



WLPGA Safety Alert – Commissioning and Purging LPG Installations

The WLPGA Core Safety Group was established in 2021 to create a renewed focus on safety across the LPG industry and to provide advice and transfer experiences. This is another in a series of Safety Alerts and Technical Bulletins that will emanate from the WLPGA Core Safety Group.

Background

Before LPG installations are put into service they have to be commissioned and purged. This ensures the system is gas tight, fit for purpose, and ready for use by the consumer. Until the system has been signed off there will be risks during the commissioning process. These risks must be managed. Commissioning and purging of LPG installations should only be done by trained and competent persons. This WLPGA Safety Alert refers to the procedures for safely commissioning and purging LPG installations.

The Safety Incident

During the commissioning of a new LPG installation, supplying a commercial kitchen in a hotel, an explosion occurred and three staff were severely burnt. When the incident happened, the LPG technicians were venting the LPG pipeline from the tanks to the appliances to remove any air present. Gas accumulated in a room where there was limited ventilation, no air circulation, and no gas detectors present. The explosion occurred when the first stove was ignited, ripping off part of the ceiling and breaking all windows.

Commissioning LPG Installations

New LPG installations will contain air and it must be totally removed to eliminate any flammable mixtures within the system and ensure proper operation of the LPG appliances. To do so, the air should be purged either with inert gas (e.g., gaseous nitrogen), or LPG vapour. When using LPG, this should be done by venting off air at a suitable purging point near the bulk tanks (or cylinders) which is usually outdoors. If done indoors using the installed LPG appliance as a purging point, a continuous flame must be provided near the appliance to burn off any discharged gases until the appliance lights up properly.

The investigation into this incident determined that commissioning should only take place in a well-ventilated area, fixed and/or portable gas detectors should be present, and competent contractors and consumers should follow correct procedures and understand the basic properties of the LPG. The following advice is provided here to reduce the risks when commissioning and purging LPG systems:

- There should be a check list for commissioning & purging filled in consultation with the customer
- The basic characteristics and properties of LPG should be understood by all
- The area should be well ventilated both during and after commissioning
- Valid calibrated gas detectors, fitted at low level, should be installed, and regularly checked
- Alternatively, portable gas detectors, with valid calibration certificates, are to be used
- Any appliances and equipment not being included in the testing should be isolated or disconnected
- Each appliance and piece of equipment should be purged before being put in operation
- Any air should be purged from the system in a controlled manner, preferably by venting safely to outside
- Purging shall be done using a burner with a continuous source of ignition and monitored with a combustible gas detector
- Purging shall be stopped once gas is detected at the appliance

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SA003 – JANUARY 2022