

# confinement barn safety

Liquefied Petroleum Gas, or propane, is a versatile, environmentally friendly energy source used in many residential, commercial, and industrial applications. One way propane is used in agriculture is to supply year-round heating for confinement barns housing commercial poultry or swine.

Small barns may have small propane vapor systems similar to those used at a residential household, while bigger operations may have larger (10,000 gallons +) installations using vaporizers to supply one or more barns with a very large BTU connected load.

Propane's versatility allows agriculture operations to use it to provide other building and water heat, supply power to material handling equipment, and to power sanitation equipment.

The purpose of this safety guide is to advise you of the things you should know if you use or plan to install and utilize propane for your confinement barn operation. It is important to:

**1** Make sure the propane equipment is designed and installed properly.

**2** Ensure the propane equipment operates properly day to day.

## code requirements

Codes, such as NFPA 58 and NFPA 54, as well as OSHA and DOT regulations, apply to the propane system at storage, to the building, and within the building.

These codes include storage distance requirements to structures, property lines, and roadways, and requirements for piping installation, materials, line sizing, and protection devices as well as appliance installation. The local Authority Having Jurisdiction (AHJ) will approve and/or enforce the requirements of the applicable codes.

## training requirements

Both the NFPA codes and the OSHA regulations require those operating a propane system must be formally trained in the applicable portions of their job.

## specific concerns

- » **Propane systems, including the container, transfer bulkhead, vaporizer, piping, and regulators are all subject to damage from vehicles and equipment.** Because of this, steps must be taken to protect the components of the system from damage due to vehicular traffic.
- » **Like any mechanical equipment, components of the propane system, including the storage equipment or the appliances they serve, are subject to wear with age and use.** Each of the components should be visually inspected regularly and maintained in accordance with manufacturers' specification. That responsibility lies with the equipment owner whether it be farm-owned or leased.
- » **The odorant in propane could be masked by manure or livestock odors.**
- » **Steel piping is subject to advanced corrosion due to the moisture and ammonia rich atmosphere in a livestock barn.** The first 20 feet of piping is more susceptible due to temperature concerns. Corrosion-resistant piping should be considered for this reason.
- » **Excessive dust, corrosion, and other factors can create a safety hazard at confinement barns.**

## special safety considerations

- » **Propane liquid, when released into the atmosphere, will immediately become very cold.** Contact with your skin may result in frostbite burns. Operators handling liquid propane should utilize appropriate Personal Protective Equipment (PPE) to protect themselves from injury.
- » In any propane operation, **identification and control of sources of ignition are of critical importance.**
- » **NFPA codes require that propane containers, pipeline, and equipment must be protected from corrosion.** Corrosion control can be as simple as painting or from an external source such as sacrificial anodes for underground piping.
- » **In any propane system, weather preparation is critical depending on the location.** An examination of the entire system should be made to determine how the system can be protected from the effects of weather.
- » **One very important item to consider is the use of anhydrous ammonia in agriculture.** An anhydrous ammonia container and a propane container look similar, and to the naked eye, may look like they are the same. Cross contamination of these products in these systems has occurred and can have catastrophic implications.
- » **Avoid letting your propane system run out of gas –** if this happens on the farm, the result could come in many different forms. Plan ahead. Ensure that checking your tank gauge is a part of your routine. Consider getting a tank monitor, estimating your usage, and scheduling regular deliveries.
- » **Propane is a flammable product that has a distinct odor so you can identify if there is a leak.** The odor is added to propane as a safety measure, but keep in mind that propane's odor can be masked by livestock and other odors. Ask your supplier to help you get a whiff of propane so you know what it smells like.



## contact your propane supplier

Consult with your propane supplier or your Authority Having Jurisdiction (AHJ) to help with design, compliance, and training, or if you have any questions.



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