



U.S. Department  
of Transportation

**Pipeline and Hazardous  
Materials Safety  
Administration**

**February 14, 2022**

1200 New Jersey Avenue, SE  
Washington, DC 20590

DOT-SP 7235  
(TWENTY-SIXTH REVISION)

**EXPIRATION DATE: 2025-12-31**

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: Luxfer Inc.  
Riverside, CA
  
2. PURPOSE AND LIMITATIONS:
  - a. This special permit authorizes the manufacture, marking, sale and use of a non-DOT specification fiber reinforced plastic (FRP) hoop wrapped (HW) cylinders for use in transporting certain Division 2.2 materials authorized under this special permit. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
  
  - b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce. The safety analyses did not consider the hazards and risks associated with consumer use, use as a component of a transport vehicle or other device, or other uses not associated with transportation in commerce.
  
  - c. In accordance with 49 CFR 107.107(a) party status may not be granted to a manufacturing permit. These packagings may be used in accordance with 49 CFR 173.22a.
  
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
  
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.302a(a)(1) and 173.304a(a)(2) in that non-DOT specification cylinders are not authorized, except as specified herein.

5. BASIS: This special permit is based on the application of Luxfer Inc., dated January 3, 2022 and submitted in accordance with § 107.109.
6. HAZARDOUS MATERIALS (49 CFR 172.101):

<b>Hazardous Materials Description</b>			
<b>Proper Shipping Name</b>	<b>Hazard Class/ Division</b>	<b>Identification Number</b>	<b>Packing Group</b>
Air, compressed	2.2	UN1002	N/A
Argon, compressed	2.2	UN1006	N/A
Carbon dioxide	2.2	UN1013	N/A
Helium, compressed	2.2	UN1046	N/A
Nitrogen, compressed	2.2	UN1066	N/A
Nitrous Oxide, compressed	2.2	UN1070	N/A
Oxygen, compressed	2.2	UN1072	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING: Packaging prescribed is a non-DOT specification fiber reinforced plastic (FRP) hoop wrapped (HW) cylinder made in accordance with Luxfer USA Limited's technical data submitted with their application, on file with the Office of Hazardous Materials Safety (OHMS), and conforming with DOT FRP-2 Standard Revision 1 (§ 178.BB) dated January 4, 1987, except as follows:

§ 178.BB-5 Authorized material and identification of material.

(a) Aluminum liner must be 6351 or 6061 alloy and T6 temper, except that after June 1989, liner material must be 6061 alloy.

(b) \* \* \*

(c) Resin system must be epoxy or modified epoxy type. Resin system must be tested on sample coupons representative of the composite over-wrap in accordance with ASTM D-2344-67 for water boil shear test, and have a minimum shear strength of 3,000 PSI.

§ 178.BB-15 Marking.

(a) Each cylinder must be permanently marked (other than stamping the composite) in the composite wrap on the side near the end of the cylinder containing the valve outlet, except that cylinders manufactured prior to October 1, 1982, may be marked as follows:

“DOT-E 7235” followed by the service pressure and the inspector's mark and must be located in the composite wrap. Other required markings must be in the composite wrap or on the metal shoulder, top head or neck of the cylinder.

b. TESTING: Each cylinder must be reinspected and hydrostatically retested every three years in accordance with § 180.209 as prescribed for DOT 3HT cylinders, except that the rejection elastic expansion does not apply and permanent volumetric expansion for cylinders made after July 1, 1979, must not exceed 5 percent of total volumetric expansion at test pressure. Retest dates must be stamped into the metal of the cylinder shoulder near the original test date.

c. OPERATIONAL CONTROLS:

(1) Cylinders must not be used for underwater breathing purposes.

(2) Cylinders used in oxygen service must conform to §§ 173.302(b)(1) through (b)(4).

(3) A cylinder is not authorized 15 years from the date of manufacture as marked on the cylinder.

(4) A cylinder that has been subjected to fire may not be returned to service.

(5) Cylinders must be packaged in accordance with § 173.301(a)(9).

(6) All cylinders marked with a 4500 psi service pressure must be fitted with a steel neckring, supplied by Luxfer, in accordance with Luxfer instructions and specifications contained in "Retrofit and Shop Procedures R2050" dated October 10, 1984. The visual inspection and neckring installation must be performed by a facility identified to OHMS and qualified to perform all operations in R2050, as determined by an independent inspection agency approved under § 107.803. Each inspection and retrofit facility must be reinspected by the independent inspector at least once every 3 months.

- (7) Cylinders marked with 4500 psi service pressure which are not equipped with neckrings must be removed from service.
- (8) No new construction of cylinders having marked service pressures higher than 3000 psi is authorized under this special permit.
- (9) Cylinders used in nitrous oxide service must conform to §§ 173.302(b)(1) through (b)(4).

8. SPECIAL PROVISIONS:

- a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this special permit for the transportation of the hazardous materials specified in paragraph 6. only in conformance with the terms of this special permit.
- b. A person who is not a holder of this special permit, but receives a package covered by this special permit, may reoffer it for transportation provided no modifications or changes are made to the package and it is offered for transportation in conformance with this special permit and the HMR.
- c. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.
- d. Each packaging manufactured under the authority of this special permit must be marked with a registration symbol designated by the Office of Hazardous Materials Safety for a specific manufacturing facility.
- e. A current copy of this special permit must be maintained at each facility where the package is manufactured under this special permit. It must be made available to a DOT representative upon request.
- f. Transportation of oxygen is only authorized when in accordance with § 175.501.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, cargo aircraft only, and passenger-carrying aircraft (see paragraph 8.f. for restrictions).

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel or aircraft used to transport packages covered by this special permit. The shipper must furnish a current copy of this special permit to the air carrier before or at the time the shipment is tendered.

11. **COMPLIANCE:** Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
- o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
  - o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
  - o Registration required by § 107.601 et seq., when applicable.

Each “Hazmat employee”, as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) - 'The Hazardous Materials Safety and Security Reauthorization Act of 2005' (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term “exemption” to “special permit” and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

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

Issued in Washington, D.C.:



for William Schoonover  
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, East Building PHH-13, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at <https://www.phmsa.dot.gov/approvals-and-permits/hazmat/special-permits-search>. Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: ae