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Course Description

This seminar series will enable the attendee to identify and apply the code provisions pertaining to containers, piping, and associated equipment when using LP-Gas as a fuel gas in a building. Attendees will acquire the knowledge and skills to conduct compliance inspections of new and existing installations via classroom instruction using lecture and visual aids.

Session Content

1. Introduction to NFPA 58 and LP Gas Properties
2. Storage, Handling and Transportation Requirements
3. Use of liquefied petroleum gas and Installation Issues

Session 1: Introduction to NFPA 58 and LP Gas Properties

This session will cover the legal path to access and the organization of NFPA 58 along with the basic properties of LP Gas.
Session Content

Session 2: Storage, Handling and Transportation Requirements

This session will cover how to locate and apply the applicable requirements for container locations and gas piping systems.

Session Content

Session 3: Use of Liquified Petroleum Gas and Installation Issues

The third session will cover how to locate and apply the applicable requirements for gas utilizing equipment and venting systems.
## Contents

1. Administration
2. References
3. Definitions
4. General Requirements
5. Equipment & Appliances
6. Installation
7. LP-Gas Liquid Transfer
8. Cylinder Storage
9. Vehicular Transport
10. Distribution Facilities
11. Engine Fuel Systems
12. Refrigerated Containers
13. Marine Shipping & Receiving
14. Operations & Maintenance
15. Pipe/Tubing Tables

### Annexes

A. Explanatory Material
B. Properties of LP-Gasses
C. Design, Construction, & Requalification of DOT (ICC) Cylinders
D. Design of ASME & API-ASME Containers
E. Pressure Relief Devices
F. Liquid Volume Tables, Computations, & Graphs
G. Wall Thicknesses of Copper Tubing
H. Procedure for Torch Fire & Hose Stream Testing of Thermal Insulating Systems for LP-Gas
I. Container Spacing
J. Sample Ordinance for Adopting NFPA 58
K. Burial & Corrosion Protection for Underground & Mounded ASME Containers
L. Suggested Methods for Leak Checking

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Code Symbols

1.1 Scope.

Asterisk denotes Annex note in Annex A

A.1.1 Annex note has same paragraph number preceded by an “A”

Code Symbols cont’d

Denotes revision, addition, or deletion from the last edition of the code

Denotes a deleted paragraph or section

What is LP-Gas

NFPA 58

3.3.38 * Liquefied Petroleum Gas (LP-Gas)

Any material having a vapor pressure not exceeding that allowed for commercial propane that is composed predominantly of the following hydrocarbons, either by themselves (except propylene) or as mixtures: propane, propylene, butane (normal butane or isobutane), and butylenes.

LP-Gas – ASTM D 1835 Standard Specification for LP-Gas
What is LP-Gas

- Stored as a liquid under pressure (100-200 psi)
- Used as a gas at room temperature (0.4 psi)
- Liquid to vapor expansion @ 250X
- Heavier than air
- Higher flame temperature than natural gas

Vapor Releases

Vapor Releases
Vapor Releases

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1. Boiling
2. Liquid
3. Expanding
4. Vapor
5. Explosion

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Leaks

Administration

Chapter 1 - Summary

Scope
Application
Retroactivity
Equivalency
Enforcement

This code applies to the storage, handling, transportation, and use of LP-Gas.
Administration

Applies to:

- LP-Gas delivered to a building for use as a fuel gas
- Highway transportation
- Marine terminals – limited
- Pipeline terminals – limited

Administration

Application - Does NOT apply to:

- Frozen ground containers or caverns
- Natural gas processing plants
- LP-Gas at utility plants
- LP-Gas used w/ oxygen
- LP-Gas used as a refrigerant in a closed loop
- Multi-fuel refueling station
Administration

Retroactivity

New

Existing

Only where specified, or
“distinct hazard to life and property”

Enablers

Safeguard life, health, property, and public welfare.

- Building Service Equipment:
  - Equipment using gas
  - Related gas piping

- Special Operations:
  - LP-Gas Distribution Facilities
Enablers

Safety for occupants in buildings

Building Service Equipment:
- Equipment using gas
- Related gas piping

Safeguard life, health, property, and public welfare.

- Building Service Equipment:
  - Equipment using gas
  - Related gas piping
- Special Operations:
  - LP-Gas Distribution Facilities
Thank You