

Department of Transportation
Hazardous Materials Regulation
Carriage by Public Highway
49 CFR 177.835 (g)

(g) No detonating primer may be transported on the same motor vehicle with any Class A or Class B explosive (except detonating primers). No detonator may be transported on the same motor vehicle with any Class A or Class B explosive (except detonators) unless—

[44 FR 70721, December 10, 1979, effective January 1, 1980]

(1) It is packed in a specification MC 201 (§ 178.318 of this subchapter) container, or

(2) It is packed and loaded in accordance with a method approved by the Department. One method approved by the Department is as follows:

(i) The detonators are in packagings as prescribed in §173.66 of this subchapter which in turn are loaded into suitable containers or separate compartments. Both the detonators and the container or compartment must meet the requirements of the Institute of Makers of Explosives Standard (IME Safety Library Publication No. 22).

[44 FR 70721, December 10, 1979, effective January 1, 1980]

Reference A

Reference B

Reference C

Reference A

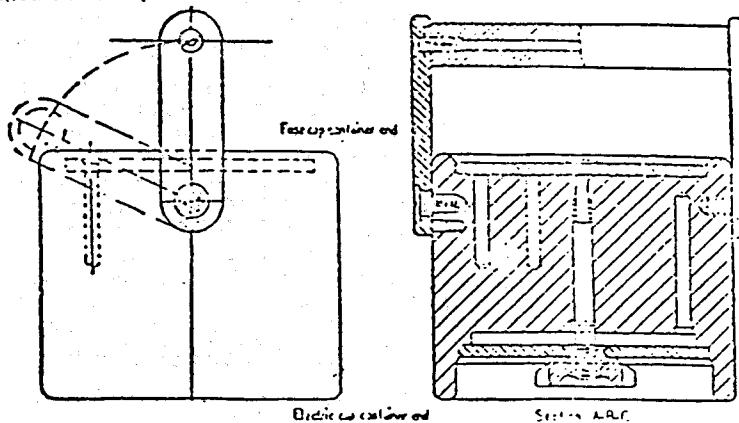
§178.318-2 Container.

(a) Every container for blasting caps, electric blasting caps, and percussion caps coming within the scope of this specification shall be constructed entirely of hard rubber, phenoiresinous or other resinous material, or other nonmetallic, nonsparking material, except that metal parts may be used in such locations as not in any event to come in contact with any of the caps. Space shall be provided so that each blasting cap of whatever nature may be inserted in an individual cell in the body of the container, into which each such cap shall snugly fit. There shall be provided no more than twenty (20) such cellular spaces. Space may be provided into which a plurality of percussion caps may be carried, provided that such space may be closed with a screw cap, and further provided that each or any such space is entirely separate from any space provided for any blasting cap. Each cellular space into which a blasting cap is to be inserted and carried shall be capable of being covered by a rotary cover so arranged as to expose not more than

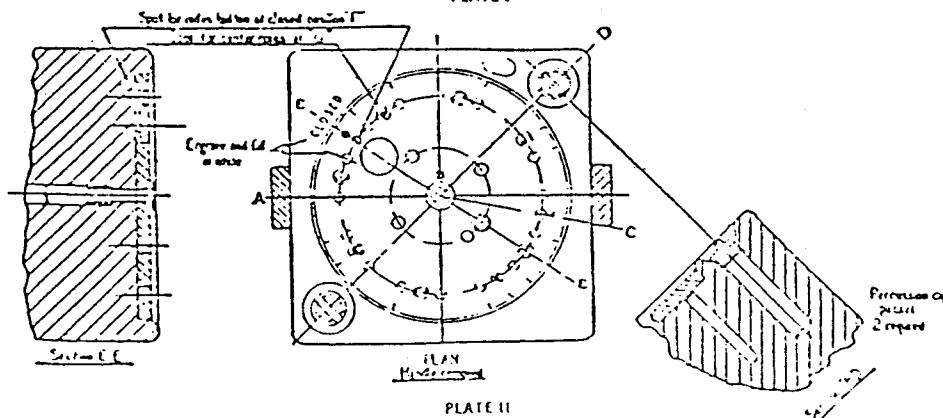
one cell at any time, and capable of rotation to such a place that all cells will be covered at the same time, at which place means shall be provided to lock the cover in place. Means shall be provided to lock in place the cover for the cells provided for the carrying of electric blasting caps. The requirement that not more than one cell be exposed at one time need not apply in the case of electric blasting caps, although spaces for such caps and blasting caps shall be separate. Sufficient annular space shall be provided inside the cover for such electric blasting caps that, when the cover is closed, there will be sufficient space to accommodate the wires customarily attached to such caps. If the material is of such a nature as to require treatment to prevent the absorption of moisture, such treatment shall be applied as shall be necessary in order to provide against the penetration of water by permeation. A suitable carrying handle shall be provided, except for which handle no part of the container may project beyond the exterior of the body.

[44 FR 70721, December 10, 1979, effective January 1, 1980]

(b) Exhibited in plates I and II are line drawings of a container for detonators and percussion caps, illustrative of the requirements set forth in §178.318-2(a).



BLASTING CAP CONTAINER
PLATE I



These plates shall not be construed as a part of this specification.

[44 FR 70721, December 10, 1979, effective January 1, 1980]

Reference B

§173.66 Detonators.

[44 FR 70721, December 10, 1979, effective January 1, 1980]

(a) Unless otherwise specified in this section, detonators must be packed in accordance with the following:

(1) They must be snugly packed in strong inside packagings.

(2) Inside packagings must be snugly packed in an outside packaging specified in paragraph (e) of this section.

(3) For devices containing no more than 10 grams of explosive (excluding ignition and delay charges)—

(i) No more than 50 devices may be packed in one inside packaging;

(ii) No more than 500 devices may be packed in one outside packaging; and

(iii) The gross weight of the completed package may not exceed 150 pounds or the gross weight permitted by the specification for the outside packaging used, whichever is less.

(b) Detonators that are blasting caps (including percussion activated) or delay connectors in metal tubes, must be packed as specified in paragraph (a) of this section. In addition—

(1) They must be packed in inside packagings with the open ends of any device covered with an appropriate cushioning material;

(2) Inside packagings must be snugly packed in intermediate packagings consisting of cartons, or wrappings made of paper, plastic, or pasteboard;

(3) Intermediate packagings must be separated from the outside packaging by at least 1 inch of cushioning material; and

(4) For devices containing no more than 3 grams of explosive (excluding ignition and delay charges)—

(i) No more than 110 devices may be packed in one inside packaging; and

(ii) No more than 5,000 devices may be packed in one outside packaging.

(c) Detonators that are electric blasting caps, delay connectors in plastic sheaths, or blasting caps with empty plastic tubing, must be packed as specified in paragraph (a) of this section, except that—

(1) Devices containing no more than 3 grams of explosive (excluding ignition

and delay charges) may be packed as follows:

(i) No more than 100 devices may be packed in one inside packaging; and

(ii) No more than 1,000 devices may be packed in one outside packaging.

(2) Inside packaging is not required for electric blasting caps when packed in inside pasteboard tubes, or when their leg wires are wound on spools with the caps either placed inside the spool or securely taped to the wire on the spool, so as to restrict freedom of movement of the caps and to protect them from impact forces.

(d) Detonators that are blasting caps with safety fuse, blasting caps with metal clad mild detonating cord, blasting caps with detonating cord, or blasting caps with shock tubes, must be packed in accordance with the requirements of paragraph (a) of this section, except that—

(1) The blasting caps are not required to be attached to the safety fuse, metal clad mild detonating cord, detonating cord, or shock tube; and

(2) Inside packagings are not required if the packing configuration restricts freedom of movement of the caps and protects them from impact forces.

(e) Detonators with or without inside packaging as provided for in paragraphs (a) through (d) of this section, must be packed in the following outside packagings.

(1) Specification 14, 15A, 16A, or 19B (§§178.165, 178.168, 178.185, 178.191 of this subchapter). Wooden boxes.

[46 FR 49889, Oct. 8, 1981, effective July 1, 1982, immediate compliance authorized]

(2) DOT Specification 12H, 23F, or 23H (§§178.209, 178.214, 178.219 of this subchapter) fiberboard box.

(f) Each outside packaging containing detonators must be plainly marked "DETONATORS—HANDLE CAREFULLY" and bear the appropriate explosives label specified in §172.411 of this subchapter.

(g) Devices subject to this section which have been approved by an agency listed in §173.86(b) before January 1, 1980, may be transported subject to the conditions of the approval and in accordance with the regulations in effect on October 31, 1979, until December 31, 1984.

IME STANDARD

FOR THE SAFE TRANSPORTATION OF CLASS C DETONATORS (BLASTING CAPS) IN A VEHICLE WITH CERTAIN OTHER EXPLOSIVES

Reference C

IME SAFETY LIBRARY PUBLICATION NO. 22

- c. Packaging, Labeling and Marking
 - 1. Packaging must be in accordance with the Hazardous Materials Regulations of the U.S. Department of Transportation.
 - 2. Notwithstanding 1. above, 1,000 or less Class C detonators (blasting caps) may be transported in an IME container when packaged in cartons or tubes only as specified in 49 CFR, Section 173.66 without a DOT specification outside container.
 - 3. When an IME container that is an integral part of the vehicle body, or is permanently attached to a motor vehicle, is used to transport Class C detonators (blasting caps) in cartons or tubes only as authorized in 2. above, and the vehicle contains any quantity of Class A or Class B Explosives and is placarded accordingly, labeling and markings of the IME container holding the Class C detonators (blasting caps) is not required.

- d. Use of IME Container or Compartment
 - In the combined transportation of Class C detonators (blasting caps) and Class A or Class B Explosives, either the Class C detonators (blasting caps) or the Class A or Class B Explosives may be transported in the IME container or compartment.

I. General

Class C detonators (blasting caps) and Class A or Class B explosives may be transported together on a vehicle using IME containers or compartments under the following conditions:

- a. Products
 - 1. As used in this standard, Class C detonators (blasting caps) include detonators approved for transportation as Class C explosives by the U.S. Department of Transportation (DOT).
 - 2. As used in this standard, Class A or Class B explosives include all materials so described by regulations of the U.S. Department of Transportation in 49 CFR Part 173. As used, Class A or Class B explosives do not include initiating explosives (e.g.: Class A detonators) and any explosives forbidden by the U.S. Department of Transportation in 49 CFR, Sections 172.101 and 173.51.
 - b. IME Containers or Compartments
 - 1. A portable IME container placed within and readily removable from the cargo-carrying space of the vehicle.
 - 2. An IME container securely attached:
 - a) Above the cab of the vehicle (see Figure 1, Appendix A).
 - b) To the vehicle frame under the cargo space (see Figure 2, Appendix A).
 - 3. A built-in IME compartment in the cargo space of the vehicle (see Appendix B).
- 241 FW 4
Appendix 1
Page 4 of 7

- c. The laminated materials must be securely bound together by water-proof adhesive or other equally effective means.

d. The ~~steel~~ joints of laminations must be secured by continuous fillet welds.

e. All exterior surfaces of the IME container or compartment must be constructed so as to prevent contact of contents with any sparking metal.

f. There must be direct access to the IME container or into an IME compartment from outside the vehicle.

g. Each IME container or compartment must have a snug-fitting continuous piano-type hinged lid or door and be equipped with a locking device.

h. Without permitting direct access to contents under normal conditions, the locking or hinging mechanisms must permit at least one edge of the lid or door to rise or move outward at least $\frac{1}{2}$ -inch when subjected to internal pressure.

i. The exterior of the IME container or compartment must be weather-resistant.

j. As an alternative to the construction requirements shown in paragraph b, above, an IME container for use only as illustrated in Appendix A may be constructed as follows:

1. The top, lid or door, sides and bottom of each IME container must be of laminate construction consisting of A/C grade or better exterior plywood, solid hardwood, asbestos board or sheetrock and sheet metal. In order of arrangement, from inside to outside, the laminate must consist of the following with the minimum thickness of each lamination as indicated: $\frac{1}{4}$ -inch plywood, 1-inch solid hardwood, $\frac{1}{2}$ -inch plywood, $\frac{1}{2}$ -inch sheetrock or $\frac{1}{4}$ -inch asbestos board, and 22-gauge sheet metal constructed inside to outside in that order. See Appendix D for details of laminate construction.

2. The hardwood must be fastened together with wood screws, the $\frac{1}{2}$ -inch plywood must be fastened to the hardwood with wood screws, the inner $\frac{1}{4}$ -inch plywood must be fastened to the hardwood with adhesive and the 22-gauge sheet metal must be attached to the exterior of the IME container with screws.

III. Identification

The interior surface of lid or door of an IME container or compartment must be marked in letters and numbers at least $\frac{1}{2}$ -inch high as follows:

BARRIER LAMINATE
MEETS IME SLP #22

APPENDIX A **PERMANENTLY MOUNTED IME CONTAINERS**

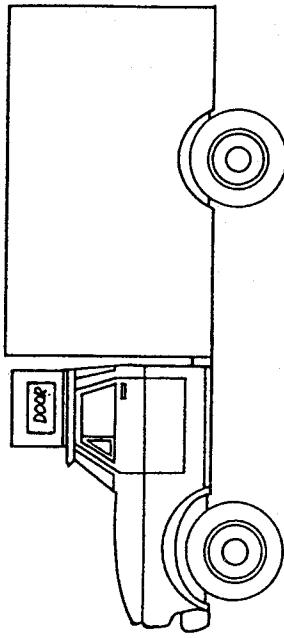


FIGURE 1

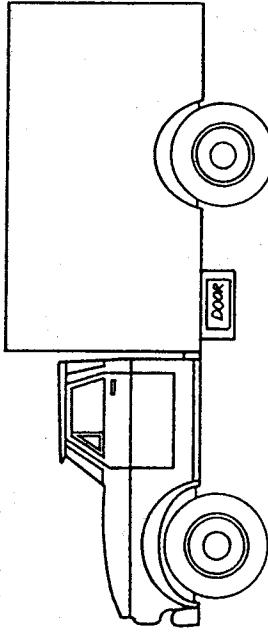


FIGURE 2

NOTE: THE CONFIGURATIONS SHOWN IN FIGURES 1 AND 2 ARE EQUALLY APPLICABLE TO MULTI-AXLE AND "CAB-OVER" VEHICLES.

APPENDIX B
IME COMPARTMENTS

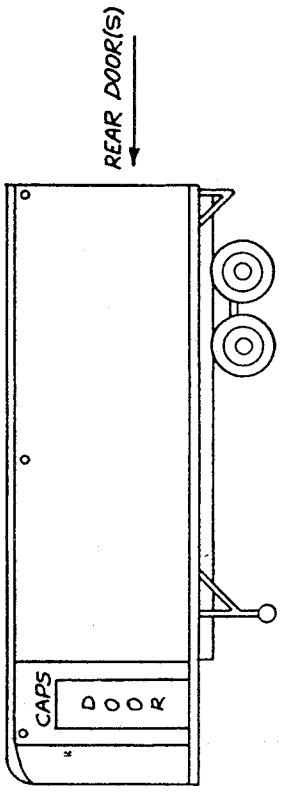


FIGURE 1

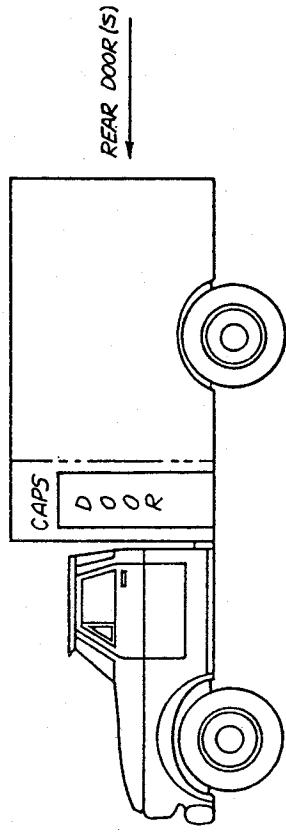


FIGURE 2

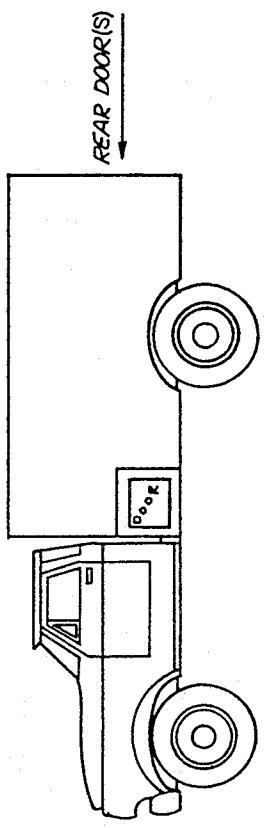
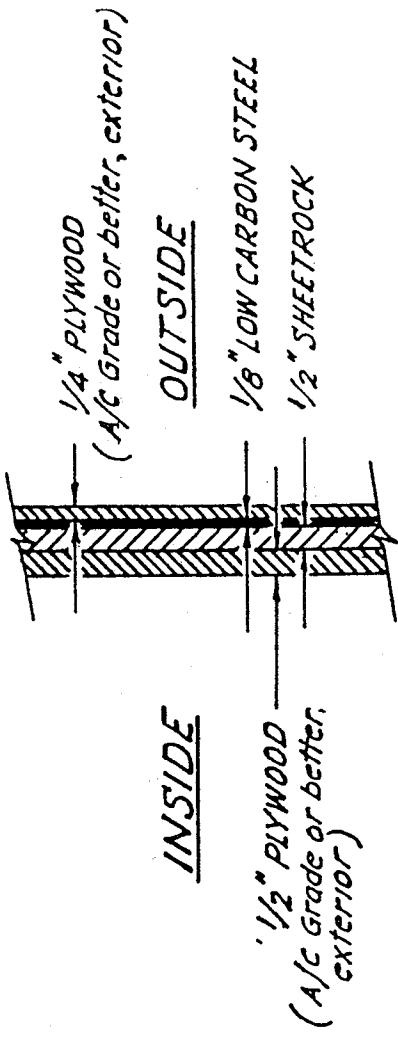


FIGURE 3

NOTE: THE CONFIGURATIONS SHOWN IN FIGURES 2 AND 3 ARE EQUALLY APPLICABLE TO MULTI-AXLE AND "CAB-OVER" VEHICLES.

APPENDIX C

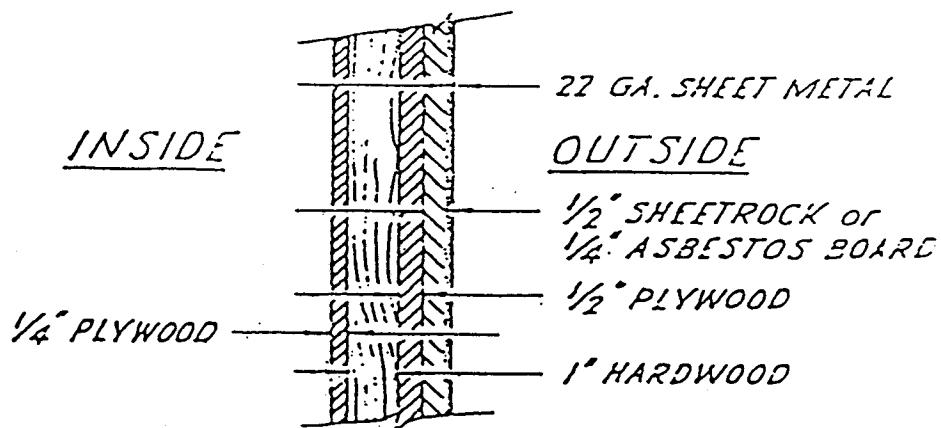


DETAIL

of
BARRIER LAMINATE CONSTRUCTION
FOR: IME Container or compartment as described in
Part II Paragraph b.

USE: As illustrated in Appendix A and B

APPENDIX D



DETAIL
of
BARRIER LAMINATE CONSTRUCTION
FOR: IME Container as described in Part II Paragraph J
USE: As illustrated in Appendix A. ONLY