacturer IO operates an effective, formal and audited quality management system (QMS).
- the HV manufacturer IO takes responsibility for the certification activities carried out by any HV manufacturer VI in their employ
- the premises are well lit and meet the requirements in the VIRM of the certification categories being carried out
- the HV manufacturer IO controls and maintains all necessary equipment for the certification categories carried out
- the HV manufacturer IO controls and maintains a library of all processes and procedures required for all the certification categories carried out, including welding procedures, relevant standards and pre-Engineered Solutions.
- one or more qualified welding supervisors are appointed to oversee welding operations
- they have staff with a sound working knowledge of standards, codes of practice and general documents as well as their trade related published material. This includes:
  - welding knowledge
  - materials and product knowledge
  - drawing interpretation
  - scope of work that local manufacturing certifiers can certify
  - repairs, including repairs to industry best practice for temporary endorsement
  - working knowledge of documents, including the following, as they apply to the business:
    - Welding in the Transport Industry (see [Technical bulletin 10](#))
    - This HVSC VIRM
    - [Land Transport Rule 35001: Vehicle Standards Compliance 2002](#) and amendments
    - [Land Transport Rule 34001: Vehicle Repair 1998](#) and amendments
    - [Land Transport Rule 31002: Heavy Vehicles 2004](#) and amendments
    - [Land Transport Rule 32015: Heavy-vehicle Brakes 2006](#) and amendments
    - Other [Land Transport Rules](#) relevant to the certification categories carried out.
- Ensure a PDS is completed for each certification activity carried out

### **HMxD manufacturer vehicle inspector (VI) requirements**

Each appointed VI may inspect and certify the work of other operators in the employ of the same HV manufacturer IO and must:

- take full responsibility for all certifications which they sign off
- only certify work they're permitted to certify (see Permitted certifications above).
- only certify work in categories they are authorised for
- ensure that they only carry out certification activities when there is sufficient properly controlled and maintained equipment for the certification to be carried out
- ensure that they only carry out certification activities when there is a sufficient library of all processes and procedures required for the certification being carried out, including welding procedures, relevant standards and pre-engineered solutions, DCs or SoDCs.
- ensure that, where necessary, a properly qualified and appointed welding supervisor has approved the welding on any activity being certified and all welding is carried out by an appropriately qualified and certified welder.
- ensure that they and the staff whose work they are certifying have a sound working knowledge of standards, codes of practice and general documents as well as their trade related published material. This includes:
  - welding knowledge
  - materials and product knowledge
  - drawing interpretation
  - scope of work that HV manufacturer certifiers can certify
  - repairs, including repairs to industry best practice for temporary endorsement
  - working knowledge of documents, including the following, as they apply to the business:
    - Welding in the Transport Industry (see [Technical bulletin 10](#))
    - This HVSC VIRM
    - [Land Transport Rule 35001: Vehicle Standards Compliance 2002](#) and amendments
    - [Land Transport Rule 34001: Vehicle Repair 1998](#) and amendments
    - [Land Transport Rule 31002: Heavy Vehicles 2004](#) and amendments
    - [Land Transport Rule 32015: Heavy-vehicle Brakes 2006](#) and amendments
    - Other [Land Transport Rules](#) relevant to the certification categories carried out.
- Maintain a PDS for each certification carried out.