

## Overview

This standard is about installing systems and components for liquified petroleum gas (LPG). Liquified Petroleum Gas includes propane and butane. This standard covers that which is specific to working with LPG as opposed to other gas fuels. It can be used alongside other standards relating to installation and maintenance for the downstream gas industry. It can also be used to extend the work range of individuals from other gas fuels to working with LPG.

It involves cylinder sizing and location, calculating permissible pressure drops, installing and checking operation, setting system controls and complying with regulations related to health and safety and gas safety.

This standard is for anyone who is installing liquefied petroleum gas (LPG) systems and components.

## Install liquified petroleum gas (LPG) systems and components

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### Performance criteria

*You must be able to:*

1. mark out sites for LPG cylinders and storage vessels at appropriate distances from windows, doors and vegetation
2. calculate required sizes of LPG cylinders and storage vessels to meet users' requirements
3. check that input services to system components are suited to their intended purpose
4. define appropriate housing of LPG cylinders and storage vessels that meet safety requirements
5. calculate permissible pressure drops for LPG installation pipework
6. select and use appropriate tools and equipment for installation work
7. install systems and components in line with safety and work requirements
8. check system pressure regulators, under and over pressure cut off and limited relief valves work as required
9. adjust and set LPG system controls to meet safety requirements
10. confirm that system and components comply with industry standards and manufacturers' instructions
11. check that ventilation provision and the continuity of any flue systems meet safety requirements
12. complete required records and documentation for installation

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### Knowledge and understanding

*You need to know and understand:*

1. characteristics of propane and butane and the differences between them including specific gravity of LPG vapour and its effect in relation to air and other gas fuels, vaporisation of LPG liquid and off take and the effects of temperature, limits of flammability and its relationship to other gas fuels and calorific value of liquefied petroleum gas and its relationship to other gas fuels
2. regulatory, statutory and manufacturer's requirements and procedures for LPG fittings, methods and agents
3. current regulations for gas safety relating to installation and use of LPG and hazards associated with the use of LPG
4. LPG system components including pipework fittings and requirements for ventilation and flue systems
5. siting, sizing and housing of LPG cylinders and storage vessels
6. storage pressures for propane and butane in cylinders and storage vessels
7. tools and equipment for installing LPG systems and components
8. how to check system working pressure and read pressure gauges
9. procedures for dealing with pressure regulators that are letting by
10. types of underpressure and overpressure cut offs and how to deal with them
11. installation, location and protection requirements for propane and butane and how the location of LPG cylinders and storage vessels will affect fire procedures
12. safety and fire precautions to be observed with LPG cylinders and storage vessels
13. identification and operation of emergency controls and LPG storage vessel shut off valves
14. LPG installation record keeping requirements

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