# DOT-SP 14272

## An Informational Guide to LPG Volumetric Meter Prover Assemblies

Prover vessels with capacities of 20 to 100 water gallons

IMPORTANT NOTICE | This document summarizes Arrow Tank and Engineering's interpretation of selected requirements associated with DOT-SP 14272. It is provided for general informational purposes only and is not a substitute for the current special permit, applicable regulations, agency direction, or qualified compliance advice. Requirements may change. Users must review the current permit and verify all requirements applicable to their equipment, shipment, and operation. Before relying on this information, confirm the permit's current status, revision, conditions, and applicability to the specific prover assembly and transportation activity.

## 1. Equipment overview

Arrow Tank and Engineering LPG prover trailer assemblies are non-DOT specification packages consisting of volumetric meter prover vessels with capacities ranging from 20 to 100 water gallons. The vessels are constructed and "U" stamped in accordance with ASME Boiler and Pressure Vessel Code, Section VIII, Div 1, with a maximum allowable working pressure (MAWP) of 250 psig.

The following discussion reflects Arrow Tank and Engineering's interpretation of the cited provisions as they relate to these LPG volumetric prover assemblies why the Special Permit is required for transportation in commerce of liquefied petroleum gas residue vapors.

## 2. Classification and applicability

Under the definitions cited below, prover vessels up to 100 water gallons are non-bulk packages and are not cargo tanks or cargo tank motor vehicles.

- A cargo tank is defined as a bulk packaging.
- A bulk packaging has a maximum capacity greater than 119 gallons for a liquid receptacle or a water capacity greater than 1,000 pounds.
- A cargo tank motor vehicle is a motor vehicle with one or more cargo tanks permanently attached to, or forming an integral part of, the vehicle.

*Reference: 49 CFR § 171.8 — Definitions and abbreviations*

Exemptions in 49 CFR § 173.5a do not apply to LPG volumetric prover vessels up to 100 gallons. The section identifies exemptions for cargo tanks and mechanical displacement meter provers; volumetric prover vessels are distinct from mechanical displacement provers.

*Reference: 49 CFR § 173.5a — Oilfield service vehicles, mechanical displacement meter provers, and roadway striping vehicles exceptions*

## 3. DOT SP-14272: SAFETY CONTROLS AND MEASURES

## a. PACKAGING

| Item | Requirement described in this guide |
|---|---|
| **Special permit marking** | "DOT-SP 14272" plainly and durably marked on both sides, with characters at least 2 inches high on a contrasting background. |
| **Identification number** | "1075" displayed on an orange identification panel; source material specifies 6.3 × 15.7 inches. |
| **Hazard label** | "Flammable Gas 2" diamond displayed on both sides. |
| **Proper shipping name** | "PROPANE" displayed on both sides. |

## Package classification

Packaging: Packaging prescribed is a non-DOT specific packaging described as volumetric meter prover tank mounted on a trailer. The meter prover has a water capacity of 20 to 100 gallons and is designed, and “U” stamped in accordance with Section VIII, Division of the ASME Code. The maximum allowable working pressure (MAWP) is 250 psig. The meter conforms in accordance with the Arrow Tank and Engineering brochure and technical specification submitted with the application of file with the Office of Hazardous Materials Safety.

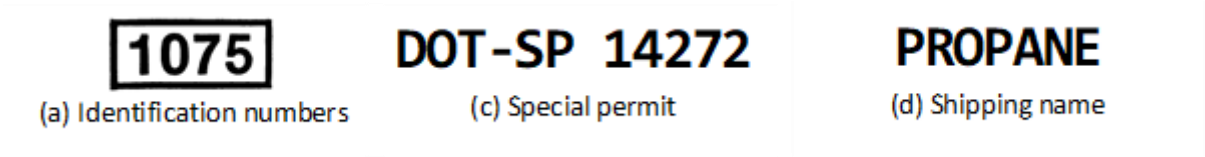
## Package Markings

The Prover vessels require markings pursuant to Subpart D – Marking

Each person who offers a hazardous material for transportation shall mark each package, freight container, and transport vehicle containing the hazardous material in the manner required by this subpart.

*Reference: 49 CFR §§ 172.300 — Marking applicability*

Examples 172.302 General marking requirements for bulk packaging:




## Package Labels

The Prover vessels require labels pursuant to Subpart E – Labeling

Each person who offers for transportation or transports a hazardous material in a non-bulk package shall label the package

*Reference: 49 CFR §§ 172.400 — Labeling applicability*

Example 172.417 (a) Except for size and color, the FLAMMABLE GAS label must be as follows:



### Examples of prover assembly markings




*Illustrative photographs of 25-gallon and 100-gallon prover trailer assemblies.*

## b. TESTING

Each volumetric meter prover tank must be periodically tested and inspected as specified in 173.a(b)(4) through (b)(9) except that pressure test must be performed at a pressure equal to 1.5 time the MWAP of the vessel or 375 psig.

Prover vessels under DOT SP-14272 are subject to the following tests and inspection

| Item | Requirement described in this guide |
|---|---|
| **"P" pressure test** | Every 5 years at 375 psig (1.5 times the 250-psig MAWP). Mark month and year on the side of the vessel or largest piping component, using characters at least 1.25 inches high on a contrasting background. |
| **"V" visual inspection** | Annually. Mark the inspection month and year on the side of the vessel or largest piping component, using characters at least 1.25 inches high on a contrasting background. |

## c. OPERATIONAL CONTROLS

- Immediately before highway transportation, depressurize the prover and drain all liquid.
- The bumper for the trailer must meet the requirements of 49 CFR 178.345-8(d) and 393.86.
- During transportation, residue-vapor pressure in the meter prover may not exceed 90% of the vessel MAWP.

# 4. DOT SP-14272: SPECIAL PROVISIONS

- Maintain a current copy of DOT-SP 14272 at the facility where the package is offered or reoffered for transportation.
- Drivers must be instructed as to necessary safeguards and proper procedures in the event of unusual delay, fire, or accident.
- Prover tank must be plainly and durably marked DOT SP-14272 on both sides in letters of at least 2 inches high on a contrasting background

# 5. DOT SP-14272: ADDITIONAL OPERATING AND TRANSPORTATION REQUIREMENTS

- Motor vehicle mode of transportation authorized.
- Carry a current copy of the special permit aboard each motor vehicle used to transport a package covered by the permit.
- Compliance with all terms and conditions prescribe in the special permit and HMR, 49 CFR Parts 171-180
- Registration required by 107.601 er seq., when applicable
- Each Hazmat employee who performs a function subject to the permit must receive training on the requirements and conditions of the special permit in addition to the training required by 172.200 through 172.704
- Cannot use, apply or display permit number if expired of no longer in effect.
- Shipping paper

### Shipping paper information

Shipping-paper description:

**Residual last contained**
**UN1075**
**PROPANE**
**2.1**

# 6. DOT SP-14272: REPORTING REQUIREMENTS

- Shipments or operations conducted under the special permit are subject to Hazardous Materials Incident Reporting in 49 CFR 171.15 – Immediate notice of certain hazardous material incidents, and 171.16 – Detailed hazardous material incident reports. In addition, grantee(s) of this special permit must notify the Associate Administrator for Hazardous Material Safety, in writing of any incident involving a package, shipment or operation conducted under terms of this special permit.

# 7. Regulatory references

- 49 CFR § 171.8 — Definitions and abbreviations
- 49 CFR § 173.5a — Oilfield service vehicles, mechanical displacement meter provers, and roadway striping vehicles exceptions
- 49 CFR § 172.300 — Marking applicability
- 49 CFR § 172.302 — General marking requirements for bulk packaging
- 49 CFR § 172.400 — General labeling requirements
- 49 CFR § 172.417 — Class 2.1 hazard label
- 49 CFR § 172.504(d) — General placarding requirements
- 49 CFR § 178.345-8 — Accident damage protection
- 49 CFR § 393.86 — Rear impact guards and rear end protection
- DOT Special Permit 14272