



### INDOOR VEHICLE FUEL DISPENSING STATIONS

Indoor refueling of propane vehicles is permitted where the building is constructed in accordance with the requirements of NFPA 30A and NFPA 58, and any other codes that are adopted by the jurisdiction where the building is located.

### PROPANE AUTOGAS STORAGE

Aboveground tanks storing propane autogas must be separated by at least 15 feet from devices that dispense liquid or gaseous motor vehicle fuels. If the facility has aboveground compressed natural gas (CNG) or liquid natural gas (LNG) tanks, the propane autogas tank must be separated by at least 20 feet.

In addition, the tanks must have physical and security protection in accordance with the codes. Consult NFPA 30A and NFPA 58 for exact conditions and requirements.

### A PROVEN TRACK RECORD OF SAFETY

Propane autogas is a safe fuel when properly stored, dispensed, and used. This is due to several factors: propane autogas' natural properties; stringent codes and regulations;

and the industry's extensive education, training, and safety-awareness programs. Vehicles powered by propane autogas have a long history of performing safely under all operating conditions. In fact, propane autogas offers several safety advantages compared with other fuels:

- Propane autogas in its natural state is non-toxic with no defining natural odor. An odorant is added to aid in leak detection.
- Propane autogas requires a much higher temperature to ignite. For example, gasoline and diesel fuel will catch fire at temperatures as low as 495 degrees Fahrenheit, whereas propane autogas requires a temperature of at least 920 degrees Fahrenheit to ignite.
- Propane autogas is classified by the Environmental Protection Agency (EPA) as a non-contaminant of air, land, and water resources.
- Among alternative fuels, propane autogas has the narrowest flammability range. The flammability range is comparable to that of gasoline and diesel fuel.
- Propane autogas engine systems are fitted with safety devices and shutoff valves that function automatically if the fuel line ruptures.

### VALUABLE RESOURCES TO HELP UNDERSTAND PROPANE AUTOGAS VEHICLES AND FACILITIES

Several online resources are available that provide users with information such as code requirements for propane autogas vehicle facilities, characteristics of propane autogas, and case studies of companies converting their fleets to run efficiently on propane autogas.

#### NFPA.ORG

The NFPA website provides information on codes and standards related to motor fuel repair garages and maintenance facilities. You can view, download, or acquire printed copies of all NFPA codes including NFPA 58 and NFPA 30A from this site.

#### PROPANE.COM/ON-ROAD-FLEETS

This PERC-sponsored website provides information on several different types of propane-autogas-powered vehicles (and other types of propane equipment), propane autogas refueling, and incentive programs.



# PROPANE AUTOGAS REPAIR & MAINTENANCE FACILITY REQUIREMENTS

#### FOR MORE INFORMATION

To learn more about propane autogas, and the Propane Education & Research Council, visit [Propane.com/On-Road-Fleets](http://Propane.com/On-Road-Fleets).

THE PROPANE EDUCATION & RESEARCH COUNCIL was authorized by the U.S. Congress with the passage of Public Law 104-284, the Propane Education and Research Act (PERA), signed into law on October 11, 1996. The mission of the Propane Education & Research Council is to promote the safe, efficient use of odorized propane gas as a preferred energy source.

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# INTRODUCTION

For purposes of this guide, only specific propane autogas requirements beyond those required for gasoline and diesel vehicle repair and maintenance facilities will be discussed in detail. This guide will explain in easy-to-understand terms the general design, safety, and code guidelines for constructing or modifying repair and maintenance garages for propane-autogas-powered vehicles including passenger cars, vans, buses, and trucks.



This guide is intended to help fleet managers, operators, and private garage owners understand the basic requirements of a propane-autogas-powered vehicle repair or maintenance garage.

## GENERAL CODE REQUIREMENT OVERVIEW

Several national codes such as the National Fire Protection Association (NFPA) Code for Motor Fuel Dispensing Facilities and Repair Garages, International Building Code (IBC), and National Electric Code (NEC) help outline the detailed requirements for building or modifying a vehicle repair or maintenance facility. These codes, for the most part, give the requirements for traditional liquid fuel facilities that service gasoline- and diesel-fueled vehicles, but do not directly address alternative fuels such as propane autogas.

There are two national codes that cover the requirements for propane autogas vehicle facilities:

- NFPA 58 Liquefied Petroleum Gas Code.
- NFPA 30A Code for Motor Fuel Dispensing Facilities and Repair Garages.

It is important to note that all national codes are adopted voluntarily by states. Always contact the local Authority Having Jurisdiction (AHJ) for applicable codes regarding the building or modifying of a propane autogas vehicle repair or maintenance facility. In some cases, the AHJ may have other requirements in addition to those cited in national codes. The AHJ is the organization, office, or individual responsible for enforcing the requirements of the code.

## VENTILATION REQUIREMENTS

Ventilation requirements for propane autogas are the same as those for gasoline and diesel. This includes ventilation for all workspaces including floor areas, pits, below-grade areas, and subfloors. There is no need for modifications to the building or building design.

## GAS DETECTION REQUIREMENTS

Propane gas detection equipment is not required for repair garages and maintenance facilities that service propane autogas vehicles.

## QUESTIONS TO ANSWER BEFORE BUILDING OR MODIFYING A REPAIR GARAGE OR MAINTENANCE FACILITY

- Does the existing garage or facility meet current code requirements for traditional liquid fuels (such as gasoline or diesel)?
- Will the facility provide minor repairs, major repairs, or both?
- If the facility provides both minor and major repairs, will the major repair area be separated from the minor repair area?
- Will the facility include an indoor or outdoor propane autogas fueling station?

## SOURCES OF IGNITION REQUIREMENTS

There are no specific requirements beyond existing standards for traditional liquid fuel repair garages and maintenance facilities.

## ELECTRICAL REQUIREMENTS

There are no specific requirements beyond existing standards for traditional liquid fuel repair garages and maintenance facilities.

## PARKING, SERVICING, AND REPAIR OF VEHICLE REQUIREMENTS

There are no specific structural requirements beyond the existing standards for traditional liquid fuel repair garages and maintenance facilities. However, there are several code requirements that apply to the propane autogas vehicle when parked, serviced, or repaired inside buildings:

- The fuel system must be leak-free.
- The fuel tank or container must not be filled beyond the limits specified for the equipment.
- The tank or container shut-off valve must be closed when the vehicle or engine is being repaired, except when the engine is required to operate.
- The vehicle should not be parked near sources of heat or open flames (or similar sources of ignition), or near inadequately ventilated pits.



## MODIFICATIONS TO EXISTING GARAGES OR MAINTENANCE FACILITIES

A review of compliance to existing codes (for liquid fuels such as gasoline or diesel) may be necessary before modifications to allow the servicing or repair of propane autogas-powered vehicles can begin. Since the existing facility may have been built under older editions of the codes, any new propane autogas modifications may require bringing the facility up to code for traditional liquid fuels as well.

## TYPES OF REPAIR GARAGES

Repair garages are placed into two different categories for code purposes. Each type of garage has a specific set of code requirements.

- Major Repair Garage. A major repair garage is defined as a building or portions of a building where major repairs, such as engine overhauls, painting, body and fender work, and repairs that require draining of the motor vehicle fuel tank, are performed.

- Minor Repair Garage. A minor repair garage is defined as a building or portions of a building used for lubrication, inspection, and minor automotive maintenance work, such as engine tune-ups, replacement of parts, fluid changes (oil, antifreeze, transmission fluid, brake fluid, air conditioning refrigerants, etc.), brake system repairs, tire rotation, and similar routine maintenance work.

## REPAIR GARAGE GENERAL REQUIREMENTS

If the facility is planning to have a major repair area for propane autogas vehicles, a separate building or area within the facility may be used. Minor repair areas do not need to be separated from other activities in the facility. If part of the facility is being used for major repair activities, there are certain requirements that need to be followed to separate the area from minor repair and other servicing activities. They are the same requirements as those for gasoline- and diesel-fueled vehicle major repair areas. There are no special requirements for propane autogas-powered vehicle repair areas.

