

November 2011 Safety Meeting

Cylinder Filling Operations

Many of you have told me that the winter 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 2011 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.

EXAMPLE OF AN ALUMINUM CYLINDER

Convert water capacity to propane capacity
Plus tare weight and hose/nozzle weight
Correct weight to set your scales

80lbs. w.c. x .42 = 33.6lbs. propane
33.6lbs. + 24.4lbs. + 5lbs = 63lbs.
63lbs.

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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Date: _____

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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

November 2011 Test

Answer Sheet

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