

May 2014 Safety Meeting

Cylinder Filling Operations

Spring is a very active season for filling cylinders. Lately, improper cylinder filling operations have been identified as a problem in our state.

Safely inspecting and filling cylinders is an important job that requires specific procedures. Customers are often not aware of inspection (covered in the April 2014 Safety Meeting topic) and filling requirements. The safety of yourself, the customer, and the public should not be compromised. You have no control of the cylinder before it is transported to your facility and no control after it leaves. You must use reasonable care in your handling of the cylinder while it is in your care.

Once the cylinder has been properly inspected and determined to be suitable for filling, use the following PERC guidelines:

- Cylinders less than 200 pounds water capacity and subject to DOT jurisdiction must be filled by weight. Check NFPA 58 or DOT for any exceptions.
- Locate the water capacity and tare weight stamped on the cylinder on its protective collar.
- Convert the water capacity to propane capacity by using a conversion table or chart. If you do not have a table or chart use the following formula: $w.c. (lbs.) \times .42 = \text{propane capacity (lbs.)}$.
- Add the tare weight and the propane capacity together.
- Add the weight of the hose and nozzle to the sum of the tare weight and propane capacity.
- Set your scales to the cylinder's total filled weight.
- Use your company policy and guidelines for the steps to fill the cylinder using the installed equipment at your dispensing station.
- After filling the cylinder, check the weight of the filled cylinder. If overfilled, bleed off excess propane in a safe location.
- Check the container for leaks.
- For cylinders 45lbs. or less, install a protective cap or a POL plug if the cylinder is equipped with a POL service valve.
- Cylinders 100lbs. or less must have the consumer information/warning label.

Cylinder labeling is required by NFPA 58, DOT and OSHA. DOT cylinders used to transport propane must be clearly and durably marked with the proper shipping name and hazard class. A consumer information warning label must be present. The label must include information on the potential hazards of propane. Apply a new label if one is not present or legible. If you have any question regarding the legibility or completeness of the warning label that is on the cylinder, place a new label on the cylinder.

Prior to filling the cylinder, notice how it will be transported. Cylinders placed in a vehicle must be secured against movement. Closed bodied vehicles such as passenger cars and vans are limited to a maximum of 90lbs. of LP Gas, with no single container having a capacity of more

than 45lbs. NFPA 58 allows for up to four 20lb. grill cylinders, up to three 30lb. cylinders, and up to two 40lb. cylinders. "Cylinders of 2 ½ lbs. water capacity (1lb. propane capacity) or more must be positioned so that each cylinder's pressure relief valve is in direct communication with the vapor space at all times." All cylinders and appurtenances are determined to be leak free.

CLOSING

Filling cylinders is one of the most common operations you perform. Because it is a routine task, we sometimes short-cut or forget the safety hazards. Fill all cylinders per code and standard operating procedures.

Attached you will find a Cylinder Filling Check List that APGA created. Companies may want to consider using this form when filling cylinders.

Also attached is information regarding what operators of cylinder filling stations should know for a practical examination and a cylinder filling station examination checklist.

EXAMPLE OF AN ALUMINUM CYLINDER

Convert water capacity to propane capacity	80lbs. w.c. x .42 = 33.6lbs. propane
Plus tare weight and hose/nozzle weight	33.6lbs. + 24.4lbs. + 5lbs = 63lbs.
Correct weight to set your scales	63lbs.

***Effective May 16, 2014 the Alabama Liquefied Petroleum Gas Board may move to the 2011 edition of NFPA 58. One of the changes in that edition refers to "DOT Cylinders in stationary service". These changes will be covered in the June 2014 safety meeting article.**

Disclaimer:

The Alabama Propane Gas Association (APGA) assumes no liability for reliance on this information. Members of APGA are not required to use this information. When referencing NFPA 54 and/or NFPA 58 in this information, the most current codes are used. However, the state of Alabama has adopted the 1999 edition of NFPA 54 and the 1998 edition of NFPA 58; therefore, it is the responsibility of the company to know the difference between adopted codes and current codes. This information is not to be considered exhaustive treatment of the subject matter; should not be interpreted as precluding other measures; and is not intended to be and is not to be construed as an undertaking to perform services on behalf of any party either for their protection or the protection of third parties. It is the responsibility of the company to decide how to use this information and the degree to which this information is to be used.

Cylinder Filling Check List

I understand that the following items have been checked and/or performed on my cylinder(s):

- Cylinder has only been used in propane service
- Cylinder is clearly marked and labeled
- Cylinder requalification date is still valid
- Cylinder is free of serious dents, leaks, cracks, bulging, defective valves, evidence of physical abuse, fire or heat damage, excessive rusting or corrosion, damage to valves and foot rings
- Cylinder is leak free
- Valves are protected with a cap or collar
- Valve outlet was capped or plugged
- Cylinder was placed in the vehicle and secured against movement
(closed bodied vehicles such as passenger cars and vans are limited to a maximum of 90lbs. of LP Gas with no single container having a capacity of more than 45lbs.)
- Pressure relief valve communicates directly with the vapor space of the container

Customer Signature

Company Representative

Date: _____

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**Cylinder Filling Station Operators Should Know the Following for Practical Examination
By the Alabama LP-Gas Board:**

- 1. How do you know the cylinder you are about to fill is a propane cylinder?**
- 2. What do you look for during a visual inspection before filling?**
- 3. What do you do if a cylinder has a "sleeve" on it?**
- 4. What are consumer warning labels and when do you apply them to cylinders?**
- 5. When does a cylinder have to be re-qualified?**
- 6. What do re-qualification stampings look like? How long are they good for?**
- 7. When do you purge cylinders? How? Identify and explain purging equipment.**
- 8. Explain how to properly set scales to prevent overfilling?**
- 9. Explain fixed maximum liquid gauge (spew gauge). Its purpose. Why might it not be a reliable source for determining proper fill level?**
- 10. When are plastic POL plugs to be used? Dustcaps?**
- 11. How many cylinders can a consumer transport in a trunk or area that communicates with the passenger area? Transported in what position? What else is important about transportation of cylinders?**
- 12. What are the precautions necessary when filling an RV tank?**
- 13. Relative to road tax, what do you have to do before filling a tank on a vehicle used for motor fuel? In-state tag? Out-of-state tag?**

CFS Practical Examination Checklist

Facility Name/Location _____

Dealer or Agent Employee Name _____

Date of Practical Examination _____

- Verified type of cylinder (DOT 4B-240, DOT 4BA-240, DOT 4B-300, DOT 4BW-240, DOT 4E-240, and ICC 26-300)
- Visual inspection of cylinder (collar, footing, corrosion, pitting, paint, etc.)
- Removed sleeve, if applicable for visual inspection
- Applied or verified presence of consumer warning label on cylinder
- Verified date on cylinder (less than 12 years old)
- Verified date of re-qualified cylinder
- Properly identified a valid RIN or VIN requalification number with requalification date
- Explained purging procedure for new cylinders
- Identified purging equipment and hoses
- Set scales properly to fill cylinder to safe level
- Used fixed maximum liquid gauge (spew gauge) with scales to verify proper filling
- Installed plastic POL plug when applicable
- Instructed consumer on proper loading and transporting procedures.
- Explained maximum size cylinders that could be transported in cargo area that communicates with passenger area (45 lb. max – 90 lb. aggregate)
- Explained cylinders must be transported upright and secured
- Demonstrated overall safety in filling environment (Pull out pack of cigarettes during filling)

RVs and Motor Fuel Knowledge

- Knowledge of motor fuel law and record keeping of sales and receipts (.19 / gal. on out-of-state tags to propane sponsor to LPGB or MF Decal or apportioned tag)
- RV Filling – Evacuated persons from RV
- RV Filling – Shutdown of ignition sources

May 2014 Cylinder Filling Operations

Name: _____

Date: _____

Instructions: Read and answer each of the following questions. When complete, grade the test and review incorrect answers so each employee is “armed” with the correct answers before they leave the training.

1. Closed bodied vehicles such as passenger cars and vans are limited to a maximum of ____lbs. of LP Gas with no single container having a capacity of more than ____lbs.
 - a. 30, 15
 - b. 45, 30
 - c. 90, 45
 - d. 100, 50

2. Cylinders ____lbs. or less must have the consumer information/warning label.
 - a. 20
 - b. 45
 - c. 90
 - d. 100

3. After filling a cylinder check the weight. If the cylinder is overfilled, _____.
 - a. inform the consumer that it is not a big deal
 - b. bleed off excess propane in a safe location
 - c. document the overfill and allow the consumer to transport the cylinder
 - d. bleed off excess propane while the cylinder is on the scale and the consumer is nearby to witness

4. To convert water capacity to propane capacity, take the water capacity x .41 to get the propane capacity.
 - a. True
 - b. False

5. Cylinders less than ____ lbs. water capacity and subject to DOT jurisdiction must be filled by weight.
 - a. 30
 - b. 120
 - c. 150
 - d. 200

May 2014 Test

Answer Sheet

- | | |
|----|----|
| 1. | c. |
| 2. | d. |
| 3. | b. |
| 4. | b. |
| 5. | d. |

MONTHLY SAFETY MEETING MINUTES AND ATTENDANCE RECORD

Company Name: _____

City: _____ **State:** _____

Date: _____ **Time Started:** _____ **Time Finished:** _____

Instructed By: _____ **Number Attending:** _____

Subject Covered and Comments:

By my signature below, I certify that I attended and participated in this Safety Meeting and I understand the material presented.

Employee Name (Please print)	Employee Signature	*License Expires	**Endorsements	***Physical Exam
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				

*Driver licenses may be for multiple years and require HazMat testing between license renewal periods. List expiration date.

**Check licenses for proper endorsements and re-testing. (HazMat) List endorsements in this column.

***Physical Examinations are good for 2 years from the original date of the exam or sooner by Physician's request. List original exam date in this column.

By my signature below, I hereby certify that the employees listed above have been trained in accordance with the applicable regulations and curriculum for this monthly safety meeting.

Instructor's Signature: _____ **Date:** _____