ELGAS

Agent and Distributor Training Manual

LPG

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ELGAS NATIONAL MAINTENANCE	**1800 065 258**
ELGAS GENERAL ENQUIRIES	**131 161**

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1. Your Role as an Agent / Distributor

1.1 Responsibilities of an Agent / Distributor

Becoming an ELGAS Agent or Distributor has many benefits, and with those benefits also come many responsibilities. This training manual covers the responsibilities of operating as an Agent / Distributor.

At ELGAS we place safety first in everything we do. Our safety culture extends to those we do business with – in particular our Agents / Distributors. It is a requirement of ELGAS that all Agents and Distributors operate safely. There are a number of ELGAS training manuals and LPG industry Standards and Codes that you may have on hand and refer to, depending on the exact nature of your business, which include:

ELGAS Training Manuals:

- *Agent and Distributor Training Manual*
  - Where selling and/or transporting LPG cylinders
- *Agent LPG Transport Safety Video*
  - Where selling and/or transporting LPG cylinders
- *Agent Portal User Guide for Agents*
  - Where agents use the ELGAS agent portal for processing sales etc
- *LPG Decanting Training Manual*
  - Where BBQ cylinder decanting is performed
- *LPG Forklift Cylinder Refilling Training Manual*
  - Where LPG powered forklift trucks are filled on site
- *Swap'n'Go Retail Manual*
  - Where ELGAS Swap'n'Go is sold
- *Cylinder Filler Training Manual*
  - Where filling cylinders is performed (excluding BBQ cylinder decanting)

LPG Industry Standards and Codes:

ELGAS training manuals often refer to the following LPG industry Standards and Codes:

- *AS/NZS 1596: The Storage and Handling of LPG*
  - Covers LPG installations up to and including the first stage regulator, including storage requirements, minimum safety distances, safety, and firefighting requirements. www.standards.org.au
- *AS 5601.1: Gas Installations - General Installations*
  - Covers LPG installations after the first stage regulator, including all the pipe work leading up to the appliance, including installation methods and pipe sizing.
- Australian Dangerous Goods (ADG) Code
  - Covers technical requirements for the land transport of dangerous goods.

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Safety and Responsibilities

ELGAS has high safety standards. The expectation is that everyone complies with each of the following:

- The safety of all personnel, property and the environment are the primary concern of all persons associated with the storage, handling and distribution of LPG
- ELGAS (and its Agents / Distributors) shall not knowingly supply LPG to an unsafe / non-compliant installation
- Only a licensed Gas Fitter may install, modify or service an LPG appliance or installation.
- Agents/Distributors must not install, or supply gas to an installation that does not comply with Regulations or is sub-standard, and shall use the *Customer Site Safety Checklist* available in this manual as a guide
- Agents /Distributors must be able to recognise non-complying or sub-standard installations.
- Agents /Distributors shall provide induction training for all personnel in their depot, whether staff contractors or visitors.
- Drivers must act professionally, be well presented and wear appropriate personal protective equipment (PPE), including high visibility clothing.
- All vehicles used to deliver LPG must be registered, roadworthy, and comply with all regulations
- Agents / Distributors must ensure that no cylinder or vessel is overfilled with LPG at any time

The Agent / Distributor is responsible for overall safety on his or her site and for all work activities associated with the storage, handling and delivery of LPG ensuring the use of the relevant safety procedures and correct equipment in all activities.

Training Responsibilities / Ensuring Competence

Agents /Distributors must ensure that all staff associated with the storage, handling, transport and sale of LPG are fully trained and competent in any operations they are required to perform. Part of this training and competency requires all relevant staff completing the *Agent and Distributor Assessment* found in Appendix IV of this manual. Hard copies of assessments must be retained by the Agent / Distributor.

The ***Agent and Distributor Training Manual*** has been produced to assist in the initial training of the Agent / Distributor management. The Manual is intended to be a general safety and product handbook and it is important that the safety aspects contained in it along with the requirements of relevant Codes and Standards are integrated into the work instructions and overall safety practices of the Agent / Distributor operations.

The ELGAS Customer Service Manager or Account Manager in your area will conduct initial or refresher training, and it is then the responsibility of the local management to on-train their staff and contractors etc.

In addition to reading the ***Agent and Distributor Training Manual***, it is important that staff are shown all emergency equipment and given hands-on experience in its use. Agent /Distributor management must regularly inspect the activities of all their staff to ensure they are competent to perform tasks they are required to perform. Additional training must be given to staff that do not display sufficient competence in any LPG related activity.

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Duty of Care

Agents and Distributors are required by Government Regulation in all states to provide a safe place of work for their staff and for customers to enter.

Special precautions are required regarding LPG storage and handling. This Training Manual provides guidance to Agents / Distributors regarding the appropriate regulatory and safety requirements that must be followed

Updating of Information

This Manual will be periodically updated, and it is important that any new regulation or change affecting safe LPG handling practices is recorded and implemented immediately. Any suggestions or recommendations for improvement of this manual should be discussed with your local ELGAS representative for possible inclusion in the next issue.

The latest version of this training manual is available at www.elgas.com.au/training

Who to Contact Within ELGAS

The ELGAS Customer Service Manager or Account Manager for your area will be your primary contact. If uncertain, your first point of contact should be your local ELGAS branch office.

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1.2 Chain of Responsibility

Chain of Responsibility (CoR) laws recognise that all parties in the road transport supply chain can be held responsible for their actions (or inactions) relating to breaches of road transport, fatigue, speed, mass, dimension and load restraint laws. The chain of responsibility means that anyone – not just the driver – who has control in a transport operation can be held responsible for breaches. It recognises that, in the transport chain, the actions and demands of people other than the driver can have a huge impact on the safe operation of the vehicle.

Who is covered by the chain of responsibility (CoR)?

Anyone involved in the following road transport operations can be held responsible for breaches of road laws:

- Consignor / Receiver (Consignee)
  Persons or companies on whose behalf goods are being transported, and those paying for and receiving the goods
- Packer / Loader – Those loading the vehicle, or placing and restraining the load
- Scheduler - Those scheduling the workload of the vehicle
- Drivers - The physical act of driving a vehicle
- Operators, directors, partners and managers
  Operating a business which controls the use of a heavy vehicle

What are the responsibilities of a driver?

Responsibilities of a truck driver include (but are not limited to) ensuring that:

- Driving hours regulations are adhered to, and required rest breaks taken
- Vehicle does not exceed mass or dimension limits
- Load is appropriately restrained
- Safe and responsible driving behaviour is demonstrated at all times
- Vehicle is serviced and maintained and is safe to drive
- Equipment required to be fitted to the vehicle is not tampered with

What are the responsibilities of an operator / manager / scheduler?

Responsibilities of operators, managers, or schedulers of a business involved in road transport include:

- Schedules do not require drivers to exceed driving hours, regulations, or speed limits
- Vehicles do not exceed mass or dimension limits
- Appropriate restraint equipment is provided and loads are appropriately restrained
- Keeping records of drivers activities, including driving, work and rest times

Common problems which lead to speeding, load restraint issues, and increased fatigue levels for drivers include poor scheduling, delays during loading and unloading, and inflexible customer delivery times.

Penalties under the National Heavy Vehicle Regulator include infringement notices, court-imposed penalties, and demerit points.

More information is available on the following website:

www.nhvr.gov.au/safety-accreditation-compliance/chain-of-responsibility

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2. LPG Product Knowledge

2.1 Properties of LPG

There are 2 primary types of Liquefied Petroleum Gas (LPG), being propane and butane. Propane is used in all ELGAS cylinders sold through Agents / Distributors. Butane is typically restricted to very large commercial operations, or when mixed with propane for use in motor vehicles as Autogas.

Properties of LPG

The following are some of the properties of LPG:

- Colourless - Non toxic - LPG vapour is heavier than air
- Odourless in its natural state (Ethyl Mercaptan is added to give a distinctive smell)
- Is a gas at normal pressures and temperatures.
- Can be stored as a liquid when stored under pressure inside a cylinder or tank
- 1 litre of liquid LPG expands to around 270 litres of LPG vapour

More information about the properties and safe handling of LPG can be found in the LPG Safety Data Sheet (SDS) available in Appendix II of this training manual. Some of the similarities and differences between Propane and Butane include:

- There is a chemical difference between Propane and Butane
- Propane boils (vapourises) at –42 degrees C, while Butane boils at 0 degrees C
- There is approximately 1.9 litres of Propane, and 1.7 litres of Butane per kg of LPG
- Flammability ranges are similar at between 2-10% of LPG to 90-98% in air

1075
2YE

The United Nations identification number for LPG is 1075. This same number is used right across the world to identify LPG.

The Hazchem code for LPG is 2YE. This code provides immediate action advice for authorities when dealing with a dangerous goods incident.
2 = Water fog / fine water spray is suitable for fire-fighting and dispersing spillage
Y = Use breathing apparatus and protective gloves
E = Evacuation of people in the immediate area must be considered

Hazards Associated with LPG

The following are regarded as some of the hazards associated with handling LPG:

- It is flammable in the vapour phase
- It can lead to asphyxiation
- LPG leaks could be hazardous
- It can cause cold burns in the liquid phase
- It can cause skin and eye irritation in the liquid phase

An 8 minute "What is LPG?" video, as well as a range of other useful LPG related videos are available on the ELGAS YouTube channel at www.youtube.com/user/ELGASltdlpg/videos



What is LPG? LPG Gas - LPG Gas Bottles - LPG Gas Bottl...



The Story of LPG



About Elgas - A brief introduction



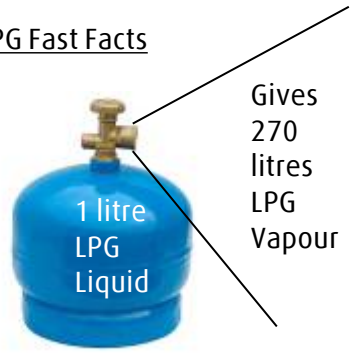
Elgas - 45kg LPG Gas Bottle Exchange Service in Action!



How to Check Gas Bottle Level - Gas Bottle Level...

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LPG Fast Facts



LPG expands around 270 times from a liquid to a vapour.

LPG is stored and transported in cylinders and tanks as a liquid under pressure.



2 – 10 %

The flammability range of LPG is quite narrow, at around 2 – 10%, requiring around 90 - 98% of oxygen to ignite.

LPG vapour at a level less than around 2% is too lean to ignite, and at a level greater than around 9% is too rich to ignite.

Ignition sources of LPG include electrical equipment (eg. a hot water system, air conditioner unit) or smoking, among other things.



In its natural state, LPG has no smell, taste, or colour.

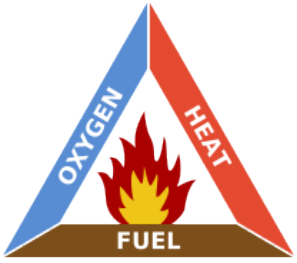
The odourant Ethyl Mercaptan is added to LPG to give it its unique and distinctive smell. The same odourant is used in many places around the world.

Sufficient odourant is added to enable unburnt LPG to be detected before it becomes a flammable mixture.



As a gas, LPG is around 50% heavier than air, so it sinks to the lowest point on the ground when released.

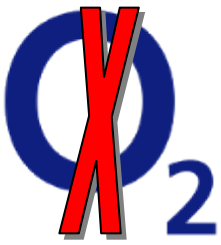
This is why care must be taken when using LPG around pits and drains as it will easily flow into pits and drains, creating a flammable gas hazard.



A fire requires three basic components – oxygen, heat, and fuel. To prevent a fire, at least one of the components must be removed.

When handling LPG, fuel and oxygen is ever present, so heat (i.e. ignition sources) must be eliminated from the equation to prevent fires.

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LPG is non-toxic, however exposure to large amounts in a confined space could result in death by asphyxiation (i.e. lack of oxygen making the atmosphere unbreathable).

This is why it is important to allow adequate ventilation when handling LPG or using it in an appliance.



- 42 degrees

While water boils (turns from a liquid to a vapour) at around 100 degrees C, propane boils (vapourises) at around – 42 degrees C, and butane boils at around 0 degrees C.

FUN FACT: A portable butane cooker may not operate in an alpine area below 0 degrees, as the butane would not vapourise to allow for ignition!



ELGAS cylinders are expressed in KG (e.g. 45 kg cylinder).

1Kg = 1.961 litres of propane LPG

There is roughly 2 litres of propane LPG for every 1kg, close enough to double.

Note: 1 kg of butane LPG equates to 1.7 litres



LPG can be used for things such as:

- Heating
- Cooking
- Hot Water
- Fuel for vehicles



It is illegal to fill an LPG cylinder from an Autogas dispenser at a petrol station.

The reasons include LPG at a service station is sometimes a mix of Propane and Butane which is not suitable for use in LPG appliances which are designed to burn Propane only.
Also, Autogas dispensers are not designed to fill cylinders so getting the correct amount of LPG in the cylinder is guess work, and that guess work can be very hazardous!

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2.2 LPG Cylinders

About LPG Cylinders

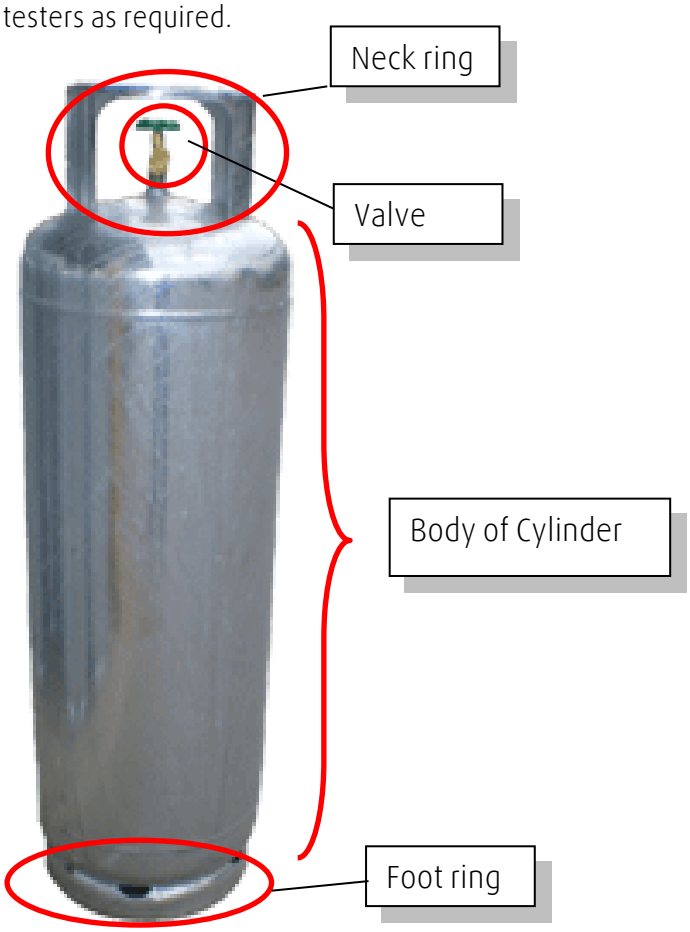
An LPG cylinder can be broken up into a number of key components, including:

- Body of the cylinder
- Foot ring
- Neck ring
- Valves

Body of the cylinder
This comprises the bulk of the cylinder and is where liquid LPG is stored inside the cylinder. The cylinder must not be filled beyond the 80% level of the cylinder. This leaves space for expansion of LPG liquid due to temperature changes. LPG expands and contracts by a large amount, even when the temperature change is small.

Foot ring
The main purposes of the foot ring are to give the cylinder a stable basis on which to stand upright, as well as protect the bottom of the body of the cylinder from damage or deterioration such as rust, by keeping the bottom of the cylinder off the ground.

Neck ring
The main purposes of the neck ring are to make it easier for handling the cylinder, as well as help protect the cylinder valve from damage. Neck rings come in various shapes and sizes. The neck ring is also used for cylinder identification and testing purposes, as it is stamped by manufacturers, owners, and cylinder testers as required.



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On the outside of a cylinder neck ring you will find a number of stamps (pictured below). Some of the main stamps include:

- Manufacturer of the cylinder
- Date of manufacture
- Company that owns the cylinder
- Tare weight of the cylinder
- Cylinder test dates
- Serial number of the cylinder

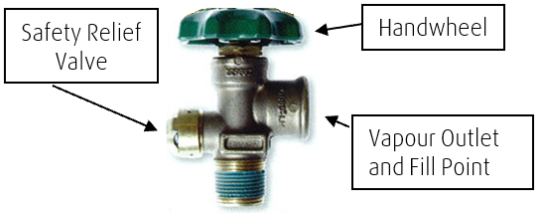




Valves

Cylinder valves are attached to the top of a cylinder and serve 2 primary purposes:

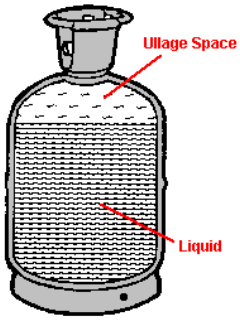
i. Filling the cylinder
ii. Vapour withdrawal (for when the cylinder is used with an appliance)
Liquid withdrawal (to power a forklift truck).



The cylinder valve is opened and closed by turning the handwheel. Besides the main inlet (fill point) / outlet of the valve, the valve assembly also houses the safety relief valve which releases excess pressure from the cylinder as required. The valve may also contain a bleed screw which indicates the 80% full level (of liquid) when a cylinder is filled by volume.

Ullage Space

LPG cylinders are filled to **no more than 80%** of the cylinder, to allow safe expansion of the liquid.



LPG has a high degree of expansion, and is the reason cylinders are only ever filled to 80% of the cylinder, which is regarded as the full level.

As the air temperature rises, LPG liquid within the cylinder expands. A space known as the "ullage" is provided to prevent cylinders from becoming over-pressurised as the surrounding air temperature rises.

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Vapour versus Liquid Cylinders

There is a very important difference between vapour and liquid cylinders, so it is critical that they do not get mixed up.

Vapour cylinders – Most LPG appliances run on LPG vapour, and are not designed to run on LPG liquid. Accordingly, a vapour cylinder must be used for installations supplying LPG to appliances. It would be dangerous to connect a liquid cylinder to an appliance installation, as the appliance would be supplied with liquid LPG. An indication that a liquid cylinder is incorrectly connected to an appliance installation could be icing around the cylinder regulator.

Liquid cylinders – Liquid cylinders are fitted with a liquid withdrawal tube that extends to the bottom of the cylinder, which is used to transfer liquid LPG from one cylinder to another. Liquid cylinders are typically found at service stations where they are used to fill smaller BBQ cylinders with liquid LPG. All forklift cylinders are liquid supply.

To help prevent 45kg liquid and vapour cylinders being mixed up, vapour and liquid cylinders have a different connection thread as well as distinguishing features on the outside of the cylinders:

- Liquid cylinders have their neck ring painted blue or have the outlet (valve) clearly labeled with a metal collar which reads "Liquid Supply".

- Liquid cylinders are fitted with an external male thread on the valve connection point, so that they cannot be accidentally fitted to a vapour installation.

Some ELGAS Agents sell 45kg liquid cylinders to a small number of customers that have a liquid appliance (eg bitumen heater, crop dryer). These customers must sign a *Liquid Burner Declaration Form*, which states they will only use the liquid cylinder for the declared appliance and will not use the cylinder for decanting purposes (i.e re-filling BBQ cylinders).



Blue neck ring on a liquid cylinder.



Vapour Valve, Female thread



Liquid Valve, Male thread

On the left-hand side is a valve from a vapour cylinder with an internal female thread on the connection point. On the right-hand side is a liquid valve, with an external male thread on the connection point.

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The following picture shows some of the main sizes of ELGAS cylinders.



Barbeque Cylinders

A 3.7 kg Small BBQ cylinder
B 8.5 kg Large BBQ cylinder

Cylinders A and B are BBQ cylinders. ELGAS has the Swap'n'Go system for exchanging an empty BBQ cylinder for a full cylinder, or customers may take their empty cylinder to a service station to have it refilled on site via the Refiller system.

Forklift Cylinders

C 15 kg Aluminium forklift cylinder, liquid
D 18 kg Steel forklift cylinder, liquid

Both C and D are forklift cylinders, used to operate LPG powered forklift trucks. Similar to a car, forklift trucks use liquid withdrawal cylinders.

The difference between the two forklift cylinders shown above is that one is made of steel, and the other aluminium, and they are also slightly different sizes. Aluminium forklift cylinders are lighter than steel cylinders. Many customers prefer the lightweight aluminium cylinder as there is less chance of injury when lifting full cylinders on and off the forklift trucks. Due to their health and safety benefits 15kg cylinders are the main size used in the ELGAS forklift business. The advantage of the 18kg cylinder over the 15kg is that it holds around an extra 6 litres of LPG and will keep a forklift truck operating longer.

In relation to forklift cylinders, with the Exchange system, the forklift cylinder is physically removed from the forklift truck each time it empties and is replaced with a full one. Empty exchange forklift cylinders must always be stored in an upright position. With in-situ fill, the cylinder does not have to be removed from the forklift truck each time it empties. Instead, the customer would have an LPG tank on site from which they would generally fill the forklift cylinder on the back of the forklift truck, similar to a car filling with LPG. Cages/racks

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Other Cylinders

E 18 kg Steel cylinder, vapour

This cylinder is not very common. It is used for situations such as powering portable appliances (e.g. blow torch for bitumen road). While the 8.5 kg or 45 kg vapour cylinders could also do the job, they are seen as too small or too large respectively. Also available in 15kg.

F 45 kg Exchange cylinder, vapour

Empty 45kg exchange cylinders are physically removed from a customer's site and replaced with full cylinders. These cylinders are clearly marked on the outside as "Fill By Weight Only", indicating the cylinder needs to be filled at an ELGAS depot using a set of scales. As shown below, the handwheel on an exchange cylinder is located on the top of the valve and there is no fill point for the tanker to fill the cylinder.



45kg Exchange Cylinder
Notice there is no fill point at the top, as the cylinders are filled by weight at the depot. The handwheel can be any colour.

G 45 kg Easygas (in situ / tanker) cylinder, vapour

Easygas cylinders stay on the customer's site and are generally only removed for testing. The cylinders are clearly marked on the outside as "Easygas". They are different to exchange cylinders in their valve configuration (shown below) as the handwheel is on the side of the valve, and the tanker fill point is at the top of the valve.



45kg Easygas Cylinder
Notice the fill point at the top of the valve so the ELGAS tanker can fill the cylinder on the customer's premises. The handwheel and dust cap can be any colour.

H 45 kg Exchange cylinder, liquid

Referred to as a "blue top" because the neck ring is painted blue. The unique colour coding is to clearly distinguish a liquid cylinder from the more common vapour cylinder. A 45kg liquid cylinder is typically used for refilling BBQ cylinders and must never be connected to most customer's installation that runs vapour appliances. The cylinder is clearly marked on the outside as "Liquid Withdrawal".

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Larger Cylinders



A B C

A 210 kg Vapour / Liquid Cylinder

The 210kg cylinder is similar to the 190kg cylinder though slightly larger in size, with a different valve configuration. Regulations state that 210kg (499 litre water capacity) is the largest size a cylinder can be, above which size the vessel is deemed a tank and subject to different regulations.

B 190 kg Vapour / Liquid Cylinder

These cylinders can provide vapour or liquid or both at the same time because they have one service valve fitted for each type of supply. Unlike 45kg liquid cylinders, a liquid 190kg does not have blue colouring at the top. Rather, the valve on the top of the cylinder is clearly labeled with a metal collar that reads “Liquid Supply” or “Vapour Supply” as appropriate. Vapour cylinders would be used for large domestic or small to medium commercial customers. Liquid cylinders are typically found at service stations, used for refilling BBQ gas cylinders.

C 90 kg Vapour Cylinder

The 90kg vapour cylinder is sometimes used for customers as an alternative to 2 x 45kg cylinders, perhaps to meet site regulations, or other reasons. The 90kg cylinder is used for Easygas Downunder, where the cylinder is fitted with a contents gauges. A contents gauge is also handy for commercial customers who need to keep a close eye on their content levels.

Easygas Downunder Cylinders



The Easygas Downunder system is designed for domestic households who would prefer their gas cylinders hidden away. A 90kg cylinder is installed underground, housed in a specially designed protective canister. All that is visible is a discreet access lid. The customer is scheduled for deliveries on the ELGAS tanker run.

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Tanks

Regulations class an LPG vessel as a tank as soon as the vessel can hold 500 litres or more water capacity. Most tanks sit horizontal, are thicker than cylinders, and are subject to different site requirements re location etc. Tanks are typically measured in tonnes as opposed to kg (eg 5 tonne tank).



Cylinder Height / Width / Capacity

Knowing the approximate height and width of cylinders can be useful when siting cylinders. The following dimensions are approximates only as different cylinder manufactures may have slightly different measures.

Size (kg)	Height (cm)	Width (cm)	Capacity LPG (L)	Capacity (MJ)
3.7	34.5	26	7	175
8.5	46.5	31	17	425
15	70.5	30.5	29	725
18	83	31	35	875
45	127	38	88	2,200
90	136	58.5	176	4,400
190	138	75	373	9,325
210	145	76	412	10,300

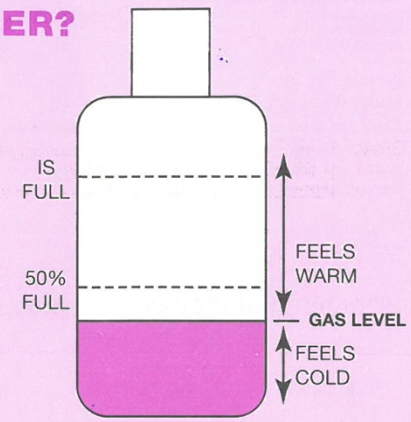
The following is a hot water test that can be performed to check the level of liquid LPG inside a cylinder:

HOW FULL IS MY LP GAS CYLINDER?

Here's how to find out:

1. **Pour very hot (but not boiling) water over the sides of the cylinder from the top.**
2. **Wait 5-10 seconds.**
3. **Starting where you poured the water, run your hand down the cylinder.**
4. **Where the cylinder changes from warm to cold, that is the gas level.**

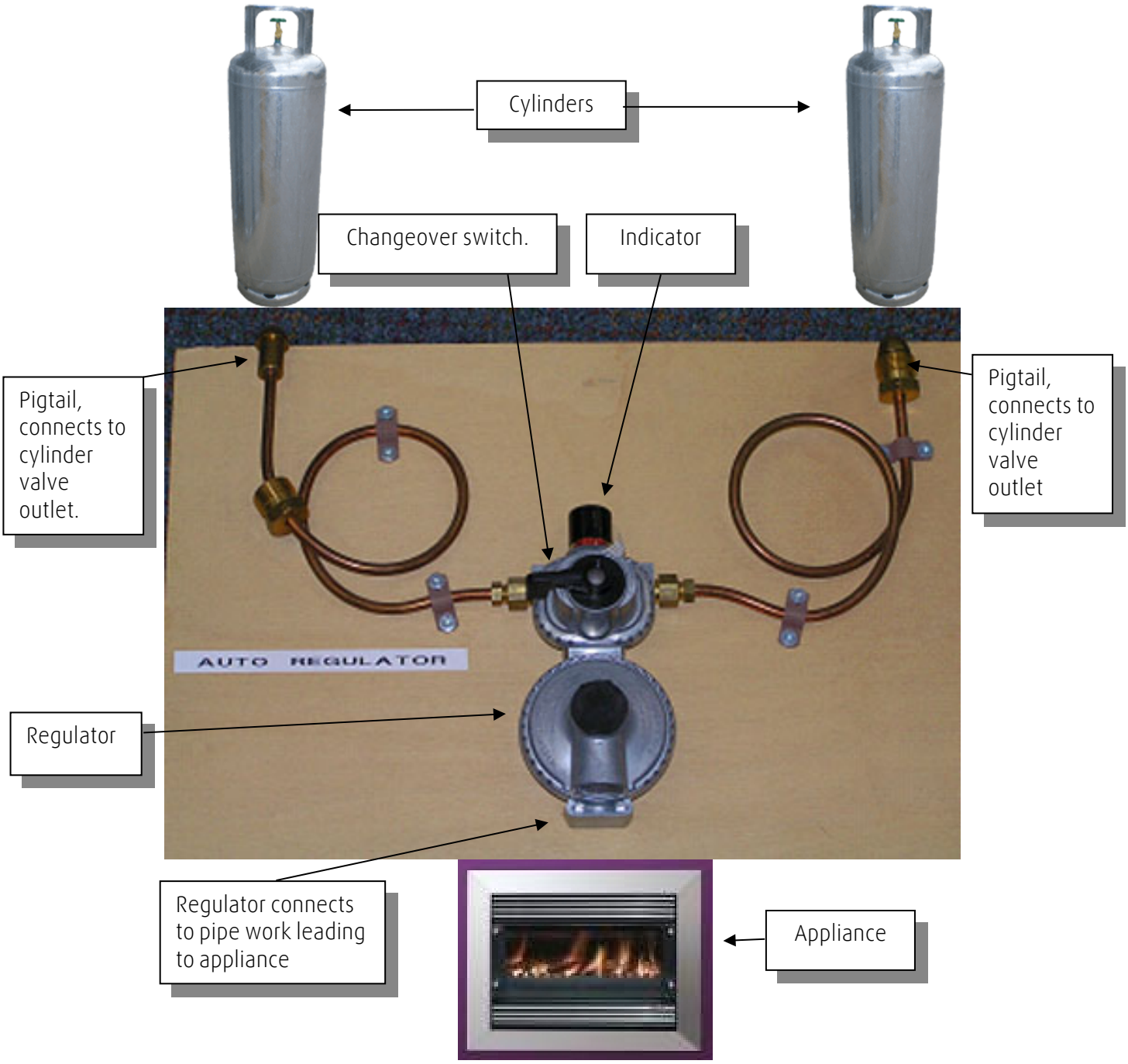
On a warm day, with the cylinder in full sunlight, you may not need to apply hot water to be able to feel the difference in temperature where the gas level is. A 45kg cylinder is full when the gas level is approximately 15 centimetres below the shoulder.



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2.3 Other LPG Equipment

The picture below represents the typical LPG equipment found on a 2 x 45kg cylinder domestic installation. As depicted below, LPG in a cylinder moves through a pigtail to a regulator, which then connects to pipework leading to an appliance.



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What is a Pigtail?

A pigtail is copper piping or a flexible hose assembly which connects LPG cylinders to a regulator. A pig-tail works at cylinder pressure (high pressure). It is often curled up and looks like a pigs tail (hence the term). It is curled up to allow for movement in the piping which sometimes occurs when cylinders are replaced or removed from a customer's site. Please note that the maximum life of a flexible hose assembly pigtail (non-copper) is 6 years from the "date of manufacture" (i.e not 6 years of service) which is stamped on the hose.



Copper piping pigtail



Flexible hose pigtail

What is a Regulator?

As the term implies, a regulator regulates the pressure at which LPG enters an appliance. If there was no regulator between the gas from the cylinder and the appliance, the appliance would receive more gas than it can effectively handle. While the majority of LPG appliances operate at 2.75 kPa pressure, the pressure inside a cylinder can range from around 400 kPa at 0 degrees C, to 900 kPa at 40 degrees C (pressure rises as temperature rises). The regulator operates to reduce pressure down to a constant 2.75 kPa for the appliance. Some larger installations may have two or more regulators, where pressure is reduced in several stages.



What is a Changeover Switch?

A changeover switch is a valve that switches over to the second (full) cylinder when the cylinder being used becomes empty. It is commonly found on installations of 2 x 45 kg exchange cylinders.

The changeover process can happen automatically or manually as explained on the following page.

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Automatic changeover switch:

- Automatically switches from the cylinder that runs out of gas to the full cylinder. This will occur when the pressure level drops low enough (but the cylinder not completely empty), ensuring a continuous supply of LPG. Please note that both cylinders must have their valves "open" for the automatic changeover to occur.

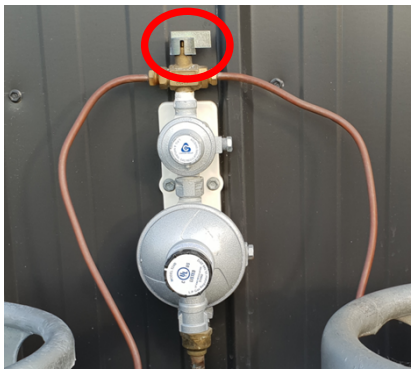
- When both cylinders contain LPG, a green indicator band is typically shown on automatic changeover switches. When the automatic changeover switch activates it will typically reveal a red indicator band. This indicates to the customer that they are now using their second cylinder and they are encouraged to order a new LPG cylinder to replace the empty one. When a driver delivers a new cylinder to replace the empty one, they will reset the indicator band so that it shows green again.



Manual changeover switch:

- When the first cylinder runs out, the customer needs to manually adjust the changeover switch (circled below) so that it points towards the full cylinder. The valve on the empty cylinder should be closed, and the valve on the full cylinder opened to re-commence gas supply. Customers are encouraged to order a new LPG cylinder once they start using the second cylinder to help ensure they do not run out of gas.

- The inconvenience of the manual change over system is that appliances will stop working when the first cylinder runs out, and will require re-lighting of pilot lights etc.



With the tanker fill (Easygas) system, a changeover switch is not required as the installation is usually fitted with a T-piece which draws LPG from both cylinders at the same time. Unlike the Exchange system which uses all of the gas from one cylinder before switching to the other, the Easygas system is designed to draw LPG equally from both cylinders. There is no need to switch over to the second cylinder, and it is ELGAS' job to schedule a delivery before both cylinders are empty. Some Easygas systems may be fitted with a changeover switch, however it will not face towards either cylinder, rather, will point in the middle allowing gas to be drawn from both cylinders at the same time.

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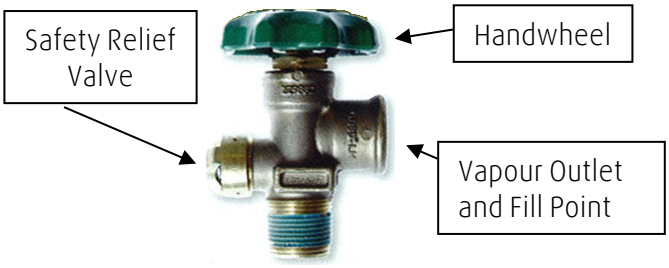
What is a valve?

A valve is a control device that is screwed into the top of a cylinder and serves a number of functions. There are many different types of valves available. Over time there has been variations in design, and variations between different manufacturers, and accordingly there are many combinations available out in the field.

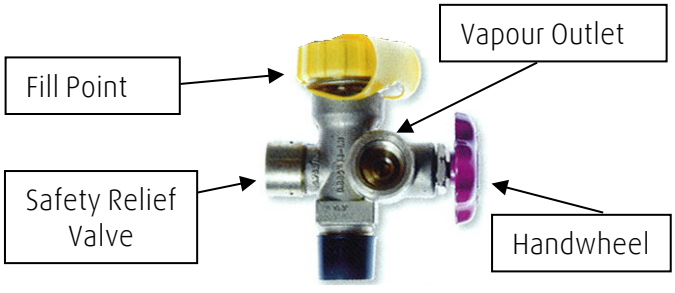
Broadly speaking, a valve may contain the following components:

- Fill Point - This is where LPG enters the valve to fill the cylinder
- Handwheel - This is used to control the flow of LPG, by opening or closing the cylinder valve. To open the cylinder valve the handwheel is turned anti-clockwise, while turning the handwheel clockwise will close the cylinder valve. Exchange cylinders have the handwheel on top of the valve assembly, while Easygas cylinders have the handwheel on the side of the valve.
- Vapour Outlet: Connection point where the pigtail connects to the valve on the cylinder.
- Safety / Pressure Relief Valve - This is designed to release a small amount of LPG should the pressure inside the cylinder get too high. The valve will automatically open, and then close once the pressure has been released. The release of LPG will lower the pressure inside the cylinder. High temperatures (40 degrees C +) may cause the safety relief valve to operate.
- Bleed Screw – Bleed screws are fitted to cylinders that are filled by volume (eg tanker filled). The bleed screw indicates when a cylinder has been filled to 80% capacity, which provides an adequate vapour space for any liquid LPG expansion. The bleed screw is opened during the filling process. When the first spurt of white liquid LPG appears at the bleed screw, this indicates the 80% full level has been reached and filling is to be stopped immediately.

With the cylinder Exchange system, cylinders are filled by weight at an ELGAS depot. For this reason, valves on Exchange cylinders do need the fill point used by tankers. Exchange cylinders are filled by weight on a set of scales via the Vapour Outlet, which is the same outlet that the pigtail connects to on a customer's site. Being filled by weight means a bleed screw is not required to indicate when the cylinder is 80% full, so there are slightly fewer components on an Exchange cylinder valve.



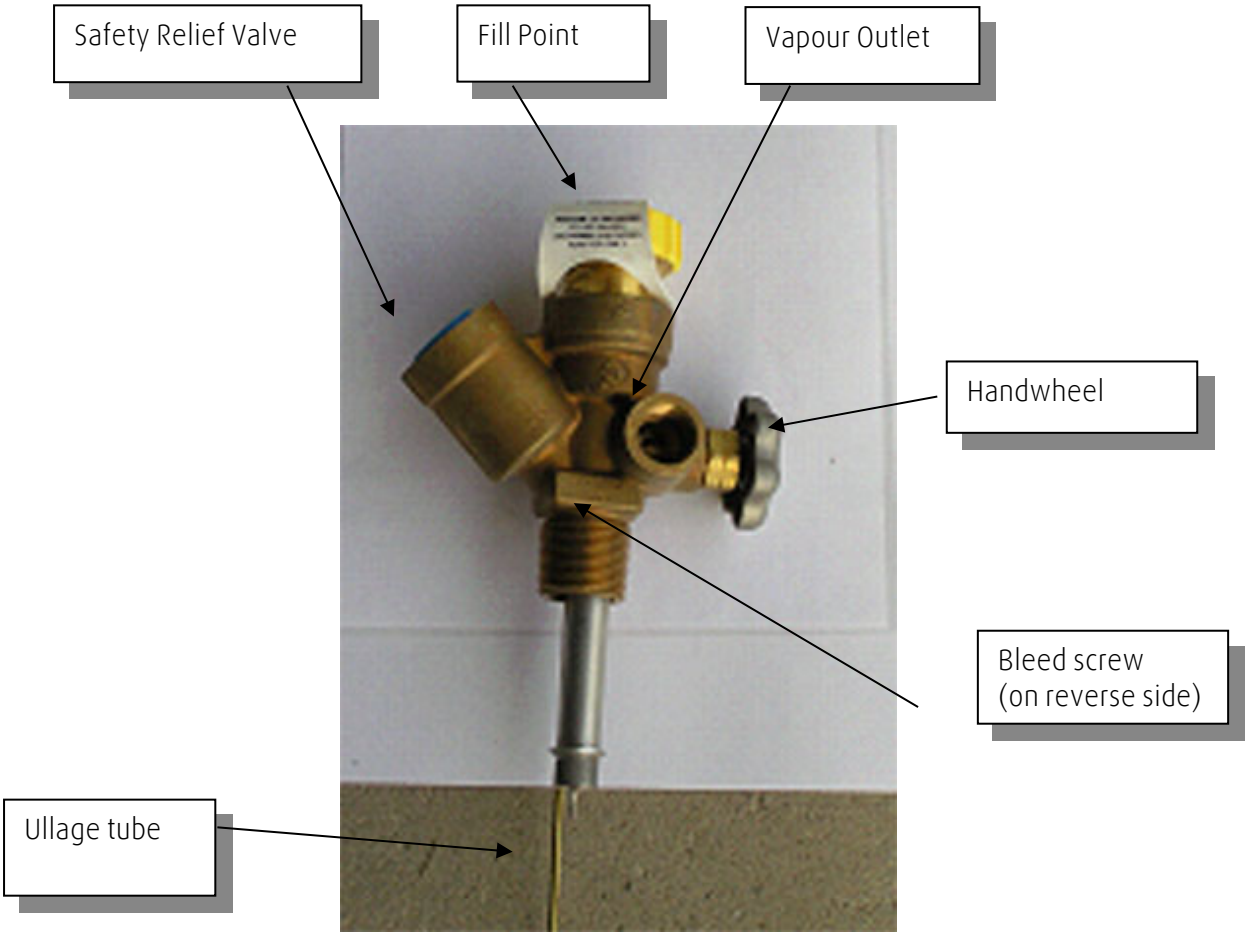
Exchange cylinder valve



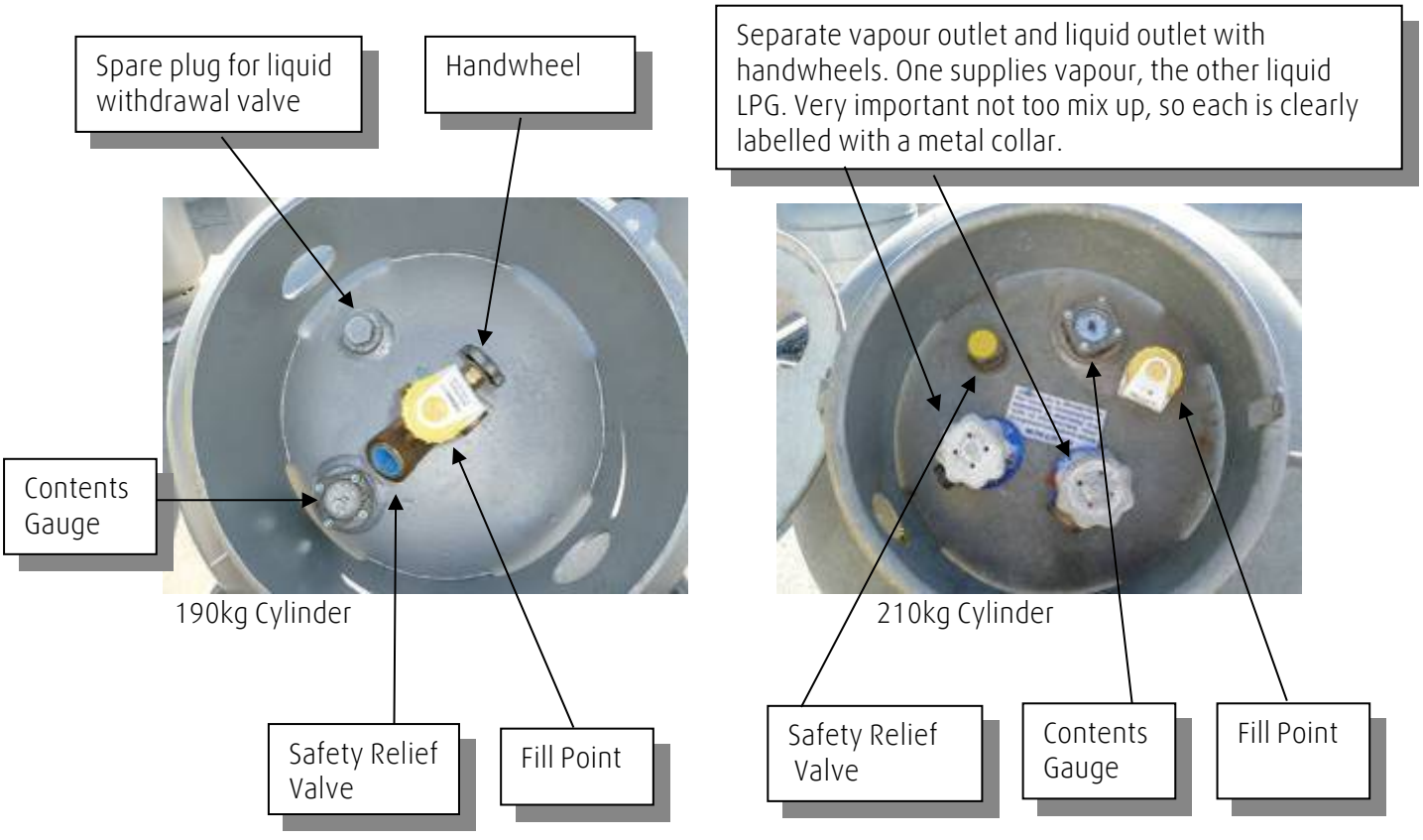
Easygas (In situ / tanker) cylinder valve

The picture on the following page shows a multi valve, which may be found on 190-210kg cylinders. The fill point at the top (with the yellow cap attached), indicates that the valve is designed for cylinders that are filled on the customers site via the ELGAS tanker.

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<u>190kg and 210kg cylinder typical configurations</u>:



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2.4 LCC27 Valve Versus Type 21 POL Valve

From April 2021 a new cylinder valve was introduced into the LPG leisure cylinder market (i.e for BBQ cylinders 9kg and under). The new valve is referred to as the LCC27 (Leisure Cylinder Connection Type 27). It replaces the existing Type 21 POL valve and comes with improved safety features.



Old Type 21 POL Valve



New LCC Type 27 valve

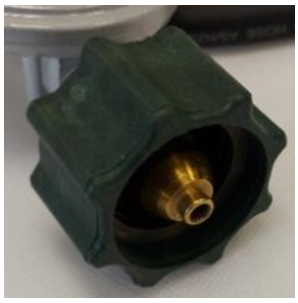
From the pictures above, the obvious difference with the new valve is that it has a visible external thread, while the old valve has the thread inside the valve.

The main safety feature with the new valve is that it incorporates a check valve that will only enable gas to flow when the valve is connected to an appliance. That is, if the cylinder valve is accidentally opened with no appliance connected, no gas will flow from the cylinder valve.

To complement the new cylinder valve, all new LPG appliances manufactured from October 2021 will include a new connection that is only suitable to use with the new LCC27 valve. This change is mandatory for all new LPG appliances from April 2022.



Existing POL appliance connection;
Left-hand thread (anticlockwise to tighten)



New appliance LCC27 connection;
Right-hand thread (clockwise to tighten)

A few points to note:

- Existing appliances with the POL connection can be used with both the old and the new cylinder valve
- New appliances with the LCC27 connection can only be used with the new LCC27 cylinder valve. Note: Consumers who purchase new appliances with the LCC27 connection must remember to swap LPG cylinders fitted with the new LCC27 cylinder valve.
- While the POL connection connects to cylinders in an anti-clockwise direction (LH thread), the LCC27 connection connects to cylinders in a clockwise direction (RH thread).

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3 LPG First Aid and Emergency Information

3.1 First Aid Information

The following actions should be applied to LPG related accidents:

Super Cold Contact Injuries (cold burns)

- Should liquid LPG come into contact with the skin, then a cold burn could occur, which is very similar to frostbite.
- Cold burns should not occur if protective gloves suitable for liquid LPG operations are worn during possible contact periods.
- When exposed to the sun, water hoses or taps on a site can contain extremely hot water. Always let the water run and cool down before application.
- Agent / Distributor staff handling LPG cylinders must be trained on how to provide first aid for cold burns.
- Agents / Distributors are required to provide and maintain an adequate first aid kit on site, with suitable materials for cold burn injuries.
- The following two pages detail the recommended procedures to be followed for the treatment of injuries, should a cold burn injury occur.

Please refer to the next two pages for further information on cold burns.

Exposure to LPG (Asphyxiation)

- Remove the person from area of exposure immediately.
- Be aware of possible explosive atmosphere.
- If victim is not breathing apply CPR and seek urgent medical attention.
- Give oxygen if available. Keep person warm and rested.

Contact with Eyes

- Immediately flush with tepid water or with sterile saline solution.
- Hold eyelids apart and irrigate for 15 minutes. Seek medical attention.

Hot Burns

Should the LPG ignite and burn an operator and/or customer then the staff shall follow their standard site procedures for treating hot burns.

First aid treatment of a hot burn is similar to treatment for a cold burn, however rather than warming the affected area, the affected area needs to be cooled.

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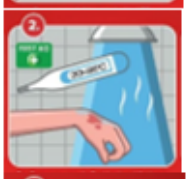
First Aid Procedures For Dealing With Super Cold Injuries

Contact temperatures are usually below -30°C and tissue contact at this temperature results in snap freezing of the affected area causing damage similar to a heat burn. Unprotected parts of the skin which come in contact with equipment at below zero temperatures may stick fast and the flesh may be torn on removal.

As Liquefied Petroleum Gas (LPG) has a boiling point of -42°C, direct bodily contact with LPG in its liquid state must be avoided as the above type of injury could occur. Other examples of liquefied gases are liquid nitrogen, oxygen and argon which have boiling points below -183°C.



1. Remove any clothing splashed by LPG and place injured person (or self) in a warm area as soon as possible. Cold injuries must be **rapidly** rewarmed to body heat. Do **not** allow to thaw slowly.



2. Small exposure - foot, leg, hand
If able, run warm water (preferably 33-35°C) over injured area. Where warm water is not available use emergency shower or tap water, but take care as prolonged immersing may cause a cooling hypothermia.



3. Larger areas - trunk or multiple areas
If able, immerse body or affected area in warm water (preferably 33-35°C). Where warm water is not available use emergency shower or tap water, but take care as prolonged immersing may cause a cooling hypothermia.



4. Eyes - Immediately hold eyes open and wash continuously with water for 15 minutes. Seek medical attention immediately.



5. Loosen any article of clothing that is not frozen but may restrict blood circulation or respiration.



6. Gently cover or drape injured area with dry sterile dressings or sheet which must be kept damp with water. Do not restrict blood circulation.



7. Thawing of frozen tissue can cause intense pain and lead to shock. They may be cold, have clammy skin, a pale appearance, and/or rapid pulse. Track any of these symptoms to tell emergency responders when they arrive.



8. Cold injuries must be rapidly rewarmed to body heat. DO NOT allow to thaw slowly. DO NOT apply direct heat or cold such as heat lamps, hot water, snow or ice to the affected area.



9. Seek medical attention for all but the most superficial frostbite injuries.

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Hospital Information Sheet

Recommended Procedure for Treatment of Super Cold Contact Injuries

NOTE: This is NOT a heat burn and the patient has been splashed by Liquefied Petroleum Gas in its liquid state at a probable temperature of -42°C. Super cold temperatures causing this injury are usually below -30°C and tissue contact at this or a lower temperature results in snap freezing of the affected area without intra-cellular fluid crystallisation occurring.

Local pain usually gives warning of freezing but sometimes no pain is felt, or is short lived. Frozen tissues are painless and appear waxy with a pale yellowish colour. Thawing of the frozen tissue can cause sustained and intense pain and shock may also occur.

- Do not delay the warming process - such injuries must be rapidly returned to body heat
- Treat for hypothermia if present
- Immerse the affected area in a bath of 33-35°C (do not exceed 35°C) - maintain at this temperature. Tap water is suitable if warm water is not available.
- Use a heating blanket or mattress if available
- Administer adequate analgesic cover
- If serious commence warm intravenous therapy to assist thawing process
- Once rewarmed treat as for thermal burn.

Use non-adherent dressings e.g. Bactigras wrapping, Vasgauze or other dry non-adherent dressings. Full extent of damage may be delayed up to 48 hours (skin may look normal after thawing). It is recommended that admission for observation be undertaken if there is any difficult in assessing the extent of tissue damage.

For further information, please contact your State Burns Unit.

NSW	Phone:	(02) 9767 7776	Concord Hospital
VIC	Phone:	(03) 9076 3626	Alfred Hospital
QLD	Phone:	(07) 3646 6738	Royal Brisbane
SA	Phone:	(08) 7074 0000	Royal Adelaide
WA	Phone:	(08) 9224 1038	Royal Perth
NT	Phone:	(08) 8922 8888	Darwin Hospital
TAS	Phone:	(03) 6166 8308	Royal Hobart

Take this information sheet with you to the Medical Centre or Hospital

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First Aid Kit

The provision and maintenance of a first-aid kit on Agent / Distributor's premises is a statutory requirement to enable immediate first-aid treatment to be given to minor injuries such as abrasions, burns, minor cuts and eye irritations. This should minimise infection of the wound, which could lead to possible complications.

The following shows some of the burns related first aid products that may be found in a first aid kit:



First Aid Kit

First Aid kits must include items such as bandages and dressings; antiseptic creams and swabs; forceps, scissors and gloves; and a first aid guide. The contents should be kept in a solid plastic container.



Eye Stream Bottles

Eye stream bottles are a first aid emergency treatment for flushing hazardous substances from the eye/s.



Burn Gel Dressings

Used for the immediate first aid treatment of burns. Gel dressings rapidly cool burns helping to prevent further tissue damage and aid the healing process, and offer rapid and ongoing pain relief. The gels are a sterile barrier against contamination and help prevent infection, and cool by drawing heat out of the burn.



2nd Skin Dressing Kit

A hydrogel dressing to help protect against blisters, pressure and friction. Helps bring cooling relief to stings, bites, and blisters.

It is advisable to have an Agent / Distributor staff member trained in first-aid on the premises. Where appropriate, qualified help should be obtained from the people/organisations listed in the Emergency Phone Numbers sheet included in Appendix I of this manual.

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3.2 Personal Protective Equipment (PPE)

In the interest of safety, and for projecting a positive image out into the community, PPE enables drivers to carry out all duties in a safe manner. All drivers, as well as personnel working in and around the dock / yard must wear suitable PPE as described in this chapter.

You are responsible for your own safety and the safety of others. Always alert a fellow worker if you see that they are working in an unsafe manner by not using appropriate PPE.

Care and maintenance of all PPE is expected, as is a degree of hygiene, to ensure the correct functioning and cleanliness of the equipment at all times. Drivers must check their trucks for the correct PPE on a weekly basis as they could personally be liable for significant fines. Yard staff should also check the condition of PPE on a weekly basis.

The various forms of personal protective equipment include:

Clothing

Protective body clothing is provided to protect the skin from contact with exposure to chemicals, flash fire, or extreme weather conditions (e.g. sun, snow). All drivers must wear high visibility, anti-static, low flammability and full body cover clothing when undertaking their work activities. Clothing made from cotton or cotton / polyester blend has suitable anti-static properties. Nylon or wool blends are NOT suitable and are not permitted in any ELGAS operation as enough static electricity can be generated to cause sparks if nylon or nylon mix clothing is worn.









Safety Boots

Protective footwear is used to protect your toes, feet and ankles from injury, and should also assist with slippery or wet surfaces. It is recommended drivers wear anti-static safety shoes or boots to AS / NZ S2210.3. Lace up boots with side-zippers are preferred due to good ankle support.



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Safety Glasses

Your eyes are one of the most vulnerable parts of your body. Eye injuries may result in damaged vision or even loss of sight. Eye injuries are difficult to treat, slow to heal, and are often permanent. Eye incidents may include splashes from solvents or LPG, scratches from vegetation and trees, or dust and grit entering the eye.

AS/NZS 1337 certified safety glasses or prescription safety glasses are recommended to be worn in all designated areas including:

i. operational areas of Agent / Distributors premises
ii. for drivers at any time when working outside the vehicle.

Sunglasses and regular prescription glasses are not recommended where eye protection is required (unless over glasses are worn).





Gloves

Gloves are used to safeguard your hands from injury. The hands are one of the most commonly injured parts of the body. All depots must have a pair of heavy-duty cryogenic gauntlets for emergency purposes. Gauntlet gloves protect the hand, wrist, and forearm. For normal work activities, drivers shall wear thermally resistant gloves that are to be replaced as soon as they show any signs of wear.




Hearing Protection

Hearing protection is mandatory when entering or working in an area where noisy plant equipment is operating and the “hearing protection required” sign is displayed.





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3.3 Handling Emergency Phone Calls and Gas Leaks

The following is taken from *Elgas Incident & Emergency: Immediate Response Guidelines v1 Sep 2019*, and covers the steps required for handling an emergency phone call from a customer.

EMERGENCY CALL PROCESS	
1	**REMAIN CALM AT ALL TIMES** Ask nature of Incident Check Levels of Emergency – Gas Leaks guide **Refer to ELGAS Emergency Phone Number 1800 819 783 if required for Gas Leak Level 1-2** Record details as follows: • Full name of caller, phone number of caller and contact at the site • Location / address of incident • Details of incident • Details of injuries (if any). If yes, ask if the injured persons are still on site or have been moved to another location or taken to hospital • Details of damage to property or assets etc. • If caller has high level of concern advise them to call '000'
2	If there has been a '**FIRE**', has the Fire Brigade been called? If '**NO**' ask caller to do so If unable or unwilling to do so: • Confirm caller details • Full Name, Contact Number & Address of Emergency Agent / Distributor is to ring '000' then notify ELGAS Emergency Phone Number 1800 819 783
3	If **Minor** Emergency • Advise Agent / Distributor Management • Arrange suitable management of site/cylinder/vehicle • Contact ELGAS to ensure all Incidents have been logged via ELGAS Incident Reporting procedure • Details of Incident must be entered onto Customer Account in EWS (where EWS used)
4	**Customer Communication** • It is critical that customers are kept informed of how we are dealing with their issue. • Maintain regular contact with the customer • The Agent / Distributor or ELGAS Emergency Phone Number must keep in contact with the customer until they have positive confirmation the after-hours / fitter etc. has made contact, and to confirm final resolution.

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The following is taken from *Elgas Incident & Emergency: Immediate Response Guidelines v1 Sep 2019*, and covers the handling of gas leaks and who is responsible for fixing the leak.

GAS LEAKS

GAS LEAKS

CAN YOU SEE IT (MAJOR LEAK)
CAN YOU HEAR IT (MAJOR LEAK)
CAN YOU SMELL IT (MINOR LEAK)

INSTRUCTIONS FOR CUSTOMERS:

Gas Leak Inside Premises
The customer should:

- Check that all appliances are turned off
- Open windows and doors
- Turn off cylinder valve If safe to do so
- Avoid using sources of ignition

Fire
The customer should:

- Turn off cylinder valve if safe to do so.
- If cylinder valve cannot be closed, call fire brigade. Keep cylinder cool by water hose but do not extinguish the flame. If the cylinder is engulfed by fire, evacuate the area.

Gas Leak Near Cylinders
The customer should:

- Check for a gas leak by completing a soapy water test. Use spray bottle or bucket of cold water with a good squirt of dishwashing liquid. Spray / pour over cylinder and fittings and look for bubbles which indicate a gas leak
- If gas leak detected, keep sources of ignition at least 20m away. SWAP BBQ cylinders should be moved to a safe, open air location.

Customer Responsibility

- If the leak is on the regulator or pipe work this is the customers responsibility. Advise customer to ring plumber / gas fitter to repair gas leak.
- If the leak is on a customer owned vessel or equipment (e.g. regulator, pipework, pigtail connection to the regulator), the customer needs to organise a plumber / gasfitter to repair the leak at their expense

ELGAS Responsibility

- If the leak is on the cylinder this is ELGAS' responsibility. The Agent / Distributor must make all reasonable efforts to attend to collect the cylinder (particularly for SWAP customers or retailers) or arrange a fitter to attend and repair if required.
- Exchange cylinders leaking from the pigtail connection to the cylinder are ELGAS' responsibility.

Venting Cylinders
The customer should:

- Lightly hose the cylinder to cool it down. Check last fill, if recent the cylinder may have been over filled and may need someone to attend and remove / decant some of the gas.

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The following is taken from *Elgas Incident & Emergency: Immediate Response Guidelines v1 Sep 2019*, and covers the actions required for different levels of gas leak, from minor to significant.

Levels of Emergency - Gas Leaks

	Minor 4 Agent/ Distributor	Moderate 3 Agent / Distributor	Serious 2 ELGAS Emergency Phone Number	Significant 1 ELGAS Emergency Phone Number
Gas Leaks	(A) Customer Responsibility • Gas Leak Contained and safe • Gas Leak at regulator / pigtail connection to regulator • Gas Leak at appliance • Gas leak at cyl/tank that is customer owned (B) Agent / Distributor to Respond • Gas leak on cylinder valve • Gas leak on Exchange pigtail connection to cylinder • Fire Briqade attended, but no leak identified	• Gas leak uncontained, but in safe location and is being attended to • Emergency Services have attended site and satisfied site is safe and leak has been contained	• Gas Leak involving a fire or explosion causing severe damage • Gas Leak has contributed to an injury, but not life threatening	• Gas leak has contributed to a Fatality or life threatening injury • Serious medical injury caused by exposure to LPG gas • Emergency services and government agencies involved • An unsafe situation
Action Required	(A) Customer responsibility to arrange plumber / gasfitter (B) Agent / Distributor to arrange collection or repair of cylinder as required	Agent / Distributor to arrange collection or repair of cylinder as required	Phone ELGAS Emergency Phone Number 1800 819 783	Phone ELGAS Emergency Phone Number 1800 819 783

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3.4 After Hours and Emergency Contact Details

The *Agent / Distributor Emergency Phone Numbers* list found in Appendix I of this manual, details the relevant phone numbers that could be required in an emergency. This list must be completed immediately upon receipt of the manual and the following actions undertaken:

i. Ensure all Agent / Distributor staff are aware of the list

ii. Ensure any Agent / Distributor staff who respond to emergencies are trained and equipped to do so. PPE in any emergency situation must include suitable gauntlets and goggles as eye protection.

iii. Keep the list in a prominent position, that is readily available by all staff if required

iv. Review the list annually to ensure it is still correct.

v. Provide a copy of the list to your local ELGAS representative.

Very few Agents or Distributor's premises are manned on a 24-hour basis. It is a legal requirement that in an emergency, that either the public or the Emergency Services should be able to contact someone in a responsible position, who can both advise and take corrective actions as necessary.

Agents / Distributors, as well as complying to the local regulations concerning the storage and handling of Dangerous Goods, must have signage on their premises in accordance with the Placarding / *Signage* section in this manual as well as the *Agent / Distributor Emergency Phone Numbers* list.

The Agent / Distributor must discuss a hierarchy of calls that includes the 24-hour ELGAS Emergency Phone Number (1800 819 783) and the local ELGAS Customer Service Manager.

3.5 Accident/ Incident Reporting

It is a legal requirement for all incidents and accidents associated with LPG at an Agent / Distributor premise or in any of their operations to be reported to ELGAS as soon as practical. This information is assembled and statistics reported to Government Regulators as required.

Upon having an incident or accident all Agents / Distributors are to contact their local ELGAS representative who will complete a Minor Incident Report.

A Major Incident Form is a formal written report of an accident/incident where the accident/incident is LPG related and involves death or injury to a customer, staff member or contractor and/or significant property damage.

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4. Emergency Guidelines in the Cylinder Truck

4.1 Emergency Guidelines in the Cylinder Truck

Safe handling of LPG requires constant vigilance. When proper care is taken, and procedures followed, many emergency situations can be avoided. However, in the event an emergency situation does arise, there are some basic procedures that must be followed carefully.

Emergency situations may occur at an Agent / Distributor premises, at a customer's site, or in any public area whilst undertaking deliveries. Emergency situations may include:

- A fire on the truck
- A gas leak
- A serious accident



An emergency information holder must be kept inside the drivers' side door to provide the driver and initial responders with information about the dangerous goods being carried and how to manage a spill or incident in emergency situations. It must only contain the following documents, with fines issued for storing any other material inside.

(i) ***Emergency Procedure Guide – Transport "LPG"*** *(AS 1678.2.1.001)*
How to handle LPG in an emergency situation

(ii) ***Emergency Procedure Guide – Transport "Vehicle Fire"*** *(AS 1678.0.0.001)*
How to handle a fire on a dangerous goods vehicle.

(iii) **Load Manifest** - Describes the type and quantity of dangerous goods being carried and emergency phone numbers.

If the emergency information holder cannot be located inside the drivers side door, it may be kept elsewhere in the cab chassis, however, there must be a sign inside the drivers side door stating where the emergency information holder is located.

Note: A hardcopy of *SAA/SNZ HB 76 DG:* Initial *Emergency Response Guide* may be carried in place of items (i) and (ii) above and is useful if you transport multiple dangerous goods.



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General Emergency Guidelines

There is no set procedure to follow that covers all emergency situations, as every emergency situation is unique. Following a set sequence of procedures may not be appropriate and may lead to injury to yourself or others. The following procedures may be used as a guide:



STOP AND ASSESS - CONSIDER YOUR OWN SAFETY / OTHERS
The appropriate action may be to immediately leave. Remain calm and assess the nature, extent and degree of hazard, before rushing into action. The safety of yourself and others is the first priority.



ELIMINATE SOURCES OF IGNITION
Eliminate / remove any ignition sources, if safe to do so.



CHECK CYLINDERS FOR ANY GAS LEAKS
Control any gas leaks by eliminating the fuel source, if safe to do so.

1800 819 783 / 000
ELGAS Emergency Phone Number

CALL FOR ASSISTANCE
Notify ELGAS of any incident via the ELGAS Emergency Phone Number. They have emergency response procedures and will organise the appropriate assistance. The ELGAS Emergency Phone Number is printed on the side of each cylinder, or on the shipping document kept inside the driver's door.
IF LIFE IS THREATENED THEN YOU MUST CALL 000 FIRST.



SELECT APPROPRIATE PPE AND EQUIPMENT
Depending on the situation – ensure the correct PPE and safety equipment is at hand.



ENSURE THE SAFETY OF BYSTANDERS / APPLY FIRST AID
Be aware of the people around you and establish an exclusion zone around the incident by using safety cones or appropriate safety signs. Apply first aid to yourself or others as required.



PRESERVE EVIDENCE
Preserve and record any evidence of the cause of incident. Communicate and cooperate with incident investigation team.

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Minimise time spent on the phone contacting family and friends. Your mobile phone must be kept free where possible to answer calls from ELGAS emergency response personnel until they arrive at the location.



Do not leave the scene until instructed by ELGAS emergency response personnel. An exception is where medical assistance is required.



Do not respond to requests for information or interviews from the media. All media requests must be referred to ELGAS management.



DO not admit liability, even though you think the accident may have been caused by you. What you consider to be your wrongful action may not be altogether correct.

Emergency Procedure Guides

The following information is taken from ***AS 1678.0.0.001, Emergency Procedure Guide – Transport "Vehicle Fire"***

EMERGENCY RESPONSE – VEHICLE FIRE	
Engine Fire	• Shut off engine and any electrical equipment and leave off • Use fire extinguisher to inject contents through any available opening, without raising the bonnet if possible
Cabin Fire	• Shut off engine and any electrical equipment and leave off • Remove burning materials if safe to do so • Use fire extinguisher provided in vehicle
Tray Fire	• Shut off engine and any electrical equipment and leave off • Use fire extinguisher provided in vehicle • If safe to do so, move undamaged cylinders from fire area • Cool cylinders with water until well after fire is out

The following information is taken from ***AS 1678.2.1.001, Emergency Procedure Guide – Transport "LPG"***

EMERGENCY RESPONSE – FLAMMABLE GASES	
Fire	• DO NOT EXTINGUISH BURNING GAS UNLESS LEAK CAN BE STOPPED. • CUT OFF SOURCE OF GAS IF SAFE TO DO SO – IF NOT POSSIBLE LEAVE GAS TO BURN, PROTECT EXPOSURES, COOL CONTAINERS • The first priority is to cut off the gas supply. If this cannot be done it is better to let the gas burn than to extinguish it and have an uncontrolled gas leak • If safe to do so, move undamaged cylinders from fire area • Extinguish any secondary fires

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Gas Leak From Cylinders - Without a Fire

In the event of a leaking cylinder on a customer's site or on the cylinder truck:

- Fully close the valve to stop the leak (where possible and if safe to do so),
  OR
- Move the cylinder to a safe and ventilated area, and either vent it (open the valve to allow the gas to escape), or leave it as is, and allow it to leak

If you need to vent a cylinder (or let it leak), you must observe the following:

- Vent in a safe area, with high ventilation (breeze) and well away from other people and operations
- Ensure there are no ignition sources within the vicinity; stop the truck engine (if applicable)
- Note the direction of the wind, or any downhill slopes, to predict where the LPG vapour may flow
- Approach the cylinder from an UPWIND direction (breeze is at your back) wearing correct PPE (long sleeve cotton shirt, long cotton trousers, eye protection and gloves)
- Stay upwind of the vapour / leaking cylinder at all times
- Keep cylinder upright at all times to avoid the leak becoming a liquid leak
- Be aware of any drains in the area
- Move clear of the vehicle
- Keep any bystanders at a safe distance

Should a leaking cylinder on the truck be noticed while travelling, do not stop until a safe location is reached.

Approaching From Upwind

A gas leak or fire should always be approached from upwind (wind at your back), for two reasons:

- Should the escaping gas reach a source of ignition while approaching the leak, the flash fire would be downwind and away from you

- Should the escaping gas be on fire, taking advantage of the upwind could greatly reduce the heat and flames you are faced with

Decontamination Following Major Incident

LPG in its liquid state becomes vapour at temperatures above -42°C. With LPG being heavier than air, any vapour or liquid leaks from LPG vessels would first sink towards the lowest point on the ground, before dissipating into the surrounding air.

Special attention must be given to any pits or drains in the surrounding area, and no ignition sources (cigarettes, lighters, power tools or pilot flames) are allowed near the vapour as is dissipates.
Note that the odorant added to LPG (Ethyl Mercaptan), has a higher boiling point than LPG and its vapour and smell may take a few more minutes to dissipate.

Under most circumstances involving a spill of LPG, no spill kit or decontamination procedure is required.

Any damage caused to LPG vessels as a result of an incident, must be reported to ELGAS (1800 783 819) who will make the necessary repairs / replacement.

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Responsibilities of the Driver / Emergency Response Co-Ordinator (ERC) in an Emergency

In the event of a serious incident, ELGAS will dispatch an Emergency Response Controller. This is a member of ELGAS staff who has been specially trained in handling emergency situations.

The responsibilities of an Emergency Response Controller in an emergency are to:

- Liaise with and co-operate with authorities / Emergency Services
- Take action to assist with the management of the incident
- Ensure the well-being of the driver
- Initiate the recovery of the truck

The responsibilities of the Driver in an emergency are to:

- Implement general emergency guidelines, including calling 1800 819 783 or 000
- Control gas leaks; eliminate sources of ignition; ensure the safety of bystanders etc.
- In the event of an accident you must always check cylinders for LPG leakage as a result of impact or damage
- Communicate with and follow all instructions given by the Emergency Response Co-Ordinator or authorities
- Continuously assess and monitor risks throughout the recovery operation at hand, including monitoring the well-being of all involved, including yourself. Sometimes shock and other conditions can have a delay before they become apparent.
- Following incident, co-operate with incident investigation team and participate in debriefings as appropriate

In the event of a serious fire you must first call the fire brigade, and direct any assistance you have gained to help clear all persons from the scene (except those necessary for management of the situation).

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4. Storage of LPG

4.1 Cylinder Storage

LPG is a Dangerous Good and therefore must be handled and stored in accordance with relevant regulations. Some of the checks that must be made in relation to the cylinder dock and yard condition include:

- Is the dock in good condition?
  (Hardwood planks are best, but must be maintained and replaced when worn)
- Floor supports in good condition and strong enough to take stored cylinders
  (eg. 20 x 45 kg cylinders is the same weight as a large four-wheel drive)
- Fall protection (non-vehicle area)
- 1m clearance on vehicle access areas
- Is the dock in a secure location?
- ELGAS delivery truck access
- Is the yard clean and tidy?

For Agents and Distributors that operate an LPG tank, further checks are required, which are available at www.elgas.com.au/training

AS/NZS 1596 section 4.5 covers some of the storage requirements including:
- Suitable construction / ventilation of storage areas
- Segregation requirements / Separation distances
- Safety relief valves

Following is an extract from section 4.5 of *AS/NZS 1596* which details cylinder storage standards.

4.5 CYLINDER STORAGE

4.5.1 General

This Clause (Clause 4.5) sets out requirements for LP Gas cylinders that are stored but not connected for use.

4.5.2 Site requirements

The following requirements and recommendations apply to the area in which cylinders are stored:

(a) The location shall ensure that cylinders are not liable to physical damage, tampering, or excessive temperature rise. This requirement shall not be taken to preclude storage in an open area, exposed to the sun.

(b) The standing area (other than a floor) shall be level, non-combustible and not prone to indentation such that water could accumulate or the cylinders could be dislodged. Any floor shall be concrete or other non-combustible material, hardwood or other suitable material, with or without suitable floor coverings.

Where there is a space between the floor and the ground, such a space shall be either completely filled with a non-combustible solid material or ventilated in accordance with Clause 8.3.3 (for Australia) and in accordance with Clause 6.2.3 (for New Zealand).

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(c) Buildings used for cylinder storage shall have non-combustible cladding for walls and roof and shall be ventilated by natural or mechanical means in accordance with the ventilation requirements of Clause 4.5.5.

(d) Cylinders in a mixed cylinder storage area shall be segregated from any oxidizing gases by at least 3 m. This segregation distance may be measured horizontally around a vapour barrier complying with the requirements of Clause 3.6 and as illustrated in Figure 4 6.

(e) Cylinders awaiting despatch may be kept on a filling platform in accordance with Clauses 8.3.2 and 8.3.3 (for Australia) and in accordance with Clauses 9.2.3 and 9.3.4 (for New Zealand).

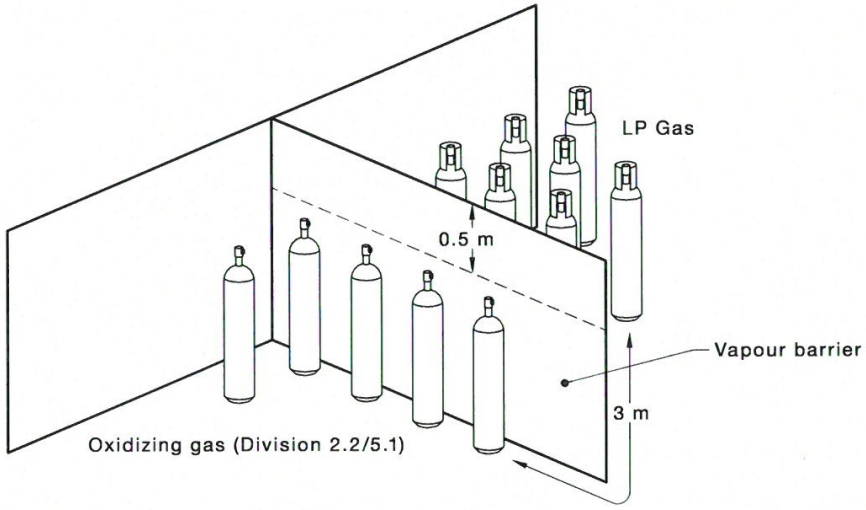


FIGURE 4.6 USE OF VAPOUR BARRIER TO ACHIEVE SEGREGATION

4.5.3 Separation distances

Cylinders stored in the open or within a building shall be located at the distances given in Table 4.1, and the following requirements shall apply:

(a) A cylinder shall be at least 1 m horizontally away from an opening into, and shall be outside of, any building that is not used solely for storage, filling and/or handling of gas cylinders.

(b) The distance between any cylinder and any above-ground LP Gas storage tank or flammable or combustible liquid storage that exceeds 250 L capacity shall be at least 3 m.

Cylinders shall not be stored within any compound (bunded area) for flammable liquid storages.

(c) The distance between any two groups of cylinders shall be not less than the protected-place distance for the larger group. Otherwise, the separation distance shall be based on the aggregate volume of the two groups.

(d) Cylinder filling locations complying with Section 8 in Australia, or Section 9 in New Zealand, shall not be treated as protected places.

(e) Clause 3.6 shall apply.

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4.5.4 Cylinder storage and handling

The following additional requirements shall apply to the storage of cylinders, including those that are empty but not gas free:

(a) The outlet valve shall be kept closed or the cylinder opening plugged.

(b) Where a cylinder is designed to incorporate a detachable valve cap, the cap shall be kept in place when the cylinder is not in use.

(c) Cylinders shall be handled carefully and not allowed to fall upon one another or be otherwise subjected to undue shock.

(d) Cylinders shall be secured to prevent movement or physical damage. Valves shall be safeguarded against physical damage in accordance with AS 2473.

(e) Cylinders shall be placed so that the safety relief device will always be able to vent the vapour space.

4.5.5 Ventilation of cylinder stores

4.5.5.1 *General requirements*

Cylinder stores shall be provided with adequate ventilation complying with the following requirements:

(a) The ventilation system shall—

  (i) be capable of diluting and removing any vapour or gas from the store, so that such levels within the store are within workplace exposure limits and below any possible explosive levels in normal situation;

  (ii) provide sufficient fresh air from outside, to reduce any risk of asphyxiation;

  (iii) ventilate the atmosphere in the store, at both high and low levels relative to the floor; and

  (iv) ventilate or mechanically exhaust directly to outside the store, to a location away from building entrances, doors or windows, airconditioning intakes, sources of ignition and areas where people are likely to congregate.

(b) The requirements of (a) shall be satisfied by either—

  (i) a natural ventilation system, as specified in Clause 4.5.5.2; or

  (ii) a mechanical ventilation system, as specified in Clause 4.5.5.3.

Compliance with the above may not achieve a reduction in hazardous areas as specified in AS/NZS 60079.10.1.

4.5.5.2 *Natural ventilation*

A naturally ventilated store shall have one of the following:

(a) Two opposing external sides that are open from floor to ceiling [see Figure 4.7(a)].

(b) One external side that is open, provided that the length of the open side is at least twice the distance of that wall from the opposite side [see Figure 4.7(b)].

(c) Vents in at least one pair of opposing external sides [see Figure 4.7(c)], provided that—

  (i) the distance between the opposing external walls does not exceed 10 m;

  (ii) in every two-metre length of external opposing walls, there are at least two vents, one positioned immediately above the floor and the other positioned immediately below the ceiling;

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4.2 Regulatory Requirements

There are a number of regulatory requirements Agents / Distributors must follow in relation to the storage, handling and transport of LPG. Three primary areas of regulation include:

i. *Dangerous Goods (DG) (Storage and Handling) Regulations*
ii. *AS / NZS 1596 LP Gas Storage and Handling*
iii. *Work Health and Safety Regulations*

Five key areas covered by the above regulations are listed below. Agents / Distributors need to put measures in place where the following total litres of LPG are stored on site:

i.	DG Notification / Licence	5000 litres or greater
ii.	Fire Protection	5000 litres or greater
iii.	Manifest	5000 litres or greater
iv.	Placarding	500 litres or greater
v.	Emergency Plan	Required as per WHS regulations

The following table can be used to help calculate the total litres of LPG that are held on site. Please note that Authorities regard any cylinder being stored on site as full, whether in fact they are empty or full.

Cylinder Size (kg)	Water Capacity (Litres)	Cylinder Holdings (No. of units)	Number of Litres
45	108		
18	44		
15	36		
Total Litres			

Note: 47 or more 45kg cylinders alone will put a site over the 5000 litre threshold for fire protection and manifests. Holding 5 or more 45kg cylinders will exceed the 500 litre threshold for placarding.

DG Notification / Licence

Occupiers of sites where dangerous goods are stored and handled in quantities exceeding the manifest quantity in Schedule 2 of the DG Regulations (i.e 5000 litres LPG), must notify their relevant state authority of those dangerous goods. In some states, a DG licence is also required. There are no notification requirements for quantities less than the manifest quantity.

Fire Protection

Fire protection measures include requesting and following written advice of the emergency services authority in relation to the design of the fire protection system for the premises. *AS/NZS 1596* provides further requirements regarding fire protection as follows:

Total Quantity of LPG (Litres)	Requirements
<=1000	No requirements
>1000 <=12,000	At least 1 hose reel or fire extinguisher
>12,000 <=60000	At least1 hose reel and 1 fire extinguisher, or 2 hose reels
>60,000	At least 2 extinguishers and 2 hose reels with 1 on-site hydrant system, or monitors, or a sprinkler system

All fire protection equipment should be maintained as per the AS 1851 standard, including testing and tagging of extinguishers and hose reels every 6 months.

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Manifest

A manifest is a kit of emergency information that is available to Emergency Services in the event of an emergency at an Agent / Distributor site. The information contained in the manifest ensures the safety of Emergency Services personnel, and assists them in making decisions regarding response actions and strategies. The manifest must be located on an external boundary at the main entrance to the site.

Information within the manifest includes the following, however exact requirements vary by state and can be found within applicable state regulations and guidelines:

i. Name and address of the business, and date the manifest was prepared / last reviewed (Note: Manifest to be reviewed at least annually)
ii. Emergency contact details of at least 2 people who have information of the nature and quantity of dangerous goods on the site
iii. A summary list that specifies the maximum number of each class of dangerous goods on the site
iv. A Site Plan that provides a quick reference to the overall layout of the site, presented in the form of a site drawing/plan. It includes information such site boundaries; locations of dangerous goods with placard quantities and ID number; main entrance and other points of entry to the site; any buildings on site with a written description; essential site services including fire services; nature of adjoining premises.





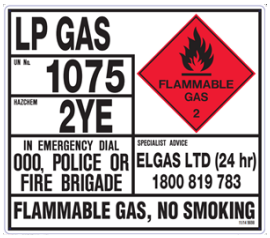
Placarding / Signage

The following pages show some of the placarding and signage requirements for Agents / Distributors holding more than 500 litres (eg.5 x 45kg cylinders). There are legal requirements for signs to be displayed at sites storing LPG. The following table provides guidance on the minimum requirements of signage that must be displayed at an Agent/Distributor. Additional signs may be required to comply with state legislation, so please check with your local statutory authority and Fire Brigade. Please speak with your ELGAS representative about additional signage requirements for Agents/Distributors that:

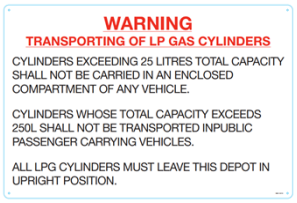
- Have a gas tank > 500 litres on site
- Fill LPG cylinders (besides BBQ decanting)

Item	Location within site	Image	Form and minimum dimensions
Outer Warning Placard	[NOHSC:1015(2001)]: HAZCHEM outer warning sign shall be prominently displayed at all entrances to the premises where emergency services may gain entry to the premises.	HAZCHEM	Size: refer to image. The word HAZCHEM must be in red lettering, not less than 100mm high, on a white or silver background. This sign is available via ELGAS, Symbol #9934

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Item	Location within site	Image	Form and minimum dimensions
Class Label LPG	• At the storage area		(a) be of the form and colouring specified in the ADG Code; and (b) have sides of not less than 250 mm
No Smoking	• [AS/NZS 1596:2014 D2.1]: Above-ground tank or tank storage and in the fill point area • [AS/NZS 1596:2014 D4.1] Notices for cylinder filling: As closely as possible to the decanting point (cylinder dock) • In the vicinity of where the LPG cylinders are stored		Standard symbols of at least 100 mm diameter, or words, for— (i) 'flammable gas' and 'no smoking'; or (ii) a warning notice in letters not less than 50 mm high prohibiting smoking and ignition sources. Where the area is isolated by a fence, the sign shall be visible from outside the fence and also from points of access. NOTE: Suitable wording for such signs would be— (a) NO SMOKING, NO IGNITION SOURCES. (b) NO SMOKING, KEEP FIRE AWAY. (c) FLAMMABLE GAS, NO SMOKING
	Around perimeter fence at 15 metre intervals (facing outwards).	  	Standard symbols of at least 100 mm diameter, or words, for— (i) 'flammable gas' and 'no smoking'; or (ii) a warning notice in letters not less than 50 mm high prohibiting smoking and ignition sources. Where the area is isolated by a fence, the sign shall be visible from outside the fence and also from points of access. NOTE: Suitable wording for such signs would be— (a) NO SMOKING, NO IGNITION SOURCES. (b) NO SMOKING, KEEP FIRE AWAY. (c) FLAMMABLE GAS, NO SMOKING The top sign is available via ELGAS, Symbol #9698

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Item	Location within site	Image	Form and minimum dimensions
Emergency eyewash and shower equipment (if applicable)	[AS 4775—2007 6.6, 7.4, 8.4] Each emergency shower, eyewash, face/eyewash, and or combined unit location shall be identified with a highly visible sign positioned so the sign is visible throughout the area served by the eyewash. The area around the eyewash shall be well illuminated.		
Warning Transporting of LPG Cylinders	In cylinder dock or area where cylinders are stored		This sign is available via ELGAS, Symbol #9825
Restrict Vehicle Access	Yard If required to restrict access to vehicle traffic beyond a point in the Depot:		
Speed Limit Signs	In all the depots: 10km		
No Mobile Phones	ELGAS Requirement: Near Cylinder storage		No std requirements
Emergency Assembly Area	Assembly Area Point		
Extinguisher Identification Sign	[ELGAS Requirement] The fire extinguisher ID sign is to be placed immediately above the extinguisher		

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Item	Location within site	Image	Form and minimum dimensions
Fire Extinguisher Location Sign	[AS 2444-2001 Portable fire extinguishers and fire blankets - Selection and location] • A sign shall be provided above or adjacent to an extinguisher. A single sign may be employed to indicate multiple extinguishers in one location, even if different types are grouped together. • Signs shall be positioned so as to be clearly visible to persons approaching the extinguisher. • Signs shall be mounted not less than 2.0 m above floor level, or at a height that makes them most apparent to a person of average height and visual acuity approaching the extinguisher, or extinguisher location		The size of the sign shall be determined by— (a) the location at which the sign shall be legible; and (b) the distance at which the sign shall be legible. The extinguisher and fire point location signs shall have symbol, border and letters in white on a red field, approximating R13 Signal Red in colour.

The condition of all placarding / signs should be checked on a monthly basis and replaced as required.

Emergency Plan

All Agents / Distributors must ensure an emergency plan is prepared for the workplace. This is a written set of instructions that outlines what workers and others at the workplace should do in an emergency. The Plan should be appropriate to the size and complexity of the site, its resources and personnel. It must include emergency and evacuation procedures, including an effective response to an emergency. Agent / Distributor personnel must be familiar with the contents of the Emergency Plan.

The Emergency Plan should be developed in conjunction with Emergency Services and relevant regulatory authorities and be regularly reviewed (at least annually) and updated as required. The Emergency Plan shall be kept in a secure location at the entrance to the site.

Guidance on the preparation of an Emergency Plan is provided in Appendix K of *AS/NZS 1596,* a copy of which is shown on the following page.

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APPENDIX K

EMERGENCY PLANNING

(Informative)

K1 EMERGENCY PLANS

K1.1 General

A site storing LP Gas may be required by its state regulatory authority to have an emergency plan. Regulations will determine the minimum quantity of storage that requires such a plan, and dictate minimum requirements for the contents of the plan. Emergency plans seek to minimize the effect of an incident at a site and requires the timely application of defined procedures by people with adequate training and resources.

K1.2 Premises emergency plan

In support of available regulatory guidance, an emergency plan should include the following information as a minimum:

(a) Emergency services contact details—'000' for Australia and '111' for New Zealand.

(b) Name and street address of the site.

(c) The nature of operations on the site.

(d) Detailed maps of the site and neighbouring land, to the extent of potential disruption in an emergency. In particular, these should identify any other dangerous goods storages and any infrastructure that could be affected.

(e) A site plan showing the location of all LP Gas, and any other placard quantity of dangerous goods, with maximum quantities shown. The site plan should also show—

  (i) the location of fire services (e.g. pumps, hydrant mains, hydrants, deluge systems, hose reels, extinguishers);

  (ii) other critical isolation valves (e.g. dangerous goods pipes, stormwater, and containment systems including bunds);

  (iii) vehicular entry points and access within the site;

  (iv) the location of isolation points for site services (e.g. electricity, gas, water);

  (v) staging points for emergency services; and

  (vi) emergency assembly points.

(f) After-hours contact details for relevant site personnel.

(g) The means of notification of an emergency to neighbouring sites.

(h) An evacuation plan for the site.

(i) Details of actions to be taken in response to identified major incidents (e.g. fire threatening the site, fire involving LP Gas, leak without fire).

(j) Identification of a person to act as a contact for emergency services.

Emergency plans should be prepared in consultation with local emergency services, and should be reviewed and updated as necessary.

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5 Delivery Vehicle Requirements

5.1 Transport Regulations and Guidelines

LPG cylinders are classified as dangerous goods and must be transported in accordance with the Australian Code for the Transport of Dangerous Goods (ADG Code). ADG Code requirements combined with other safety measures will help ensure that cylinders are transported and handled in a proper manner for the safety of yourself, your customers, and the general public. Drivers must not drive a vehicle not suitable to transport Dangerous Goods. A Dangerous Goods licence is not required to transport cylinders where each individual cylinder is under 500 litres water capacity.

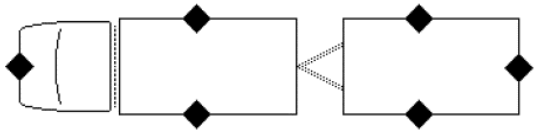
Placarding

In accordance with the ADG Code, placards must be displayed on the exterior surface of vehicles that contain a load of dangerous goods with a total water capacity greater than 250 litres. A placard load is a quantity where the risk from the dangerous goods becomes great enough to need extra controls.

The vehicle must be fitted with placard holders or flip placards clearly visible at the front and rear. If the vehicle is going to tow a trailer it must have placard holders or flip placards on each side of the towing vehicle and on each side of the trailer. The following diagrams shows where placards are required:



Ute or rigid truck



Ute or rigid truck towing a trailer

Placarding needs to reflect what is on the vehicle. If you only have one class or division of dangerous goods on board, you need to use that diamond only. If the vehicle is carrying multiple types of DG (divisions), such as flammable and non-flammable gases, then you should use the mixed class "dangerous goods" placard (sometimes known as a "bumble-bee").

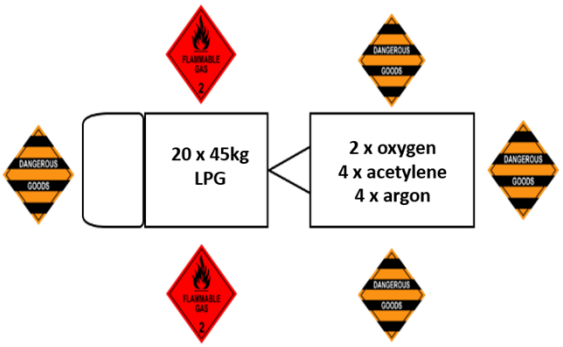
The table below shows you the placards you need for different loads of gases and dangerous goods.

Division 2.1 – Flammable Gas (eg LPG)	Mixed class dangerous goods (bumblebee)
	
Use this placard if you only have flammable gases on board	This placard can only be used if you have multiple classes on board.

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Whenever you either load or unload dangerous goods, you must check to make sure the placarding is still correct. For example, if you had a load of LPG and argon on the vehicle you should use the *mixed class* placard. If you then remove the argon, you need to change the placards to *flammable gas*.

If you are towing a trailer, the side placards should reflect what is on that part of the combination (including no placards if no dangerous goods are present). The front and rear placards should reflect what is on the whole combination. An example of how to placard a combination is shown below:



Certain dangerous goods are not allowed to be transported on the same vehicle. This is because they can react dangerously if they come into contact with each other. If the only dangerous goods you are transporting is gases in cylinders smaller than 500 L, then there will be no incompatible dangerous goods on board.

You must not transport oxidising gases (such as oxygen) and *fire-risk substances* or *combustible liquids* together on the same vehicle. These materials include things like wastepaper, hay, sawdust, woodchips and liquids such as diesel (not including diesel in the fuel tank).

Please refer to Part 9 Segregation, of the ADG Code if carrying a mixed load of Dangerous Goods or hazardous material and you are unsure about a specific scenario.

If you need to carry incompatible dangerous goods, you can consider the following options:

i. One of the incompatible dangerous goods can be loaded in a *segregation device*; or
ii. Separate the incompatibles onto different parts of a vehicle combination (e.g. put one class in the towing vehicle and the other in the trailer).

Other requirements when transporting a placard load include:

- Placards must only be visible when the truck is actually carrying LPG. It is an offence to display placards when the vehicle is empty.
- You must not travel on any prohibited routes, for example tunnels in many capital cities.
- Insurance of $5 million is required to cover the cost of a dangerous goods incident.

The following table summarises the maximum number of individual LPG cylinder sizes that can be transported without placarding (as the total water capacity is under 250 litres). Keep in mind that authorities regard any cylinders being carried as “full”, whether in fact they are empty or full (except brand new empty cylinders and labelled gas-free cylinders).

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Cyl. Size (kg)	Water Capacity of 1 Cylinder	Max. Cyls. Carried Without Placarding
3.7	11	22
8.5	22	11
15	36	6
18	44	5
45	108	2
90	215	1

Gross Vehicle Mass and Width

Tare and Gross Vehicle Mass (GVM) are assigned to a vehicle by the manufacturer.

Tare = the total weight of the vehicle unloaded

GVM = the all up weight of a vehicle, consisting of the tare mass (mass of the vehicle) plus the load it is carrying (e.g. goods, tools, equipment, driver etc.).

Each truck has a Gross Vehicle Mass (GVM). By law, it is the responsibility of the driver to ensure these load limits are complied with.

By subtracting the Tare from the GVM you can calculate the maximum allowable weight of the load

It is important for drivers to know the GVM of their vehicle, as many minor roads have GVM restrictions. These restrictions may be applied for technical reasons such as load limited bridges, or as a method of reducing the number of heavy vehicles on local roads. A vehicle's GVM rating must not be exceeded as this will diminish stability and reduce braking efficiency.

Heavy vehicles over 4.5 tonne must not exceed a width of 2.5 metres, however, this is to be measured without taking into account any of the following:

- Anti-skid devices mounted on wheels
- Central tyre inflation systems
- Lights
- Rear vision mirrors
- Reflectors
- Signaling devices
- Tyre pressure gauges
- Permanently fixed webbing assembly-type devices, such as curtain side devices, if the maximum width across the vehicle and including the devices, does not exceed 2.55 metres.

Smoking In Cab

The Elgas In-Vehicle Distractions policy states:

"...smoking of any substance, including e-cigarettes is banned within and around all ELGAS vehicles"

Regulations also state:

"No person shall smoke or light or carry any fire or matches or cigarette lighters in any road vehicle which has aboard in bulk, dangerous goods of Class 2.1 (e.g. LPG)"

Responsibility rests with the driver to take all practicable steps to ensure that all other persons who travel in the vehicle also comply with the above requirement.

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Loose Items in the Vehicle Cab

The *ADG Code* specifies the requirements for emergency and PPE equipment and documentation to be carried in the vehicle. If not stowed securely these can become airborne projectiles that are capable of inflicting serious injury on the occupants of the vehicle.

When a vehicle stops suddenly in a crash, objects inside that are not restrained can continue to move at up to 20 times the force of gravity. This means that a 1-litre plastic bottle weighing 1kg can impact with a force of 20kg or a small tool box weighing 20kg can impact with a force of 400kg.

It is good practise to ensure that no loose items are located in the truck cabin. All delivery vehicles must have either:

- An adequate method of restraining loose items
- Loose items relocated outside of the driver space or separated by an approved barrier

Parking and Vehicle Security

To operate safely, drivers must follow the following requirements relating to parking vehicles loaded with dangerous goods. Vehicles must be kept secured at all times. They must be parked in secured yards (such as depots) and not left open to public access.

When parked at depots, vehicles must be locked and keys kept in a safe location.

A vehicle transporting dangerous goods **must NOT** be parked or left standing:

- In a built-up area with public access
- Within 15 metres of any building in which there is, or is likely to be, a concentration of people (other than a building in which the vehicle is loaded or unloaded)
- At any other place in which there is, or is likely to be, a concentration of people
- Within 8 metres of another vehicle which is transporting placarded dangerous goods.

A vehicle **may** be parked or left standing in these circumstances if it is reasonably necessary to do so:

- For the purpose of loading or unloading dangerous goods onto or from the vehicle
- Because the vehicle has broken down
- Because of a dangerous situation involving the vehicle
- To comply with the requirement of any law
- For a brief rest or refreshment break

When parking overnight:

- All trucks must be parked at an approved secured yard.
- Cylinder trucks are generally parked at an approved secured yard, however, if they are parked elsewhere they cannot have any cylinders on board (full or empty).

Security tips for when completing daily deliveries:

- Keep doors locked when possible
- If the site or area looks threating, leave!
- Report events or concerns to your supervisor
- Call 000 if you are in the vehicle and feel threatened

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5.2 Pre-Journey Safety Inspection

It's the Cylinder Truck Drivers responsibility to ensure that the vehicle they are driving is in a good roadworthy condition and safe to drive prior to operation of the vehicle. The load must be checked and be secure as per *Australian Dangerous Goods Code* requirements.

It is essential that drivers carry out Pre-Journey Safety Inspections on a daily basis, prior to starting their shift. These inspections relate to the mechanical and safety equipment on the truck, and help ensure the vehicle is fit for purpose and safe to drive on the road. Inspections are also important when driving a vehicle for the first time, or changing to another vehicle.

Before driving a vehicle, drivers must be satisfied that:

- The vehicle is in a safe and legal operating condition
- Any previously reported defects do not compromise safe and legal operation.

Daily checks help ensure any minor mechanical faults are identified before they escalate into serious problems, leading to timely and costly repairs.

Regulations cover the design, construction and operation of dangerous goods vehicles. The company relies on drivers to complete daily and weekly checks, to maintain compliance with regulatory requirements.

Pre-Journey Safety Inspections cover:

- Mechanical equipment on the truck
- Appropriate load restraint
- Safety equipment

For Agents / Distributors without a procedure, the standard ELGAS Pre-Journey Safety Inspection Checklist similar to the one shown on the following page should be used as a minimum. Please take photocopies of the page to use if required. If in doubt about the safety of your vehicle to be on the road DO NOT leave the depot.

Any defects must be passed on to your local management to action. Examples of defects may relate to maintenance required on tyres, lights, brakes, windscreen, or it may simply be an "unusual noise" coming from the engine.

All defects must be reported. Remember a defect may lead to an accident or injury. If you have not received the appropriate training for the equipment you are being asked to use, stop and report the issue to your manager.

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ELGAS

Pre-Journey Safety Inspection Checklist

(To be completed & signed at start of shift & returned with daily paperwork)

Tanker ☐ Cylinder ☐ Trailer ☐	Date of inspection:	Driver Name:
Vehicle registration:	Time of Inspection:	Signature:

DAILY CHECKS

In Cabin Checks (approx. 3 minutes)	OK	Fail	N/A	Comments
In-cab documentation (eg shipping document, emerg. guides)				
Mirrors / windows, clean and undamaged				
Windscreen washer and wiper operation				
Cab clean and tidy / no loose items in cab				
Dashboard / in cab gauges functioning and no indication of faults				
AdBlue (level)				
Perform in-yard brake test				
PPE in good condition (eg gloves, glasses, boots, uniform)				
External Checks (approx. 5 minutes)	**OK**	**Fail**	**N/A**	**Comments**
Air pressure builds normally (no indication of leaks)				
Drain air tanks				
Lights for operation & condition (Headlights, Hazards, Indicators, Reverse, Stop)				
Tyres (under inflation / damage / tread depth)				
Wheel Nuts (visual check for evidence of looseness)				
Engine Oil / Coolant / Windscreen Washer / Fuel / Power Steering (levels / leaks)				
Hydraulic fluid (where visible)				
Load effectively restrained (eg hoses, gates, cylinders, stillage)				
Tie down straps in good condition (eg check frays, cuts)				
Check for gas leaks (see, hear, smell)				
Fresh (unreported) significant bodywork damage				
Trailer lights for operation				
Check turntable handle and safety clip				
Trailer tug test				

IF NOT SAFE, DO NOT GO

WEEKLY CHECKS (To be completed on your first working shift between Monday to Sunday each week)

	OK	Fail	N/A	Comments
Seats belts in good condition (eg retraction / fraying)				
Safety equipment available and correctly stowed (eg Fire extinguishers in test; complete First Aid kit)				
Parking brake alarm (function test)				
Inspect shock absorbers for attachment				
Truck placards (eg DG class, class diamonds)				
Breakdown triangles / Safety cones / wheel chocks (where required)				
Delivery equipment & fittings (eg safety adapter x 2, trolley / tailgate loader / crane good cond.)				

Defect / Faults: It is the responsibility of the vehicle operator to check and report any defects immediately. If a defect is found, log it in the Vehicle Defect book and hand it to your Transport Supervisor or nominated person for action and follow up. You must retain a copy to verify it has been rectified.

PDD0800BELG

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The following Pre-Journey Safety Inspection Guide outlines what to look out for when completing daily and weekly vehicle inspections.

Pre-Journey Safety Inspection Guide

Daily Checks (approx. 3 minutes)			
Internal Items (Cabin)			
PRE-JOURNEY CHECKLIST ITEM	WHAT TO LOOK OUT FOR	WHAT HAPPENS IF IT IS NOT DONE?	RECTIFYING ACTIONS
Documentation	Shipping Document, Manifest, Emergency Guides	If any document is missing (or out of date) you will contravene regulations. You may be subject to a fine	Replace missing or out of date documents before departing
Mirrors and windows	Must be properly adjusted, clean and free of cracks	Can obstruct the drivers view when driving	Clean prior to leaving. Damaged windows (cracks) must be replaced – Defect Report required. **Do not drive, report to Supervisor**.
Windscreen wipers and washers	Check they are working correctly	Will affect the drivers visibility when driving if they are not working correctly	Repair or replace damaged windscreen wipers or washers – Defect Report required. **Do not drive, report to Supervisor (faulty wipers).**
Cab clean and tidy	Check for loose items, any other obstructions	Can create a trip hazard for the driver or projectile in the event of an accident	Remove any obstructions and secure loose items
Dashboard / in cab gauges	Check they are working correctly	Driver will not know of any vehicle faults or issues (that usually show on the dashboard) if lights are not working	Replace or repair faulty gauges as required – Defect Report required. **Do not drive, report to Supervisor.**
AdBlue	Check the Adblue gauge to ensure there is a sufficient level	Low levels of Adblue may affect the vehicles performance and running empty will prevent the engine from starting	Top up Adblue when required
In-yard brake test	Vehicle does not move when park brake is applied (low revs)	Faulty park brakes could cause the vehicle to roll if not applied correctly	Repair as required – Defect Report required. **Do not drive, report to Supervisor**
Personal Protective Equipment (PPE)	All items are available (boots, glasses, gloves, uniform), correct for vehicle and, there are no faulty items	Driver could be injured with damaged, incorrect or no PPE	Replace missing, incorrect or damaged items before departing

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External Checks (approx. 5 minutes)			
PRE-JOURNEY CHECKLIST ITEM	WHAT TO LOOK OUT FOR	WHAT HAPPENS IF IT IS NOT DONE?	RECTIFYING ACTIONS
Air pressure	Pressure builds normally and there are no sign of leaks (brakes and ELGAS gas equipment)	Brakes: A loss in air pressure may impinge on braking system	Repair air leaks – Defect Report required. **Do not drive, report to Supervisor**
Air tanks	Condensation (water) in tanks	Water build up in air tanks restricts the volume of air within the tank and reduces functionality or, may rust vital components	Drain tanks daily before departing
Lights for operation and condition	Check all lights are operating correctly (headlights, hazards, indicators, reverse and stop)	If lights are not working correctly, other vehicles won't be aware when vehicle is stopping or slowing down	Any damaged lights must be repaired – Defect Report required. **Do not drive, report to Supervisor**
Tyres	Correct inflation, damage, tread depth and proper fit. Tread wear indicators show the need to replace tyres.	Unroadworthy tyres can affect the vehicle performance which will increase the chances of a vehicle incident or accident	If tyre tread is low arrange an appropriate time to replace. Inflate tyres with low pressure. If the tyre is damaged or not roadworthy report the issue – Defect Report required. **Do not drive, report to Supervisor**
Wheel nuts	Check for looseness	Loose wheel nuts could cause the wheels to wobble or fall off which will cause an accident	Tighten loose wheel nuts immediately
Fluid levels	Check engine oil, windscreen washer, fuel, power steering levels	Low fluid levels can affect the vehicles performance and could cause damage to the vehicle engine.	Top up fluids as required
Hydraulic fluid	Check fluid level is at required level	Low level or empty may cause damage to the hydraulic system	Top up level when required
Load effectively restrained	Check gates, cylinders and stillages are all in the correct position and secure	Ineffective restraint may cause a loss of containment or an incident / accident	Ensure all items that must be restrained are done so effectively
Tie down straps	Check they are correct fit, frays and cuts	Incorrect, cut or frayed tie downs may break and result in cylinders becoming dislodged	Replace incorrect, cut or frayed tie downs before departing
Gas leaks	Check, listen or smell for gas leaks	A gas leak despite how minor may cause a significant incident particularly around ignition sources	Report all gas leaks and have repaired – Defect Report required. **Do not drive, report to Supervisor**
Significant body damage	Confirm whether the vehicle is free from visible damage	Damage can further deteriorate and cause even more damage to the vehicle	Report any new damage. Vehicle may be grounded depending on damage

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Weekly Checks			
PRE-JOURNEY CHECKLIST ITEM	WHAT TO LOOK OUT FOR	WHAT HAPPENS IF IT IS NOT DONE?	RECTIFYING ACTIONS
Seat belts	Ensure seatbelts are easy to access, secure and free from damage	It's a legal requirement to have correctly functioning seatbelts	Report damaged seatbelts – Defect Report required. **Do not drive, report to Supervisor**
Safety equipment	Check fire extinguishers are in-test and correctly stowed and first aid equipment is in date and all items are available	An out of test fire extinguisher increases the chances of it not working correctly if there is a need to use. Out of date first aid contents can cause problems in extreme cases. Missing items could prove disastrous in the event of an accident	Report out of test fire extinguishers – Defect Report required. **Do not drive, report to Supervisor**. Secure any loose fire extinguishers. Replace any out of date or missing first aid items before departing
Park brake alarm (if applicable)	Check that it works correctly	If alarm is not working and the hand brake is not applied correctly, the truck could roll without the driver being aware	Report park brake alarm fault – Defect Report required. **Do not drive, report to Supervisor**
Shock absorbers	Check to see whether attached correctly	Faulty or poorly attached shock absorbers increase the risk of an incident / accident	Report faults and issues – Defect Report required **Do not drive, report to Supervisor**
Placards	Check you have the correct DG class and diamonds on display and they are not in poor condition	Poorly displayed DG decals contravene the ADG code. You may be subject to a fine	Report faded placards. These must be replaced without delay.
Breakdown equipment	Check you have breakdown triangles, safety cones and wheel chocks (if required)	Other motorist may not see you have broken down if you have not displayed breakdown triangles	Replace missing equipment before departing
Delivery equipment and fittings	Check that trolleys, tail gate loader and crane are in good condition	Faulty delivery equipment increases the risk of an unsafe incident occurring while making the delivery	Report and replace faulty delivery equipment prior to departing

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5.3 LPG Cylinder Truck Safety Equipment

The following portable safety equipment should be carried on all vehicles transporting LP Gas cylinders or Industrial Gas cylinders to meet the Australian Dangerous Goods Code and ELGAS Requirements:

Units	Item	Notes
1	Electric torch complying with AS/NZS 60079.11, being flameproof or EXD/E rated.	Torch MUST be working at all times (spare batteries shall be carried safely in the cab in a sealed packet, as failure of torch to work could result in a breach).
1	Gauntlets for Emergency Response purposes. (Thermally insulated gloves or gauntlets).	BOC Gauntlets Part Gloves No. 743310 or equivalent.
2	Gloves for normal operation.	Examples include BOC Part No 743398 (cotton back leather glove) and BOC Part No 7433 (riggers glove). (Rating of 3131 is minimum).
1	Gas tight goggles or full face shield for Emergency Response purposes. (Safety glasses are not acceptable).	Standard prescription glasses do not give adequate eye protection and are not acceptable.
3	Breakdown warning triangles to AS 3790.	Each triangle is reflective on both sides
1	Dry powder extinguisher (10B) in cab.	ELGAS and Regulatory requirement.
1	Dry powder fire extinguishers (60B) fixed on tray body.	ELGAS and Regulatory requirement. Only one 30B min dry powder extinguisher required for vehicles up to 10, 000L capacity. All extinguishers to be located as per ADG7. This applies whether the vehicle is a bobtail or a trailer. All extinguishers must be charged, in test and have a test date tag.
1	Motor Vehicle First Aid Kit (similar to St. John's Vehicle First Aid Kit), with a Burns Kit (Gel) and 250 ml of Eye Wash solution (in a sealed container)	Contents to be in a robust plastic container, with secure storage.
2	Class 2 placards only for all LPG **OR**, if mixed load, the Mixed Class placard when carrying other gases.	Placards must be in good visual condition placed on the front and rear. If a trailer is being towed, placards matching the DG must be displayed on the sides as well as front and rear of lead and tail unit.
	Adequate Load Restraint devices for loads being carried.	Restraints must be in good condition and not showing signs of damage and checked daily as part of Pre-Journey Inspect. Ropes are not acceptable.
1	Robust cylinder trolley where cylinders are manually handled.	For all vehicles carrying cylinders.
1	Spray bottle with leak detection fluid.	

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	2 litres (minimum) of tap water for personal or emergency use.	Stored in a plastic bottle securely in cab.
1	Emergency Information Holder containing only: 1 copy SAA/SNZ HB76 OR 1 copy of AS 1678.2.1.001 1 copy AS 1678.0.0.001 AND Daily Shipping Documentation to regulatory requirements.	Must be kept inside the drivers' side door. If kept elsewhere in the cab chassis, there must be a sign inside the driver's side door stating where the Emergency Procedure Guide is located. Must only contain these documents, with fines issued for storing any other material inside. An emergency information holder of a size and shape suitable for carrying emergency information and documents and marked with the words "emergency procedure guides" or "emergency information" in re letters at least 10 mm height on a white background. The sheet must show 2YE. Additional documents are required for mixed load.
1	Document Holder containing: - current ELGAS Safety Data Sheet - ELGAS Super Cold Contact Injury Sheet - ELGAS Public Liability Insurance Certificate of Currency - Vehicle Insurance Form (or Contractor equivalent) - ELGAS Emergency Response Phone Numbers with Local Numbers allowed - A relevant Load Restraint Guide	This Document Holder should be flexible plastic type holder stored in the cab in a position easily accessible but protected from damage. This is NOT the Emergency Information Holder – the Document Holder is a folder or pouch containing other documents as required.
1	A Pre-Journey Inspection Checklist.	Drivers are to complete an inspection electronically or manually and must also report defects using the manual defect book. In Aust the Checklist is completed electronically via the HandHeld

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The following additional portable safety equipment should be carried on all vehicles transporting a mixed load of cylinders (eg LPG and industrial gases) to meet the ADG Code and ELGAS requirements:

1	Draeger Breathing Apparatus (BA) and suitable face mask	BA Model CF15 or equivalent. Refer to Note 1.

Note 1: Only applies if carrying goods of Classes 2.3, 6.1 or 8 and personnel must be trained in its use (see attached Table ADG 7.3 Table 12.2)
Typical gases include Anhydrous Ammonia, Agrigas, Sulphur Dioxide and Insectigas.

Table 12.2 Minimum Personal Protective and Safety Equipment on Road Vehicles transporting a Placard Load

Minimum Equipment Required	Class, Division or Subsidiary Risk of Dangerous Goods in Load											
	2.1 *[a]*	2.2	2.3	3	4	5.1 (solids)	5.1 (liquids)	5.2	6.1	6.2	8	9
Respiratory protection equipment for escape purposes	No	No	*[b]*	No	No	No	No	No	*[b]*	No	*[b]*	No
Gas tight goggles or full face shield as appropriate	*[c]*	*[c]*	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No
Eye-wash kit *[d]*	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Chemically resistant gloves or gauntlets	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Thermally insulated gloves or gauntlets	Yes	Yes	Yes	No	No	No	No	No	No	No	No	*[e]*
Chemically resistant suit or coveralls	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes	No
Chemically resistant boots	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes	No
Any electric torch	No	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Electric torch complying with AS/NZS 60079.11 or other recognised Code	Yes	No	No	Yes	Yes	No	No	Yes	No	No	No	No

[a] *A vehicle transporting unodourised LP Gas must additionally be equipped with a gas detector suitable for detection of LP Gas, in accordance with AS 1596.*

[b] *The minimum requirement is air supplied short term breathing apparatus suitable for escape purposes, except when, even in an emergency, the dangerous goods will not give rise to harmful vapours, gases or dust. Note that where a driver attends to the loading or transfer of goods, SCBA with a duration of greater than 15 minutes may be required by other (e.g. health and safety) legislation.*

[c] *Yes – if the goods are in receptacles with a capacity > 500 L or the goods are cryogenic liquids.*
No – otherwise "Gas tight goggles" means face hugging goggles with increased facial seal.

[d] *Where an eyewash kit is required, it must be of at least 250 mL capacity, filled and ready for use.*

[e] *Yes – if the goods are elevated temperature substances or dry ice.*
No – otherwise.

***NOTE 1**: Where an item of Personal Protective or Safety Equipment is required based on the primary hazard or subsidiary risk of any item of dangerous goods in the load, that item must be carried, except that where thermally insulated gloves or gauntlets are required and carried, any requirement for chemically resistant gloves or gauntlets may be ignored*

***NOTE 2**: Under other legislation, it may be necessary to carry additional Personal Protective Equipment where it is specified for the purpose on the Safety Data Sheet.*

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The following shows some of the burns related first aid products that may be found in a trucks first aid kit, as well as an overview of the fire extinguishers that must form part of the trucks safety equipment.



First Aid Kit

First Aid kits must include items such as bandages and dressings; antiseptic creams and swabs; forceps, scissors and gloves; and a first aid guide. The contents should be kept in a solid plastic container.



Eye Stream Bottles

Eye stream bottles are a first aid emergency treatment for flushing hazardous substances from the eye/s.



Burn Gel Dressings

Used for the immediate first aid treatment of burns. Gel dressings rapidly cool burns helping to prevent further tissue damage and aid the healing process, and offer rapid and ongoing pain relief. The gels are a sterile barrier against contamination and help prevent infection, and cool by drawing heat out of the burn.



2nd Skin Dressing Kit

A hydrogel dressing to help protect against blisters, pressure and friction. Helps bring cooling relief to stings, bites, and blisters.



Dry Powder Fire Extinguisher (60B) / (10B - in cab)

The dry powder extinguisher is the most dependable and effective for LPG fires. Type B fire extinguishers are recommended for flammable liquids. A dry powder extinguisher sprays a very fine powder which serves to smother the fire.

A hand extinguisher is effective in the early stages of a fire but is of little use once the fire has spread to a large quantity of combustible material. When using the extinguisher, aim the nozzle at the base of the flames and sweep the nozzle in a side-to-side manner.

You should tip dry powder extinguishers upside down weekly to ensure that the powder does not solidify.

It is good practice to regularly check the test date and pressure of the fire extinguisher to ensure it is in good working order at all times.

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5.4 Transport Documentation - Load Manifest / Shipping Document

Transport documentation must be carried in the cabin of any vehicle carrying dangerous goods. The primary transport documentation required consists of a:

(i) Load Manifest

Indicates what and how much of a dangerous good is being transported.

If the total number of cylinders being carried changes during the course of completing deliveries, the Load Manifest must be updated to reflect the new total number of cylinders being carried. Emergency services need to know exactly how many cylinders are on the vehicle and what type of gas is in those cylinders.

The picture to the right shows an example of how a Load Manifest may be updated while completing deliveries. It demonstrates how you may update the document if for example you deliver 2 cylinders and pick up only 1, and thus end up with 1 less cylinder on the vehicle.

Cylinder Details	No. of Cylinders
45kg vapour (110 litres WC)	~~20~~ 19
18kg forklift (44 litres WC)	
18kg vapour (44 litres WC)	
15kg forklift (37 litres WC)	
8.5kg vapour (21 litres WC)	
3.7kg vapour (9 litres WC)	
Other	
Other	
Total Cylinders	~~20~~ 19

The following information is required on a Load Manifest:

- ✓ Consignors name and contact telephone number (e.g. ELGAS Ltd, 1800 819 783)
- ✓ UN Number of any Dangerous Goods (e.g. 1075)
- ✓ Proper shipping name of the goods (e.g. Liquefied Petroleum Gas)
- ✓ Class or division of the goods (e.g. DG Class 2.1 Flammable Gases)
- ✓ Number and type of packages (e.g. cylinders) on board

(ii) Shipping Document

Indicates where you are transporting the goods.

The schedule of deliveries must appear in the order that deliveries will be made.

If the vehicle is carrying a placard load, the Load Manifest and Shipping Document must be carried in the Emergency Information Holder (if practical).

The following 2 pages contain a blank Load Manifest and Shipping Document that can be used for the transportation of LPG. Please take photocopies of the pages to use if required. Please note, the templates do NOT accommodate for any non-LPG related Dangerous Goods being carried.

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Load Manifest

Date: _____ Driver: _____ Odometer Out: _____

Odometer In: _____

THE GOODS LISTED BELOW CONSIST OF LIQUIFIED PETROLEUM GAS (L.P. GAS) DG CLASS 2.1, HAZCHEM CODE 2YE, UN NO. 1075
ALL HOURS EMERGENCY PHONE NO 1800 819 738

Start Time: _____

Finish Time: _____

Agent / Distributor Name and Address:

_____
_____
_____
_____

Specialist Advice
ELGAS LIMITED
Phone No. 131 161

IN EMERGENCY DIAL 000
POLICE OR FIRE BRIDGADE

Notes:

_____
_____
_____
_____

THIS IS TO CERTIFY THAT THE ABOVE NAMED DANGEROUS GOODS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELLED AND ARE IN PROPER CONDITION FOR TRANSPORT ACCORDING TO THE PROVISIONS OF THE AUSTRALIAN CODE FOR THE TRANSPORT OF DANGEROUS GOODS BY ROAD AND RAIL

Cylinder Details	No. of Cylinders
45kg vapour (110 litres WC)	
18kg forklift (44 litres WC)	
18kg vapour (44 litres WC)	
15kg forklift (37 litres WC)	
8.5kg vapour (21 litres WC)	
3.7kg vapour (9 litres WC)	
Other	
Other	
Total Cylinders	

Driver Fit for Duty

- ☐ I confirm that I am fit for duty
- ☐ I comply to fatigue management regulations
- ☐ I confirm that I have a valid driver's licence
- ☐ I confirm that I have completed my pre journey safety inspection

Signature: _____

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Shipping Document

Date: _____ Driver: _____

THE GOODS LISTED BELOW CONSIST OF LIQUIFIED PETROLEUM GAS (L.P. GAS) DG CLASS 2.1, HAZCHEM CODE 2YE, UN NO. 1075
ALL HOURS EMERGENCY PHONE NO 1800 819 738

Cust No. Invoice No.	Customer Details	Cylinder Size	Order Qty	Delivered Qty	Pick Up Qty	Gas Check Required	Payment $	Customer Signature Notes

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5.5 Load Restraint Guidelines

Unsecured loads on heavy vehicles can pose significant danger to road users. The law requires all people involved in the operation of a heavy vehicle to ensure that it is loaded safely and securely.

Cylinder Truck Drivers must comply with *AS 5714:2015 Load Restraint for LP Gas Cylinder Distribution* (some information contained in this section comes direct from this Standard). There are fines and penalties for vehicles transporting loads that are not satisfactorily secured. The following table summarises some of the key load restraint components found on a typical cylinder truck:

Coaming Rail: A small frame border around the outside of the vehicle's loading deck. Some coaming rails have pockets (holes) for inserting removable gates.	
Gates: Permanent or removable vertical frames used at the sides and rear of a vehicle's loading deck to contain its load. The gates shall be either: • Removable: have a locking device fitted that positively affixes the gates to the tray • Hinged: be hinged and permanently fixed to the tray • Fixed: fixed gates	
Gate height: Shall be a minimum of 70% of the height of the cylinders they are used to contain or 55% of the height of any stillage they contain. If you are relying on ute sides to function as gates, it will need to meet the same requirements. Note: For G size industrial gas cylinders, a gate height of 1150mm will comply.	 +
Gate Interlocking: Suitable top latches that positively lock gates shall be fitted at each and every gate. Such latches shall have pins, barrels or bars at least 10mm in diameter, or larger if subject to bending movements. <u>Note:</u> If the locking part is flat plate style, it must be 40mm wide and 4mm deep or alternately around 25mm wide and 5mm thick.	
Headboard: Usually a permanent, solid vertical frame used at the front of a vehicle's loading deck (also known as bulkhead). Loads are often located against the headboard to provide direct restraint in the forward direction.	

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Loading deck (or tray): The part of the truck or trailer where the load can be placed. The loading deck is a flat bed with a coaming rail around the outer edge of the loading deck.	
Pockets: Housing or slots positioned on or around the loading deck of the vehicle for the insertion of gates, stakes or loading pegs	
Tie rail: A rail which skirts the perimeter of the loading deck below the coaming rail. Tie-down straps can be anchored or tied to the tie-rail. Tie-down straps must be secured close to the support points, otherwise tie rail may bend	
Tail Gate Lift: A platform attached to the back of the truck that will physically raise and lower by using a hydraulic system. The tail gate lift in the closed position will often be used in place of a rear gate. Riding up or down on a tail gate lift is dangerous and not allowed, unless it is specifically designed to carry a person.	
Tail Gate Restraint: Fall prevention equipment for operator and product. It is recommended that all open sides of a raised platform should be suitably equipped to protect against falls.	
Underrun Protection: Truck underrun devices can be fitted to the front, rear or side of the truck, and are designed to engage car safety systems during a crash and reduce the degree of intrusion into a car's passenger compartment.	

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General Load Restraint Performance Requirements (*AS 5714:2015*)

Loads must be restrained to prevent unacceptable movement during all expected conditions of operation. The load restraint system must, therefore, satisfy the following requirements:

i. The load must not become dislodged from the vehicle.

ii. Cylinders must be transported upright so that the safety relief valve is always in the vapour space of the cylinder.

iii. Any load movement must be limited, such that in all cases where movement occurs, the vehicle's stability and weight distribution cannot be adversely affected.

Typical Deliveries (carrying LPG cylinders on a vehicle with an open tray or platform)

- ✓ Each cylinder must be stowed and secured within rigid sides or gates
- ✓ No cylinder in the vehicle may protrude above the sides or gates by more than 30% of the height of the cylinder
- ✓ No cylinder may protrude beyond the sides or gate
- ✓ Gates and headboards must be strong enough to contain a load of full cylinders
- ✓ Supplementing the headboard and side and rear gates, there is a need for tie-down straps to hold groups of cylinders against the headboard.
- ✓ Going over bumps may dislodge gates out of their sockets. Removable gates need to be tied down or have some other locking device fitted to secure gates in place. Alternately the gates may be hinged and permanently fixed to the truck tray.

Forces Acting on LPG Cylinder Loads (*AS 5714:2015*)

The load restraint system must be capable of withstanding the forces that would result if the laden vehicle were subjected to each of the following separately. Note, a heavy load is just as likely to fall off as a light load as the same gravitational forces are acting on both.

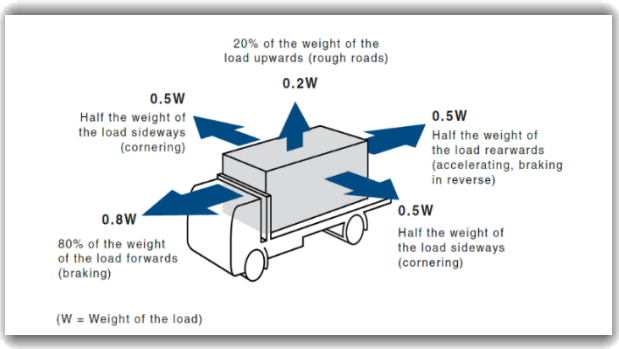
Note: 'g' (the acceleration due to gravity)

(a) 0.8 'g' deceleration in a forward direction, (80% of the load)

(b) 0.5 'g' deceleration in a rearward direction, (50% of the load)

(c) 0.5 'g' acceleration in a lateral direction, (50% of the load)

(d) 0.2 'g' acceleration relative to the load in a vertical direction (20% of the load)



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Means of Restraint

The **PRIMARY** means of restraint is achieved by the use of strapping, wrapping or mechanical restraints.

Tie-Down Straps

- ✓ Tie-down straps must be inspected at every use, and if they are showing signs of wear or fraying, the strap must be considered as being defective and must be removed and replaced immediately. A nick, cut or hole in the web of 10% of the lay-flat width of the tie-down strap is the maximum damage allowed. Any more damage must result in the tie-down strap being replaced with a new strap (eg. a nick of 7 mm depth in a strap 50 mm wide is more than 10% and the strap must be replaced).
- ✓ Drivers must carry enough tie-down straps in the truck to restrain a full load of cylinders. Straps must have a rated breaking strength sufficient to restrain the load.
- ✓ Under no circumstances is any type of rope to be used to secure cylinders or pallets to trucks. The tension in a tie-down strap is about 5-10 times more than of a rope.
- ✓ Tie-down straps must be a minimum of 50mm wide and of nominal 2000kg load capacity. These must be visually inspected at least weekly and replaced where there are signs of deterioration (10% of the width of the strap).
- ✓ Tie-down straps must be applied so that the strap passes at right angles over any edge, and is not to be applied around a corner formed by a vertical and horizontal member of a gate. In general this means that straps should generally be horizontal to the tray surface or at right angles to the edge of the tray and up and over the load.
- ✓ Tie-down straps must be tensioned by applying forces to the ratchet that can be comfortably achieved.
- ✓ Where there is a gap within the load, cylinders must be clamped together to prevent unrestrained movement. This requires a horizontal tie-down strap at about the centre of mass of the cylinders.
- ✓ If restraints are applied to gates, the gates need to be designed to resist the strap loads. This includes requirements related to how the gate is attached to the tray.
- ✓ Cylinders of different heights must have a dedicated strap fitted for each type of cylinder (each size of cylinder requires its own horizontal strapping).
- ✓ Extend the life of tie-down straps by using sleeves that slide along the straps acting as a buffer between the load contact point and the strap
- ✓ Ensure there are no twists in the tie-down strap when securing the load



The **SECONDARY** means of restraint is achieved by use of gates, fixed side panels, stillages or cages constructed to provide adequate strength to contain a load of filled cylinders. To satisfy these requirements, the gates shall:

i. Be tied down
ii. Have a locking device fitted that positively affixes the gates to the tray; or
iii. Be hinged and permanently fixed to the tray

Most load restraint accidents occur at low speed in city areas and often only after a short distance. The same amount of restraint must be used for every journey.

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Examples of Truck Design

The following pictures show examples of truck designs, and highlight some good points as well as areas that could be improved.

	**Good:** Hinged; attached at headboard; width between uprights would prevent any size LPG cylinder falling out **Not so good:** Not high enough as more than 1/3rd of cylinder above gate; gate support pillars may be too small; no horizontal bars to hold tie-down straps in place.
	**Good:** LH gate attached at headboard; width between uprights would prevent any size LPG cylinder falling out; RH gate sheeting prevents anything dropping off tray. **Not so good:** LH gate only one horizontal bar to hold tie-down straps in place; RH gate cannot attach tie-down straps.
	**Good:** Chained down at tail gate; width between uprights would prevent any size LPG cylinder falling out **Not so good:** Gates higher than required so heavier than required; only one horizontal bar to hold tie-down straps in place.
	Good: Nil **Not so good:** Gates not attached in a way that would prevent them lifting up; no vertical bars to hold horizontal tie-down straps in place.

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	**Good:** Bars across top of load between gates resist gate racking under load restraint side loads; side and rear gates attached at corner; width between uprights would prevent any size LPG cylinder falling out **Not so good:** Bars across top of load make it difficult to remove gates – driver has to push them up out of their slots from the ground (if possible) or climb up onto the load to remove the bar; gates too high; only one horizontal bar to hold tie-down straps in place along sides of truck.
	**Good:** Attached at headboard; appropriate height **Not so good:** Weak attachment between gates; gaps between vertical bars too wide to keep small cylinders from falling from the load space; no horizontal bars to hold tie-down straps in place.
	**Good:** Hinged; attached at headboard; sheeting across gates (if strong enough and appropriately attached) would prevent any size LPG cylinder falling out; appropriate height for all LPG cylinder sizes. **Not so good:** Hinge points at bottom of coaming rail probably mean that when folded down the gates damage the roadway or loading area surface; no facility to hold tie-down straps in place; horizontal tie-down straps are required if there is a gap at the back of the tray or within the load.
	**Good:** Appropriate height; (though not shown, side gates attached at rear gate). **Not so good:** Gap between vertical bars to wide – cylinders could slide out; no horizontal bars to hold horizontal tie-down straps in place.

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	**Good:** Hinged; attached at headboard; width between uprights would probably prevent any size LPG cylinder falling out; central support to resist load restraint side loads; appropriate height **Not so good:** No horizontal bars to hold tie-down straps in place; hinge points at bottom of coaming rail probably mean that when folded down the gates damage the roadway or loading area surface.
	**Good:** Width between lower horizontal bar and edge bar of gate would probably prevent any size LPG cylinder falling out **Not so good:** Gates higher than required; weak connections between gates; gates not held down so as to prevent gates riding up over bumps; limited vertical bars to hold tie-down straps in place. Note that the way the horizontal tie-down strap is applied is causing additional loads on the strap and cannot be recommended.
	**Good:** Width between lower horizontal bar and edge bar of gate would probably prevent any size LPG cylinder falling out; separate load space for small cylinders under the tray **Not so good:** Gates higher than required; weak connections between gates; gates not held down so as to prevent gates riding up over bumps; limited vertical bars to hold tie-down straps in place.
	**Good:** Width between vertical bars would probably prevent any size LPG cylinder falling out; central gate supports to resist load restraint side loads; gates attached to central restraints; appropriate gate height. **Not so good:** No horizontal bars to hold tie-down straps in place; Note that the way the horizontal tie-down strap is applied is causing additional loads on the strap and cannot be recommended.

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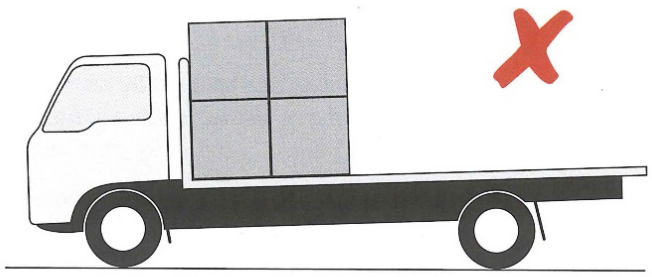
Weight Distribution on the Cylinder Truck

Responsibility for correctly loading and securing a vehicle's load to the minimum requirements rests with the driver.

A vehicle's GVM rating must not be exceeded as this will diminish stability and reduce braking efficiency.

To ensure an axle is not overloaded, weight must be distributed throughout the load body:

- A load placed against a headboard is easier to restrain, but it can place too much weight on the steer axle, increasing braking distances and affecting directional stability.
- Having the load too far to the rear of the truck may cause insufficient weight on the steer axle to ensure safe steering, and will also increase stopping distances due to reduced braking efficiency.



Overloading a vehicle is contrary to legislation and ELGAS requirements, and may invalidate insurance policies.

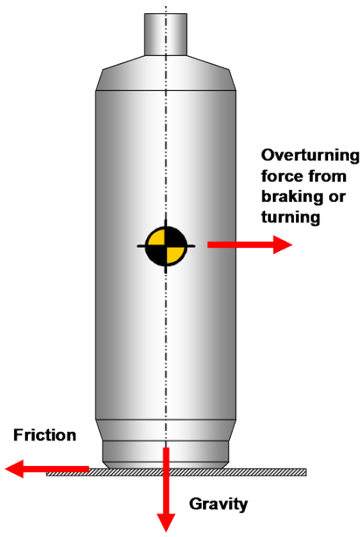
The following table summarises the number of full cylinders that equate to around 1 tonne of weight. This may be useful when loading the truck.

Cylinder Size (kg)	No. of Full Cylinders per Tonne*
15 (alum)	39
18 (steel)	24
45	11
90	6

* assumes the cylinders are full of LPG, and takes into account the weight of the cylinder

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Tipping vs. Sliding – Single Cylinder



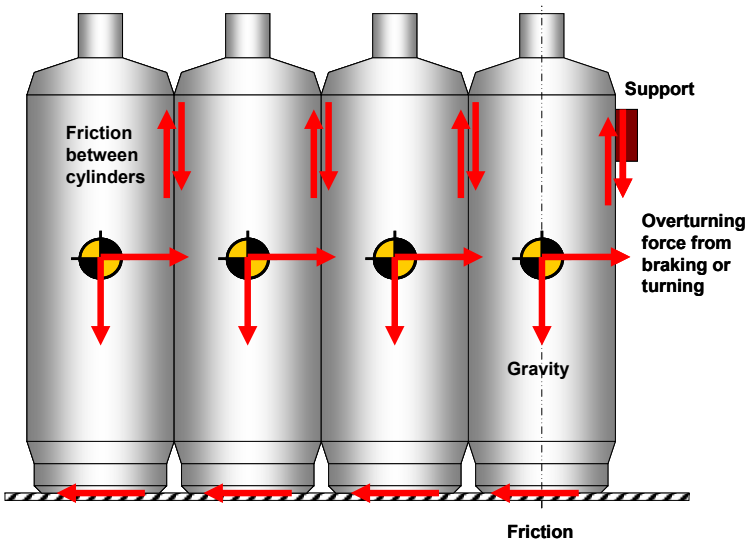
With a very low friction surface like ice, almost all objects will tend to slide rather than tip. With a very high friction surface (say sandpaper or similar) almost all objects will tend to tip rather than slide.

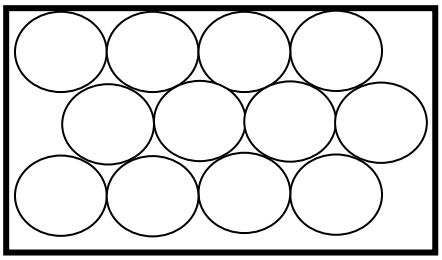
Studies have shown that most cylinder sizes between 2kg – 190kg would slide rather than fall over if tested as a single cylinder. However:

45-90kg cylinders would be more likely to fall over rather than slide as a single cylinder

Tie down straps must be secured at or just above the centre of gravity of a cylinder to achieve maximum restraint. This point is indicated by the circles on the pictures above and below.

Tipping vs. Sliding - Multiple Cylinders





Interlocking Cylinders (birds eye view)

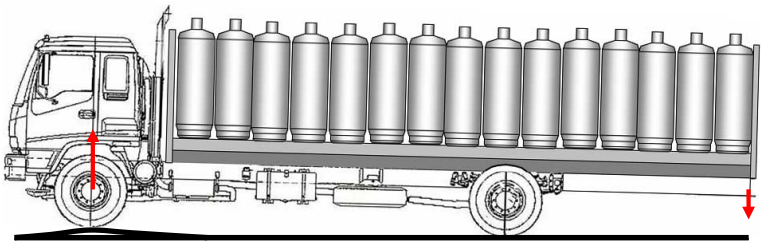
With multiple cylinders, each cylinder pushes against the next cylinder, providing additional resistance to tipping over. Testing has shown that none of the cylinders will tip over when they are in a group which is pulled together by a tie-down strap. Cylinders will lock together better with less movement when interlocked together as shown above right.

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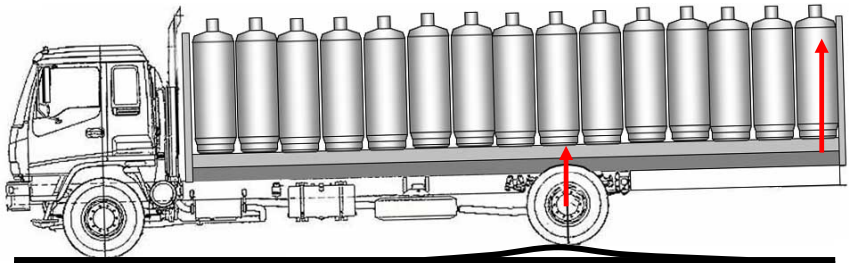
Cylinders Being Thrown Vertically

To prevent LPG cylinders being propelled upwards, the cylinders must be clamped together.

Consider the following two situations:



When the front of the truck passes over a speed bump, there will be downwards pressure towards the back of the tray. Accordingly, the load at the rear of the truck should not become airborne due to the front steer passing over a bump.



When the rear axle goes over the same bump the situation is very different. There is upwards pressure at the rear of the truck, which depending on the speed traveled and the size of the speed hump, there is a real risk of propelling the cylinders at the rear into the air.

The picture below shows the typical result when cylinders are not effectively restrained.



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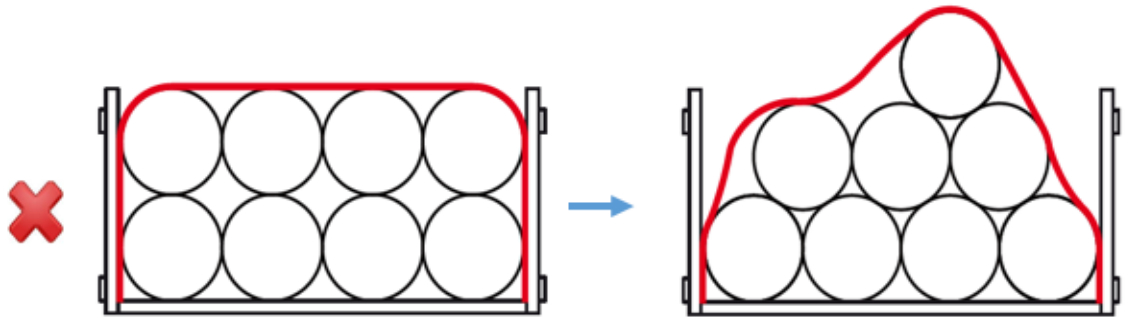
Loss of Cylinders through Gate Openings

To ensure cylinders are not lost through gate openings, the following load restraint requirements must be met:

i. Gate latches must lock in a manner that does not allow the latching mechanism to release in normal travel

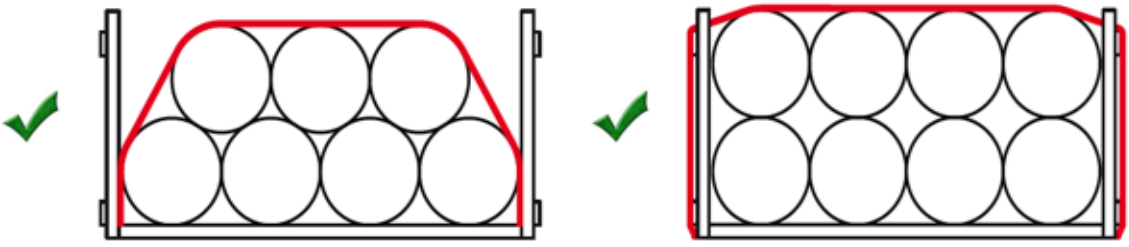
ii. Stillages / gates used for small LPG cylinders must have openings that are less than 132mm (diameter of a 2kg cylinder) at the base of each stillage / gate (or 260mm - minimal dimension of other cylinders)

Examples of 'Belly Wrapped' Cylinder Load Arrangements



NOT SUITABLE; straps not restrained by vertical member (attached inside the side gates)

Effect of side load greater than 0.6g



A more **SUITABLE** load configuration is achieved through interlocking (this has reduced the load)

Another more **SUITABLE** load configuration is achieved by restraining the strap by the vertical member

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Do's of Load Restraint

- Ensure the vehicle is loaded in a manner that does not affect vehicle stability and handling
- Ensure side gates are secure, and if your gates are not hinged and do not have locking devices, they must be secured with tie-down straps.
- Cylinders must be transported upright so that the safety relief valve is always in the vapour space of the cylinder.
- Make sure that tie-down straps are as near to vertical as possible
- Attach tie-down straps at tie rail support points as this is the strongest point
- Check and re-tighten tie-down straps or other restraining devices regularly during trips.
- Tie-down straps must not be faulty (e.g. worn, torn, or ratchets damaged). Use strap protectors on sharp edges.
- Use a vehicle that is suitable in design and strong enough for the job
- Make sure that you have enough tie-down straps and that they are in good condition and strong enough to secure your load
- Take extreme care when releasing fixed lever dogs and ratchet straps



Don'ts of Load Restraint

- Do not use cordage or ropes to secure your load. While a rope may feel tight, the tension in a tie-down strap is about 5-10 times more than of a rope.
- Do not use faulty equipment
- Do not attach chains or straps between tie rail supporting points
- Do not take chances with the security of your load
- Loading directly onto slippery steel decks should be avoided. Use wood or rubber to improve the grip. Low friction is high risk.
- Don't double stack cylinders on top of each other. This may cause issues with the load restraint and, damage the cylinder.

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5.6 Truck Breakdowns

Should your cylinder truck breakdown, or require a tyre change, it is your responsibility to ensure the truck does not become a traffic hazard. Breakdown warning triangles must be used if the vehicle has stopped on the road or any part of its load has fallen off the vehicle.

Where possible, try to have the truck moved out of the main traffic stream. As a rule:

- The vehicle must be correctly parked, on a firm, level surface
- Ensure that the vehicle is away from traffic
- Wheel chocks must be used when necessary
- Park brakes must be applied
- Switch on hazard warning lights
- Do not leave the vehicle unattended

Guidelines for the placement of breakdown warning triangles are as follows:

On roads with a speed limit of 80km/h or more, 3 triangles must be placed on the road:

i. 1 x triangle must be placed 200-250 metres behind the vehicle or fallen load,
ii. 1 x triangle must be placed 200-250 metres in front of the vehicle or fallen load, and
iii. 1 x triangle must be placed by the side of the vehicle or fallen load

On roads with a speed limit of less than 80km/h, 3 triangles must be placed on the road:

i. 1 x triangle must be placed 50-150 metres behind the vehicle or fallen load
ii. 1 x triangle must be placed 50-150 metres in front of the vehicle or fallen load, and
iii. 1 x triangle must be placed by the side of the vehicle or fallen load.

If the road is a one-way road or divided road (not including roads with painted medians), three triangles are still needed, but there is no requirement to place a triangle in front of the vehicle. The 3rd triangle should instead be placed between the triangle by the side of the vehicle or fallen load and the triangle behind the vehicle.



Breakdowns - Changing Tyres

Changing a flat tyre can lead to injuries to your back, fingers, or shoulders if not tackled correctly. Drivers must only change tyres on their truck as a last resort. Drivers should preferably use the services of an accredited tyre repairer to come out and change the tyre.

There are a number of hazards and difficulties involved in changing a tyre on a cylinder truck:

- A truck weighing many tonnes has to be jacked up, and the person changing the tyre may need to place themselves under the vehicle.
- Often the wheel nuts are very tight and may require a metre-long bar just to loosen.
- It is preferable to use a torque wrench to precisely set the torque of the nuts.

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5.7 Safe Driving

When you are behind the wheel of an ELGAS truck, you are a representative of both ELGAS and the LPG industry. It is essential that you comply with all relevant road laws, and all speed limits must be strictly adhered to. This, coupled with driving defensively, will stand you a good chance of avoiding an accident. Three motivators for safe driving behavior include:

i. Returning home safely
ii. Avoiding the cost of collisions
iii. Avoiding fines and demerit points

Around 60% of all avoidable incidents at ELGAS are from low speed impact whilst reversing or maneuvering. Particular care must be taken in this area, including the use of mirrors, reversing sensors and observational cameras to avoid these low speed collisions.

Professional rivers have good attitudes. Other road users are possibly not as skilled as you and make mistakes. Part of a professional drivers job is to keep the average driver safe by practicing safe driving behaviours, including:

- Hazard perception; anticipating problems and taking appropriate action
- Not taking risks; evaluating risks and taking appropriate action
- Knowing, respecting, and following road rules, including not speeding
- Co-operating with other road users; showing tolerance and patience
- Following loading and freight rules
- Managing fatigue

All Drivers must carry a current and valid drivers license suitable for the size of truck they are driving, as well as a Dangerous Goods license if required.

When operating different vehicles drivers must familiarise themselves with the vehicle and its features. The vehicle operating manual must be read and understood.

Food and Drink Consumption

Australian road laws require the driver to be **'In Control of the Vehicle at All Times'.** Eating or drinking may be treated as a breach if the driver is deemed not in control of the vehicle. Fines and demerit points may be applied. ELGAS guidelines include:

- Drivers at ELGAS must not eat while driving
- Drivers may take a drink from an appropriate drink bottle if they are in control of the vehicle.
- Drinking is prohibited when the conditions are unsafe.
- Drivers are encouraged to use their rest breaks or the times when stopped to eat and drink.

Speed Limits

The maximum allowable speed for heavy vehicles in Australia is determined by national regulation and for some vehicles, speed controlling equipment is mandatory. ELGAS has imposed the following speed limits to all vehicles carrying a manifest quantity of any Dangerous Good (including utes and light trucks):

The posted speed limit or 100km/h, whichever is the lower speed

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Slow Speed Manoeuvring.

Slow speed manoeuvres, including reversing at depots and customer sites, are the greatest cause of avoidable incidents for ELGAS vehicles. These incidents can be avoided by practicing safe driving methods, including:

- GOAL – Get Out And Look. Check the area into which the vehicle is to be reversed. Look out for:
  i. People
  ii. Obstructions
  iii. Suitability of ground
- Driving to the conditions
- Adjusting and using mirrors effectively
- Checking operation of, and using reversing cameras and warning devices correctly
- Being aware of site conditions

The basic principles of manoeuvring safely are:

- Mirrors – ensure proper adjustment at all times
- Assisted reverse – a competent person guiding into restricted areas
- Coned area – to warn pedestrians and other vehicles of a hazardous area

Mirrors

Modern vehicles can have mirror systems that provide a comprehensive coverage of the surrounding area. If configured and adjusted correctly mirrors can provide visual coverage around the vehicle with 100% visibility of at least one meter in front and along both sides.



Linde mandatory mirror configuration (note this is a left-hand drive vehicle)

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Mirror pre-use check

During the vehicle's pre-journey inspection check, ensure all mirrors are:

- In place
- In good condition
- Clean
- Adjusted correctly

Mirror adjustment

Adjust to view as much of each side of the vehicle as possible:

- With widest possible view of the road
- With rear horizon line approximately two-thirds up
- Do not fill half the mirror with the vehicles side – this reduces road coverage
- Adjust to provide a comprehensive ground coverage
- Ensure the entire truck side is clearly visible
- Ensure area immediately beside the vehicle on the passenger side is visible
- Adjust to enable a view of the vehicle's corner and front

Hint:- With the vehicle safely parked on flat ground. Gain the assistance of a second person to walk around the vehicle as closely as possible to ensure there are no blind spots, and adjust mirrors accordingly

Mirror use while driving

- Ensure all mirrors are checked every few seconds
- Look beyond the mirror for potential hazards
- When making sharp turns at low speed, check all mirrors carefully Immediately before, during and after moving.

Observational Cameras

Reversing camera: When reverse gear is selected the camera operates and the driver is able to see the area, up to two meters, immediately behind the vehicle

Proximity camera: A camera fitted to the front (near side) mirror arm which enables clear images of the area at the corner of the vehicle.

Camera pre-journey check:

- For a reversing camera – apply park brake, select reverse gear, and check display
- For a proximity camera – apply park brake, select forward gear, and check display

Using a reversing camera:

- **GOAL:** Physically check the area into which the vehicle will reverse
- Check both mirrors
- Select reverse gear
- Check there is a clear view of the area behind the vehicle
- Check both mirrors again
- Commence reversing whilst checking mirrors again, glancing at the screen.

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Reverse sensor: Covers the area immediately behind the vehicle and out of the drivers direct sight. It emits a warning sound when an object is detected. A reversing sensor will not detect very low / high objects.

Reversing sensor pre-journey check:

- Apply park brake, select reverse gear, and ensure self-test beep beep is audible

Using a reversing sensor:

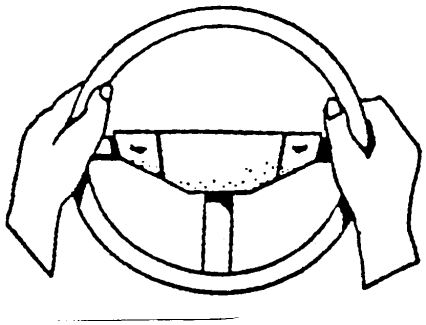
- GOAL: Physically check the area into which the vehicle will reverse
- Check both mirrors
- Select reverse gear and listen for warning sounds.

Regardless of whether observational cameras or reversing sensors are fitted, always physically check the area into which the vehicle is to be reversed before attempting a reverse manoeuvre

Steering

As a professional and licenced driver you know how to drive and control vehicles. However it is always useful to review some basics. We are all prone to developing bad habits, often without realising, so occasionally stopping and doing a self-check is a good idea.

Hands on the wheel. The steering wheel should normally be held lightly with both hands. Gripping the wheel too tightly can lead to fatigue and restrict smooth movement. The generally accepted position for the hands is at or above quarter to three. However due to the size and position of some truck steering wheels this may need to be adjusted slightly. You should still maintain your grip as close as possible to the quarter to three position.



Steering faults that could cause problems:

- Gripping the wheel too tightly
- Removing both hands
- Removing one hand for too long a period
- Gripping the wheel below half way
- Turning the wheel too much or too little
- Making sudden sharp corrections
- Entering corners or bends too quickly
- Excessive braking in corners or bends

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Braking

As a professional driver you need to be aware of the danger posed by your vehicle if you lose control of its speed or direction. You need to have a full understanding of your vehicles braking operations and capabilities. When changing to a vehicle you are not familiar with you must take sufficient time to understand the braking and steering before leaving the depot.

Braking on Hills

Complete loss of brakes when descending a hill is a real problem which can lead to disastrous outcomes. In most cases this occurs due to lack of maintenance or driver error. In most cases the brake loss can be prevented. On the rare occasion when it cannot be prevented defensive driving practices can minimise the dangers.

One of the most common causes of brake failure is overheating due to failure to select the correct gear or failure to properly use auxiliary brakes. Overheating leads to brake fade in which the brake linings completely lose their grip. Professional drivers never allow these conditions to occur. Truck speed downhill should be controlled by use of engine, gears, and auxiliary brakes. The brakes should be reserved for coping with emergencies and changing traffic conditions.

When braking:

- Brake early and gradually
- Brake in a straight line
- Allow for the load
- Match your braking to the road surface
- Ease off as vehicle slows
- Always check brakes after driving through water

Park Brake Application

Park brakes provide the driver with safety and security of his vehicle. It is essential to always engage the park brakes when stopped. Truck rollaways can have a deadly and catastrophic outcome. If you are faced with a truck rollaway while you are out of the vehicle do not attempt to enter the moving vehicle.

Always remain in complete control of your vehicle at all times.

- Never leave the truck unattended without the park brake being applied.
- Always check the operation of your park brake and warning alarm at your daily pre & post journey inspection
- In hilly and mountainous areas always chock your vehicle

Regular maintenance and upkeep of your trucks braking system is essential. Park brake holding detents at the control lever do wear and may be susceptible to not fully engaging – positive detent locking must occur at every application. If not, have it fixed immediately.

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Safe Driving Tips for Driving Heavy Vehicles

The following are some safe driving tips for driving heavy vehicles. Drivers should not consider safe driving to be a matter of luck and understand that it is a by-product of their ability to drive as a professional.

Right of Way

- The average motorist has limited knowledge regarding the extra allowances required to operate a heavy vehicle, and for the hazardous product we carry. With that in mind, what may seem normal to the average motorist may well present substantial risk to you. You should be aware of this and always adopt the role of defensive driver, allowing for other driver errors with patience and courtesy.

- When approaching a situation that calls for a 'Right of Way' decision, make sure the other driver has seen you and is allowing you the right of way. Try to make eye contact with other motorists / pedestrians and never assume that you have been seen until the other driver has made it obvious they are giving way. Whether or not you have the right of way you are expected to take every reasonable precaution to avoid an accident.

Overtaking

- Overtaking in a large vehicle is always a hazardous operation. Make sure there is sufficient unobstructed distance available for you to overtake quickly and regain your side of the road. In multi-lane environments you are responsible when you are changing lanes. Signal well before lane changes and check for clear path to carry out the change. Checking of your blind spot with appropriate mirrors and adjacent space is essential prior to moving out of a lane

Low Clearance

- Be aware of the overall height of your vehicle and therefore remain conscious of overhead bridges, service station canopies etc.

Cornering

- Drivers should reduce speed before the corner, steer through the corner, then gradually accelerate out of the corner. Speed through corners is left to the discretion of the driver, however it must not exceed the advisory speed signs and for a 90-degree corner it must not exceed 24 kph. These are maximum speeds and the driver is obliged to enter all corners at a safe speed.
- It is important to remember the load we are carrying is liquid. This can produce a late transfer of weight in corners or deceleration causing drivers to move outside the capability zone of their vehicle traction or centre of gravity and upright position.

Traveling Behind Vehicles

- The law states that drivers will always maintain a "proper following distance" (stopping distance), between their vehicle and the vehicle in front.

- The recommended following distance for cars is the "3 second rule" (illustrated below). This should be extended to "4 seconds" for heavy vehicles to allow for increased braking distances etc. The 4 seconds is measured by noting a stationary mark or shadow on the road (or adjacent) and checking your gap by counting to four. The front end of your vehicle should not arrive at the fixed reference point before reaching the four count.

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The "3 second rule" safety gap commonly used for cars should be extended to the "4 second rule" for heavy vehicles, to allow for increased braking distances etc.

Foul Weather Driving

- Drivers must adjust their driving to the weather and visibility. Fog, snow and heavy rain reduce your ability to control the vehicle. Bright sunlight can reduce your ability to see, and high temperatures can affect the road surface.

- When the weather deteriorates, or in darkness, the ability to obtain information, usually through our eyes, is decreased. Extra tolerance and allowance must be made for driving functions, such as slowing speed and allowing extra stopping distance. Ensure the correct operation of windscreen wipers and also maintain clear side windows and mirrors. Your fellow motorist may not be maintaining those vital elements of vision and your defensive driving awareness will need a high level of alert.

- Expand your area of observation to improve scope for anticipation of other motorists or road condition. Double the 'following distance'. Turn your lights on and try and keep other vehicles away from your side or rear.

Maintain Traction

- Direction and speed control are only possible as long as the tyres remain in positive contact with the road surface. To maintain traction and minimise accident risk, drive moderately, and avoid heavy braking, rapid acceleration and sudden turning. In foul weather adjust your road speed and increase allowances for braking; assume that the traction capacity of your vehicle is minimal.

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Changed Traffic Conditions

- Traffic conditions can vary from hour to hour, and even minute to minute. The defensive driver should be considerate, even to drivers who persist in trying to force their way into the stream of traffic. This requires a calm temperament which is cultivated and maintained through defensive driving.

Health

- Your health is vital to your employment as a professional driver. You need to have sufficient sleep and rest to preserve your health standards. You should make a point of having regular medical checkups in addition to company-initiated health screenings, and advise your Manager of any changes in your physical condition that may affect your ability to do the job. On long trips regular rest breaks (every 2 hours) should be taken to guard against fatigue and drowsiness. Exercise by walking around the truck or resting.

Bicycles and Motorcycles

- Both bicycles and motorcycles can be difficult to see if you are not paying attention. You must always maintain awareness of all road users around you, including pedestrians, and exercise particular care when children are in view. Bicycle and motorcycle riders have the same rights and responsibilities as drivers

ELGAS expects the high standard of its reputation be reflected in the courtesy extended to other road users. The public and our valued customers will judge the company based on your actions as a driver.

Driving Infringements

Transportation of LPG involves ELGAS and its drivers in compliance with various laws, which are generally administered by the police (e.g. road and traffic laws). Breaches of these laws involve fines imposed against the person actually breaching the law, generally the driver. ELGAS is not liable for any fines for negligent driving or speeding by a driver.

Drivers MUST inform their line management if they lose their driving license or are convicted of a drink driving offence etc. If a driver is involved in an accident under these circumstances, they are NOT be covered by ELGAS for insurance purposes and this is deemed a dismissible offence.

The consequences for a driver involved in an accident as a result of driver negligence may range from coaching, to disciplinary action, dismissal, fines, demerit points, injury, stress and psychological problems, and court actions.

Common Causes of Vehicle Incidents

The following list is the 10 most frequent, immediate and root causes of commercial vehicle incidents:

- Speed
- Fatigue
- Distractions
- Following distances
- Not allowing for the mistakes of other drivers
- Insufficient training
- Failure to adjust to conditions - road/load/weather
- Attitude
- Driver impairment
- Allowing sufficient time for the journey

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5.6 Cylinder Truck Rollovers

One of the most serious and life-threatening accidents that can occur in a cylinder truck is a truck rollover.

Cylinder trucks are different to many other trucks travelling on the road as they can have a high centre of gravity, especially when cylinders are double stacked in stillages or a decking system. This high centre of gravity creates an added degree of instability, especially when faced with a potential rollover situation.

Load distribution can dramatically affect vehicle handling. When all full cylinders are on one side of the truck and empties on the opposite side, or when all full cylinders are at the head board and all empties at the rear, the handling of the truck will differ. Weight distribution on the truck must be as low as possible, and evenly distributed between axles and wheels.

One of the common causes of cylinder truck rollovers is where the truck moves slightly off the road and into the gravel. The result is that the driver tends to react quickly to return the truck back on to the road, often at speed, overcorrects the steering, and rolls the truck.

There are a number of important lessons that can be learned from truck rollovers of the past:

- DO NOT get your wheels off the road and into the gravel. There are generally only three reasons why a cylinder truck ends up off the bitumen and into the gravel, being:

  i. Fatigue
  Drowsiness, microsleeps

  ii. Distractions
  In-cab handheld, mobile phones, paperwork, GPS devices, eating

  iii. Speed
  Cylinder trucks must travel under the posted speed and advisory limits.

- If you end up with one or more wheels in the gravel, where possible, DO NOT try to instinctively steer back on to the road at speed, rather, SLOW DOWN, maintain control of the vehicle, and return to the road when safe to do so. Abrupt steering maneuvers may cause you to lose control of the vehicle.

Your ability to maintain control of the cylinder truck depends on many influencing factors, some within your control and others beyond your control.

Factors that may contribute towards a truck rollover		
Centre of gravity	Vehicle speed	Changing direction
Acceleration	Driver experience	Liquid movement
Load movement	Driver alertness	Sun
Wind	Brake condition	Roundabout size and camber
Tight Corners	Road condition	Road knowledge
Camber change in turn	Road litter	Inappropriate gear selection
Suspension condition	Tyre condition	Tyre pressure
Time pressures	Other road users	Mobile phones

One of these factors alone can be enough to roll a cylinder truck, and if two or more of these factors come into play at the same time, then the likelihood of a truck rollover increases sharply.

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Preventative and routine maintenance is critical for cylinder trucks. Suspect suspension components affect the characteristics, drive and handling of the vehicle. Tyres are the only connection between the truck and the road. Tyre and sidewall condition, and correct tyre pressure, are added factors which will affect the stability of the vehicle. Stability may also be affected where the load is not correctly located or restrained.

Any factors outside of your control can be moderated by defensive driving and driving to the conditions you are exposed to. Training, policies, and procedures will minimize external factors to an extent but will never provide 100% protection from an incident occurring. If a driver is found to be negligent in their ability to maintain control their vehicle and other road users are put at risk or injured, the law can find you guilty of negligent driving.



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6 Deliveries to Customers

6.1 Manual Handling and Safe Cylinder Handling Requirements

Manual Handling

Manual handling is an issue for everyone, regardless of job role. Those performing frequent manual tasks such as cylinder truck drivers and yard workers are of greater risk of musculoskeletal disorders such as back problems, or damaged ligaments. However damage can be caused in the office environment by what may seem a relatively simple task such as picking up a light weight or stretching to grasp an object. Therefore it is important to assess tasks and ensure you use correct lifting techniques.

Manual handling risk not only comes from the weight of an object being handled but from the way it is handled.

Some of the main problems associated with manual handling include:

- Twisting, jerking, over reaching actions which strain ligaments and muscles, and occasionally a joint
- Doing the task too fast which causes many strains
- Lifting the wrong way
- Handling a load too heavy for your ability
- Repetition, where the injury develops over time
- Fatigue which will contribute to poor decision making and possible injuries as a result
- Pre-existing injuries, you are more vulnerable to injury.

Back injuries represent the majority of manual handling related injuries. The back may suffer from an isolated incident or suffer from long term exposure to load and stress.



Lifting with a bent back causes load stress to be shifted to one side of the affected discs, pinching them between the vertebrae, which can lead to the discs wearing out or even bursting under the pressure.

The human back is weak and easily damaged in every position except when it its vertical, hence the old saying “straight back is a strong back.”

The strongest muscles in the body are in the legs, so always lift a load with a straight back and bent legs!

Fortunately most back injuries relate to strains and injuries of the muscles that support the spine, and not the discs themselves. Tearing of muscles is more likely to occur when the back is bent. Such injuries should be seen as a warning sign that your current work practices are not ideal, and steps must be put in place before more serious and permanent injury results.

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Back to the Basics...



On the job injuries due to lifting, account for a lot of accidents in any industry.



The Do's and Don'ts of Safe Lifting

TUCK
Tighten stomach muscles and tuck pelvis to keep your back in balance.

BEND KNEES
Bend at your knees! This centers balance and distributes weight.

HUG
Hold the object lifted as close to your body as possible. Gradually straighten to a standing position.

DON'T BEND AT WAIST
This is the easiest way to strain your back and cause damage to your spine.

DON'T TWIST
Twisting can overload your spine and lead to serious injury. Feet, knees and torso should be in alignment.

DON'T BE A HERO
If a load is just too large, heavy, or awkward to carry don't take unnecessary risk. Get someone to





SPECIAL TIPS





Make sure your footing is firm when lifting and the path is clear.

Use the same safe techniques about when setting your load down.

Long and odd-sized objects might be better handled by supporting on your shoulder, keeping the front end higher than the rear.

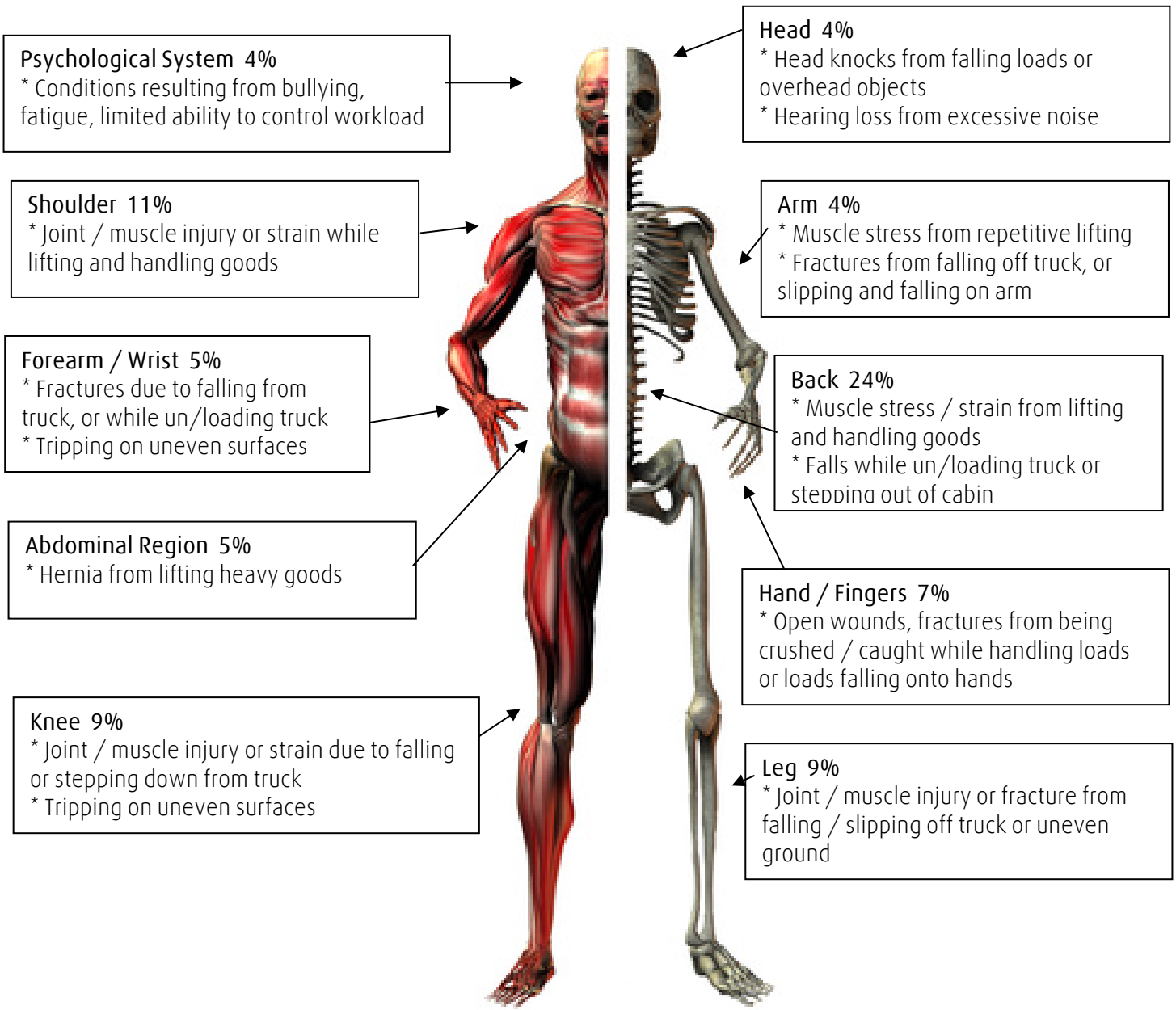
Use a stepstool or ladder for reaching anything above shoulder level. Test the weight before removing from a shelf.

Reaching into a lower storage area requires your feet to be a shoulder width apart, while squatting and bending at your hips. Keep the object as close as possible when lifting.

Your back is aligned correctly when your ears, shoulders and hips are in a straight line. If these three curves are not in balance, there is a greater likelihood of both back pain and injury.

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Manual handling injuries represent one of the greatest risks in the workplace. The impacts don't stop at work, and you could be affected for the rest of your life, therefore taking care now is essential. The following diagram depicts the major types of injuries suffered by workers in the transport industry*.



* Based on figures from WorkSafe Victoria, (Injury Hotspots Road Freight Industry).

It can be seen that the major contributors for workplace injuries, and hence the areas that should be approached with particular care are:

- Stepping down from the truck
- Slips / trips / falls on uneven or slippery surfaces
- Lifting and handling goods

There are a number of common reasons for climbing on the truck, but it should be remembered that trucks are generally not primarily built for such access, so do take care.

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Safe Entry and Exit of a Commercial Vehicle Cab

Truck cabs come in a variety of configurations with an equal number of variations in steps, ladders and handles. Improper entrance or exit from a truck cab is often the basic reason for a slip or fall and resulting injury. Common mistakes include:

- Jumping
- Exiting in the wrong direction
- Failing to use all steps
- Not using rungs or handles
- Slippery / improper footwear

Entering or exiting a cab is a routine act, and a driver does not usually even think about it. But this routine act can, and does, injure many drivers each year. Injuries can range from minor strains, cuts, bruises, to broken bones. The majority of injuries occur when a driver slips or loses their balance getting out of the vehicle. Protect yourself from slips and falls with the following guidelines:

- Wear appropriate footwear with slip resistant soles
- Become familiar with the equipment of the vehicle you are driving, especially where it is not the usual vehicle you drive. Know where steps and handles are, and never use tyres as steps or door frames as handles.
- Always use a 3-point contact system. This means having 3 limbs (e.g. 2 arms, 1 leg) in contact at all times when entering and exiting.
- Make sure you park in an appropriate area to enter and exit the vehicle
- Look before exiting for any hazards such as uneven or slippery surfaces, potholes, or people walking by
- Always face the cab when exiting the vehicle, and never jump to the ground.
- Keep your hands free and place items in the cab before entering, or retrieve items after exiting the cab

DID YOU KNOW:

More than 80% of severe injuries among truck drivers are sustained while not driving.

If you jump from the cabin, you can exert 12 times your body weight on your ankles, knees, hips and lower back. For an average driver, this is equal to a tonne of shock.

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Benefits and Design of Mechanical Handling Equipment

The use of mechanical handling equipment can significantly reduce loads on the spine and the risks associated with performing a manual activity. Using a mechanical aid is the safest way to move a cylinder. This should be the only method used where a large number of cylinders are to be moved or where the cylinder has to be moved over long distances (greater than around 6 metres).

Types of mechanical handling equipment that could be used include:

- Trolleys
- Tailgate Loaders

LPG cylinders must only be moved short distances (around 6 metres) by manually trundling. Trolleys, forklift trucks or other mechanical means must be used for longer distances.

Mechanical handling equipment should be easy to use and designed to suit the load.

Trolleys

Trolleys are the preferred and most efficient way of moving large (e.g. 90-210kg) and medium size (e.g. 45kg) cylinders, and must be used where:

- The weight of the cylinder is difficult to handle.
- Cylinders are to be moved over uneven or soft ground.
- Stairs have to be negotiated (stair capable trolley required).

Other safety measures when using trolleys include:

- Trolleys should be pushed with the cylinder in front rather than being pulled along behind. This allows for better vision and control.
- Regularly check for visible damage (e.g. cracked weld joints, sharp edges)
- Ensure trolley tyres are appropriately inflated to assist with stability
- Any securing straps on the trolley must be in good condition
- Gloves and other PPE must always be worn



Trolleys should not be considered "one size fits all".

The trolley shown to the left is suitable for a medium sized cylinder (e.g. 45kg) but would not be appropriate to handle a larger cylinder. Trolley selection must be suitable for the intended load.

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Tailgate Loaders

Improper use of a tailgate may result in serious personal injury or damage to cylinders. Do not operate a tailgate until you have been properly instructed in its use.

The following lists some of the mandatory requirements when operating a tailgate:

- Tailgate loaders must be operated and maintained as per manufacturers recommendations
- Ensure the truck is parked on level ground
- Be certain the vehicle is properly and securely braked
- Do not overload the tailgate (refer to load rating of tailgate)
- Load must be placed in a stable position as close as possible to the centre of the platform
- Never stand in, or move through, the area in which the tailgate will operate or into the area which an unstable load may fall

Never ride a tailgate, unless it is specifically designed to carry a person. There is a risk of injury due to:

- Falling off the tailgate
- Potential crush injuries
- Injury due to sudden movement / collapse of the tailgate or the load



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Manually Handling LPG Cylinders - Trundling

When manually handling LPG cylinders without the use of mechanical handling equipment, many operators use the trundling method. Cylinder trundling involves:

- Leaning the cylinder over at an angle to where the point of balance is achieved (approximately 10 degrees from vertical). Using one hand to support the cylinder on the cylinder valve or cylinder neck ring.
- Rotating the cylinder by pushing with the other hand above the cylinder midpoint.



Trundling cylinders is a very common and effective method of moving cylinders, provided:

- The work surface is level, free of ridges or bumps and not slippery.
- The use of a trolley is not available or impractical.
- Trundling is not used for long distances. The maximum that a cylinder may be trundled is around 6 metres.
- Do not trundle more than one cylinder at a time as excessive strain on both wrists will result
- Do not attempt to trundle cylinders that are unstable, have damaged base rings or cannot stand unsupported.
- Care needs to be taken to ensure that the cylinder valve is not opened inadvertently. Where a hand-wheel is present, check that it is closed tightly. Take extra care when trundling a cylinder that has a hand-wheel at the top of the valve. Trundling this type of cylinder may cause the valve to open and gas to discharge from the valve outlet.

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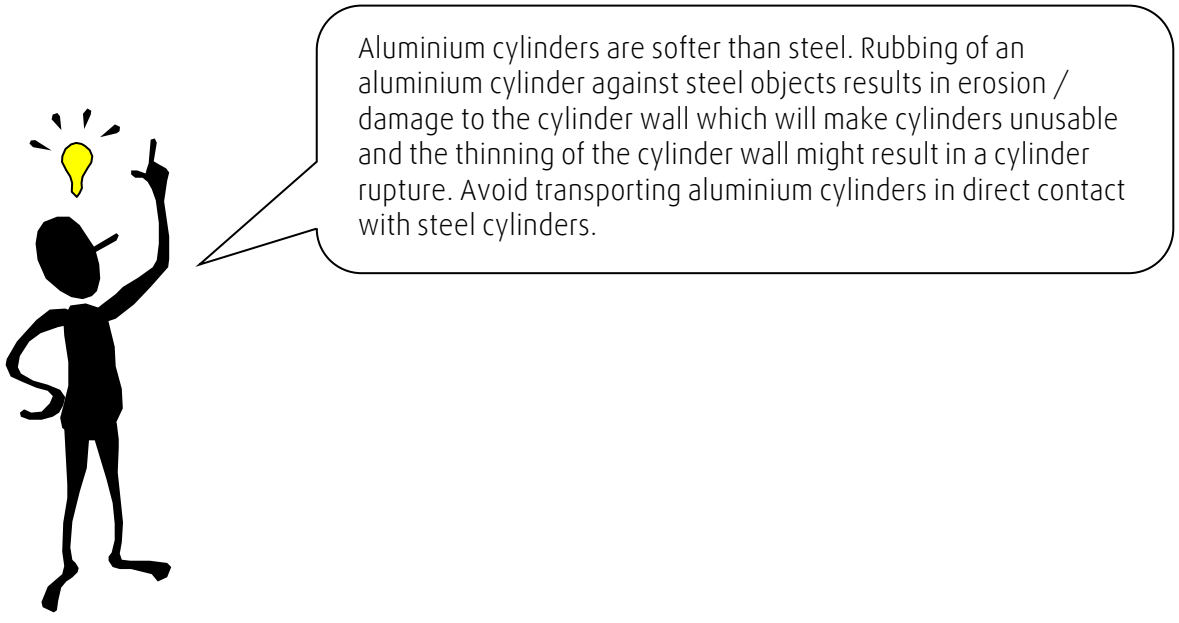
Safe Transportation and Cylinder Handling Requirements

Careful handling of LPG cylinders is essential at all times to ensure that cylinders do not present a risk to persons or surroundings.

Drivers must handle cylinders according to their own capabilities, which may change on a daily basis (eg cold / flu). Drivers must also handle cylinders according to the surrounding conditions, which may also change on a daily basis (eg wet, things in the way etc).

Gas cylinders that are constructed, maintained and used in accordance with applicable regulations are safe for the purposes for which they are intended. Accidents occurring during the transportation, handling, usage and storage of LPG cylinders can usually be traced from failure to follow safe handling requirements, such as:

- Cylinders must not be dropped directly onto a hard surface, thrown or handled in any way which may cause damage to the cylinder, valve, neck ring, paintwork, labelling or the ground. This has the potential to make the cylinder unusable or unsafe.
- Cylinders must be lowered slowly to the ground
- Cylinders must not be exposed to temperatures above 65°C or below -20°C. Never allow a flame or heat to be applied directly to any part of a gas cylinder. High temperatures may result in excessive cylinder pressure leading to possible rupture.
- Special care must be taken when handling full cylinders. Even though some cylinders may be small in size, they can be heavy, especially when filled with LPG.
- Care must be taken not to open the cylinder valve when handling a cylinder.
- Only move medium or large cylinders up or down stairs by use of a special stair capable trolley.
- Extreme weather conditions such as high winds, high rainfall, excessive ground water or ice have an adverse effect on the ability to handle cylinders safely.
- Correct lifting techniques must be used. Straight back, bent legs!
- Cylinders must be secured when loaded onto vehicles to prevent damage in transit
- Cylinders must be transported upright so that the safety relief valve is always in the vapour space of the cylinder.
- Cylinder valves must always be properly closed during transit
- All industrial gas cylinders filled by BOC must have valve outlets sealed or capped



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Lifting a Fallen Cylinder

Care must be taken when manually lifting cylinders to use correct lifting techniques.

When lifting a fallen cylinder, grip the neck ring firmly using both hands. If the cylinder has a handwheel, beware of inadvertently opening the cylinder valve.

Lift a fallen cylinder by using bent legs and keeping the back straight.

Do not attempt to manually lift a large (e.g. 90kg plus) fallen cylinder without assistance.

No attempt must be made to catch a falling cylinder as this may cause serious injury. The natural instinct to catch the cylinder **must** be ignored.

If a cylinder is falling:

- Stand aside from the path of the cylinder.
- Make sure other personnel nearby are warned of the situation.

Be aware of the location of other unrestrained cylinders as a falling cylinder can cause a domino effect.

Cylinders that fall must be immediately inspected for damage and repaired if necessary, prior to being refilled or transported off-site.



Seek assistance with any manual handling task that you feel you cannot do safely. Some loads require 2 or more people to handle the size or weight of the load.

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6.2 Customer Installation Safety Guidelines

Domestic Installations

There are a number of safety measures that must be followed on domestic LPG installations. Drivers must always check that the installations they are delivering to meet the current legal and ELGAS requirements. Australian Standard *AS / NZS 1596 "LP Gas Storage and Handling"* is the Standard that determines minimum distances from sources of ignition / drains and vents / doors and windows.

ELGAS' number one rule is:

> "ELGAS will not knowingly supply to an unsafe installation"

The following table shows a comparison of some of the safety distances required for a tanker (i.e Easygas / In situ) and an Exchange domestic installation. Given that the tanker method of delivery involves a small discharge of LPG during the filling process, some of the safety distances are greater with the tanker delivery system relative to Exchange (especially in relation to sources of ignition).

Requirement	Easygas / In situ	Exchange
Distance from source of ignition *	3.5 m	1.5 m
Distance from openable window **	50 cm	15 cm
Distance from door	1.0 m	1.0 m
Distance from drain ***	1.0 m	1.0 m
Distance from air vent / opening	1.0 m	1.0 m

* Includes power points, hot water systems, air conditioners, and Telstra / NBN telco boxes
** An openable window is one that can be opened! A glass window that does not open can be closer than the measurements shown above.
*** If there was a leak of LPG it would accumulate on the lowest point of the ground (i.e. in the drain)

Note: that the minimum distances above extend around the corners of buildings where applicable.

LPG regulations cover other installation requirements for cylinders, including:

- Cylinders shall be installed on a firm, level, non-combustible base, and not resting on soil. ELGAS recommends concrete slab bases
- Cylinders must be restrained to prevent them from falling. ELGAS recommends chains to secure cylinders in place.
- Cylinders shall be installed so that discharge from the pressure relief valve is directed away from any adjacent cylinders or combustible structures

A tape measure must be carried by all drivers to take accurate measurements when an installation is in question. As far as authorities are concerned there are no grey areas with the measurements, and an installation is either legal or illegal depending on what side of the line an item falls.

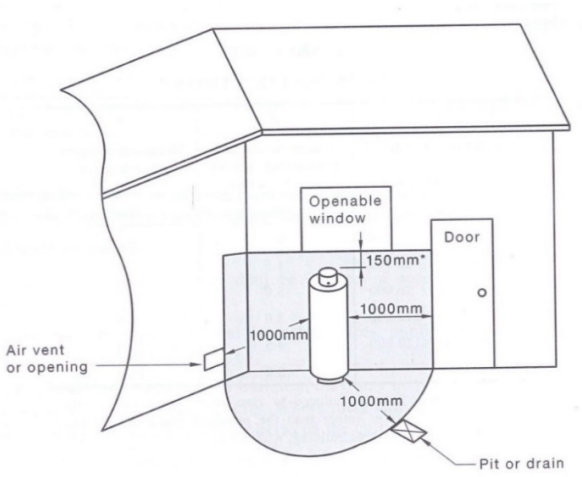
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The diagrams below are taken from *AS / NZS 1596* and depict the minimum safety distances required for 45kg cylinders.

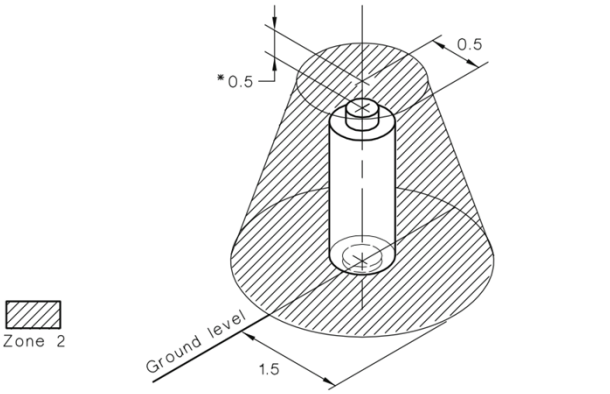
The pictures on the left depict the separation distances to openings such as doorways, drains, vents, and openable windows for both Exchange and Easygas (in situ) cylinders (also shown in table form in the previous page). Measurements are taken from the side of the cylinder or the top of the valve. The separation distances are the same, except exchange requires 150mm separation to openable windows while in situ requires 500mm.

The pictures on the right depict the minimum safety distances required from sources of ignition. Measurements are taken from the middle of the cylinder or the top of the valve. You will notice that the separation distance is shaped like an upside-down cone, with a smaller area towards the top and a larger area towards the ground. The source of ignition separation distance is larger for Easygas (in situ) cylinders as tanker deliveries involve an escape of LPG as the cylinder bleed valve is used during filling, hence the larger safety distance required.

Exchange Separation Distances



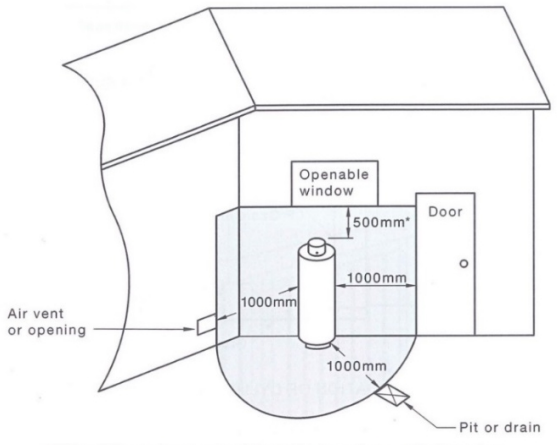
*This distance is measured from the top of any cylinder valve



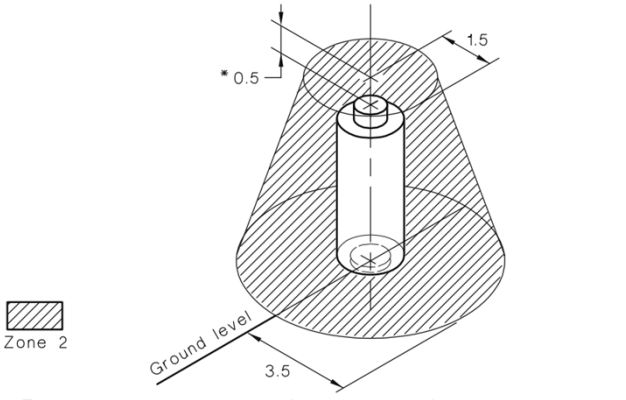
*This dimension is measured from the top of any cylinder valve.

DIMENSIONS IN METRES

Easygas (in situ / tanker) Separation Distances



*This distance is measured from the top of any cylinder valve



*This dimension is measured from the top of any cylinder valve.

DIMENSIONS IN METRES

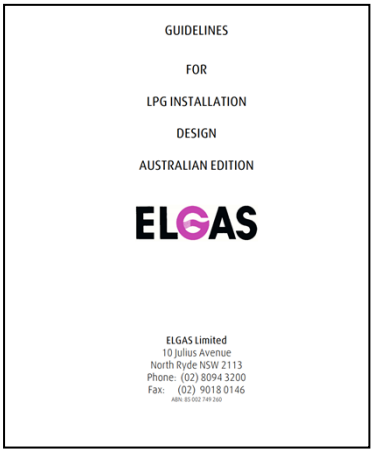
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Commercial / Industrial Installations

ELGAS has produced a manual titled ***Guidelines for LPG Installation Design*** (pictured below), which contains a vast amount of information on commercial / industrial installations. The manual covers many areas including:

- Installation design
- Vapourisation and Regulators
- Impact Protection
- Pipe Sizing
- Energy Unit Conversion Factors
- Tank location
- Cylinder location
- Decant / Swap'n'Go
- Easygas Downunder

Copies of the manual are available on request via your local Elgas representative.



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Other Site Safety Considerations

In addition to meeting required government standards, all ELGAS customer sites must be considered in regards to the following, especially if you are considering referring a customer across to the ELGAS tanker method of delivery:

1. Truck and Driver Access
   Minimum 4m wide x 4m high clear access for trucks through gates and to the fill / exchange point; the ability to access the site (e.g. keys / after-hours access); trucks have a wide turning circle and will require suitable space to turn around on site. Paths and other access routes must be suitable for drivers to either drag a hose or wheel a trolley. Hoses cannot be dragged through a building to make a delivery (this does not apply to a carport or verandah).

2. Parking and Ease of Exit
   Trucks require a safe parking point for the unloading / filling of LPG vessels. Safe parking means the truck is safe from damage or theft, is easily visible, and is not disrupting site operations or breaking any road traffic laws. Steep hills should be avoided as this makes parking and unloading extremely difficult. Vehicles delivering Dangerous Goods should be parked in a way so they can be driven away in a forward direction, without the need to reverse. If this is not reasonably practical, then they must be driven away with minimal manoeuvring.

3. Solid Surface
   Delivery trucks when full can weight over 20 tonnes, so a solid surface is required for the safe delivery of LPG. Avoid large slopes, slippery surfaces, dirt or grassed areas and always look for a minimum packed gravel / dirt track when carrying out site safety investigations. As a driver, if you believe there is a chance your truck will be damaged or get bogged you should defer the deliver until the situation is rectified.

4. Reasonable Distances
   AS / NZ 1596 states that during a delivery *"There is no more than 50m of hose length between the tanker and the receiving vessel"*. ELGAS suggests the shortest length possible in the interest of time, maintenance, and health and safety reasons, and prefer a maximum distance of 40m between cylinder location and likely tanker location for tanker deliveries. Access to cylinder storage location for cylinder trucks is to be as close as possible, and preferably no longer than 40m.

5. Line of Site
   For all tanker deliveries the driver must have an un-interrupted view between their tanker and the vessel they are filling. Line of sight must include viewing the Gas Module on the tanker while filling, including all valves, fittings and hose connections, and ideally the truck cabin, in the event of either of them being tampered with or damaged. An allowance of 1.5 metres is allowed (i.e. 1 sideways step), if line of sight is obscured behind a wall for example. A 2-man fill using an Offsider is an option to overcome line of sight issues. Tanker Drivers must carry the Remote Control Shut Down unit (where supplied with the truck) as another safety measure when filling.

6. General
   Give consideration to potential hazards such as animals (dogs, bulls etc.), steep hills, poorly surfaced ground, possibility of flooding and anything else that may impact on a drivers ability to perform their role (including surfaces not designed to support heavy loads).

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6.3 Customer Site Safety Check List

Agents/Distributors must not supply gas to an installation that does not comply with regulations or is sub-standard. The following list may be used as a guide to what must be checked on each visit to a customer site. Further information is available in the *Site Gas Checks* chapter of this training manual.

- ✓ Check distances from openings into building > 1m
- ✓ Check distances from drains >1m.
- ✓ Check distances from vents (as in brickwork cavity) >1m
- ✓ Is there >150mm between the top of the cylinder valve and the bottom of the window opening.
- ✓ Check distances from any ignition source, including electricity switches, hot water systems, air conditioners
- ✓ Check there is no oily rags, rubbish build-up etc. within 1m of the nearest cylinder.
- ✓ Pressure relief valves are directed away from adjacent cylinders or combustible structures
- ✓ Are the cylinders on a firm, level, non-combustible base
- ✓ Check for leaks using "soapy water"
- ✓ Check in-situ cylinders are "in-test."
- ✓ Can the cylinders be struck by maneuvering vehicle and have inadequate vehicular protection
- ✓ Is there adequate access for the truck
- ✓ Is it a reasonable distance (<40m) from the truck to the cylinder location
- ✓ Is there line of sight for tanker deliveries (if applicable)

Customer sites do change over time, so be aware of any changes to a premises that may make a once compliant site to be non-compliant, including:

Renovations to premises	Installing Incinerator
Installing Barbecues	Installing New Drainage
Outdoor Lighting Switches	Installing a hot water system
Installing an air-conditioning system	

A rigorous application of the above may well be impracticable, but it is expected that an Agent/Distributor will be very familiar with each customer site, and will be aware of a site that has been modified. New sites, or sites with evidence of building work must always be checked.

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6.4 Procedure for Exchanging a 45kg Cylinder On a Customer's Site

Loading a cylinder truck and delivering cylinders is a safe activity when all procedures are correctly followed. There are however some hazards, including:

- Sprains and strains
- Slips and trips
- Cylinder leaks
- Freeze burns from direct LPG contact
- Exposure to bad weather, especially heat cold and rain
- Dogs, belonging to the householder, the neighbours or on the street
- Garden paths or uneven surface over which the gas cylinder is trolleyed
- Tight spaces in and around residential and commercial installations
- Any adults, children or pets in the vicinity of the truck or the LPG installation

Drivers must adhere to the following when making deliveries to a Customer site:

- Wear appropriate PPE
- Mobile phones must not be taken into or used in hazardous areas
- Do not attempt to re-light any appliance pilot light
- Only a licensed gas installer (fitter) may install, modify or service an LPG installation or appliance(s)
- Drivers may tighten a pigtail where required (eg to rectify a small gas leak), however drivers must be trained and assessed as competent to replace a pigtail
- Do not supply a cylinder where a gas leak is evident in any part of the installation. Any leak must first be repaired by a licenced gas installer (fitter)
- All adults, children and pets must be kept clear of the un-loading / loading of the LPG cylinder and its attachment to the LPG installation.

One of the following procedures (A to E) must be followed when delivering exchange 45kg LPG cylinder(s) to a Customer's site.

	Delivery Type	Connect	Open Cyl Valve	Cyl Valve Closed Card	Comments
A	Standard	YES	YES	NO	Leak check required
B	Out of Gas (OOG)	YES	NO	YES	No leak check is possible
C	Change of Supplier	YES	NO	YES	Opposition cylinders must be removed from the Customer's site.
D	New LPG Installation	NO	NO	YES	Cylinders are plugged and tagged. Where a Compliance Certificate or Plate is confirmed, cylinders can be connected with valves left CLOSED.
E	Discontinued Supply	NO	NO	YES	Cylinders are plugged and tagged

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Procedure for ALL deliveries (A to E):

- Park the truck as close as legally possible to the LPG installation to reduce lifting / movement
  - Ensure the correct personal protective equipment (PPE) is worn including gloves / safety footwear / appropriate high vis clothing and eye protection.
- Use cylinder trolley (preferred) or trundling (if under 6m distance to travel) to move cylinder to installation location. In tight locations, ensure there is sufficient space to move the trolley and cylinder without additional and extensive manual handling. If required to move a cylinder though a residence or commercial building, ensure there is sufficient clearance through doorways and around furniture or machinery
- Make sure the ground, path or floor will not be damaged by the weight (almost 100 kg) of the trolley and cylinder
- Visually inspect all fittings
  - Regulator / threads / nuts / pipework / base slab to be checked for wear and tear / kinks / damage
- Site check for compliance with *AS/NZS 1596*
- Where there is more than one cylinder on site, only disconnect and exchange one cylinder at a time
- Disconnect the empty cylinder by turning the POL fitting CLOCKWISE (left hand thread)
  - Take care not to damage the connection pipe / pigtail
  - Check that all threads are clean.
  - Check there are no obvious obstructions in any hose or pipe, such as dirt or insects
- Move full cylinder into position and connect the cylinder by turning the thread ANTI-clockwise.
- Check for leaks only once the cylinder valve is opened.

Procedures for the different deliveries (A to E):

THE PROCEDURES ARE DIFFERENT FOR EACH TYPE OF DELIVERY (A to E).

A. Standard Delivery: Remove and replace an already existing and connected cylinder at a site that has LPG in at least one of the connected cylinders

i) When the cylinders are connected and tight, check for gas leaks by carefully opening the cylinder valve and spraying all connections with soapy water;
ii) IF YOU FIND A LEAK IMMEDIATELY CLOSE THE CYLINDER VALVE;
iii) Check and tighten all connections and re-open the cylinder valve. If the leak continues, CLOSE THE CYLINDER VALVE. Advise the Customer to get a licenced gas fitter to check the installation.

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B. Out of Gas Delivery: Remove and replace an already existing and connected cylinder at a site where ALL gas has been emptied from ALL cylinders. (i.e. run out of gas).

i) When the cylinders are connected and tight, DO NOT OPEN CYLINDER VALVES. It is not possible to do a leak test in this situation;
ii) If on a manifold, leave the manifold valve closed, open the cylinder valve, do a leak check with soapy water on the pigtail connection, then CLOSE THE CYLINDER VALVES;
iii) DO NOT OPEN CYLINDER VALVES. Leave a *Cylinder Valves Closed Card* for the Customer (in the letterbox if available).

NOTE: for Out of Gas Customers:

When delivering cylinders to an "Out-of-Gas" situation, the cylinder valve(s) MUST be left in the CLOSED position, until such time that the Customer has checked that all appliances are turned OFF.

An appliance left turned on may leak LPG vapour inside the building when the cylinder valve is opened. This must be avoided!

Only after all appliances have been checked and turned off, should the gas cylinder valves be opened, with the Customer re-lighting any pilot lights or appliances.

Leave a *Cylinder Valves Closed Card* if the Customer is not home.

C. Change of Supplier Delivery:

i) Remove and replace / connect all existing (opposition) cylinders in an existing LPG installation, leaving all cylinder valves closed. Remove the opposition cylinders from the Customer's premises;
ii) Connect all cylinders and DO NOT OPEN CYLINDER VALVES. Leave a *Cylinder Valves Closed Card* with the Customer (in letterbox if available).

D. New Installation Delivery:

i) Deliver and DO NOT CONNECT any LPG cylinders to a new or refurbished LPG installation where no LPG cylinders are currently connected;
ii) All LPG cylinders must be plugged and tagged, and left secured;
iii) Leave a *Cylinder Valves Closed Card* with the Customer (in letterbox if available).

NOTE: It is the responsibility of a qualified Gas Fitter to make the first connection to a new installation as it requires testing of the whole system including inside the building.

NOTE: Where a Compliance Certificate / Plate (or equivalent) is confirmed, connect all cylinders and DO NOT OPEN CYLINDER VALVES. Leave a *Cylinder Valves Closed Card* with the Customer (in letterbox if available).

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E. Discontinued Supply Delivery: An existing LPG installation which has been idle (not operational) and has no cylinder(s) installed.

i) Deliver and DO NOT CONNECT any LPG cylinders, and leave any existing cylinders in place (connected or loose);
ii) All LPG cylinders must be plugged and tagged, and left secured;
iii) Leave a *Cylinder Valves Closed Card* with the Customer (in letterbox if available).

NOTE: It is the responsibility of a qualified Gas Fitter to make the first connection to a discontinued supply installation as testing of the whole system including inside the building may be required.

Other Delivery Options

A number of other cylinder delivery options are as follows:

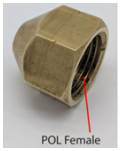
(i) Drop Off Exchange Cylinder (No Connection) To an Existing Supplied Customer

- Ensure the cylinder is dropped off in a safe and secure location with consideration of site compliance; potential impact by vehicles; theft or tampering; hazards to children.

(ii) Removal of a Cylinder to Reduce Cylinder Holdings

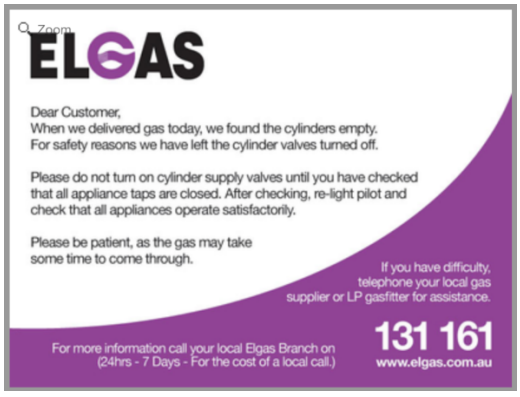
When a cylinder is being disconnected from a regulator, leaving an unused pigtail, the following must occur:

- Remove the cylinder no longer required
- DO NOT remove the unused pigtail
- Fit a female POL cap to the POL end of the unused pigtail.
- Branches should stock / supply female POL caps to drivers and charge customer for supply and fitting



Cylinder Valves Closed Card

The Image below is a *Cylinder Valves Closed Card* left at a Customer's premises when the cylinder valves are left in the CLOSED position. In the absence of a card, a similarly worded note could be left for the customer if required.



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Plugged and Tagged Cylinders

If ELGAS is asked to supply LPG vessels to a Customer site before the Compliance details are obtained, such **cylinders will be delivered with their outlet valve plugged and a tag attached** notifying the Customer that the plug must not be removed until authorised by the Licensed Installer, who has contacted ELGAS with the required information.

The image below is of a "Plug" which is inserted in a cylinder valve when delivered to a Customer's premises where no compliance details are available. The Key required to unlock the plug and remove it is also shown. The Plug prevents accidental connection of the cylinder until cleared by a gas fitter. Plugs and keys are available via your local ELGAS warehouse representative if required.



The image below is a "Cylinder Tag" attached to the cylinder valve when delivered to a Customer's premises where no compliance details are available (Australian version shown). The Cylinder Tag advises the Customer and also identifies the cylinder for the gas fitter. Cylinder Tags are available via the ELGAS warehouse as symbol number 9639 (Aust. version).





If Compliance details are provided before the cylinders are delivered, then the delivery is changed to an "Out of Gas" delivery, and the cylinders are connected, with valves left CLOSED and a "Cylinder Valves Closed Card" left for the Customer.

We Came To Deliver Card

If a delivery is not possible on a given day, drivers should leave a *We Came to Deliver Card* for the customer. This card indicates that the driver visited the property, but could not deliver for a particular reason, which is highlighted by the driver ticking the appropriate check box. In the absence of a card, a similarly worded note could be left for the customer if required.



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6.5 New LPG Installations

New LPG installations must be certified as compliant to the state authority's regulation.
Certification is often completed by the gas-fitter who installs or modifies an LPG installation.
In some states, a compliance plate is fixed to the installation, and in other states, a paperwork system is used to record compliance.

Each state is different in its approach to compliance. In all installations, the LPG supplier (ELGAS) must record the compliance detail in a customer record (like EWS) for two reasons:

i. ELGAS will not deliver LPG to a non-certified customer, or to a non-compliant customer (it is illegal to make a delivery to a non-compliant customer); and
ii. All state authorities require the LPG supplier to record the compliance details for all customers and will often request this information as part of a survey or investigation.

The table below summarises the primary Australian state authorities and documentation required.

State	State Authority	Documentation Required	On Customer Site
Qld	Dept. of Natural Resources, Mines and Energy (DNRME)	Compliance Certificate	Compliance Badge (at the LPG regulator)
NSW	NSW Office of Fair Trading (OFT) / SafeWork NSW	Certificate of Compliance	Compliance Plate (on wall near installed cylinders or on bulk tank)
ACT	Construction Occupations Registrar	Certificate of Compliance (CoC)	Copy of CoC left with customer / building owner / distribution network owner
Vic.	Victorian Building Authority (VBA)	Certificate of Compliance (CoC), supplied by the gas-fitter on completion of work to Customer and VBA	No requirement
Tas.	Department of Justice – Gas Standards and Safety	Gas Fitting Notice – Certificate / Statement of Compliance	Gas Standards and Safety Gas Fitting Compliance Plate (on wall)
SA	Office of the Technical Regulator SafeWork SA	Certificate of Compliance Dangerous Substances – Storage Licence	No requirement
WA	EnergySafety WA (ESWA)	Notice of Completion	Compliance Badge
NT	NT WorkSafe	Compliance Certificate / Notification Commencement	Compliance Badge

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Victoria:

- Standard gas installations require the lodgement of a Certificate of Compliance with the Victorian Building Authority (VBA) within 5 days of completing the gas installation.
- Complex gas installations require acceptance from Energy Safe Victoria (ESV) prior to LPG being allowed for commissioning. ESV requires a gas application from the licensed plumber notifying ESV of the impending work. ESV will e-mail a Gas Supply Notice to Elgas at esvnotices.vic@elgas.com.au when the complex gas installation (customer's gasfitting line) is accepted. Prior to ESV accepting the complex gas installation, a full cylinder / tank can be delivered to site, however it must be plugged and tagged. The owner / manager can use LPG after receipt of the Gas Supply Notice ESV.
- ESV's *Gas Information Sheet No. 33 Gas Installation Notification*, helps identify whether a gas installation is standard or complex. This Information Sheet can be found at www.esv.vic.gov.au/gas-technical-information-sheets/gas-installation-notification If unsure whether the gas installation is standard or complex, ESV's Gas Technical Information Line can be contacted on 1800 652 563 to obtain a determination.

Tasmania

- Gas Standards and Safety (GSS) require the lodgment of a Certificate/Statement of Compliance within 48hrs of any gas fitting work being commissioned (including alteration to existing gas installations).
- Complex gas installations (including alteration to existing gas installations) require Director of Gas Safety acceptance before the installation is commissioned. GSS notify Elgas by email when the gas fitter's complex installation application has been accepted and the installation can legally be commissioned.
- Type B appliances are classified as a complex gas installation and therefore require a separate application for acceptance and gas supply notification.
- Commissioning gas can be delivered to the site of a complex gas installation prior to the Director's acceptance, provided it is safe to do so and gas is not connected to the consumer installation until notified the Director has accepted the installation.
- Gasfitters are required to install a compliance plate as close as practical to the supply point (Filling in of the compliance plate should be permanent and legible).
- LPG storage in excess of 5000L, will become regulated and monitored by Work Safe Tasmania (WST).
- Further information regarding building classification, forms approved by the Director of Gas Safety (including applications) and other useful information and links, can be found at www.cbos.tas.gov.au/topics/technical-regulation
- Tasmanian Gas (Safety) Regulations 2014 - www.legislation.tas.gov.au/view/html/inforce/current/sr-2014-062

New South Wales

- Gasfitters are required to provide NSW Fair Trading with a completed copy of a Certificate of Compliance within 5 business days following any gas fitting work.
- The gasfitter will issue a Compliance Plate which must be installed at the installation

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Queensland

- Petroleum and Gas Regulations require determining whether we are supplying to an LPG fixed installation or if we are supplying a customer who is using LPG for a portable system.
- If supplying LPG to a poratble system (eg forklift / BBQ) there are no further requirements.
- Where supplying to a fixed installation e.g.gas heater, obtain a Gas System Compliance Certificate which has been completed by a certified gas fitter prior to supplying LPG.
- In the case of a change of LPG supplier, where an opposition cylinder is removed and exchanged for an ELGAS cylinder, there is no requirement for a new Gas System Compliance Certificate. However, an LPG Leakage test is required as per Section 82 of the Petroleum and Gas (Safety) Regulation 2018. This is covered by *ELGAS* ***SOP_S82 LPG Leakage Test***.

South Australia

- The Office of the Technical Regulator require a Certificate of Compliance for all new installations or modifications to existing installations.

- SafeWork SA require a Dangerous Substances – Storage Licence for customers with LPG storage of 560 litres water capacity or greater www.safework.sa.gov.au/law-compliance/licensing/apply-licence/chemical-substance-licences/dangerous-substance-storage

Western Australia

- EnergySafety WA (ESWA) require a Notice of Completion (NOC) for any new gas installation. An overview of ESWA's compliance requirements are available in on the Intranet within Training / Training Manuals and Induction Materials / Elgas Induction Manual

Northern Territory

- NT WorkSafe require a Compliance Certificate for all new LPG installations or modifications to existing installations
- NT WorkSafe requires a Notification Commencement of Gas Works for all new LPG systems greater than 200kg capacity.

A.C.T

- In the ACT, the gas fitter is required to supply a Certificate of Compliance (CoC) to the customer / building owner, the Constructions Occupations Registrar and the owner of the distribution network.

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6.6 Site Gas Checks

The ELGAS gas check program involves checking customer sites for compliance as well as ensuring the vessels on site are safe to deliver to. A separate checklist is used for ensuring the safety of both the site and the vessels. While a formal site gas check is completed every 3 years (prompted via a driver's handheld), an informal gas check must be completed for every delivery as ELGAS drivers must not deliver to an illegal installation. This is important, as conditions on a customer's site may change overnight (e.g. air conditioner installed in the ignition source clearance zone by an electrician who does not know or has ignored regulations).

The 2 primary components of the gas check program are:

i. Vessel Inspections
ii. Site Inspections

Depending on the nature and severity of a defect, the driver may continue to deliver or must stop the delivery. All defects are recorded and reported back into the ELGAS system for action. Where a truck handheld is used, a non-compliance notice is printed via the truck printer to notify the customer of the relevant defect, and the handheld will not allow the delivery where applicable.

Vessel Inspections

The following is the list of vessel inspections required as part of the gas check program:

Category	Defect Item	Stop / Continue Delivery
Gas Leak	Valve	STOP
Gas Leak	Regulator	STOP
Gas Leak	Pigtail	STOP
Compliance	Test Date	STOP
Compliance	Compliance plate	STOP
Installation	Damaged gauge	STOP
Installation	Pressure relief valve direction	STOP
Installation	Damaged valve	STOP
Installation	Damaged pigtail	STOP
Installation	Damaged regulator	STOP
Installation	EDU* – Plastic lid missing, cracked, damaged	STOP
Rust	Rust on bottom	Continue
Rust	EDU* – Rust on top	Continue
Labels	Red diamonds	Continue
Labels	Flammable gas	Continue
Labels	Emergency phone number	Continue
Labels	No smoking	Continue

*EDU – Easygas Downunder

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The following pictures show some good and bad examples of what to look out for when completing vessel inspection gas checks:

Example	Good	Bad
Pressure relief valves can rust out, especially if the protective cap is broken or missing		
Stickers may wear out over time and need to be replaced		
The cylinder to the left shows surface rust only and is OK to continue to use. The cylinder to the right has "pitted" rust which has eaten into the metal and must be taken out of service.		
Pressure relief valves must not face on to other cylinders or to surrounding walls. They must vent into a clear open area.		

Note, vessel inspections are not applicable to cylinder truck drivers as all cylinders they deliver are checked at Elgas depots when being filled.

For tanker drivers, a vessel gas check will be prompted on the driver's handheld for vessels between 45-210kg, when either of the following conditions exist on a customer's account in EWS:

- *Next Int* date has expired or is missing and *Int Ext* date is blank
- *Int Ext* date has expired
- *Tank Number* is missing

There are 2 exceptions to the above rules, where a vessel gas check will not be prompted on a tanker drivers handheld:

- Vessels greater than 210kg capacity
  - these are inspected as part of a National Maintenance program
- Customer sites with more than 3 vessels
  - an open Contact Note (26-Compliance Issue) is automatically generated on a customer's account for the branch to follow up

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Site Inspections

The following is the list of site inspections required as part of the gas check program. Any defects reported via a driver's handheld automatically generate an open Contact Note on a customer's account (26-Compliance Issue) for the branch to follow up:

Category	Defect	Stop / Continue Delivery
Ignition	Electrical points	STOP
Ignition	Appliances	STOP
Ignition	Low electrical wire	STOP
Pipework	Incorrect Piping	STOP
Pipework	Damaged Pipe	STOP
Access	4m x 4m access	Continue
Access	Driveway overhanging wire	Continue
Access	Driveway overhanging tree	Continue
Access	Obscured	Continue
Access	Need Solid Surface	Continue
Access	EDU – Vehicle traffic over cylinder	Continue
Parking Location	Too far from filling point (50m max)	Continue
Parking Location	No line of sight (1.5m max)	Continue
Parking Location	Easily Bogged	Continue
Parking Location	Slope surfaces	Continue
Signage	No smoking	Continue
Signage	Decant instruction	Continue
Signage	Refiller sign	Continue
Impact Protection	Assessment required	Continue
Combustible Material	Shrubs or bush	Continue
Combustible Material	Long grass	Continue
Combustible Material	Firewood	Continue
Combustible Material	Chemical	Continue
Combustible Material	Overhanging vegetation	Continue
Location	Indoors	STOP
Location	Under stairway	STOP
Location	Restricted access	STOP
Location	Obscured	STOP
Location	Vessel not restrained	Continue
Location	Needs slab	Continue
Location	Ventilation	Continue
Separation Distance	Public place*	STOP
Separation Distance	Protected place**	STOP
Separation Distance	Construction***	STOP
Separation Distance	Minimum 1m from drain	STOP
Separation Distance	Minimum 1m from vent or opening	STOP

* A public place includes any place open to the public and including a street or road. It does not include private property, or parking areas for commercial and public buildings.

** A protected place includes a neighbouring dwelling, place of worship, public building, school, hospital, theatre, or open area in which people are accustomed to assemble in large numbers. It also includes a factory, office, store, warehouse or other building where people are employed.
*** Construction includes any works that affect the function and integrity of the LPG installation

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The following pictures show some good and bad examples of what to look out for when completing site inspection gas checks:

Category / Defect	Example
Ignition / Electrical Points (hot water service, power point) **Separation Distance / Minimum 1m from Opening** Window may be within 1m (Note: measurements extend around corners) **Location / Obscured** Extraneous material around vessels	
Pipework / Incorrect Piping Pipework at cylinder needs pigtail Regulator and pipework unsupported **Ignition / Electrical Points** (hot water service, power point) **Installation / Pressure Relief Valve Direction** Relief valve facing building.	
Ignition / Electrical Points (hot water service) **Separation Distance / Minimum 1m from Drain** **Location / Obscured** Extraneous material around site and in cylinder neck ring	
Pipework / Incorrect Piping Pipework and regulator unsupported **Separation Distance / Minimum 1m from Opening** Openable window **Installation / Pressure Relief Valve Direction** Relief valve facing window **Location / Obscured** Extraneous material around site. Potentially combustible liquid in container	

Note: a site gas check will be prompted on a driver's handheld when either of the following conditions exist on a customer's account in EWS:

- *Last Gascheck* date is older than 3 years;
- *Compliance Plate* (Aus) or *Compliance Date of Test* information is missing. Enter N/A on the customer account if any item is Not Applicable

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The following is a sample Gas Check form that can be used when completing a gas check.

ELGAS - GAS CHECK

ELGAS

Branch Number	Customer Number	Customer Name

Address Of Installation

Compliance Number (Plate, Certificate, Form 8)	Date:

Gas Fitter Licence Number

	No Compliance Information?
	Cannot Locate Number / Plate
	Number / Plate found but illegible
	Not required in this State

Cyl / Tank Capacity		Tank Paintwork		Good
Cyl / Tank Test Date				Fair
Cyl / Tank Registration Number				Poor
Tank Manufacture Serial Number		Cylinder Stencils		Good
				Fair
				Poor

Cyl / Tank Capacity		Tank Paintwork		Good
Cyl / Tank Test Date				Fair
Cyl / Tank Registration Number				Poor
Tank Manufacture Serial Number		Cylinder Stencils		Good
				Fair
				Poor

Site Details		Pipework Good	Signage	Red Diamonds
		Regulator Correct		No Smoking
		Impact Protection		Flammable Gas
		Security		Elgas Logo
		Cyl / Tank Domes Locked		Emergency Phone No
		Cyls on Firm Base and chained		Decant Instructions
				Refiller Signage

Site tidy		Good
		Fair
		Poor

Soapy Water Test		Pass
		Fail

Comments

Inspection By	Inspection Date

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6.7 Notification to Customer of Non-Complying Installation

Due to changes in customer properties, Agents / Distributors must inspect every site when they are delivering LPG. If the installation no longer conforms to government regulations and LPG industry Codes and Standards, then the customer should be contacted at the time of delivery (if possible) and informed that the installation is no longer compliant and further deliveries cannot be made until the installation is rectified.

Additionally, the customer may be informed by letter, that no further gas deliveries will be made until the situation has been remedied. An example draft letter has been provided below. There may be occasions when the customer will refuse to initiate corrective actions, and states that they will take their business elsewhere. Should this occur, then the Agent /Distributor should contact their ELGAS representative who should follow it up with the relevant Regulatory Authority.

Normal letterhead of Agent / Distributor Trading Name, Address and Phone Number

Customer Name Customer Number:
Address

Dear Sir/Madam,

For your safety (***Distributor's Name***) has carried out a routine safety inspection on your LPG installation as required by legislation and found that this installation no longer conforms to government regulations and LPG industry Codes and Standards.

Reason/s why it does not conform:

.....

.....

.....

We regret to advise that we cannot supply LPG to your installation until the above-mentioned problems have been addressed and the Compliance Certificate covering the alterations is received by our Company.

Thank you for your co-operation and please contact us if you require clarification on this matter.

Yours faithfully,

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6.8 Customers Picking Up Cylinders

An area of major concern is the customer who calls to pick up their cylinder(s) in a sedan or station wagon. It is imperative that this customer is not allowed to leave with the cylinder(s) lying down which contravenes *AS/NZS1596* and the *Australian Dangerous Goods Code*.

Cylinders must be transported upright so that the safety relief valve is always in the vapour space of the cylinder. If a cylinder is lying down, the safety relief valve on the cylinder could release liquid LPG instead of vapour resulting in a more dangerous leak. Additionally there is a risk to passengers from an unrestrained cylinder moving about in the event of a road accident.

AS/NZS 1596 states the total quantity of LPG transported inside any enclosed vehicle compartment (i.e passenger compartment / sedan boot) must not exceed 33 litres water capacity (i.e 13kg cylinder). This means that no more than 1 x 9kg BBQ cylinder (22 litres water capacity) can be transported per vehicle compartment. The cylinder must be secured so that it cannot fall over or move during transport.

The total quantity of LPG transported by the vehicle must not exceed 65 litres water capacity. This means no more than 2 x 9kg cylinders can be transported in a vehicle, where the cylinders are transported in 2 separate vehicle compartments (i.e passenger compartment / sedan boot). As a rule, carrying LPG cylinders in vehicles is not encouraged and they should be carried in the vehicle's cabin for a short time only. (Caravans have special compartments for LPG cylinders).

Open type vehicles which have cargo areas open to the air with unrestricted ventilation (eg ute) can transport cylinders with up to 250 litres water capacity (eg up to 2 x 45kg cylinders) without the need for placarding. Cylinders must be secured in an upright position during transport.

The failure to comply with these requirements carries expensive penalties and are being actively policed by the responsible authorities in each State and Territory. If you require any further information regarding this contact your local ELGAS management, or the Technical Management in your State.

Duty of Care

Every time a self-exchanging customer collects new cylinders Agents/Distributors are required by government regulation and ELGAS standards to provide information on all aspects of the storage and handling of LPG including details of:

- Manual handling of cylinders
- Transportation of LPG cylinders
- Compliant and safe installation

ELGAS has prepared an information sheet titled *Instructions for Customers Self-Exchanging LPG Cylinders* (available on the following page). A copy of this should be given to customers every time they pick up a 45kg cylinder or larger from an Agent / Distributor

Photocopies of the information sheet can be made and distributed as required.

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Instructions for Customers Self-Exchanging LPG Cylinders

In the Agent/Distributor yard

Pick up or return of a cylinder requires access to a hazardous area:

- Children must remain in the vehicle.
- An Agent/Distributor representative must be in attendance when any cylinder is removed or returned.

Transport – Loading and Unloading

LPG cylinders are heavy. Care must be taken at all times when handling them to avoid hurting yourself.

- Park the vehicle as close as possible to the cylinder location to reduce lifting and moving
- 2 people may be required to move the cylinder onto/off the vehicle
- Never attempt to lift a larger cylinder on your own
- Cylinders **must be standing upright so that the safety relief valve is always in the vapour space of the cylinder; cylinders must not be laid down, and must be safely secured** when transported in any vehicle
- A maximum of 33 litres water capacity (eg. 1 x 9kg cylinder) may be carried inside a vehicle compartment (i.e passenger compartment / sedan boot)
- A maximum of 65 litres water capacity (eg 2 x 9kg cylinders) may be carried inside a vehicle, with the cylinders transported in 2 separate vehicle compartments (i.e passenger compartment / sedan boot)
- Open type vehicles which have cargo areas open to the air with unrestricted ventilation (eg ute) can transport a maximum of 250 litres water capacity (eg up to 2 x 45kg cylinders) without the need for placarding. Placarding is required when transporting above 250 litres water capacity.
- Cylinders 15kg and over must be transported in the open (eg ute / tray truck / trailer with head board)
- Carefully slide the cylinder off the vehicle and either use a trolley or roll it on its foot ring into place
- Always use a trolley to move and place larger cylinders

Before Connecting

Visually inspect all the fittings:

- Hoses, regulator, threads, nuts, pipework and base slab must all be checked for splits, wear, kinks or other damage,
- Take care not to kink the copper / flexible hose pigtail
- Check that all threads are clean, and there are no obvious obstructions in any hose or pipe, such as dirt or insects.

Connection and Use

Re-connection of the cylinder is the opposite of the removal:

- LPG cylinders must only be connected to installations that have been installed and certified by a licensed Gas Fitter. Site compliance requirements are available via the following website: www.elgas.com.au/blog/388-lpg-gas-bottle-cylinder-placement-guide
- All LPG fittings have a left-hand, internal thread and are tightened by turning anti-clockwise (clockwise undoes the fitting),
- When connected and tight, check for gas leaks by carefully by opening the cylinder valve and spraying all connections with a mixture of detergent/water
- **IF YOU FIND A LEAK IMMEDIATELY TURN THE CYLINDER OFF**. Check and tighten all connections again and if the leak continues, turn off the cylinder and get a licensed Gas Fitter to check the installation,
- Always turn the gas cylinder off when the LPG is not going to be used for a period of time

EMERGENCY INFORMATION IS AVAILABLE 24 HOURS A DAY VIA THE ELGAS EMERGENCY PHONE NUMBER

1800 819 783

IF IN DOUBT ASK, CONTACT YOUR GAS FITTER/PLUMBER OR ELGAS

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7 Administration

7.1 Administration Methods for Agents and Distributors

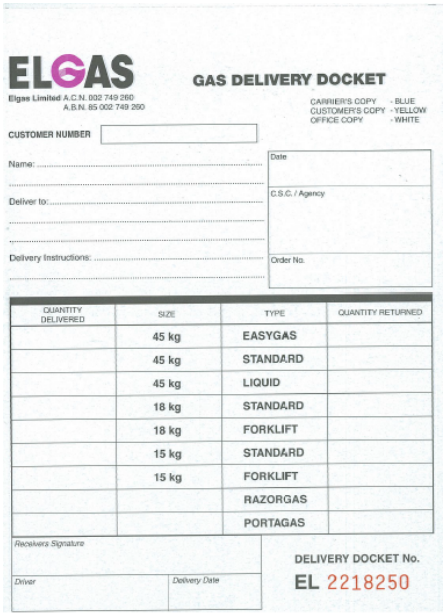
Agents

An Agent is a business that receives cylinders from ELGAS on consignment (i.e. does not pay for them). The Agent delivers cylinders to ELGAS customers using an ELGAS invoice. The Agent receives a delivery fee (commission) from ELGAS for every cylinder sold. The customer and the debt belong to ELGAS.

The administration methods used for individual Agents may differ due to the nature of the business and resources available. The most effective method for completing transactions and keeping information up to date is by using the ELGAS Agent Portal, which is an online system for processing customer orders, taking payments and searching for customer information etc. Instructions are available within the ***Agent Portal User Guide for Agents***, which your local ELGAS representative can supply. For agents who do not have access to EWS, a manual system of processing transactions is used.

Effective and timely completion of the required administration will benefit ELGAS, the Agent, and the customer. An important aspect of this is the prompt processing of sales transactions, as well as completion of regular stocktakes by Agents that can be reconciled by ELGAS. Depending on the size of the Agency and the number of sales transactions these requirements may need to be completed weekly, fortnightly or monthly. Agents should speak with their local ELGAS representative to establish a method that will work for both. A sample of a stocktake form is shown in the section *Agent Stocktake Reconciliation Form*.

Agents without access to the Agent Portal will be provided with ELGAS *Gas Delivery Docket* pads to be used for deliveries (pictured below). Agents are required to fill in the customer details, the number of cylinders delivered and the number of cylinders returned. Copies of all dockets for a period (eg week) are then forwarded to ELGAS along with an agent invoice for the commissions due on the sales.



ELGAS

GAS DELIVERY DOCKET

Elgas Limited A.C.N. 002 749 260
A.B.N. 85 002 749 260

CARRIER'S COPY - BLUE
CUSTOMER'S COPY - YELLOW
OFFICE COPY - WHITE

CUSTOMER NUMBER

Name:

Deliver to:

Delivery Instructions:

Date

C.S.C. / Agency

Order No.

QUANTITY DELIVERED	SIZE	TYPE	QUANTITY RETURNED
	45 kg	EASYGAS	
	45 kg	STANDARD	
	45 kg	LIQUID	
	18 kg	STANDARD	
	18 kg	FORKLIFT	
	15 kg	STANDARD	
	15 kg	FORKLIFT	
		RAZORGAS	
		PORTAGAS	

Receivers Signature

Driver

Delivery Date

DELIVERY DOCKET No.

EL 2218250

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For agents using the Agent Portal, a summary of sales may be provided in the form of copies of relevant shipping documents, or alternatively ELGAS may use reverse billing and send the agent a summary of sales for a period (eg week) from which the agent can produce an agent invoice for commissions due.

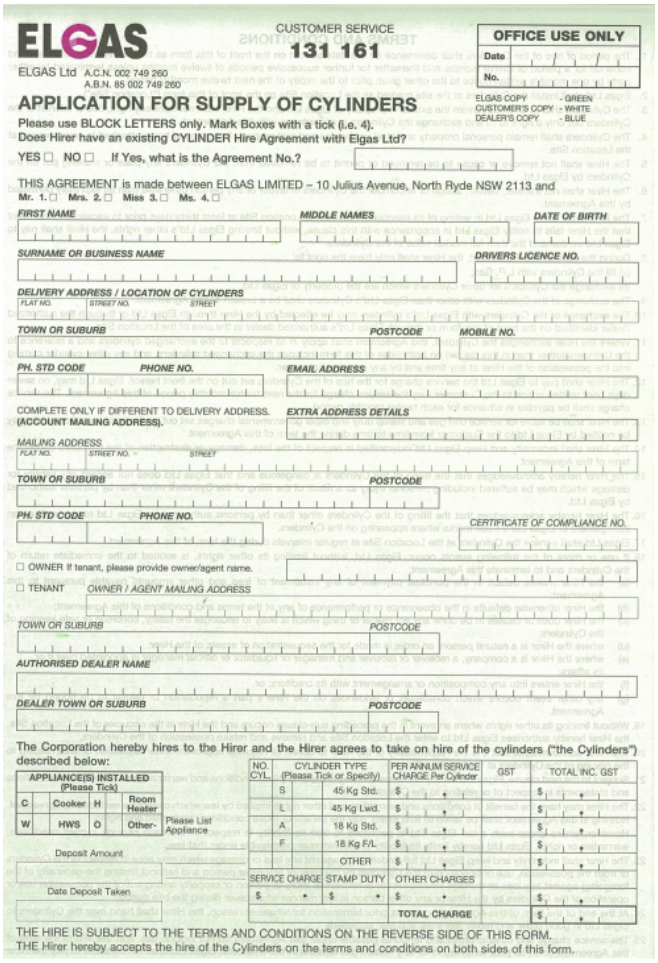
It is a benefit to both ELGAS and Agents to grow the business by signing up new customers. Agents will be supplied with a pad to record the required information to set up a new customer. A sample form is shown below.

ELGAS Agents can also profit from selling LPG appliances supplied by ELGAS. Please speak with your local ELGAS representative for more information.

Distributors

A Distributor buys cylinders from ELGAS and then resells the cylinders to their customers for a profit. Cylinders are sold using the Distributors invoice, and the debt and the customer belong to the Distributor. ELGAS requires details of the customer buying the cylinders from the Distributor, but ONLY for the purpose of charging a service charge on the cylinders sold, and not for the sales of the gas itself.

It is a benefit to both ELGAS and Distributors to grow the business by signing up new customers. Distributors will be supplied with a pad to record the required information to set up a new customer so that a service charge can be charged by ELGAS. A sample form is shown below.



ELGAS

CUSTOMER SERVICE 131 161

OFFICE USE ONLY
Date
No.

ELGAS Ltd A.C.N. 002 749 260
A.B.N. 85 002 749 260

ELGAS COPY - GREEN
CUSTOMER'S COPY - WHITE
DEALER'S COPY - BLUE

APPLICATION FOR SUPPLY OF CYLINDERS

Please use BLOCK LETTERS only. Mark Boxes with a tick (i.e. 4).
Does Hirer have an existing CYLINDER Hire Agreement with Elgas Ltd?
YES ☐ NO ☐ If Yes, what is the Agreement No.?

THIS AGREEMENT is made between ELGAS LIMITED – 10 Julius Avenue, North Ryde NSW 2113 and
Mr. 1.☐ Mrs. 2.☐ Miss 3.☐ Ms. 4.☐

FIRST NAME | MIDDLE NAMES | DATE OF BIRTH
SURNAME OR BUSINESS NAME | DRIVERS LICENCE NO.
DELIVERY ADDRESS / LOCATION OF CYLINDERS
FLAT NO. | STREET NO. | STREET
TOWN OR SUBURB | POSTCODE | MOBILE NO.
PH. STD CODE | PHONE NO. | EMAIL ADDRESS
COMPLETE ONLY IF DIFFERENT TO DELIVERY ADDRESS. (ACCOUNT MAILING ADDRESS). | EXTRA ADDRESS DETAILS
MAILING ADDRESS
FLAT NO. | STREET NO. | STREET
TOWN OR SUBURB | POSTCODE
PH. STD CODE | PHONE NO. | CERTIFICATE OF COMPLIANCE NO.
☐ OWNER If tenant, please provide owner/agent name.
☐ TENANT OWNER / AGENT MAILING ADDRESS
TOWN OR SUBURB | POSTCODE
AUTHORISED DEALER NAME
DEALER TOWN OR SUBURB | POSTCODE

The Corporation hereby hires to the Hirer and the Hirer agrees to take on hire of the cylinders ("the Cylinders") described below:

APPLIANCE(S) INSTALLED (Please Tick)				
C		Cooker	H	Room Heater
W		HWS	O	Other-

Please List Appliance

Deposit Amount

Date Deposit Taken

NO. CYL.	CYLINDER TYPE (Please Tick or Specify)		PER ANNUM SERVICE CHARGE Per Cylinder	GST	TOTAL INC. GST
	S	45 Kg Std.	$.		$.
	L	45 Kg Lwd.	$.		$.
	A	18 Kg Std.	$.		$.
	F	18 Kg F/L	$.		$.
		OTHER	$.		$.
SERVICE CHARGE		STAMP DUTY	OTHER CHARGES		
$.		$.	$.		$.
			TOTAL CHARGE		$.

THE HIRE IS SUBJECT TO THE TERMS AND CONDITIONS ON THE REVERSE SIDE OF THIS FORM.
THE Hirer hereby accepts the hire of the Cylinders on the terms and conditions on both sides of this form.

Sample of a new customer form

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7.2 Agent Stocktake Reconciliation Form

AGENCY CYLINDER/FILL ACCOUNT RECONCILIATION

AGENT:	

DATE	

OPENING STOCK CYLINDERS	DATE	45KG VAPOUR	45KG LIQUID	45KG EASYGAS	18KG FORKLIFT	15KG FORKLIFT	8.5kg swap n Go	3.7kg swap & go
EMPTY CYLINDERS								
FULL CYLINDERS								

CYLINDERS SUPPLIED DURING MONTH	DATE	45KG VAPOUR	45KG LIQUID	45KG EASYGAS	18KG FORKLIFT	15KG FORKLIFT	8.5kg swap n Go	3.7kg swap & go
DOCKET NUMBER								

SALES TO CUSTOMERS	DATE	45KG VAPOUR	45KG LIQUID	45KG EASYGAS	18KG FORKLIFT	15KG FORKLIFT	8.5kg swap n Go	3.7kg swap & go
DOCKET # RANGE								
	TOTAL							

STOCK ON HAND		45KG VAPOUR	45KG LIQUID	45KG EASYGAS	18KG FORKLIFT	15KG FORKLIFT	8.5kg swap n Go	3.7kg swap & go
CLOSING STOCK OF FULL CYLINDERS	TOTAL:							
CLOSING STOCK OF EMPTY CYLINDERS	TOTAL:							

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8 Appendix

Appendix I Agent / Distributor After Hours and Emergency Contacts

Agents / Distributors should understand the Emergency Support that is available in their immediate community. The *Agent / Distributor After Hours and Emergency Contacts* list gives a form for Agents / Distributors to complete and keep by their telephone to allow easy access in the event of a site emergency. Please confirm these phone numbers annually.

AGENT / DISTRIBUTOR COMPANY NAME .	WORK:	A/HRS:
AGENT / DISTRIBUTOR ALTERNATIVE PHONE NO	WORK:	A/HRS:
FIRE BRIGADE	000	LOCAL:
POLICE	000	LOCAL:
LICENSED GASFITTER	WORK:	A/HRS:
DELIVERY DRIVER	WORK:	A/HRS:
ELECTRICIAN	WORK:	A/HRS:
ELGAS OFFICE ELGAS EMERGENCY PHONE NUMBER NON-EMERGENCY (ELGAS NAT. MAINTENANCE) NON-EMERGENCY (GENERAL)	WORK: 1800 819 783 1800 065 258 131 161	
AMBULANCE	000	
DOCTOR	WORK:	A/HRS:
OTHER	WORK:	A/HRS:
OTHER	WORK:	A/HRS:

Date of last update:_____

Copy passed to Local ELGAS Branch (date):_____

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Appendix II LPG Safety Data Sheet

Every supplier of Dangerous Goods is required to provide a copy of the SDS to any consumer, Emergency Service Personnel, Medical Practitioner or Regulatory Authority staff member if requested. In addition, for all non-domestic customers the supplier must supply a copy of the SDS on, or before, the first delivery of gas. LPG is defined as a Dangerous Goods and therefore these rules apply to its sale and supply. Every relevant SDS must be readily accessible by persons handling the goods in the work place including your staff. Please ensure the latest copy of the SDS for LPG is obtained. The latest version can be found on the ELGAS Internet at www.elgas.com.au/msds-material-safety-data-sheet-lpg-lp-gas



ELGAS

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **LIQUEFIED PETROLEUM GAS (LPG)**

Synonyms AUTOGAS • BUTANE • LIQUEFIED PETROLEUM GAS • LP GAS • LPG • PROPANE

1.2 Uses and uses advised against

Uses AUTOMOTIVE FUEL • FUEL • INDUSTRIAL APPLICATIONS

1.3 Details of the supplier of the product

Supplier name **ELGAS LTD**

Address 10 Julius Ave, North Ryde, NSW, 2113, AUSTRALIA

Telephone 131 161

Website https://www.elgas.com.au/

1.4 Emergency telephone numbers

Emergency 1800 819 783 (24 hours)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Flammable Gases: Category 1A
Gases Under Pressure: Liquefied gas

Health Hazards

Not classified as a Health Hazard

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **DANGER**

Pictograms

Hazard statements

H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.

Prevention statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response statements

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 In case of leakage, eliminate all ignition sources.

Storage statements

P410 + P403 Protect from sunlight. Store in a well-ventilated place.

ChemAlert. Page 1 of 7 SDS Date: 01 Sep 2023 Revision No: 2.1

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Disposal statements
None allocated.

2.3 Other hazards
No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
BUTANE	106-97-8	203-448-7	<99%
ISOBUTANE	75-28-5	200-857-2	<99%
PROPANE	74-98-6	200-827-9	<99%
PROPYLENE	115-07-1	204-062-1	<60%
ETHANE	74-84-0	200-814-8	<5%
ETHYL MERCAPTAN	75-08-1	200-837-3	0.0025%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye Cold burns: Immediately flush with tepid water or with sterile saline solution. Hold eyelids apart and irrigate for 15 minutes. Seek medical attention.

Inhalation If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Be aware of possible explosive atmospheres. Apply artificial respiration if not breathing. Give oxygen if available.

Skin Cold burns: Remove contaminated clothing and gently flush affected areas with warm water (30°C) for 15 minutes. It is recommended that warm water is applied to clothing before removing it so as to prevent further skin damage. Apply sterile dressing and treat as for a thermal burn. For large burns, immerse in warm water for 15 minutes. DO NOT apply any form of direct heat. Seek immediate medical attention.

Ingestion Ingestion is not considered a potential route of exposure.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed
In high concentrations may cause asphyxiation. Direct contact with the liquefied material or escaping compressed gas may cause frostbite injury.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically. Severe inhalational exposure may sensitise the heart to catecholamine induced arrythmias. Do not administer catecholamines to an overexposed person.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Stop flow of gas if safe to do so, such as by slowly closing the cylinder valve.

5.2 Special hazards arising from the substance or mixture
Extremely flammable. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, mobile phones etc. when handling.

5.3 Advice for firefighters
Temperatures in a fire may cause cylinders to rupture and internal pressure relief devices to be activated. Cool cylinders or containers exposed to fire by applying water from a protected location. Do not approach cylinders or containers suspected of being hot. This material is capable of forming explosive mixtures in air.

5.4 Hazchem code
2YE
2 Fine Water Spray.
Y Risk of violent reaction or explosion. Wear full fire kit and breathing apparatus. Contain spill and run-off.
E Evacuation of people in and around the immediate vicinity of the incident should be considered.

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6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use Personal Protective Equipment (PPE) as detailed in Section 8 of the SDS. Ventilate area where possible and eliminate ignition sources.

6.2 Environmental precautions

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

6.3 Methods of cleaning up

Stop the flow of material, if this is without risk. If the leak is irreparable, move the cylinder to a safe and well ventilated area, and allow to discharge. Keep area evacuated and free from ignition sources until any leaked or spilled liquid has evaporated.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Do not store near incompatible substances and sources of ignition. Cylinders should be stored: upright, prevented from falling, in a secure area; below 65°C, in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Butane	SWA [AUS]	800	1900	--	--
Butane	SWA [Proposed]	--	--	1000	2370
Ethane	SWA [AUS]	Asphyxiant			
Ethyl mercaptan	SWA [AUS]	0.5	1.3	--	--
Isobutane	SWA [AUS]	1000	--	--	--
Propane	SWA [AUS]	Asphyxiant			
Propylene	SWA [AUS]	Asphyxiant			

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

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PPE

Eye / Face	Wear safety glasses.
Hands	Wear leather or insulated gloves.
Body	Wear coveralls.
Respiratory	Where an inhalation risk exists, wear Self Contained Breathing Apparatus (SCBA) or an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS GAS (LIQUEFIED UNDER PRESSURE)
Odour	CHARACTERISTIC ODOUR
Flammability	EXTREMELY FLAMMABLE
Flash point	-104°C to -60°C
Boiling point	-42°C to -0.5°C
Melting point	NOT RELEVANT
Evaporation rate	NOT AVAILABLE
pH	NOT RELEVANT
Vapour density	NOT AVAILABLE
Relative density	0.510 to 0.568
Solubility (water)	SLIGHTLY SOLUBLE
Vapour pressure	520 kPa to 1530 kPa @ 40°C
Upper explosion limit	10.9 % (Propane)
Lower explosion limit	1.7 % (Propane)
Partition coefficient	NOT AVAILABLE
Autoignition temperature	450°C (Propane)
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

Density	1.86 kg/m³ to 2.47 kg/m³ @ 15°C
Specific heat value	2.386 to 2.512 kJ/kg

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources. Do not use natural rubber flexible hoses. Also incompatible (potentially violently) with oxygen, halogens and metal halides.

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

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11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity No known toxicological effects from this product. Based on available data, the classification criteria are not met.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
BUTANE	Study not feasible	Study not feasible	658000 mg/m3/4H (rat)
PROPANE	Study not feasible	Study not feasible	> 800000 ppm/15M (rat)
PROPYLENE	--	--	> 65000 ppm/4hrs (rat)
ETHANE	--	--	658 mg/L/4hrs (rat)
ETHYL MERCAPTAN	682 mg/kg (rat)	--	2770 ppm/4 hours (mouse)

Skin Not classified as a skin irritant. Contact with the liquefied material or escaping compressed gas may cause frostbite injury.

Eye Not classified as an eye irritant. Contact with the liquefied material or escaping compressed gas may cause frostbite injury.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Asphyxiant. Effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Not expected to be harmful to the environment.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

12.4 Mobility in soil

Spillages are unlikely to penetrate the soil.

12.5 Other adverse effects

Gas at standard temperature and pressure and is expected to partition primarily to air.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Cylinders should be returned to the manufacturer or supplier for disposal of contents.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

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	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1075	1075	1075
14.2 Proper Shipping Name	PETROLEUM GASES, LIQUEFIED	PETROLEUM GASES, LIQUEFIED	PETROLEUM GASES, LIQUEFIED
14.3 Transport hazard class	2.1	2.1	2.1
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

Not a Marine Pollutant.

14.6 Special precautions for user

Hazchem code 2YE

GTEPG 2A2

EmS F-D, S-U

Other information Ensure cylinder is separated from driver and that outlet of relief device is not obstructed.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

ASPHYXIANTS (1): When present in the atmospheres in high concentrations, asphyxiants reduce the oxygen concentration by displacement. Atmospheres deficient in oxygen do not provide adequate sensory warning of danger and most simple asphyxiants are odourless. Therefore it is not appropriate to recommend an exposure standard for each asphyxiant, but to maintain oxygen concentrations. However, some asphyxiants may be given an exposure standard due to the potential for narcotic effects at high concentrations or an explosion hazard.

ASPHYXIANTS (2): There is a significant hazard associated with workers entering poorly ventilated areas (e.g. tanks) where oxygen may be deficient. An air supplied breathing apparatus may be required if adequate ventilation is not ensured.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

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HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

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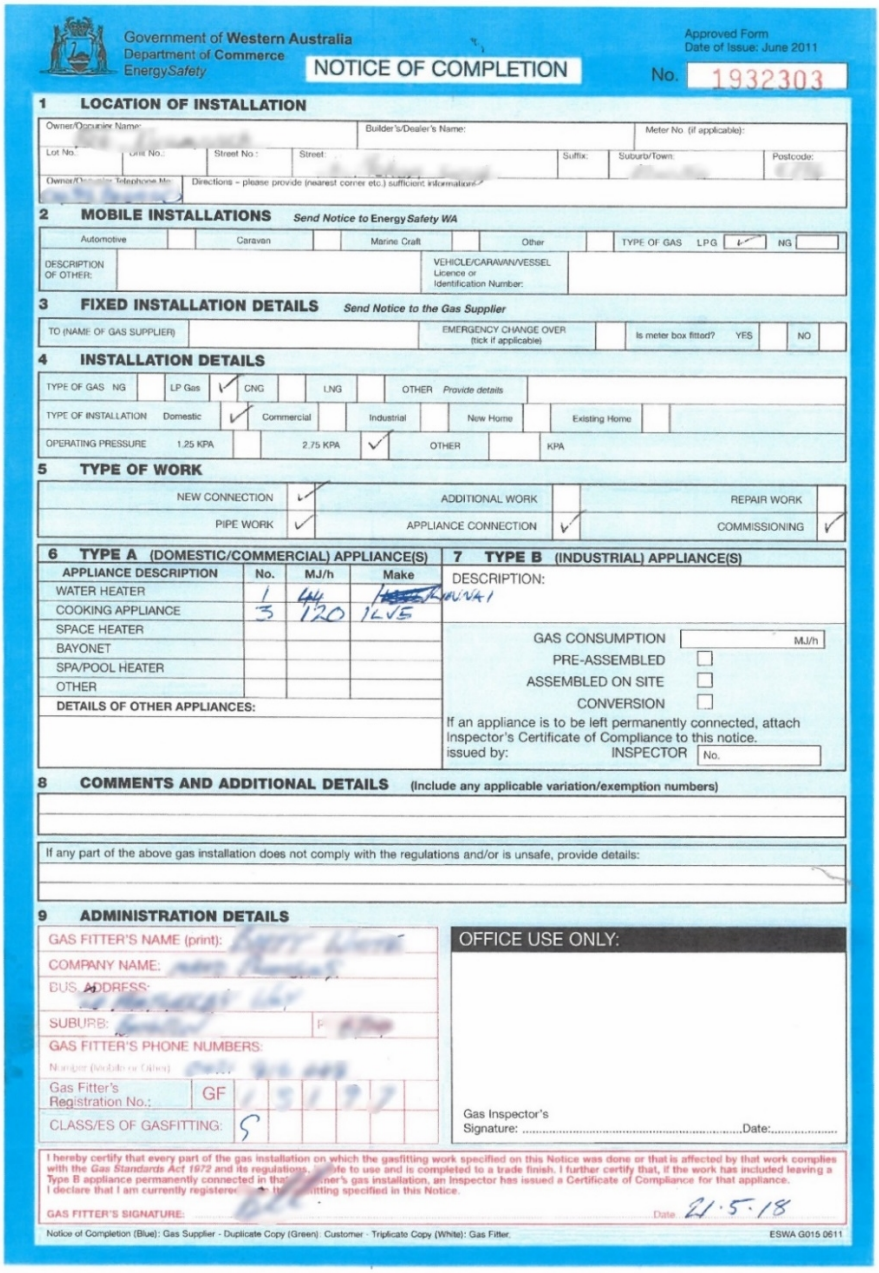
[End of SDS]

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Appendix III EnergySafety WA (ESWA) Regulatory Compliance – Notice of Completion (NOC)

What is an NOC?

A Notice of Completion (NOC) is a form completed by a qualified gasfitter after completing gasfitting work in Western Australia. The gasfitter records the details of the work done (address, appliance type, gas pressure, etc.), and signs off saying the work is compliant to the gasfitting regulations. There are two type of NOC documents that can be accepted. The most common one is a blue document (shown below) with a 7-digit number, while an Electronic version with Alphanumeric characters is also available (shown following page). Please note that no other type of document will be accepted other than the two examples provided below.



Government of Western Australia
Department of Commerce
EnergySafety

NOTICE OF COMPLETION

Approved Form
Date of Issue: June 2011

No. 1932303

1 LOCATION OF INSTALLATION

Owner/Occupier Name: | Builder's/Dealer's Name: | Meter No. (if applicable):

Lot No.: | Unit No.: | Street No.: | Street: | Suffix: | Suburb/Town: | Postcode:

Owner/Occupier Telephone No.: | Directions – please provide (nearest corner etc.) sufficient information

2 MOBILE INSTALLATIONS *Send Notice to EnergySafety WA*

Automotive | Caravan | Marine Craft | Other | TYPE OF GAS LPG ✓ NG

DESCRIPTION OF OTHER: | VEHICLE/CARAVAN/VESSEL Licence or Identification Number:

3 FIXED INSTALLATION DETAILS *Send Notice to the Gas Supplier*

TO (NAME OF GAS SUPPLIER) | EMERGENCY CHANGE OVER (tick if applicable) | Is meter box fitted? YES | NO

4 INSTALLATION DETAILS

TYPE OF GAS NG | LP Gas ✓ | CNG | LNG | OTHER *Provide details*

TYPE OF INSTALLATION Domestic ✓ | Commercial | Industrial | New Home | Existing Home

OPERATING PRESSURE 1.25 KPA | 2.75 KPA ✓ | OTHER | KPA

5 TYPE OF WORK

NEW CONNECTION ✓ | ADDITIONAL WORK | REPAIR WORK

PIPE WORK ✓ | APPLIANCE CONNECTION ✓ | COMMISSIONING ✓

6 TYPE A (DOMESTIC/COMMERCIAL) APPLIANCE(S)

APPLIANCE DESCRIPTION	No.	MJ/h	Make
WATER HEATER	1	44	[illegible] RUNAI
COOKING APPLIANCE	3	120	ILVE
SPACE HEATER			
BAYONET			
SPA/POOL HEATER			
OTHER			

DETAILS OF OTHER APPLIANCES:

7 TYPE B (INDUSTRIAL) APPLIANCE(S)

DESCRIPTION:

GAS CONSUMPTION MJ/h

PRE-ASSEMBLED ☐

ASSEMBLED ON SITE ☐

CONVERSION ☐

If an appliance is to be left permanently connected, attach Inspector's Certificate of Compliance to this notice.

issued by: INSPECTOR No.

8 COMMENTS AND ADDITIONAL DETAILS (Include any applicable variation/exemption numbers)

If any part of the above gas installation does not comply with the regulations and/or is unsafe, provide details:

9 ADMINISTRATION DETAILS

GAS FITTER'S NAME (print):

COMPANY NAME:

BUS. ADDRESS:

SUBURB: | P

GAS FITTER'S PHONE NUMBERS:

Number (Mobile or Other)

Gas Fitter's Registration No.: GF

CLASS/ES OF GASFITTING: S

OFFICE USE ONLY:

Gas Inspector's Signature: .....Date:.....

I hereby certify that every part of the gas installation on which the gasfitting work specified on this Notice was done or that is affected by that work complies with the *Gas Standards Act 1972* and its regulations, is safe to use and is completed to a trade finish. I further certify that, if the work has included leaving a Type B appliance permanently connected in the customer's gas installation, an Inspector has issued a Certificate of Compliance for that appliance. I declare that I am currently registered to do the gasfitting specified in this Notice.

GAS FITTER'S SIGNATURE: Date 21.5.18

Notice of Completion (Blue): Gas Supplier - Duplicate Copy (Green): Customer - Triplicate Copy (White): Gas Fitter ESWA G015 0611

Example of the most common Notice of Completion document, with 7-digit No.

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Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**
Energy*Safety*

eNotice Approved Form

No.**E73549**

GAS NOTICE OF COMPLETION

1 LOCATION OF INSTALLATION

Owner/Occupier Name:	Builder/Client Name:	Meter No. (if applicable):
[redacted]		Not Installed/Unreadable
Address: [redacted]		
Directions – please provide (nearest corner etc.) sufficient information:		

2 MOBILE INSTALLATION DETAILS

NOT APPLICABLE

3 FIXED INSTALLATION DETAILS

TO (NAME OF GAS SUPPLIER)	[redacted]
TYPE OF GAS	LPG
TYPE OF INSTALLATION	Domestic
OPERATING PRESSURE (kPa)	2.75

5 TYPE OF WORK

New Installation			
Pipe work?	Yes		
Type A Appliance Connection?	Yes	Type B Appliance Connection?	No

6 TYPE A (DOMESTIC/COMMERCIAL) APPLIANCE(S)

APPLIANCE DESCRIPTION	No.	MJ/h	Commissioned
Cooking Appliance	1	39	Yes

7 TYPE B (INDUSTRIAL) APPLIANCE(S)

NOT APPLICABLE

8 COMMENTS AND ADDITIONAL DETAILS

Variation/Exemption required for certification?	No
Any non-compliant details to report?	No
Any comments or additional details?	No

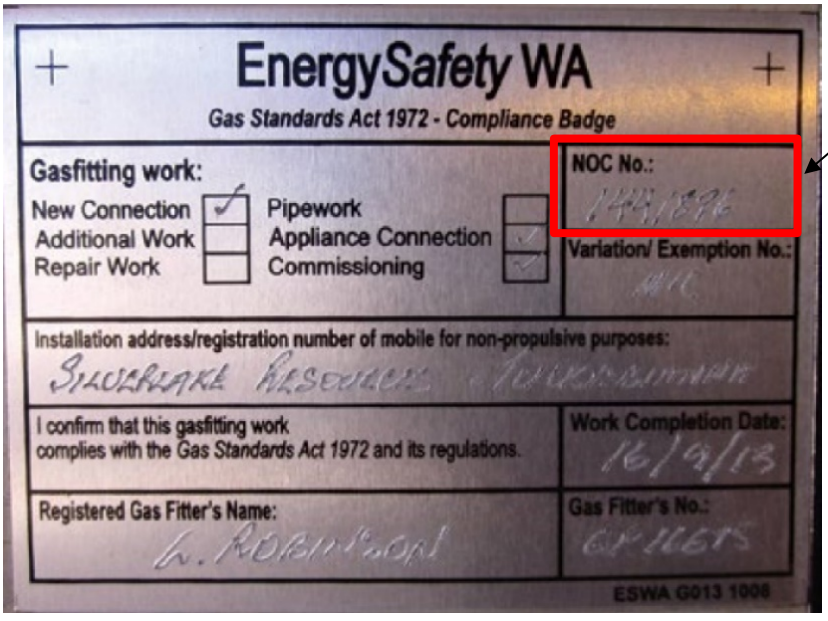
9 ADMINISTRATION DETAILS

Gas Fitter's Name: [redacted]	Date Lodged: 06/06/2018
Company Name:	Lodged By: [redacted]
Business Address: [redacted]	
Gas Fitter's Phone Number: [redacted]	
Gas Fitter's Registration No.: [redacted]	
Class/es of Gasfitting: G	

I hereby certify that every part of the gas installation on which the gasfitting work specified on this Notice was done or that is affected by that work complies with the *Gas Standards Act 1972* and its regulations, is safe to use and is completed to a trade finish. I further certify that, if the work has included leaving a Type B appliance permanently connected in that customer's gas installation, an Inspector has issued a Certificate of Compliance for that appliance. I declare that I am currently registered to do the gasfitting specified in this Notice.

Completion Date: 06/06/2018

Example of electronic Notice of Completion, with Alphanumeric No.



NOC number

Example of Compliance Badge, typically affixed near the LPG cylinders and gas regulator

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When is an NOC required by ELGAS?

ELGAS must receive a copy of an NOC before supplying gas to a new and fixed installation. A fixed vapour installation is defined by a gas installation where the piping and appliance is permanently installed and cannot be carried or moved. Please check with the ELGAS office if you are in doubt of an installation being fixed or non-fixed. Typically, most 45kg vapor cylinder accounts are "fixed" installations.

ELGAS does not need to receive a copy of the NOC before supplying gas to:

- Fixed installations that have been supplied gas previously (e.g. by an opposition gas supplier)
- Portable installations (e.g. portable BBQs, caravans)
- Forklifts
- Cylinder filling equipment (decant, SPU, SDU)

Gasfitters will also send ELGAS NOCs for other work, which will be filed.

Why is an NOC required?

For a new and fixed installation, it is important to receive a copy of the NOC so that we know a qualified gasfitter has done the work. This is a requirement under WA State Legislation. Fines for non-compliance could be up to $250,000 per breach.

- It is critical for you to question all new customers if their gas installation is new or not.
- If it is new, it is mandatory for you to sight the NOC and not just rely on verbal communication that an NOC has been issued. Please remember, no copy of the NOC means no gas supply under any circumstances (this applies for all 45kg vapor cylinders, and not forklift or BBQ gas cylinders).
- An NOC is not required in the case of a new customer on a property where gas has been used before, such as a customer moving into an old property, or switching from another gas supplier.
- Where an NOC is required, for Agents operating on the ELGAS Windows System (EWS), an account should be opened only when the NOC is in hand, and the NOC number is entered in the Compliance Plate section on the Installation screen of the customer's account.
- Where an NOC is required, for Agents NOT operating on the ELGAS Windows System (EWS), a delivery should not occur until such time the NOC is in your hands, and the NOC number is mentioned on the new customer application form. The NOC must then be forwarded to ELGAS along with the new customer application form.
- For Distributors, where an NOC is required gas supply cannot be done without sighting a copy of the NOC.
- In all of the above cases the NOC should be forwarded to ELGAS to enable ELGAS to fulfil its obligations for random inspections of these installations by Inspectors approved by ESWA. NOCs can be sent to ELGAS by email (notices.wa@ELGAS.com.au) or mail (ELGAS Ltd, PO Box 5006, Beckenham WA 6107)
- As a secondary check, Agent / Distributor drivers must be advised to do a visual inspection whilst completing a delivery. If an LPG connection looks new (eg check condition of pipes, pigtails, surface marks) and there is no Compliance Badge against the installation, the driver must not deliver the cylinders until confirming with the ELGAS office as the customer may have given incorrect information when opening an account with ELGAS.

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Whilst this is a simple and straightforward process, ELGAS have had instances where full compliance is not met, resulting in a breach of regulatory requirements. There are hefty fines, penalties and disciplinary action that will be issued by Government authorities for non-compliances. It is a legal obligation for all gas suppliers including their Agents & Distributors to meet regulatory compliance, and this must be achieved without compromise.

What does ELGAS do with the NOC?

As a part of the Energy Safety Inspection Plan that covers ELGAS & BOC, 15% of all Type A appliance NOCs and 100% of all Type B appliance NOCs must be inspected by ELGAS. There is no cost incurred by ELGAS Agents/Distributors carrying out these mandatory ESWA inspections; they are covered by ELGAS.

All NOCs collected within the Group are collated by ELGAS followed by a selection of sites for inspection. If an inspection finds a non-compliant installation, a Notice of Defect (NOD) is issued by the Inspector to the Gas Fitter, or an Inspector's Order (IO) is issued to the property owner. A copy of the NOD/IO is also supplied to ELGAS and ESWA. The Gas Fitter or land owner must then rectify the non-compliance.

This is a critical process for operating in the LPG industry in Western Australia and compliance to ESWA regulations is mandatory for all LPG suppliers.

What information must be on a NOC?

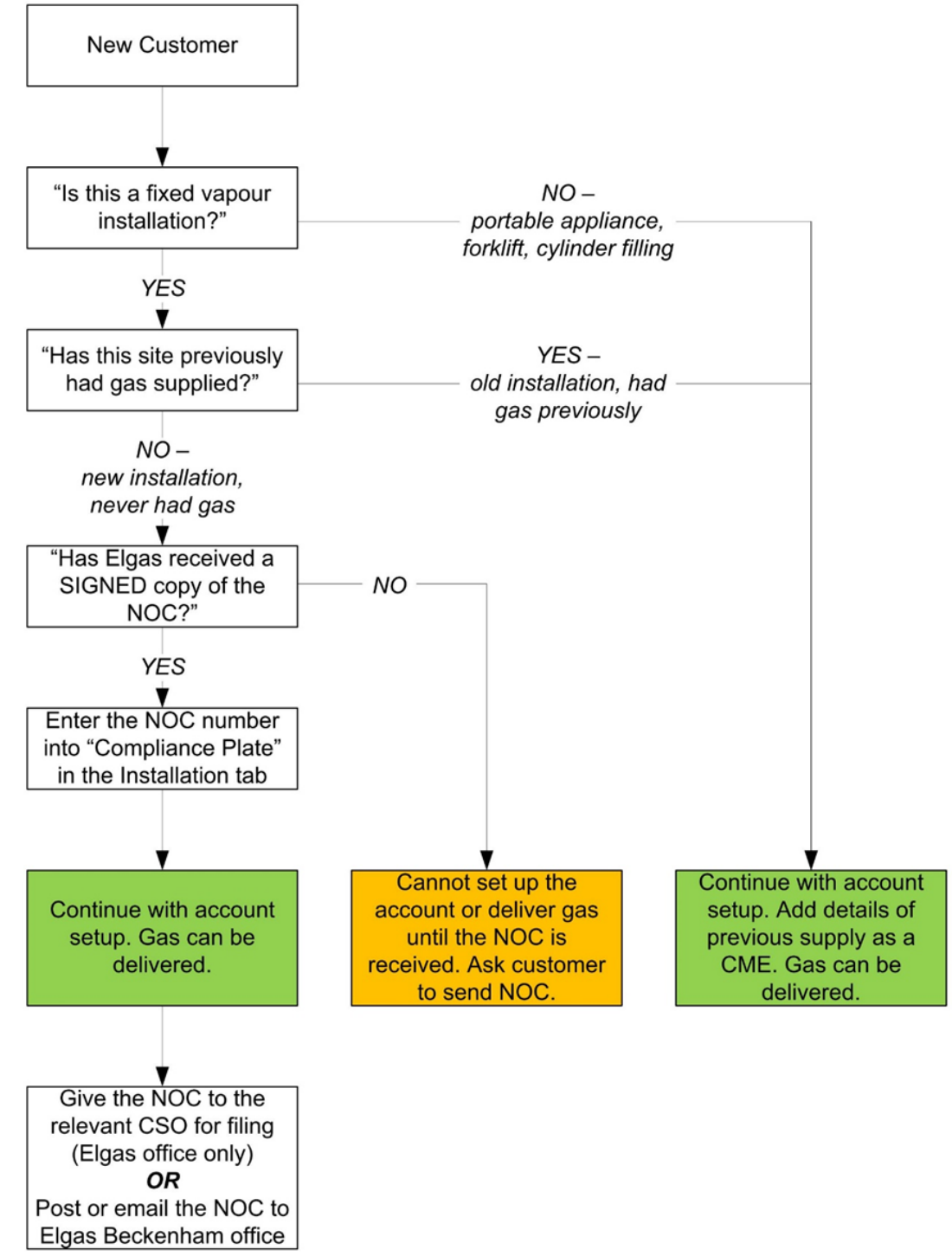
The following minimum information must correctly appear on the NOC:

- The customer details at the top of the NOC must match the site we are supplying.
- The gasfitter has notated in the Commission box that he has commissioned the new installation.
- The gasfitter must have completed their details and signed the bottom of the NOC. If it's not signed, or if the copy doesn't show the signature, ask for a signed copy (except for eNotices).
- If Section 7 (Type B Appliance) is completed, do not supply, and contact the ELGAS Technical Engineer.

The flowchart on the following page explains the procedure for creating a new customer account on EWS.

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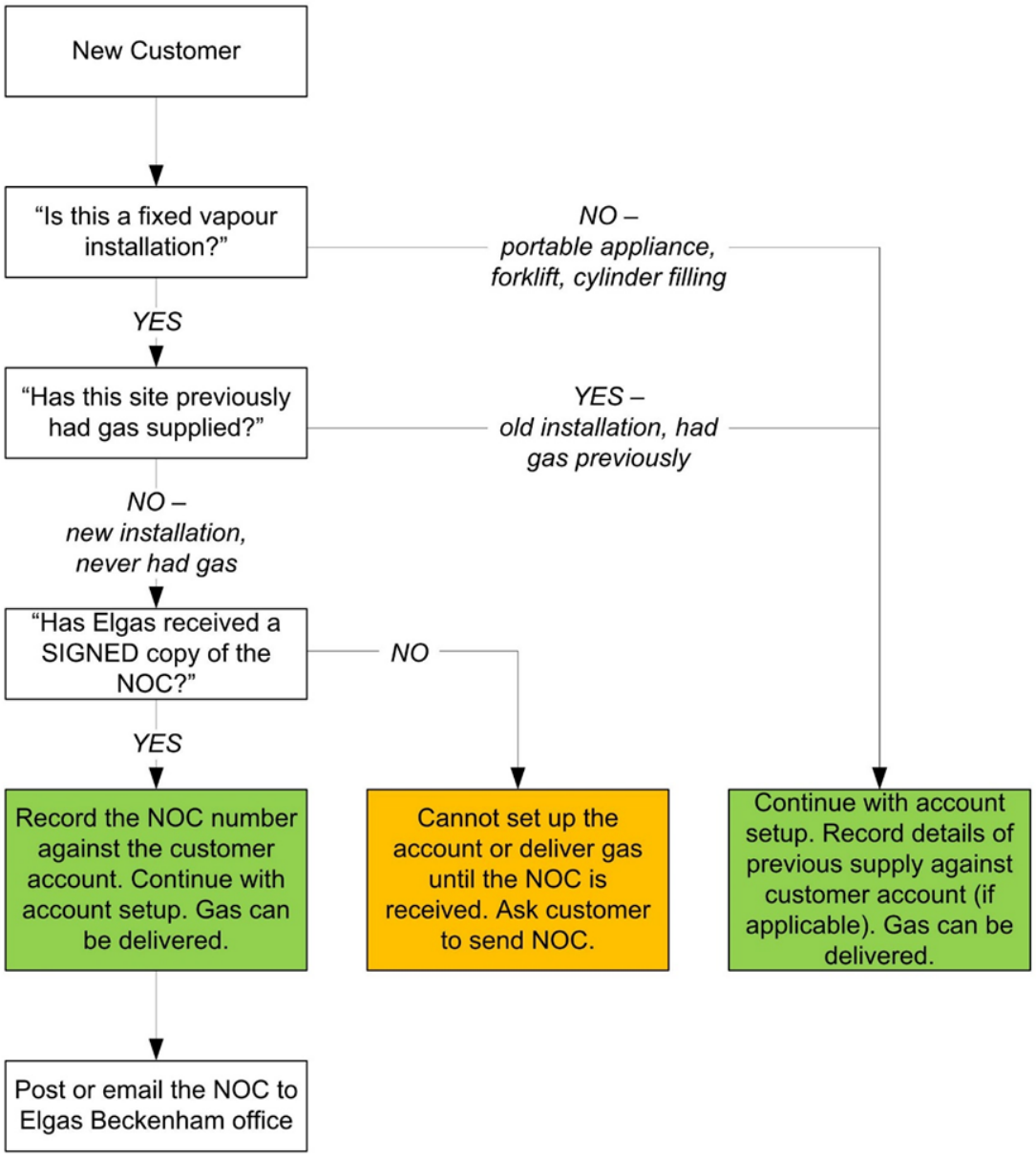
Elgas WA Procedure: Creating a New Customer Account using EWS



Date of review: 27/06/2016

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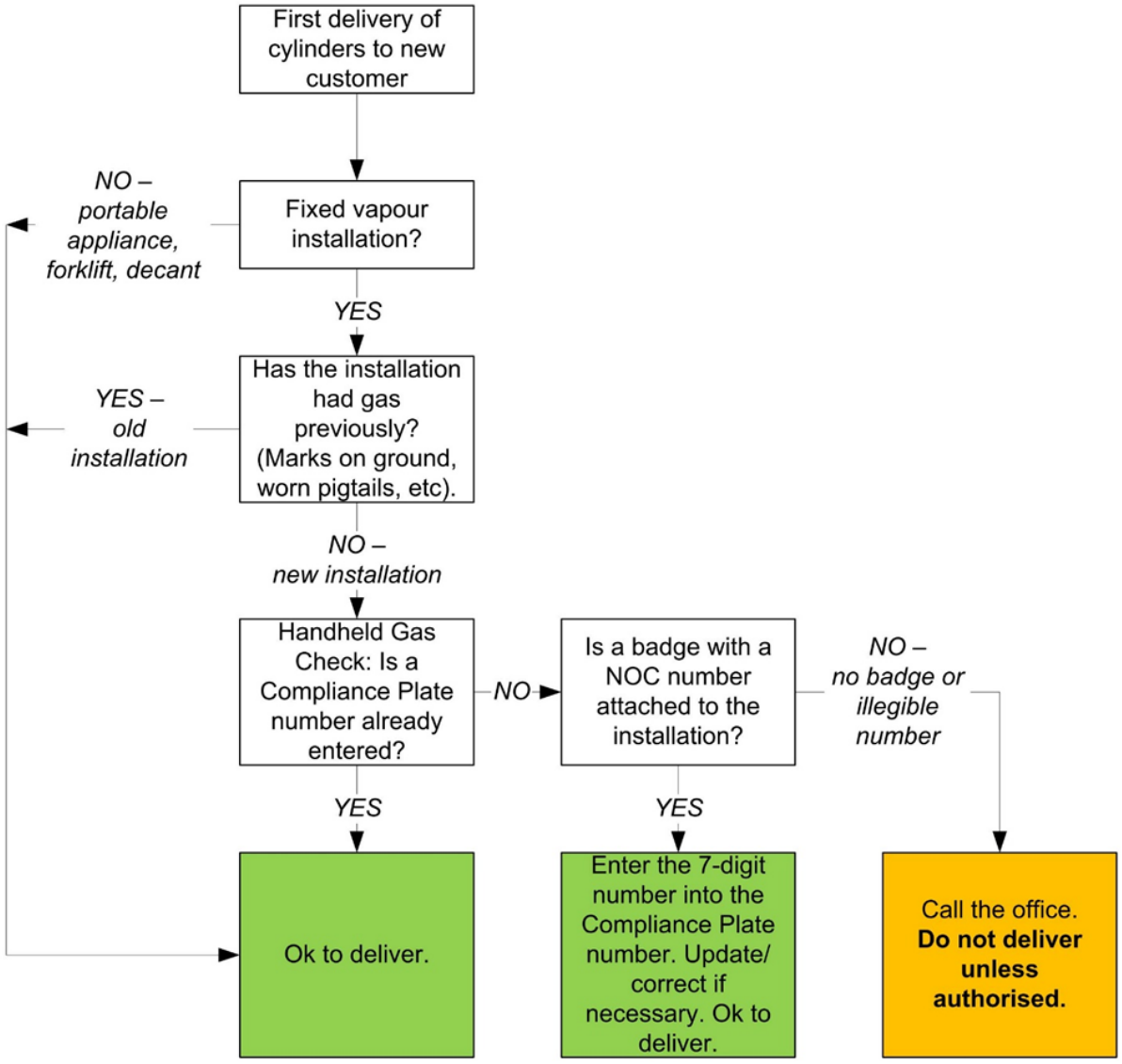
Elgas WA Procedure: Creating a New Customer Account (without EWS)



Date of review: 27/06/2016

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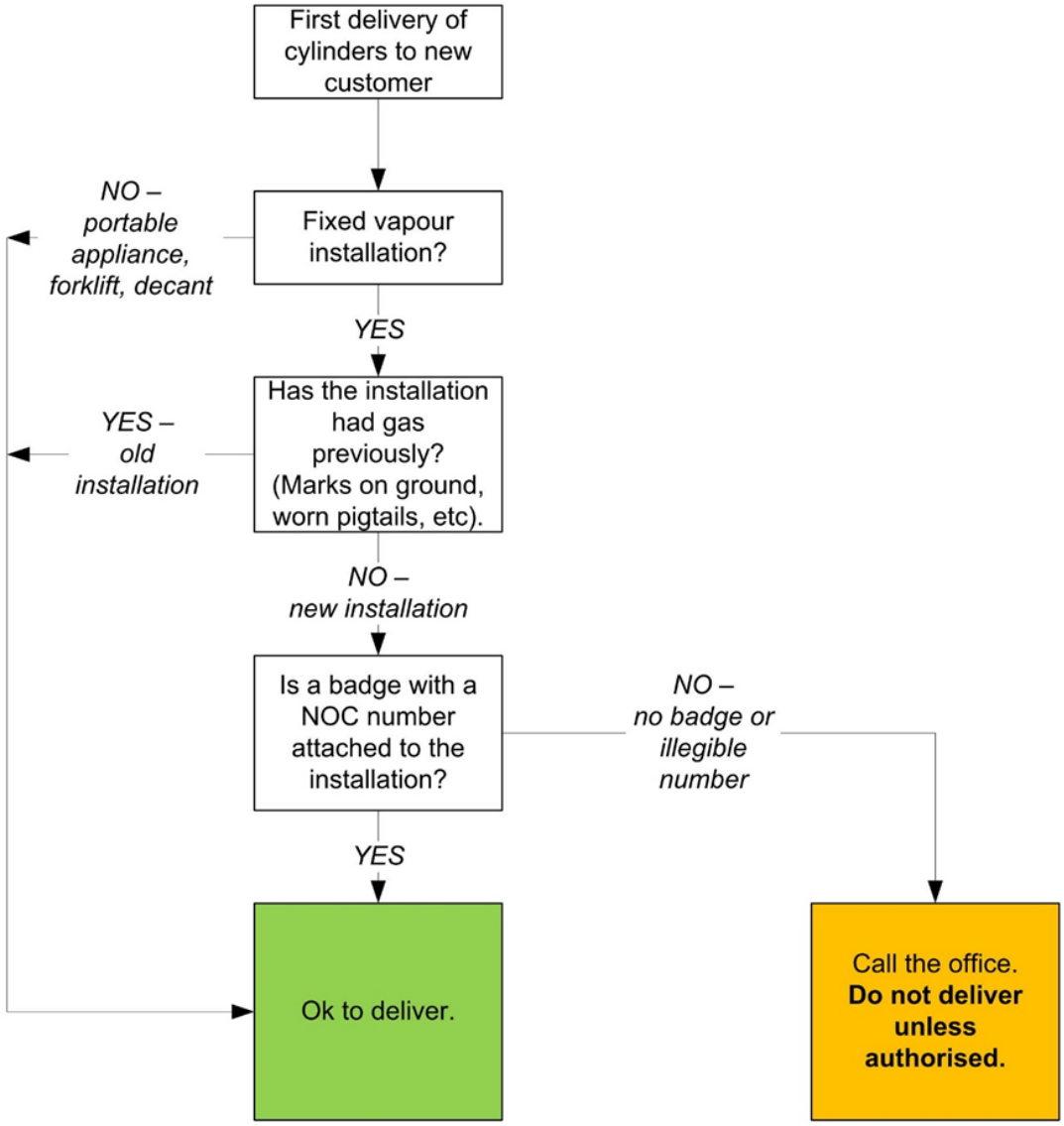
Elgas WA Procedure: Delivery of LPG Cylinders (Driver with Handheld)



Date of review: 27/06/2016

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Elgas WA Procedure: Delivery of LPG Cylinders (Driver without Handheld)



Date of review: 27/06/2016

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Setting Up New Customer Accounts in EWS (ELGAS Windows System)

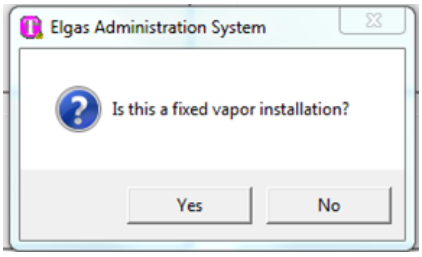
Agents setting up new customer accounts in EWS are responsible to ensure the correct process is followed. Non-compliance with this process may result in disciplinary measures by ELGAS or Energy Safety Western Australia. This can expand to Individuals/Agents engaged in creation of accounts who do not follow the process detailed in this document.

The following procedure applies to setting up new customer accounts in EWS for 45kg vapor cylinders, predominantly used by residential customers and commercial establishments such as restaurants, cafes, panel beaters, catering companies etc – such accounts are called "Fixed Installations"

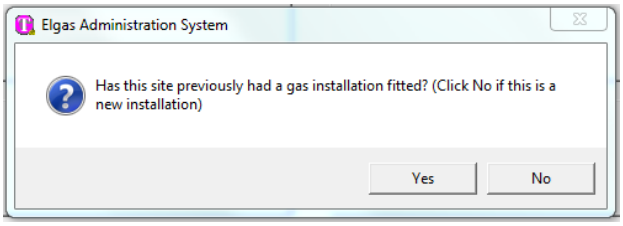
1. Select "**Customer File Maintenance and Enquiry**" from the main menu

2. Select "**New Customer**"

   The prompt below will appear - For all new "Fixed Installation" accounts with a 45kg vapor cylinder on site please select "**Yes**". For "Non-Fixed Installations" select "**No**".



3. If you select "**Yes**" for a fixed vapour installation the following prompt will appear:



   If you select *"Yes"* you can continue to follow the prompts to create an account.
   "Yes" means the property HAS been supplied LPG before, regardless of suppliers.

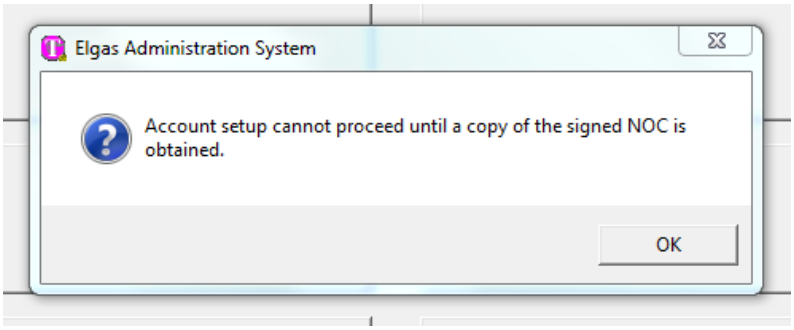
   If you select *"No"* the following prompt will appear. *"No"* means the property is a new build and/or the property is new to LPG and has NOT been supplied to before.



To select *"Yes"* for the above prompt you MUST have SIGHTED a SIGNED copy of an NOC. An account CANNOT be created if you have not received a signed NOC. This should be discussed with the customer before creating an account as there will be no need to create an account unless you have the NOC.

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If you do not have the NOC or a copy of this, select "**No**" for the above prompt. This will result in the following message to be displayed.

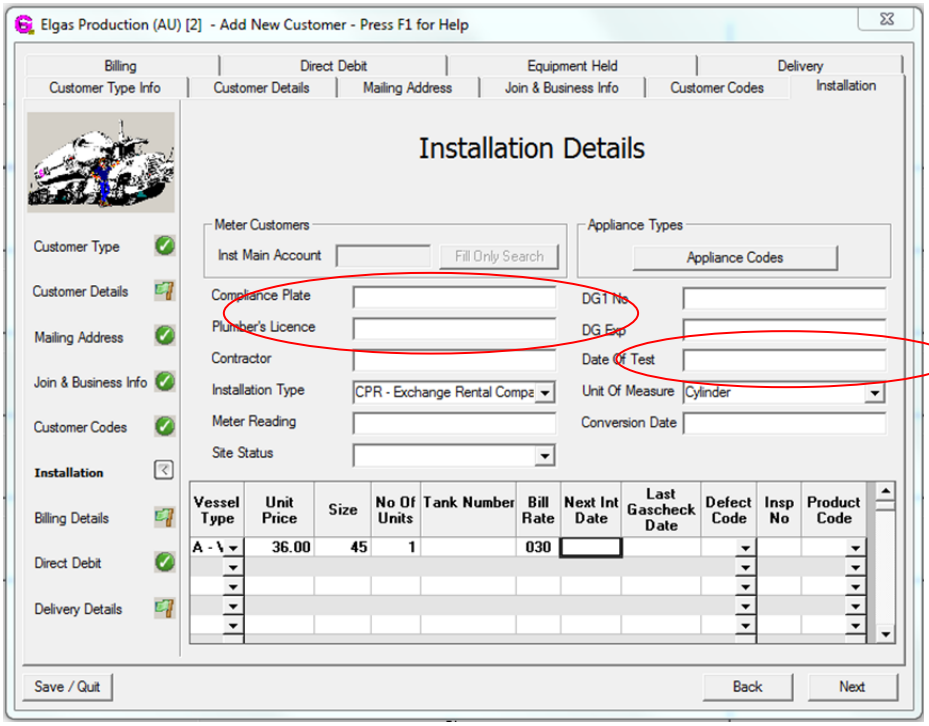


Please advise the customer that due to WA Regulatory Compliance LPG cylinders cannot be supplied to a new property/property new to LPG without receiving a copy of the NOC.

4. Details of the NOC MUST be entered into the Installation Tab of the New Customer wizard. The details that need to be entered are:

"**Compliance Plate**" = NOC Number
"**Plumber Licence**" = GF00****
"**Date of Test**" = Date the NOC was signed

Please note that "**Compliance Plate**" number should also be entered for new accounts being set up where an NOC is not required (such as a customer switching from a competitor, or a site previously serviced by ELGAS and has had a change in ownership)



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Appendix IV: Agent and Distributor Assessment

Blank copies of this assessment are available at www.elgas.com.au/training

Agent and Distributor Assessment

ELGAS

Learning outcomes	For the Candidate to: 1. Identify the properties of LPG and how LPG cylinders are used 2. Identify the first aid and emergency procedures associated with LPG 3. Identify storage requirements for LPG 4. Identify LPG cylinder delivery vehicle requirements 5. Identify site compliance regulations and delivery procedures
Cut-off point	The candidate is to be assessed as 'Not Yet Competent' for this assessment under the following circumstances: ➢ All questions applicable to your branch must be answered correctly to be deemed competent
Assessment conditions	In the Theory / Knowledge component of this assessment, candidates should record their own written answers. Alternatively, the assessor can record the candidate's verbal response on the answer sheet. This is a closed book assessment.

ASSESSOR'S DETAILS

	Position	Name	Signature	Date
Assessor				
Feedback to candidate				
General Comments:				
Outcome:			COM ☐	NYC ☐

CANDIDATE'S DETAILS

	Position	Name	Signature	Date
I have been provided feedback on this assessment				
	Comments (if required):			

Evidence gathered via:
Theory / Knowledge: This assessment tool is designed to check the candidate's theoretical knowledge and understanding of the job task and record the responses given by a candidate against each of the questions posed.

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Theory/Knowledge

The following key is used.

C – Competent Has met the minimum standard required for this level of training	NYC – Not Yet Competent Below the required standard. Has not met the minimum standard required for this level of training.

LPG Product Knowledge	COM	NYC
Question 1: Approximately how many times does LPG expand when it goes from a liquid to a vapour? ☐ 2 times ☐ 270 times ☐ 170 times ☐ 2700 times	☐	☐
Question 2: Approximately how many litres of LPG are there in 1 kg of LPG? ☐ 20 litres ☐ 196 litres ☐ 2 litres ☐ 10 litres	☐	☐
Question 3: True or False. LPG is heavier than air and will sink to the lowest level when released. ☐ True ☐ False	☐	☐
Question 4: LPG Cylinders are filled to no more than: ☐ 80% ☐ 85% ☐ 90% ☐ 100%	☐	☐
Question 5: True or False. There is generally no problem with connecting a liquid LPG cylinder to an appliance installation. ☐ True ☐ False	☐	☐

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First Aid and Emergency Information	COM	NYC
Question 6: Please select which of the following are hazards associated with LPG. ☐ May cause cold burns ☐ Asphyxiation ☐ May cause skin and eye irritation ☐ All of the above	☐	☐
Question 7: The Elgas Emergency Phone Number is: ☐ 1800 065 258 ☐ 131 161 ☐ 1800 819 783	☐	☐
Question 8: Where should the Emergency Procedure Guide generally be kept in a cylinder delivery truck? ☐ In the glove box ☐ Inside the drivers side door ☐ On the front passenger seat	☐	☐
Question 9: In an emergency situation in the cylinder delivery truck the first response would generally be? ☐ Stop and assess your own safety and that of others ☐ Eliminate sources of ignition ☐ Check cylinders for any gas leaks ☐ Call for assistance	☐	☐
Question 10. It is generally best to approach a gas leak: ☐ From upwind (wind at your back) ☐ From downwind (wind coming towards you)	☐	☐

Storage of LPG	COM	NYC
Question 11: The regulation that covers cylinder storage requirements such as ventilation and separation distances is: ☐ ADG Code ☐ AS/NZS 1596 ☐ Chain of Responsibility	☐	☐
Question 12: True or False: HAZCHEM signs are not applicable for Agents/Distributors storing LPG cylinders. ☐ True ☐ False	☐	☐

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Delivery Vehicle Requirements	COM	NYC
Question 13: Please select which of the following should be checked as part of a Pre-Journey Safety Inspection. ☐ Mirrors ☐ Load restraints ☐ Personal protective equipment (PPE) ☐ All of the above	☐	☐
Question 14: True or False: All LPG cylinders must be transported in an upright position, whether full or empty. ☐ True ☐ False	☐	☐
Question 15: Select the correct answer. When loading cylinders on to the truck, no cylinder can protrude over the sides or gates by more than _____ % of the height of the cylinder. ☐ 50% ☐ 10% ☐ 70% ☐ 30%	☐	☐
Question 16: One of your load restraint straps is showing signs of wear and fraying. What should you do? ☐ Use the strap but ensure that there are no twists in it when securing the load ☐ Use the strap but ensure that the webbing passes at right angles over any edge ☐ The strap must be considered as being defective and must be removed and replaced immediately	☐	☐
Question 17. The regulation that provides guidelines on how to transport cylinders in a safe manner is: ☐ ADG Code ☐ AS/NZS 1596 ☐ Chain of Responsibility	☐	☐

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Deliveries to Customers	COM	NYC
Question 18: What is the minimum clearance distance from a 45kg Exchange cylinder to an air vent, door or drain? ☐ 3 metres ☐ 2 metres ☐ 1 metre	☐	☐
Question 19: What is the minimum distance from the bottom (middle) of an Exchange cylinder to an ignition source? ☐ 1 metre ☐ 1.5 metres ☐ 2 metres	☐	☐
Question 20: When delivering a 45kg cylinder to an out of gas customer, what is the correct procedure? ☐ Connect the customer vessels and leave the cylinder valves CLOSED ☐ Connect the customer vessels and leave the cylinder valves OPEN ☐ Deliver the cylinders but do NOT connect the cylinders	☐	☐
Question 21. When delivering a 45kg cylinder to a new installation, what is the procedure? ☐ Connect the customer vessels and leave the cylinder valves CLOSED ☐ Connect the customer vessels and leave the cylinder valves OPEN ☐ Deliver the cylinders but do NOT connect the cylinders	☐	☐
Question 22. The regulation that states that anyone (not just the driver) who has control in a transport operation can be held responsible for breaches is: ☐ ADG Code ☐ AS/NZS 1596 ☐ Chain of Responsibility	☐	☐

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Agent / Distributor – Operator's Certificate to Train

Between ELGAS Limited and

Customer Name:_____(Customer)

Site Operator / Manager (Name):_____(Operator)

Business Address: _____(Premises)

Account Number:_____

I, the Operator, acknowledge having been trained in the contents of the *Agent and Distributor Training Manual*, and advised of my responsibility to understand all relevant laws, standards and instructions of ELGAS relating thereto.

I understand my obligation to train and assess all employees or other personnel at the Premises who are involved in the storage, handling or transportation of LPG cylinders, to do so in a safe and proper manner, and understand all relevant laws, standards and instructions of ELGAS relating thereto. Part of this training will include completion of the ELGAS *Agent / Distributor Competency Assessment*.

I acknowledge receiving and understood my obligations outlined in the *Agent and Distributor Training Manual* and undertake to comply with all requirements.

SIGNED for and on behalf of ELGAS Ltd:

Signature: _____ Name (print): _____

Position:_____ Date: _____

SIGNED for and on behalf of the Customer by the Operator:

Signature: _____ Name (print): _____

Position:_____ Date: _____

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Agent / Distributor – Operator's Certificate to Train (continued)

Between ELGAS Limited and

Customer Name: _____

Business Address: _____(Premises)

Appendix A: Additional Operators

SIGNED for and on behalf of the Customer by the Operator:

Signature: _____ Name (print): _____

Position:_____ Date: _____

SIGNED for and on behalf of the Customer by the Operator:

Signature: _____ Name (print): _____

Position:_____ Date: _____

SIGNED for and on behalf of the Customer by the Operator:

Signature: _____ Name (print): _____

Position:_____ Date: _____

SIGNED for and on behalf of the Customer by the Operator:

Signature: _____ Name (print): _____

Position:_____ Date: _____

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Agent / Distributor – Operator's Certificate to Train

Between ELGAS Limited and

Customer Name:_____(Customer)

Site Operator / Manager (Name):_____(Operator)

Business Address: _____(Premises)

Account Number:_____

I, the Operator, acknowledge having been trained in the contents of the *Agent and Distributor Training Manual*, and advised of my responsibility to understand all relevant laws, standards and instructions of ELGAS relating thereto.

I understand my obligation to train and assess all employees or other personnel at the Premises who are involved in the storage, handling or transportation of LPG cylinders, to do so in a safe and proper manner, and understand all relevant laws, standards and instructions of ELGAS relating thereto. Part of this training will include completion of the ELGAS *Agent / Distributor Competency Assessment*.

I acknowledge receiving and understood my obligations outlined in the *Agent and Distributor Training Manual* and undertake to comply with all requirements.

SIGNED for and on behalf of ELGAS Ltd:

Signature: _____ Name (print): _____

Position:_____ Date: _____

SIGNED for and on behalf of the Customer by the Operator:

Signature: _____ Name (print): _____

Position:_____ Date: _____

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Agent / Distributor – Operator's Certificate to Train (continued)

Between ELGAS Limited and

Customer Name: _____

Business Address: _____(Premises)

Appendix A: Additional Operators

SIGNED for and on behalf of the Customer by the Operator:

Signature: _____ Name (print): _____

Position:_____ Date: _____

SIGNED for and on behalf of the Customer by the Operator:

Signature: _____ Name (print): _____

Position:_____ Date: _____

SIGNED for and on behalf of the Customer by the Operator:

Signature: _____ Name (print): _____

Position:_____ Date: _____

SIGNED for and on behalf of the Customer by the Operator:

Signature: _____ Name (print): _____

Position:_____ Date: _____

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