

January 16, 2015



U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 13230
(FIFTH REVISION)

EXPIRATION DATE: December 31, 2018

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: FIBA Technologies, Inc.
Littleton, MA
2. PURPOSE AND LIMITATIONS:
 - a. This special permit authorizes the manufacture, mark, sale and use of non-DOT specification cylinders conforming with all regulations applicable to a DOT Specification 3AA or 3AAX cylinder except as specified herein, for the transportation in commerce of the materials authorized by 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.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.302a and 173.304a in that non-DOT specification cylinders are not authorized except as specified herein.
5. BASIS: This special permit is based on the application of FIBA Technologies, Inc. dated December 17, 2014, submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Gases or mixtures of gases authorized in the HMR to be shipped in DOT-3AA and DOT-3AAX specification cylinders *	2.1 2.2 2.3	Various	N/A

* For Compressed natural gas see paragraph 7.c.(2).

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a non-DOT specification steel cylinder manufactured in stages by both domestic and non-domestic entities and stamped DOT-3AA or DOT-3AAX. The non-domestic entity (Dalmine) manufactured the pipe, formed the ends and heat-treated the semi-finished cylinder. Each cylinder must be in conformance with §§ 178.35 and § 178.37 as applicable, except as follows:

§ 178.35(c) *Duties of inspector.* The inspector was not present in the non-domestic manufacturing facility during the first phase of the cylinder's manufacture.

§ 178.35(f)(1)(i) Each cylinder must be stamped "DOT-SP 13230" in lieu of "DOT-3AA or DOT-3AAX" as appropriate.

b. TESTING - Each cylinder must be requalified as specified for a DOT-3AA or DOT-3AAX cylinder in § 180.209.

c. OPERATIONAL CONTROLS -

(1) Cylinders may be manifolded in accordance with § 173.301(g) and securely mounted on a motor vehicle.

(2) For the transportation of compressed natural gas the following additional requirements apply:

(i) CYLINDERS -

(A) The marked service pressure must be at least 1800 psig but not over 4000 psig.

(B) Each cylinder must be constructed of 4130X steel as specified in § 178.37(b) except that for cylinders with a marked service pressure greater than 2800 psig, the percent of sulphur and phosphorus content may not exceed 0.015% and 0.024% respectively.

(C) The ultimate tensile strength determined in accordance with § 178.37(k) may not exceed 126,000 psi.

(D) The yield strength to ultimate strength ratio may not exceed 86%.

(E) Requirements for Tensile and Hardness Tests.

(1) When the cylinders are heat treated in a batch furnace, two tensile specimens may be tested from one of the cylinders or a test ring from each batch. The lot size represented by these tests may not exceed 200 cylinders.

(2) When the cylinders are heat treated in a continuous furnace, two tensile specimens may be tested from one of the cylinders or a test ring from each four hours or less of production. The test lot based on this production period may not exceed 200 cylinders.

(3) Each specimen for the tensile test may be taken from the sidewall of a cylinder or from a ring which has been heat treated with the finished cylinder of which the specimen must be representative. The axis of the specimen must be parallel to the axis of the cylinder. Each cylinder or ring specimen for test must be of the same diameter, thickness, and metal as the finished cylinder they represent. A test ring must be at least 24 inches

January 16, 2015

long with ends covered during the heat treatment process so as to simulate the heat treatment process of the finished cylinder it represents.

(4) A test cylinder or test ring need represent only one of the heats in a furnace batch provided the other heats in the batch have previously been tested and have passed the tests and that such tests do not represent more than 200 cylinders from any one heat.

(5) After the final heat treatment, each cylinder must be hardness tested on the cylindrical surface. The hardness must not exceed HB 269. When the result of a hardness test exceeds the maximum permitted, two or more retests may be made; however, the hardness number obtained in each retest may not exceed the maximum permitted.

(6) The test results must conform to the requirements specified in § 178.37(1), paragraph c.(1)(v) above, and the additional requirements of this special permit.

(7) When the test results do not conform to the requirements specified, the cylinders represented by the tests may be reheat treated and the tests repeated.

(F) Ultrasonic Examination. After the hydrostatic test, the cylindrical section of each cylinder must be examined in accordance with ASTM Standard A-388-95. The ultrasonic examination scanning speed must be less than or equal to the speed at which an acceptable calibration was made. The equipment used must be calibrated by angle beam technique to detect a notch equal to five percent of the design minimum wall thickness. Any discontinuity indication greater than that produced by the five percent notch must be

January 16, 2015

cause for rejection of the cylinder unless the discontinuity is repaired in accordance with § 178.37.

(G) Drain tube: Each discharge end of the cylinder must be equipped with an internal drain tube.

(ii) GAS SPECIFICATION -

(A) Each cylinder must be filled only with non-corrosive compressed natural gas (scrubbed to remove acid gases) and may not contain any liquefied gas. The gas contained in the cylinder may not have more than:

(1) 0.5 lbs. of water per million cubic feet at standard temperature and pressure (STP) (60°F, 30 inches Hg).

(2) 0.1 grain of hydrogen sulfide per 100 cubic feet at STP as determined by ASTM D 2385-76 Test for Hydrogen Sulfide and Mercaptan Sulfur in Natural Gas (Cadmium-Sulfate Iodometric Titration Method).

(3) Total Soluble Sulfides other than H₂S or soluble sulfides must be less than 0.1 grain per 100 cubic feet at STP.

(4) One percent by volume of oxygen.

(5) Three percent by volume of carbon dioxide.

(6) Four percent total (including but not limited to items (4) & (5) of this paragraph) by volume of all non-hydrocarbon gases (excluding nitrogen).

(B) The shipper is responsible for establishing procedures to determine the composition and impurity level of the gas at each facility used for filling the cylinders, and to verify compliance with the

January 16, 2015

requirements of this special permit. Records of the gas composition and impurity levels must be maintained for three years.

(C) Cylinders that become contaminated with H₂S or soluble sulfides must be condemned.

(D) During any unloading operation each cylinder must be inclined to an angle that lowers the centerline of the cylinder at the discharge end to a point lower than any portion of the opposite end of the cylinder.

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 modification or change is 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 either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Special Permits and Approvals (OHMSPA) 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. MARKING -

(1) Each cylinder not stamped "DOT-SP 13230" at the time of manufacture as specified in paragraph 7.a. must be stamped "DOT-SP 13230" at the time of the next requalification. No cylinder described in paragraph 8.g. of this special permit may bear a DOT-Specification mark (ie. DOT-3AA) after it's next requalification. The DOT specification mark must be removed or obliterated.

(2) Each cylinder used for natural gas must be marked CNG immediately following and on the same line of the required DOT specification marking, example: DOT-SP 13230 CNG to signify the cylinder is suitable for compressed natural gas service when manufactured, inspected, tested and used as prescribed in this special permit.

(3) Each motor vehicle which contains cylinders manifolded in accordance with § 173.301(g) must be plainly marked on the curb side near the front, in letters at least 2 inches high on a contrasting background, "DOT-SP 13230".

g. The manufacture and use of the cylinders authorized under this special permit is limited to cylinders bearing the serials numbers provided by FIBA Technologies, Inc. and on file with the Office of Hazardous Materials Special Permits and Approvals.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, and cargo vessel.
10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel and motor vehicle used to transport packages covered by this special permit.
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, 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 Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

January 16, 2015

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590. Attention: PHH-31.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at

http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm

Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: SS/dl