

# Electrical and Gas Safety Obligations for the Caravan, Motorhome, and Boating Industry

## Introduction

This bulletin is intended to provide guidance about the safety of gas and electrical installations, and appliances that are used in the caravan, motor home, and boating (recreational vehicle) industry. The bulletin is divided into two parts. Part one covers the gas regulations, and Part two covers the electricity regulations.

It first gives an overview of each regulation and then how it is applied in various areas of the industry.

**This bulletin is intended to be used for guidance purposes only. It is not a substitute for understanding and complying with the legislation and standards.**

## Part One – Gas Regulations overview

The Gas (Safety & Measurement) Regulations 2010 introduced on 4 May 2010 and amended as of 1 July 2013 require that all gas appliances and fittings are capable of operating safely when installed correctly and used for their intended purpose.

Part 2 (Regulations 9 to 15) sets out a general requirement for safety and what is deemed to be unsafe. A person who owns, supplies, sells, hires or operates an installation in a recreational vehicle has an obligation under the general safety provisions of regulation 9 to ensure the installation is not used if it is unsafe

### Installation & connection

Regulation 44 sets out the specific safety requirements for the installation of gas appliances and fittings. The regulation requires that every person who designs, installs, commissions, tests and connects a gas installation must do so in accordance with whichever of the following standards applies:

- **AS/NZS 5601.1: 2010: Gas installations**, or,
- **AS/NZS 5601.2: 2010: Gas installations - LP Gas installations in caravans and boats for non-propulsive purposes.**

If the installation does not fully comply with the means of compliance standard, it must comply with a Certified Design as set out in regulation 43.

Every person who supplies or intends to supply an imported installation must, before supplying the installation, ensure that it complies with the essential safety requirements set out in section 2 of the above standards.

For the recreational vehicle industry the applicable standard is **AS/NZS 5601.2**.

Regulation 51 requires that the person *connecting* a gas supply to an installation must ensure that it is safe, is compatible with the gas supply, and if certification is required, that it is so certified. For imported installations the person connecting must also ensure that the installation complies with the essential safety requirements of the standards.

*Connect* is defined as that gasfitting that allows the supply to the installation or that gasfitting that allows some other action to provide the supply. In the case of recreational vehicles this is likely to be gasfitting to provide a cylinder hose connection.

### Appliances

Regulation 53 requires that “...every person who manufactures, imports, sells or offers for sale, hires or leases out, or installs a gas appliance or fittings must take all practicable steps to ensure that the gas appliance or fittings is safe.”

The Regulations require that appliances are either *certified* or *endorsed* in accordance with the Regulations.

Regulations 54 to 59 describe the *certification* and *endorsement* regimes. In general terms, appliances supplied in bulk must be *certified* to either AS/NZS 3645.2 or to the European, Australian, or North American certification regimes. Schedule 2A in the Regulations prescribe what certification agencies and what standards are recognised.

The *endorsement* regime provides an alternative for appliances in imported installations whereby the appliances may be *endorsed* by an *Approved Practitioner* (approved by Energy Safety).

Gas appliances must have certain data markings on them to provide information for their safe installation. It includes a requirement to identify the supplier making the declaration. This is specified in Regulation 71.

Appliances subject to the certification regime must have a supplier declaration and a gas safety compliance label. (The supplier declaration scheme is detailed below).

There are also responsibilities for those repairing, modifying, adjusting, and hiring gas appliances and fittings as set out in regulations 74 and 75.

#### Certification of gasfitting

Regulations 46 to 56K detail the certification requirements for gasfitting. All gasfitting will be required to have a "Gas Safety Certificate" which testifies to the installation being safe to use.

Gasfitting is divided into Low, General and High Risk gasfitting. A "Certificate of Compliance" is issued by the installer who certifies that the work they carried out is compliant. Certificate of Compliances will be mandatory for General and High risk work and optional for Low risk. Gasfitting on a RV with sleeping quarters is considered to be High Risk.

In addition to the certification requirements all High Risk work must be registered on the Energy Safety Electricity and Gas High Risk database.

- <https://www.med.govt.nz/energysafety/app/highrisk-db/home>

#### Non-compliance

There are substantial penalties for non-compliance. Failing to comply with the Regulations is an offence which on conviction is liable to a fine of up to \$10,000 for an individual or \$50,000 for a body corporate depending on the grade of offence.

Alternatively the Regulations provide for infringement notices (instant fines) where the fees are up to \$1,000 for an individual or \$3,000 for a body corporate depending on the grade of offence.

A PDF copy of the Regulations may be downloaded from the Energy Safety website:

- <http://med.govt.nz/energysafety/legislation-policy/gas-acts-regulations-codes>.

### **Importing (or manufacturing) gas appliances for recreational vehicles**

The majority of gas appliances imported for installation in NZ made recreational vehicles will fall into the certification regime. Small runs of an appliance model may use the endorsement regime.

All appliances under the certification regime will be required to have a supplier declaration. An appliance supplier declaration is a public statement from the supplier of the appliance that the appliance

complies with regulation 53 and 71. The declaration identifies the supplier and identifies appliance and the certification the appliance has.

The process for making a supplier declaration is to first register as a supplier on the Energy Safety website. Once the registration has been approved by Energy Safety, the supplier can enter the appliance declarations on the Energy Safety online appliance supplier declaration database.

An appliance certified under the *certification* regime must also have the Gas Safety Compliance label applied to it. Retailers of gas appliances are required to ensure the appliance has a Safety Compliance label before they sell the appliance (unless it has been an endorsed in which case it should have an endorsement certificate).



**All** importers of gas appliances (requiring certification) must make a supplier declaration before supplying a gas appliance. Even if there is another supplier of the same product who has already made a declaration, you must register and make a declaration.

Appliances that have an electrical supply must also meet the electricity safety regulations. Appliances may also have to meet electromagnetic compatibility (EMC) and energy efficiency requirements. Details may be found at the following URLs respectively;

- <http://www.rsm.govt.nz/cms/pdf-library/resource-library/publications/Compliance-guide>
- <http://www.eeca.govt.nz/standards-and-ratings/minimum-energy-performance-standards-and-labelling>

The regulations identify the following items as critical for gas safety and all importers or manufacturers of gas appliances must, before supplying an appliance:

- take all practicable steps to ensure that the gas appliance is safe (regulation 53);
- ensure the appliance is certified or alternatively, endorsed (regulations 54 & 57);
- ensure that the gas appliance has a compliant data plate and, for certified appliances, has a compliance label (regulations 71 & 72); and;

- for appliances other than endorsed appliances, make a supplier declaration (regulation 66).

More details on the appliance safety regime may be found at

- <http://med.govt.nz/energysafety/about/publications/publications-for-industry/compliance-guides>

## Manufacturing recreational vehicles with gas installations

All recreational vehicle gas installations must be installed in accordance with the gas installation standard, AS/NZS 5601.2 or, if deviating from the means of compliance standard, to a Certified Design.

Manufacturers have an obligation to be satisfied that any gas appliance or fitting they install complies with safety requirements of regulations 53, 71 and 72 of the Regulations (that it is, safe and correctly marked). Installers also have an obligation to ensure that the appliance carries a compliance label or is supported by a current and valid supplier declaration on the Energy Safety website. (If you import or manufacture gas appliances you must also comply with the obligations on appliance suppliers).

On 1 April 2010 the definition of gasfitting (licensed work) was amended to remove the previous exclusion on work on installations that are fed from an LPG supply system that has a total connected capacity of less than 15 kilograms of LPG. In other words, an installation that is to be connected to a single nine kilogram cylinder is considered gasfitting (licensed work).

The Regulations require an installer, authorised under the Plumbers, Gasfitters, and Drainlayers Act (PGD Act), to certify that that the General Risk and High Risk gasfitting work they have carried out is compliant. This is optional for Low Risk gasfitting work. (Any gasfitting on an RV with sleeping areas is considered to be high risk).

In addition, a licensed *Certifying Gasfitter*, or exemption holder will need to issue a Gas Safety Certificate certifying the installation is safe to use. The details of High Risk work will also need to be lodged on the Energy Safety website.

A recreational vehicle fitted with a gas appliance is a gas installation. Energy Safety considers the following items are critical for safety. For each gas installation, all manufacturers must:

- take all practicable steps to ensure that every gas appliance installed is safe (regulation 53);
- ensure that every gas appliance certified under regulation 53 has a supplier

declaration or a compliance label (regulation 70) before installing;

- ensure that the installation meets the AS/NZS 5601.2 standard;
- is fully certified.

## Importing recreational vehicles with gas installations

The Regulations requires that every person who imports a gas installation must ensure that it complies with section 2 of AS/NZS 5601.2 (the essential safety requirements).

Although an imported gas installation may have been safety certified in its country of origin, in many countries the appliances in the gas installation will only be certified for propane gas. New Zealand LPG is a mixture of propane and butane. Running a propane-only appliance on the New Zealand mixture may have critical safety consequences. Unless the appliance can be shown to operate on butane and propane, the appliance will not meet the safety requirements of the Regulations.

If you import recreational vehicles equipped with gas installations, regulation 54 specifies you are also an importer of gas appliances. As such, the obligations outlined in the section above entitled “**Importing (or manufacturing) gas appliances for recreational vehicles**” apply to the installation importer as well.

An imported installation will often have to have some gasfitting carried out on it, such as fitting new pig tails to match NZ cylinders. This will have to be carried out by a licensed person and under regulation 51 that licensed person will also be responsible for ensuring the installation is safe; is compatible with the gas supply and for determining the entire installation complies with section 2 of AS/NZS 5601.2.

Importers of new installations may find it difficult to obtain the correct documentation and compliance labelling to comply with the certification regime and should consider the endorsement regime.

The performance and safety of appliances in second-hand installations may not be the same as when it originally came from the manufacturer. Energy Safety consider that it is more appropriate for such appliances to be considered a “one-off” appliance and that the endorsement regime should apply. An endorsement for each and every appliance will need to be completed by an approved practitioner.

Energy Safety considers the following items are critical for safety:

- take all practicable steps to ensure that a gas appliance is safe (regulation 53);

- ensure that every gas appliance has a supplier declaration or an endorsement (regulations 66 & 57); and
- ensure that the installation meets section 2 of AS/NZS 5601.2.

### **Renting, hiring, or selling recreational vehicles with gas installations**

The owner of an installation in a hired recreational vehicle has an obligation under the general safety provisions of regulation 9 to ensure the installation is not used if it is unsafe.

Regulation 75 requires that:

*“Every person who hires or leases out or offers to hire or lease out, any gas appliance, fittings, or gas installation must take all practicable steps to ensure that, before hiring, leasing, or offering to hire or lease them out:*

*(a) The appliance, fittings, or installation are in a safe condition and are complete with any safety accessory (for example a fireguard); and*

*(b) Any instructions to ensure the safe use of the appliance, fittings or installation are provided and are practicable and suitable for the safe use of the appliance, fittings, or installation*

A person who rents or hires recreational vehicles with gas installations must ensure the installation, as a whole, is in a safe condition and instructions to ensure the safe use of the appliance are provided.

Energy Safety consider the following items are critical for safety: for a person who rents, hires, or sells recreational vehicles with gas installations:

- take all practicable steps to ensure that a gas appliance is safe (regulation 53);
- take all practicable steps to ensure that the installation is in a safe condition and that instructions are provided (regulation 75).

## Part Two – Electricity Regulations overview

The Electricity (Safety) Regulations 2010 require that any person who designs or does work on electrical installations, fittings and electrical appliances must ensure the resultant work is electrically safe (regulations 13 and 14).

The term 'Electrically safe' means *“that there is no significant risk that a person or property will be injured or damaged by dangers arising directly or indirectly from the use of, or passage of electricity through, the works, installations, fittings, appliances, or associated equipment”*.

Any person who owns or operates electrical installations, fittings and electrical appliances must not use or allow to be used the equipment if it is electrically unsafe (regulation 15).

The term 'Electrically unsafe' means *“that there is a significant risk that a person may suffer serious harm, or that property may suffer significant damage, as a result of dangers arising directly or indirectly from the use of, or passage of electricity through, the works, installations, fittings, appliances, or associated equipment”*.

Certain classes of appliance may require a supplier declaration (“declared medium risk”), or an approval (“declared high risk”). The supplier declaration is a declaration of conformity and is prescribed in regulation 83. The supplier of an electrical appliance requiring a declaration must complete and retain the supplier declaration. If the appliance is of the declared article type, then the supplier must be able to provide certification from a recognised agency or make an application for approval from Energy Safety.

All low voltage (any voltage exceeding 50 volts a.c. or 120 volts ripple-free d.c. but not exceeding 1,000 volts a.c. or 1,500 volts d.c.) fittings and electrical appliances must be electrically safe. Regulation 80 requires that new low voltage fittings and electrical appliances comply with **AS/NZS 3820:2009: Essential safety requirements for low voltage electrical equipment**; or other appropriate standard listed in Schedule 4 of the Regulations; or comply with the Conformity Cooperation Agreement<sup>1</sup>.

The sale of second-hand appliances is also covered by the requirements of regulation 80. An appliance is deemed to be safe if it has been tested, inspected and tagged in accordance with **AS/NZS 5761:2005 (In-service safety inspection and testing—Second-hand electrical equipment prior to sale)**

There are substantial penalties for non-compliance. Failing to comply with the Regulations is an offence which on conviction is liable to a fine of up to \$10,000 for an individual or \$50,000 for a body corporate depending on the grade of offence.

The Regulations also have infringement notices where the fees are up to \$1,000 for an individual or \$3,000 for a body corporate depending on the grade of offence.

There is an additional information sheet on the Energy Safety website that provides specific information on North American RVs:

- <http://www.med.govt.nz/energysafety/about/publications/publications-for-industry/industry-bulletins/electrical-safety-bulletins/warrants-of-electrical-fitness-woefs-for-recreational-vehicles-or-caravans-having-electrical-systems-that-operate-at-110-volts>

### Electrical installations in recreational vehicles

The Electricity Act 1992 defines *connectable installation* as an electrical installation in a vehicle, relocatable building, or pleasure vessel that may be connected to an external power supply. Regulation 60 requires that connectable installations must be installed so that they comply with Part 2 of **AS/NZS 3000: 2007: Electrical installations**.

Regulation 60 also requires installations in pleasure vessels to comply with **AS/NZS 3004.2:2008 (Electrical installations – Marinas and recreational boats—Recreational boats installation)**. All other connectable installations (e.g. caravans and motorhomes) must comply with **AS/NZS 3001:2008 (Electrical installations – Transportable structures and vehicles including their site supplies)**.

Any person who hires or leases a connectable installation, or any person who supplies electricity to a connectable installation, must ensure the installation has a warrant of electrical fitness (WoEF). A WoEF may be issued by an electrical inspector or the person who certified the installation. The WoEF is valid for four years.

The WoEF must be issued in accordance with AS/NZS 3004.2 for pleasure vessels or AS/NZS 3001 for caravans and other RVs. A WoEF using the above standards is verification that an installation is suitable for continued use. It makes an assumption that the installation was installed in accordance with NZ standards initially.

This assumption is not valid for an imported installation and, in such cases the electrical inspector must first assess that the installation

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<sup>1</sup> Part of the China Free Trade Agreement



complies with Part 1 of AS/NZS 3000 before carrying the usual AS/NZS 3001 inspection.

## Importing (or manufacturing) electrical appliances for recreational vehicles

Persons who import or manufacture electrical appliances must ensure the appliances meet the safety obligations outlined above. In addition, there are obligations in regard to electromagnetic compatibility (EMC) and energy efficiency in some appliances.

Further details on the electrical appliance safety regime may be found at:

- <http://med.govt.nz/energysafety/appliances-fittings/electrical-appliances-fittings>

Appliances may also have electromagnetic compatibility (EMC) and energy efficiency requirements. Details may be found at the following URLs respectively;

- <http://www.rsm.govt.nz/cms/pdf-library/resource-library/publications/Compliance-guide>
- <http://www.eeca.govt.nz/standards-and-ratings/minimum-energy-performance-standards-and-labelling>

## Manufacturing recreational vehicles with electrical installations

Persons who manufacture connectable installations must ensure that any electrical installation in a vehicle, relocatable building, or pleasure vessel complies with regulation 60.

With certain exceptions the installation and maintenance of conductors, fittings and electrical appliances is prescribed electrical work under regulation 6 and Schedule 1. As such, it is subject to a number of restrictions in the Regulations, including the requirement for it to be carried out by a suitably licensed person, usually a licensed and registered electrician. The exceptions to the definition of prescribed electrical work are listed in Schedule 1 of the Regulations.

A PDF copy of the Regulations may be downloaded from:

- <http://med.govt.nz/energysafety/legislation-policy/electricity-acts-regulations-codes>

## Importing recreational vehicles with electrical installations

Recreational vehicles imported from foreign countries must comply with the New Zealand electricity legislation and applicable Standards. Importers should be aware that imports from

countries with different power systems such as those from Japan, Canada and the USA that have 110/220Vac 60 Hz electricity systems are very unlikely to comply with New Zealand or Australian electrical safety legislation.

Electrical regimes that supply at 110 Vac, (like the United States), have particular safety features associated with them that are reflected down into the appliances, such as earthing. Such arrangements cannot be duplicated in a connectable installation by simply using a transformer as the installation has no reliable earthing arrangement. Therefore the safety of the US appliances and their use will not achieve the level of safety expected in the US system for which the appliances are designed. In addition, the transformer will change the system enough to make the operation of some safety components ineffective.

As mentioned above, an electrical inspector will need to assess an imported installation against Part 1 of AS/NZS 3000 before carrying out the usual inspection for a WoEF.

It is important to note that the importer of these installations is also an importer of appliances. An importer of appliances is subject to the obligations placed on appliance suppliers, in particular appliances of a type subject to the supplier declaration or approval requirements.

Appliances made for 110 Vac supply are unlikely to meet the NZ appliance requirements. US equipment is also not likely to be suited or certified and evaluated for safety when operated at 50Hz.

Importers of second-hand installations will also need to comply with the obligations placed on other suppliers of second-hand appliances. In order to meet these requirements all second-hand appliances should be tested to AS/NZS 5761.

Please see the **Electricity Regulations overview** section for more detail.

## Renting, hiring, or selling recreational vehicles with electrical installations

It is an offence under the Regulations to hire, lease out or offer to hire or lease out an installation that does not have a valid WoEF.