

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

Introduction

This bulletin is intended to provide guidance information 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.

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.

If you wish to receive our free Business Update electronic newsletter please go to <http://news.business.govt.nz>

Part One – Gas Regulations overview

The Gas Regulations 1993 require that all gas appliances and fittings are capable of operating safely when installed correctly and used for their intended purpose. Regulation 12 sets out the safety requirements for the installation of gas appliances and fittings. The regulation requires that every person who installs a gas installation must install it in accordance with Part 1 of **NZS 5261: Gas installation: 2003**.

NZS 5261 is divided into three parts. Compliance with the first part is mandatory and the remaining two parts are a means of compliance with Part 1. Parts 2 and 3 are intended for fixed gas installations that are in buildings. For caravans and boats, an informative note in clause 1.1.3 of Part

1 of NZS 5261 states that complying with **NZS 5428: Installation and use of LPG for non-**

propulsive purposes in caravans and boats: 1996 is one means of complying with Part 1.

The NZS 5428 standard was revised and republished in 2006 to reflect the essential safety requirements of NZS 5261 and to bring it in line with other modern caravan installation standards. The 2006 version is a better guide to meeting the NZS 5261 requirements than the previous version.

Regulation 13 requires that “...every person who manufactures, imports, sells or offers for sale, hires out, leases out, or installs a gas appliance or fitting ... must take all practicable steps to ensure that the gas appliance or fitting is safe in all reasonably foreseeable circumstances.” If an appliance does not comply with **NZS 5262: Gas appliance safety: 2003**, then it is not safe.

Gas appliances must have certain data markings on them to provide information for their safe installation. Regulation 14 requires that every appliance sold or intended for sale is marked in accordance with section 5 of the appliance standard NZS 5262.

Regulations 15 to 15F describe the appliance supplier declaration scheme, which is detailed below. There are also responsibilities for those repairing, modifying, adjusting, owning, using, and hiring gas appliances and fittings as set out in regulations 16 and 17. Regulations 24 and 24A require that the installer must certify most types of gasfitting as being compliant with the regulations.

There are substantial penalties for non-compliance. Failing to comply with the Gas Regulations is an offence punishable by a fine of up to \$10,000.

A PDF copy of the Gas Regulations may be downloaded from the Energy Safety website: <http://www.energysafety.govt.nz/gas/legislation>

Importing (or manufacturing) gas appliances for recreational vehicles

An appliance supplier declaration is a public statement from the supplier of the appliance that the appliance complies with regulation 13 and 14. The declaration identifies the supplier and the person making the declaration (the personal details are not publicly available). It further identifies the appliance and any standards that it complies with. The declaration also identifies any testing or certification that has been undertaken in relation to the appliance.

The usual 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 declaration database.

If a supplier is supplying 10 or less of a particular appliance then they may register with Energy Safety and supply a paper based declaration with the appliance rather than enter it on the website. This is really intended for the suppliers of “one-off” appliances

All manufacturers and importers of gas appliances must make a supplier declaration before supplying a gas appliance. You must register and make a declaration even if there is another supplier of the same product who has already made a declaration. Retailers and installers of gas appliances are also required to determine whether the appliance has a declaration before supplying or installing the appliance.

Energy Safety considers the following items are critical for safety and all importers or manufacturers of gas appliances must, before supplying an appliance:

- ensure that a gas appliance is safe in all reasonably foreseeable circumstances (regulation 13);

- ensure that the gas appliance is marked in accordance with section 5 of the appliance standard NZS 5262 (regulation 14); and
- make a supplier declaration (regulations 15 to 15F).

More details on the appliance declaration scheme may be found at <http://www.energysafety.govt.nz/gas/appliance/overview> — of particular note is the *Safety Obligations* link in the second paragraph, which links to an explanatory document.

Manufacturing recreational vehicles with gas installations

All gas installations must be installed in accordance with Part 1 of the gas installation code, NZS 5261. One means of achieving this is by installing to the requirements of the caravan code, NZS 5428.

Installers have an obligation to be satisfied that any gas appliance or fitting they install complies with safety requirements of regulations 13 and 14 of the Gas Regulations (that it is, safe and correctly marked). Installers also have an obligation to ensure that the appliance 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).

The Gas Regulations require an installer, licensed under the Plumbers, Gasfitters, and Drainlayers Act (PGD Act), to certify most gasfitting work. The installer will usually be a licensed craftsman gasfitter, or someone who carries an exemption under the Act.

The definition of gasfitting in the 1976 PGD Act excludes 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 not considered gasfitting, but if it is to be connected to anything greater than 15 kilograms, then the work must be completed (and certified) by a worker licensed under the Act.

A new version of the PGD Act was enacted in 2006. The Act includes a new and updated definition of gasfitting. The most substantive change introduced is that work on installations supplied from small (less than 15 kg capacity) LPG cylinders will be brought under the licensing regime. This will affect installations such as most of those in caravans and boats, and those involving a fixed cooking hob supplied from a small cylinder. This part of the new Act is yet to be enacted.

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:

- ensure that every gas appliance installed is safe in all reasonably foreseeable circumstances (regulation 13);
- ensure that each gas appliance installed is marked in accordance with section 5 of the appliance standard NZS 5262 (regulation 14);
- ensure that every gas appliance obtained in New Zealand has a supplier declaration (regulation 15F); and
- ensure that the installation meets the essential safety requirements in Part 1 of NZS 5261 (regulation 12).

Importing recreational vehicles with gas installations

Regulation 17(1) requires that *“every person who owns, operates, or uses any fittings, gas appliance, or gas installation must take all reasonable steps to ensure that the fittings, appliance, or installation is in a safe condition, is operated in a safe manner, and is maintained in a safe condition.”*

As the owner, an importer of an installation in a recreational vehicle has an obligation to ensure that any vehicle gas installation is in a safe condition. Compliance with the caravan code, NZS 5428, can be used by importers as one means of ensuring that *“all reasonable steps”* are taken in respect of safety.

Although an imported gas installation may have been safety certified in its country of origin, it is quite probable that the gas installation has only been 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, Energy Safety recommends the appliance is removed.

If you import recreational vehicles equipped with gas installations, 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.

Importers of new installations should register with Energy Safety and make a declaration for each model of appliance that is fitted in their recreational vehicle range. 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 a paper based declaration for each and every appliance will need to be completed by a competent person.

Energy Safety consider the following items are critical for safety:

- ensure that a gas appliance is safe in all reasonably foreseeable circumstances (regulation 13);
- ensure that every gas appliance has a supplier declaration completed (regulation 15A); and
- take all reasonable steps to ensure that the installation is in a safe condition (regulation 17).

Renting, hiring, or selling recreational vehicles with gas installations

Regulation 17(2) requires that:

“every person who hires out or leases out any fittings, gas appliance, or gas installation shall take reasonable steps to ensure that:

- (a) The fittings, appliance or installation is in a safe condition; and*
- (b) Any instructions to ensure the safe use of the appliance are provided—prior to so hiring or leasing them out.”*

A person who rents, hires, or sells 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.

As a supplier, a person who rents, hires, or sells recreational vehicles with gas installations also has an obligation to ensure that any appliance is supported by a current and valid supplier declaration on the Energy Safety website.

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

- ensure that a gas appliance is safe in all reasonably foreseeable circumstances (regulation 13);
- take all reasonable steps to ensure that the installation is in a safe condition and that instructions are provided (regulation 17).

Part Two – Electricity Regulations overview

The Electricity Regulations 1997 require that all electrical installations, fittings, electrical appliances and associated equipment must be designed, constructed, maintained, installed,

and used so they are electrically safe (regulation 69(1)).

The term ‘Electrically safe’ means “...*that there is no significant risk of injury or death to any person, or of damage to any property, as a result of the use of the...electrical installations fittings, electrical appliances...or the passage of electricity through those...electrical installations, fittings, electrical appliances...*”.

Certain classes of appliance may require a supplier declaration, or be listed by Energy Safety as a declared article. The supplier declaration is a statement that the appliance meets the requirements of regulation 69(1). The supplier of an electrical appliance requiring a declaration must complete and retain the supplier declaration. If the appliance is of a type that requires a type approval, 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 comply with basic safety requirements. Regulation 76 requires that low voltage fittings and electrical appliances comply with *AS/NZS 3820:1998 (Essential safety requirements for low voltage electrical equipment)*.

The sale of second-hand appliances is also covered by the requirements of regulation 69(1). An appliance is deemed to be safe if it has been tested (by a competent person) and meets the requirements of *AS/NZS 3760:2001 (Inservice safety inspection and testing of electrical equipment)*

There are substantial penalties for non-compliance. Failing to comply with the Electricity Regulations is an offence punishable by a fine of up to \$10,000.

Further details on the electrical appliance safety regime may be found at: <http://www.energysafety.govt.nz/electricity/appliances>

There are several information sheets on the Energy Safety website that provide specific information, namely:

- Warrants of Electrical Fitness for Recreational Vehicles or Caravans having electrical systems that operate at 110 volts.
- Selling Safe Second-hand Electrical Appliances
- Upgrade of Existing Caravans and Motorhomes to AS NZS 3001 Requirements.

Electrical installations in recreational vehicles

Regulation 97 requires that connectable installations must be manufactured and installed so that they operate safely if used for their intended purpose. The Electricity Act 1992 defines *connectable installation* as an electrical installation in a vehicle, relocatable building, or pleasure vessel. Fittings supplying electricity to connectable installations must also be installed and maintained so that they operate safely if used for their intended purpose (regulation 98).

Relocatable buildings and vehicles are deemed to comply with the requirements in regulations 97 and 98 if they comply with *AS/NZS 3001:2001 (Electrical installations – Movable premises (including caravans and their site installations))*. Pleasure vessels are deemed to comply if they comply with *AS/NZS 3004:2002 (Electrical installations – Marinas and pleasure craft at low voltage)*. However, there may be other ways to comply with regulations 97.

Every person who hires or leases a connectable installation, or who supplies electricity to a connectable installation, must ensure the installation has a warrant of electrical fitness, or an electrical certificate of compliance (CoC) that is less than four years old.

Energy Safety is aware that sometimes a CoC is not as easily recognised by caravan park operators as a warrant of electrical fitness, (the operators are electricity suppliers and therefore require a CoC or warrant of fitness). Energy Safety advises that a warrant of electrical

fitness should be obtained for the purpose of demonstrating to a caravan park operator that an installation in a caravan is safe. The electrical warrant of fitness must be issued by a Registered Electrical Inspector in accordance with the criteria set out in *NZS 3019 (Int):2002 (Electrical installations - In-service testing)*.

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://www.energysafety.govt.nz/electricity/appliances>

Details on the EMC and energy efficiency requirements may be found at the following URLs respectively;
<http://www.rsm.govt.nz/cms/product-compliance>
<http://www.eeca.govt.nz/labelling-and-standards/index.html>

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 regulations 69(1) and 97(1).

With certain exceptions the installation and maintenance of conductors, fittings and electrical appliances is prescribed electrical work under regulation 17. As such, it is subject to a number of restrictions in the Electricity 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 regulation 17 of the

Electricity Regulations. A PDF copy of the Electricity Regulations may be downloaded from:
<http://www.energysafety.govt.nz/electricity/legislation>

Importing recreational vehicles with electrical installations

It is an offence under the Electricity Regulations to sell an installation for use in New Zealand that does not comply with the Regulations. Therefore it is an offence to sell an installation that is not electrically safe. If you import recreational vehicles with electrical installations installed, you must ensure they are electrically safe.

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. These factors will render the RV in contravention of regulation 69 and 97.

It is also 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 3760.

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 Electricity Regulations to hire, lease out or sell an installation that is not electrically safe. If you hire or lease a recreational vehicle with a connectable installation, it is an offence to do so unless the installation has a valid warrant of electrical fitness or a certificate of compliance that is less than four years old.