



# Guideline for Transporting Detonators with Other Explosives

February 2014

The new *Explosives Regulations, 2013* now allow up to 20 000 detonators to be transported with other explosives, however, they must be stored so that they do not ignite the other explosives being transported. While the regulation does not prescribe how this must be done, this guideline has been developed to help meet the intent of the regulation.

## 1. REGULATION APPLYING WHEN TRANSPORTING DETONATORS

*192. (1) When detonators are to be transported in a vehicle that contains other explosives, the shipper and the carrier must ensure that no more than 20 000 detonators will be transported with the other explosives. They must also ensure that*

*(a) in the case of a vehicle that contains no more than 2 000 kg of explosives, the detonators are stowed apart from the other explosives so that an explosion of one or more detonators will not ignite any of the other explosives; and*

*(b) in the case of a vehicle that contains more than 2 000 kg of explosives, the detonators are stowed in a container in or compartment of the vehicle that is fully enclosed, cannot be accessed from the portion of the vehicle that contains the other explosives and will prevent the detonators from exploding during a fire for at least one hour.*

## 2. HOW TO MEET THE INTENT OF THIS REGULATION

### 2.1 Under 2000 kg NEQ

2.1.1 ERD will accept that a barrier built prior to February 1<sup>st</sup>, 2014 and as described here is acceptable to meet 192. (1)(a):

*“The detonators and electric detonators are separated from other explosives by a solid partition of wood 15 centimetres thick and extending at least 15 centimetres above the highest level to which explosives are packed in the vehicle.”*

2.1.2 Detonators classified as 1.4, in their original packaging and separated by at least 30 cm from other explosives would be regarded as unlikely to ignite any other explosives.

2.1.3 For detonators not classed as 1.4 just air separation would not normally be regarded as sufficient because detonators tend to get thrown about as they detonate and detonator delays may mean that a thrown detonator may not detonate until after it has landed. A physical barrier of inert goods between detonators and other explosives, such as one or two rows of boxes, would normally be regarded as sufficient for protecting explosives from the detonators.

2.1.4 ERD accepts that steel or aluminum day box would protect explosives from detonators when constructed with walls made from an outer cladding of 6mm metal and 12mm plywood inner lining, or equivalent.

- 2.1.5 Any separation or barrier, supported by test data showing that the detonators will not initiate the rest of the explosives, is acceptable.
- 2.1.6 Any box suitable for transporting detonators with 2000 kg of other explosives will protect the other explosives. The details of these are given below.

## **2.2 2000 kg NEQ and Over**

- 2.2.1 An IME22 box built to meet the standards set out in the *Institute of Makers of Explosives' Safety Publication No. 22* and mounted as required in 192.(1)(b);
- 2.2.2 Any box tested, and the results provided to and accepted by Explosives Regulatory Division (ERD), that shows it will protect detonators from fire for a period of one hour.
- 2.2.3 A Schedule IV detonator box built and mounted prior to February 1<sup>st</sup>, 2014 is acceptable to meet 192.(1)(b); or
- 2.2.4 A box built to the specifications in section 3.0.

## **3. DETAILS OF SUITABLE BOX FOR TRANSPORTING DETONATORS**

### **3.1 Construction**

- 3.1.1 The container or compartment shall provide for total enclosure of the electric detonators;
- 3.1.2 There shall be no access to the contents of the container or compartment from the inside of the cargo compartment of the vehicle;
- 3.1.3 The top, lid or door, sides and bottom of the container or compartment shall form a laminate barrier constructed from inside to outside in the following order:
  - a) 14 mm (1/2-inch) exterior type fir plywood, good two sides (G2S);
  - b) 25 mm (1-inch) rigid fiberglass insulation with a minimum density of 5pcf (pounds per cubic foot) and a flame spread rating of 25 or less as tested in accordance to ULC-S10. (AF 705 (6pcf) or AF 707 (7pcf) meets this requirement);
  - c) 1.9 mm (0.075-inch) mild steel plate; and
  - d) 14 mm (1/2-inch) exterior type fir plywood, good two sides (G2S).
- 3.1.4 The laminations of the container or compartment shall be bonded together by a suitable adhesive, rivets or other equally effective means;
- 3.1.5 The mild steel plate referred to in paragraph (3)(c) shall be overlapped or continuously welded at all joints and seams;
- 3.1.6 The door or lid of the container or compartment shall:
  - a) fit snugly;
  - b) have a continuous piano-type hinge or at least three hinges; and
  - c) be equipped with a locking device.
- 3.1.7 Interior surfaces of the container or compartment shall have a smooth finish and be free from any exposed sparking metal; and
- 3.1.8 A container or compartment mounted outside the cargo compartment of the vehicle shall be:

- a) completely covered with a sheet metal of minimum thickness 0.75 mm (22 gauge);
- b) protected from missiles by a suitable guard mounted between the container and the wheels; and
- c) separated from any part of the exhaust system by at least 7.5 cm (3 inches).

### **3.2 Marking**

- 3.2.1 The interior surface of each laminate construction of the container or compartment shall be marked in letters and numbers at least 14 mm (1/2-inch) high as follows:

#### **BARRIER LAMINATE**

## **4. LOCATION AND MOUNTING**

- 4.1 A container may be securely fixed or mounted in one of the following locations if no part of the container extends beyond the overall length or width of the vehicle or projects below the road clearance allowance;
- a) within the cargo compartment with a separate access door to the container in the side of the cargo compartment;
  - b) between the cab and the cargo compartment;
  - c) to the underside of the vehicle between the cab and the rear wheels of the vehicle and not projecting below the road clearance allowance; or
  - d) above the cab of the vehicle.
- 4.2 A compartment for detonators may be constructed within the forward end of the cargo compartment of the vehicle with a separate access door to the detonator compartment in the side of the cargo compartment.

If you have any questions, the Explosives Regulatory Division can be reached at the coordinates below.

#### **Pacific Region: BC + YT**

1500 - 605 Robson St.  
Vancouver, BC  
V6B 5J3  
Tel.: 604-666-0366  
Fax: 604-666-0399  
ERDpacific@nrcan.gc.ca

#### **Western Region: AB + SK + NT**

214 - 755 Lake Bonavista SE  
Calgary, AB  
T2J 0N3  
Tel.: 403-292-4766  
Fax: 403-292-4689  
ERDwestern@nrcan.gc.ca

#### **Central Region: ON + MB**

580 Booth St. 10<sup>th</sup> Floor  
Ottawa, ON  
K1A 0E4  
Tel.: 613-948-5187  
Fax: 613-948-5195  
ERDcentral@nrcan.gc.ca

#### **Eastern Region: QC + NU + Atlantic**

2050 Girouard W - Box 100  
St. Hyacinthe, QC  
J2S 7B2  
Tel.: 450-773-3431  
Fax: 450-773-6226  
ERDeastern@nrcan.gc.ca

#### **Headquarters:**

580 Booth St. 10<sup>th</sup> Floor  
Ottawa, ON  
K1A 0E4  
Tel.: 613-948-5200  
Fax: 613-948-5195  
ERDmms@nrcan.gc.ca