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**PART 5**

**MEANS OF CONTAINMENT**

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## MEANS OF CONTAINMENT

### **Definitions**

*SOR/2008-34*

*Definitions for the following terms, used in this Part, are provided in Part 1, Coming into Force, Repeal, Interpretation, General Provisions and Special Cases:*

<i>accidental release</i>	<i>handling</i>	<i>railway vehicle</i>
<i>aerosol container</i>	<i>IMDG Code</i>	<i>road vehicle</i>
<i>aircraft</i>	<i>IMDG Code, 29th Amendment</i>	<i>safety requirements</i>
<i>capacity</i>	<i>SOR/2002-306</i>	<i>safety standards</i>
<i>Category A</i>	<i>import</i>	<i>ship</i>
<i>Category B</i>	<i>infectious substance</i>	<i>small means of containment</i>
<i>certification safety mark</i>	<i>in standard</i>	<i>standardized means of containment</i>
<i>49 CFR</i>	<i>in transport</i>	<i>subsidiary class</i>
<i>class</i>	<i>large means of containment</i>	<i>substance</i>
<i>compatibility group</i>	<i>liquid</i>	<i>tube</i>
<i>consolidation bin</i> <i>SOR/2014-159</i>	<i>means of containment</i>	<i>Type 1A means of containment</i>
<i>culture</i>	<i>means of transport</i>	<i>Type 1B means of containment</i>
<i>cylinder</i>	<i>net explosives quantity</i>	<i>Type 1C means of containment</i>
<i>dangerous goods</i>	<i>offer for transport</i>	<i>UN Recommendations</i>
<i>flash point</i>	<i>packing group</i>	<i>UN standardized means of containment</i>
<i>gas</i>	<i>person</i>	
<i>gross mass</i>	<i>public safety</i>	

### **5.1 Selecting and Using Means of Containment**

- (1) A person must not handle, offer for transport, transport or import dangerous goods in a means of containment unless the means of containment is required or permitted by this Part to be used for the transportation of the dangerous goods.
- (2) A person must not handle, offer for transport or transport dangerous goods in a standardized means of containment unless the standardized means of containment is in standard.
- (3) A person must not handle, offer for transport or transport dangerous goods in a means of containment that is required or permitted by this Part unless the means of containment is designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety.

*SOR/2008-34*

## **5.2 Requirements for a Standardized Means of Containment to Be in Standard**

A standardized means of containment is in standard with a specific safety standard if it has displayed on it the certification safety marks required by the standard and

- (a) was in compliance with the requirements of the standard when each certification safety mark was first displayed; and
- (b) remains in compliance with the requirements of the standard that had to be complied with when each certification safety mark was first displayed.

## **5.3 Certification Safety Marks on a Means of Containment**

Any mark required by a safety standard is a certification safety mark and must be visible and legible when it is displayed on a means of containment.

*Under section 8 of the Act, a person must not sell, offer for sale, deliver, distribute, import or use a standardized means of containment unless it has displayed on it all the applicable prescribed safety marks.*

## **5.4 Loading and Securing**

A person must load and secure dangerous goods in a means of containment and must load and secure the means of containment on a means of transport in such a way as to prevent, under normal conditions of transport, damage to the means of containment or to the means of transport that could lead to an accidental release of the dangerous goods.

## **5.5 Filling Limits**

- (1) A person filling a means of containment with dangerous goods must not exceed the maximum quantity limit specified in a safety standard or safety requirement applicable to that means of containment.
- (2) If the maximum quantity limit for a means of containment is not specified in a safety standard or safety requirement, the person filling the means of containment with dangerous goods
  - (a) must not exceed the maximum quantity limit established by the manufacturer for the means of containment; and
  - (b) must ensure that the means of containment could not become liquid full at any temperature that is less than or equal to 55°C.

*SOR/2012-245*

### **5.5.1 Repealed SOR/2015-100**

## 5.6 UN Standardized Means of Containment

A means of containment is a UN standardized means of containment if it has displayed on it the applicable UN marks illustrated in Chapter 6.1, Chapter 6.3 and Chapter 6.5 of the UN Recommendations and *SOR/2002-306*

- (a) it is in compliance with
  - (i) sections 2, 3, 4 and 7 of CGSB-43.125,
  - (ii) sections 2 to 11 of CGSB-43.146, or *SOR/2002-306*
  - (iii) sections 2 and 3 and Part 1 of TP14850; or *SOR/2014-152*
- (b) it was manufactured outside Canada in compliance with Chapter 6.1, 6.3 or 6.5 of the UN Recommendations and with the national regulations of the country of manufacture.

## Class 1, Explosives

### 5.7 Compatibility Groups

- (1) A person must not load or transport with other explosives in the same means of transport, except for a ship, explosives that have a compatibility group letter listed in column 1 of a row in the following table unless the compatibility group letter of the other explosives is listed in column 2 of the same row:

Table  
*SOR/2008-34*

Column 1	Column 2
A	A
B	B, S
C	C, D, E, N, S
D	C, D, E, N, S
E	C, D, E, N, S
F	F, S
G	G, S
H	H, S
J	J, S
K	K, S
L	L
N	C, D, E, N, S
S	B, C, D, E, F, G, H, J, K, N, S

- (2) For a mixed load of two or more explosives with compatibility groups C, D, E, N or S, the compatibility group of the mixed load is the first compatibility group of E, D, C, N or S present in the mixed load.  
*SOR/2008-34*
- (3) Despite subsection (1), detonators in compatibility group B may be loaded or transported in the same road vehicle with explosives in compatibility group D or N. The compatibility group of the mixed load is D.  
*SOR/2008-34*
- (4) Despite subsection (1), explosive articles included in compatibility group G, except for fireworks with UN number UN0333, UN0334, UN0335 or UN0336, may be loaded or transported in the same road vehicle together with explosive articles included in compatibility group C, D or E. The compatibility group of the mixed load is E.  
*SOR/2008-34*
- (5) For a mixed load of two explosives with one of the compatibility groups being S, the compatibility group of the mixed load is that of the other compatibility group.  
*SOR/2008-34*

### 5.8 Means of Containment for Class 1, Explosives

A person must not handle, offer for transport or transport dangerous goods included in Class 1, Explosives, unless they are in a means of containment that is selected and used in accordance with CGSB-43.151.  
*SOR/2014-306*

### 5.9 Repealed *SOR/2008-34*

## Class 2, Gases

### 5.10 Means of Containment for Class 2, Gases

- (1) A person must not handle, offer for transport or transport dangerous goods included in Class 2, Gases, in a means of containment unless the means of containment is manufactured, selected and used in accordance with
- (a) for transport by road vehicle,
    - (i) CGSB-43.123, if the gas is included in Class 2.1 or 2.2,
    - (ii) CSA B340, except clauses 4.1.1.1, 5.1.3(a)(ii) and 5.1.4(a),
    - (iii) CSA B342,
    - (iv) CSA B622, except clause 4.3, and, despite any indication to the contrary in CSA B620, Annex B of CSA B620,
    - (v) CSA B625, or
    - (vi) TP14877, if the means of containment is a ton container;
  - (b) for transport by railway vehicle,
    - (i) CGSB-43.123, if the gas is included in Class 2.1 or 2.2,
    - (ii) TP14877,
    - (iii) CSA B340, except clauses 4.1.1.1, 5.1.3(a)(ii) and 5.1.4(a),
    - (iv) CSA B342, or
    - (v) CSA B625;
  - (c) for transport by aircraft,
    - (i) CGSB-43.123, if the gas is included in Class 2.1 or 2.2,
    - (ii) CSA B340, except clauses 4.1.1.1, 5.1.3(a)(ii) and 5.1.4(a), or
    - (iii) CSA B342; and
  - (d) for transport by ship,
    - (i) CGSB-43.123, if the gas is included in Class 2.1 or 2.2,
    - (ii) TP14877,
    - (iii) CSA B340, except clauses 4.1.1.1, 5.1.3(a)(ii) and 5.1.4(a),
    - (iv) CSA B342,
    - (v) CSA B622, except clause 4.3, and, despite any indication to the contrary in CSA B620, Annex B of CSA B620, or
    - (vi) CSA B625.

*SOR/2014-152*

- (2) In addition to complying with the requirements set out in subparagraphs (1)(a)(ii), (b)(iii), (c)(ii) and (d)(iii), a person who uses a means of containment that is a cylinder or tube to handle, offer for transport or transport dangerous goods included in Class 2, Gases, must use a cylinder or tube that was

*SOR/2014-152*

- (a) manufactured in accordance with CSA B339;
  - (b) authorized for continued use under sections 7.32 and 8.4.2 of the “Transportation of Dangerous Goods Regulations” in effect on January 1, 2001, and the conditions in those sections are complied with; or
- SOR/2008-34*



- (c) manufactured before January 1, 1993 in accordance with a specification for cylinders set out in 49 CFR and has displayed on it requalification marks as required by CSA B339 or 49 CFR, except a cylinder manufactured in accordance with
  - (i) 49 CFR specification DOT-3B, DOT-3BN, DOT-3E, DOT-4AA480, DOT-4B, DOT-4B240ET, DOT-4BA, DOT-4BW, DOT-4D, DOT-4E, DOT-4L, DOT-8 or DOT-8AL, or
  - (ii) 49 CFR specification DOT-39, if the cylinder has a service pressure less than or equal to 6.2 MPa (900 psig).

*SOR/2002-306*

- (3) A person must not handle, offer for transport or transport in Canada a cylinder that contains any dangerous goods listed in Table 7 of CSA B340 that are in pure form or that are part of mixtures included in Class 2.3 if the means of containment is an aluminum alloy cylinder manufactured before August 1990.

*SOR/2014-152*

- (4) An independent inspector referred to in CSA B339 who prepares a certificate of compliance and test report that is referred to in clause 4.19 of that standard must give a copy of the report to the manufacturer of the means of containment. The independent inspector and the manufacturer must each keep a copy of the report for 3 years for a means of containment that is a specification TC-39M cylinder and for 15 years for all other means of containment.

*SOR/2014-152*

*A TC-39M cylinder is described in CSA B339.*

- (5) A person who prepares a report of requalification, repair, reheat treatment or rebuilding referred to in clause 24.7 of CSA B339 must give a copy of the report to the owner of the means of containment. The owner and the person who prepared the report must each keep a copy of the report for 10 years. If, during that 10 years, the owner of the means of containment transfers ownership to another person, the owner must give a copy of the report to that person.

- (6) In addition to the requirements of subparagraphs (1)(a)(ii) and (d)(ii), a person who uses a standardized means of containment that is required, by CSA B622, to offer for transport dangerous goods included in Class 2, Gases, must use a means of containment

- (a) manufactured in accordance with CSA B620 if the means of containment is manufactured in Canada on or after August 31, 2008; and
- (b) tested and inspected in accordance with CSA B620 when the most recent periodic re-test or periodic inspection is performed in Canada on or after August 31, 2008.

*SOR/2008-34*

#### **5.11 UN1950, AEROSOLS, and UN2037, GAS CARTRIDGES** *SOR/2014-152*

Despite section 5.10, a person must not handle, offer for transport or transport dangerous goods that are UN1950, AEROSOLS, or UN2037, GAS CARTRIDGES, unless they are contained in a means of containment that is manufactured, selected and used in accordance with CGSB-43.123.

*SOR/2014-152*

## Classes 3, 4, 5, 6.1, 8 and 9 Dangerous Goods

### 5.12 Small Means of Containment

- (1) A person must not handle, offer for transport or transport dangerous goods included in Class 3, 4, 5, 6.1, 8 or 9 in a small means of containment unless it is a UN standardized means of containment that is selected and used in accordance with sections 2, 3 and 12 of CGSB-43.146 or a means of containment that is selected and used in accordance with sections 2 and 3 and Part 2 of TP14850.

*SOR/2014-152*

- (2) A person must not reuse a steel or plastic drum with a capacity greater than or equal to 150 L to handle, offer for transport or transport dangerous goods that are liquid and are included in Class 3, 4, 5, 6.1, 8 or 9 unless

*SOR/2011-60*

- (a) for a steel drum, the requirements for the reconditioning, remanufacturing and repair in Part II of CGSB-43.126 are complied with and the drum reconditioning, remanufacturing and repair facility is registered with Transport Canada in accordance with the requirements of Appendix A of CGSB-43.126; or

*SOR/2011-60*

- (b) for a plastic drum, the requirements for the reconditioning, remanufacturing and repair in Part III of CGSB-43.126 are complied with and the drum reconditioning, remanufacturing and repair facility is registered with Transport Canada in accordance with the requirements of Appendix A of CGSB-43.126.

*SOR/2011-60*

- (3) *Repealed SOR/2014-152*

### 5.13 Repealed *SOR/2014-152*

### 5.14 Large Means of Containment *SOR/2008-34*

- (1) A person must not handle, offer for transport or transport dangerous goods included in Class 3, 4, 5, 6.1, 8 or 9 in a large means of containment unless it is manufactured, selected and used in accordance with

- (a) for transport by road vehicle,

- (i) the requirements of sections 2, 3, 12 and 13 of CGSB-43.146, if the means of containment is a UN standardized means of containment,
- (ii) CSA B621, except clause 8.2(b), and, despite any indication to the contrary in CSA B620, Annex B of CSA B620,
- (iii) CSA B625, or
- (iv) TP14877, if the means of containment is a ton container;

- (b) for transport by railway vehicle,

- (i) the requirements of sections 2, 3, 12 and 13 of CGSB-43.146, if the means of containment is a UN standardized means of containment,
- (ii) TP14877, or
- (iii) CSA B625;

- (c) for transport by aircraft, Part 12, Air, of these Regulations; and

- (d)** for transport by ship,
  - (i)** the requirements of sections 2, 3, 12 and 13 of CGSB-43.146, if the means of containment is a UN standardized means of containment,
  - (ii)** TP14877,
  - (iii)** CSA B621, except clause 8.2(b), and, despite any indication to the contrary in CSA B620, Annex B of CSA B620, or
  - (iv)** CSA B625.

*SOR/2014-152*

- (1.1)** If there is a conflict between sections 5.14.1 to 5.15.6 and subparagraph (1)(b)(ii), sections 5.14.1 to 5.15.6 prevail to the extent of the conflict.

*SOR/2015-100*

- (2)** In addition to the requirements of subparagraphs (1)(a)(ii) and (d)(iii), a person who uses a standardized means of containment that is required by CSA B621 to offer for transport dangerous goods included in Class 3, 4, 5, 6.1, 8 or 9 must use a means of containment
  - (a)** manufactured in accordance with CSA B620 if the means of containment was manufactured in Canada on or after August 31, 2008; and
  - (b)** tested and inspected in accordance with CSA B620 when the most recent periodic re-test or periodic inspection is performed in Canada on or after August 31, 2008.

*SOR/2008-34*

- (3)** Despite clause 2.1.6 of CGSB-43.147, every reference in CGSB-43.147 to the Association of American Railroads publication M-1002-2000, "Specifications for Tank Cars", must be read as M-1002-2003, "Specifications for Tank Cars", published by the Association of American Railroads, October 2003.

*SOR/2008-34*

- (4)** The requirements of clause 30.8.2 of CGSB-43.147 do not apply to
  - (a)** UN2448, MOLTEN SULFUR;
  - (b)** UN3257, ELEVATED TEMPERATURE LIQUID, N.O.S; or
  - (c)** UN3258, ELEVATED TEMPERATURE SOLID, N.O.S.

*SOR/2008-34*

**Tank Cars for Flammable Liquids SOR/2015-100**

**5.14.1 Clause 10.5.3 of TP14877 SOR/2015-100**

The requirements of clause 10.5.3 of TP14877 do not apply in respect of the importing, offering for transport, handling or transporting of any dangerous goods included in Class 3, Flammable Liquids, Packing Group I, II or III, in a tank car.  
*SOR/2015-100*

**5.14.2 Clause 10.1 of TP14877 – May 1, 2017 SOR/2015-100**

Starting on May 1, 2017, the exception set out in clause 10.1 of TP14877 does not apply in respect of the importing, offering for transport, handling or transporting of any of the following dangerous goods in a tank car:

- (a) UN1170, ETHANOL more than 24% ethanol, by volume;
- (b) UN1267, PETROLEUM CRUDE OIL;
- (c) UN1268, PETROLEUM DISTILLATES, N.O.S., or PETROLEUM PRODUCTS, N.O.S.;
- (d) UN1987, ALCOHOLS, N.O.S.;
- (e) UN1993, FLAMMABLE LIQUID, N.O.S.;
- (f) UN3475, ETHANOL AND GASOLINE MIXTURE with more than 10% ethanol, ETHANOL AND MOTOR SPIRIT MIXTURE with more than 10% ethanol, or ETHANOL AND PETROL MIXTURE with more than 10% ethanol; and
- (g) UN3494, PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC.

*SOR/2015-100*

**5.14.3 Clause 10.1 of TP14877 – May 1, 2025 SOR/2015-100**

Starting on May 1, 2025, the exception set out in clause 10.1 of TP14877 does not apply in respect of the importing, offering for transport, handling or transporting of dangerous goods included in Class 3, Flammable Liquids, Packing Group I, II or III, in a tank car.  
*SOR/2015-100*

**5.15 Tank Car Selection – May 1, 2017 SOR/2015-100**

- (1) Starting on May 1, 2017, a person must not import, offer for transport, handle or transport any of the dangerous goods listed in subsection (2) and included in Packing Group I, II or III in a tank car unless the tank car
  - (a) is a Class 105, 111, 112, 115 or 120 tank car that is in compliance with the requirements of TP14877 for the tank car's class and that is equipped with a jacket that
    - (i) is made of ASTM A1011 steel, or steel of an equivalent standard,
    - (ii) has a thickness equal to or greater than 3 mm (11 gauge), and
    - (iii) is weather-resistant;
  - (b) is an enhanced Class 111 tank car with a jacket;
  - (c) is an enhanced Class 111 tank car without a jacket;
  - (d) is a TC 117R tank car;
  - (e) is a TC 117 tank car; or
  - (f) is a TC 117P tank car.

- (2) The dangerous goods are
- (a) UN1267, PETROLEUM CRUDE OIL;
  - (b) UN1268, PETROLEUM DISTILLATES, N.O.S., or PETROLEUM PRODUCTS, N.O.S.; and
  - (c) UN3494, PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC.

*SOR/2015-100*

**5.15.1 Tank Car Selection – March 1, 2018** *SOR/2015-100*

- (1) Starting on March 1, 2018, a person must not import, offer for transport, handle or transport any of the dangerous goods listed in subsection (2) and included in Packing Group I, II or III in a tank car unless the tank car
- (a) is an enhanced Class 111 tank car with a jacket;
  - (b) is an enhanced Class 111 tank car without a jacket;
  - (c) is a TC 117R tank car;
  - (d) is a TC 117 tank car; or
  - (e) is a TC 117P tank car.

- (2) The dangerous goods are
- (a) UN1267, PETROLEUM CRUDE OIL;
  - (b) UN1268, PETROLEUM DISTILLATES, N.O.S., or PETROLEUM PRODUCTS, N.O.S.; and
  - (c) UN3494, PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC.

*SOR/2015-100*

**5.15.2 Tank Car Selection – April 1, 2020** *SOR/2015-100*

- (1) Starting on April 1, 2020, a person must not import, offer for transport, handle or transport any of the dangerous goods listed in subsection (2) and included in Packing Group I, II or III in a tank car unless the tank car
- (a) is an enhanced Class 111 tank car with a jacket;
  - (b) is a TC 117R tank car;
  - (c) is a TC 117 tank car; or
  - (d) is a TC 117P tank car.

- (2) The dangerous goods are
- (a) UN1267, PETROLEUM CRUDE OIL;
  - (b) UN1268, PETROLEUM DISTILLATES, N.O.S., or PETROLEUM PRODUCTS, N.O.S.; and
  - (c) UN3494, PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC.

*SOR/2015-100*

**5.15.3 Tank Car Selection – May 1, 2023 SOR/2015-100**

- (1) Starting on May 1, 2023, a person must not import, offer for transport, handle or transport any of the dangerous goods listed in subsection (2) and included in Packing Group I, II or III in a tank car unless the tank car
  - (a) is an enhanced Class 111 tank car with a jacket;
  - (b) is an enhanced Class 111 tank car without a jacket;
  - (c) is a TC 117R tank car;
  - (d) is a TC 117 tank car; or
  - (e) is a TC 117P tank car.
- (2) The dangerous goods are
  - (a) UN1170, ETHANOL more than 24% ethanol, by volume;
  - (b) UN1987, ALCOHOLS, N.O.S.;
  - (c) UN1993, FLAMMABLE LIQUID, N.O.S.; and
  - (d) UN3475, ETHANOL AND GASOLINE MIXTURE with more than 10% ethanol, ETHANOL AND MOTOR SPIRIT MIXTURE with more than 10% ethanol, or ETHANOL AND PETROL MIXTURE with more than 10% ethanol.

*SOR/2015-100*

**5.15.4 Tank Car Selection – July 1, 2023 SOR/2015-100**

- (1) Starting on July 1, 2023, a person must not import, offer for transport, handle or transport any of the dangerous goods listed in subsection (2) and included in Packing Group I, II or III in a tank car unless the tank car
  - (a) is an enhanced Class 111 tank car with a jacket;
  - (b) is a TC 117R tank car;
  - (c) is a TC 117 tank car; or
  - (d) is a TC 117P tank car.
- (2) The dangerous goods are
  - (a) UN1170, ETHANOL more than 24% ethanol, by volume;
  - (b) UN1987, ALCOHOLS, N.O.S.;
  - (c) UN1993, FLAMMABLE LIQUID, N.O.S.; and
  - (d) UN3475, ETHANOL AND GASOLINE MIXTURE with more than 10% ethanol, ETHANOL AND MOTOR SPIRIT MIXTURE with more than 10% ethanol, or ETHANOL AND PETROL MIXTURE with more than 10% ethanol.

*SOR/2015-100*

**5.15.5 Tank Car Selection – May 1, 2025** *SOR/2015-100*

Starting on May 1, 2025, a person must not import, offer for transport, handle or transport dangerous goods included in Class 3, Flammable Liquids, Packing Group I, II or III, in a tank car unless the tank car

- (a) is a TC 117R tank car;
- (b) is a TC 117 tank car; or
- (c) is a TC 117P tank car.

*SOR/2015-100*

**5.15.6 Tank Cars Manufactured on or after October 1, 2015** *SOR/2015-100*

A person must not import, offer for transport, handle or transport dangerous goods included in Class 3, Flammable Liquids, Packing Group I, II or III, in a tank car that is manufactured on or after October 1, 2015 unless the tank car

- (a) is a TC 117 tank car; or
- (b) is a TC 117P tank car.

*SOR/2015-100*

**5.15.7 Enhanced Class 111 Tank Cars** *SOR/2015-100*

- (1) For the purposes of sections 5.15 to 5.15.4 and 5.15.11, a tank car is an enhanced Class 111 tank car with a jacket if the following conditions are met:
  - (a) the tank car is in compliance with the requirements of TP14877 for Class 111 tank cars;
  - (b) all the top shell service equipment is enclosed in a protective housing that meets the requirements set out in subsection (3);
  - (c) the tank shell and heads are made of carbon or low-alloy steel plate, in the normalized condition, that is AAR TC128 Grade B steel or ASTM A516 Grade 70 steel;
  - (d) the tank heads are normalized after forming;
  - (e) in the case of a tank shell and heads made of AAR TC128 Grade B steel, the shell and heads have a thickness equal to or greater than 11.1 mm (7/16 in.);
  - (f) in the case of a tank shell and heads made of ASTM A516 Grade 70 steel, the shell and heads have a thickness equal to or greater than 12.7 mm (1/2 in.);
  - (g) the tank car is equipped with a jacket that
    - (i) is made of ASTM A1011 steel, or steel of an equivalent standard,
    - (ii) has a thickness equal to or greater than 3 mm (11 gauge), and
    - (iii) is weather-resistant;
  - (h) the tank is insulated, or fitted with a thermal protection blanket;
  - (i) the tank car is equipped with one or more reclosing pressure relief devices, each with a start-to-discharge pressure that is equal to or greater than 517 kPa (75 psi);

- (j) the tank car is equipped at each end with a head shield that
    - (i) is made with structural or pressure vessel steel plate that has a thickness equal to or greater than 12.7 mm (1/2 in.), and
    - (ii) covers at least the lower half of the tank head; and
  - (k) in the case of a tank car equipped with a bottom outlet valve, the valve handle – unless stowed separately – is designed to bend or break free on impact without the valve opening or is designed so that all of the handle is located within the bottom discontinuity protective structure.
- (2) For the purposes of sections 5.15 to 5.15.3 and 5.15.11, a tank car is an enhanced Class 111 tank car without a jacket if the following conditions are met:
- (a) the tank car meets the conditions set out in paragraphs (1)(a) to (d) and (i) to (k);
  - (b) in the case of a tank shell and heads made of AAR TC128 Grade B steel, the shell and heads have a thickness equal to or greater than 12.7 mm (1/2 in.); and
  - (c) in the case of a shell and heads made of ASTM A516 Grade 70 steel, the shell and heads have a thickness equal to or greater than 14.3 mm (9/16 in.).
- (3) The protective housing must be in compliance with clause 10.5.3.1 of TP14877, but
- (a) clause 10.5.3.1.a must be read as “W is defined as the designed gross rail load of the tank car, less trucks”; and
  - (b) clause 10.5.3.1.3 must be read as “The protective structure must provide a means of drainage with a minimum flow area equivalent to six holes, each with a diameter of 25.4 mm (1 in.)”.

*SOR/2015-100*

**5.15.8 TC 117R Tank Cars** *SOR/2015-100*

For the purposes of sections 5.15 to 5.15.5 and 5.15.11, a tank car is a TC 117R tank car if the following conditions are met:

- (a) the tank car is in compliance with the requirements of TP14877 for Class 111 tank cars;
- (b) the tank shell and heads have a thickness equal to or greater than 11.1 mm (7/16 in.);
- (c) the tank car is equipped with a jacket that
  - (i) is made of ASTM A1011 steel, or steel of an equivalent standard,
  - (ii) has a thickness equal to or greater than 3 mm (11 gauge), and
  - (iii) is weather-resistant;
- (d) the tank car is equipped with a thermal protection system that meets the requirements of clause 8.2.7 of TP14877;
- (e) the tank car is equipped at both ends with a full head shield that is made with structural or pressure vessel steel plate that has a thickness equal to or greater than 12.7 mm (1/2 in.);
- (f) in the case of a tank car equipped with a bottom outlet valve, the valve handle – unless stowed separately – is designed to bend or break free on impact without the valve opening or is designed so that all of the handle is located within the bottom discontinuity protective structure; and
- (g) the tank car is equipped with a reclosing pressure relief device.

*SOR/2015-100*



**5.15.9 TC 117 Tank Cars SOR/2015-100**

- (1) For the purposes of sections 5.15 to 5.15.6, a tank car is a TC 117 tank car if the following conditions are met:
- (a) the tank car is in compliance with the requirements of sections 1 to 9 of TP14877 for Class 111 tank cars;
  - (b) the tank shell and heads are made of steel plate, in the normalized condition, that is AAR TC128 Grade B steel that
    - (i) has a minimum tensile strength equal to or greater than 560 MPa (81 000 psi), and
    - (ii) has a thickness equal to or greater than 14.3 mm (9/16 in.);
  - (c) the plate thickness of the tank heads is measured after the heads are formed;
  - (d) all the top shell service equipment – except for a hinged and bolted manway – is mounted on the manway cover plate and enclosed in a protective housing that meets the requirements set out in subsection (2);
  - (e) in the case of a tank car equipped with a bottom outlet valve, the valve handle – unless stowed separately – is designed to bend or break free on impact without the valve opening or is designed so that all of the handle is located within the bottom discontinuity protective structure;
  - (f) the tank car is equipped with a reclosing pressure relief device;
  - (g) the tank car is equipped with a jacket that
    - (i) is made of ASTM A1011 steel, or steel of an equivalent standard,
    - (ii) has a thickness equal to or greater than 3 mm (11 gauge), and
    - (iii) is weather-resistant;
  - (h) the tank car is equipped with a thermal protection system that meets the requirements of clause 8.2.7 of TP14877;
  - (i) the tank car is equipped with a tank head puncture resistance system that meets the requirement of clause 8.2.8 of TP14877;
  - (j) the test pressure of the tank is 6.9 bar (100 psi); and
  - (k) the burst pressure of the tank is 34.5 bar (500 psi).
- (2) The protective housing must be in compliance with clause 10.5.3.1 of TP14877, but
- (a) clause 10.5.3.1.a must be read as “W is defined as the designed gross rail load of the tank car, less trucks”; and
  - (b) clause 10.5.3.1.3 must be read as “The protective structure must provide a means of drainage with a minimum flow area equivalent to six holes, each with a diameter of 25.4 mm (1 in.)”.

*SOR/2015-100*

**5.15.10 TC 117P Tank Cars SOR/2015-100**

- (1) For the purposes of sections 5.15 to 5.15.5 and 5.15.11, a tank car is a TC 117P tank car if the tank car passes a side impact test and a head impact test carried out in accordance with this section and meets the conditions set out in
- (a) paragraphs 5.15.8(a), (d), (f) and (g); or
  - (b) paragraphs 5.15.9(1)(a), (d) to (f), (h), (j) and (k).
- (2) For the purposes of section 5.15.6, a tank car is a TC 117P tank car if the tank car passes a side impact test and a head impact test carried out in accordance with this section and meets the conditions set out in paragraphs 5.15.9(1)(a), (d) to (f), (h), (j) and (k).

- (3) A tank car passes the impact tests if, at rest, there is no leak visible from the tank shell or head within at least one hour of the side impact test and within at least one hour of the head impact test.
- (4) The side impact test is carried out as follows:
- (a) the tank car is restrained in the direction of impact;
  - (b) the tank is filled, with no more than 4 per cent outage and with no internal pressure, with lading of the same density as the dangerous goods that the tank car is intended to carry;
  - (c) the tank may be filled with water if the dangerous goods that the tank car is intended to carry have a specific gravity of 1.1 or less;
  - (d) the tank car is hit by a proxy object;
  - (e) the proxy object has a mass equal to or greater than 129 727 kg (286,000 lbs.) and is fitted with a rigid punch that
    - (i) protrudes at least 1.5 m (60 in.) from the base of the proxy object, and
    - (ii) has a cross-section 30.5 cm (12 in.) high by 30.5 cm (12 in.) wide, with a 2.54 cm (1 in.) radius on each edge of the impact face;

*The proxy object is intended to approximate a loaded freight car, including the coupler with the knuckle removed.*
  - (f) at the instant of impact,
    - (i) the centre of the impact face of the punch is aligned with the intersection of the vertical and longitudinal centrelines of the tank, and
    - (ii) the horizontal centreline of the punch is perpendicular to the point of impact; and
  - (g) at the instant of impact, the speed of the punch face is equal to or greater than 5.36 m/s (12 mph).
- (5) The head impact test is carried out as follows:
- (a) the tank car is restrained in the direction of impact;
  - (b) the tank is filled, with no more than 4 per cent outage and with no internal pressure, with lading of the same density as the dangerous goods that the tank car is intended to carry;
  - (c) the tank may be filled with water if the dangerous goods that the tank car is intended to carry have a specific gravity of 1.1 or less;
  - (d) the tank car is hit by a proxy object;
  - (e) the proxy object has a mass equal to or greater than 129 727 kg (286,000 lbs.) and is fitted with a rigid punch that
    - (i) protrudes at least 1.5 m (60 in.) from the base of the proxy object, and
    - (ii) has a cross-section 30.5 cm (12 in.) high by 30.5 cm (12 in.) wide, with a 2.54 cm (1 in.) radius on each edge of the impact face;

*The proxy object is intended to approximate a loaded freight car, including the coupler with the knuckle removed.*
  - (f) at the instant of impact,
    - (i) the centre of the impact face of the punch is aligned with the centre of the tank head, and
    - (ii) the horizontal centreline of the punch is perpendicular to the point of impact; and
  - (g) at the instant of impact, the speed of the punch face is equal to or greater than 8.05 m/s (18 mph).

**5.15.11 Reporting** *SOR/2015-100*

Starting on January 1, 2017, a consignor must, on reasonable notice given by the Minister, provide the Minister with the following information:

- (a) the number of TC117R tank cars that the consignor owns or leases;
- (b) the number of TC117P tank cars that the consignor owns or leases;
- (c) the number of Class 111 tank cars that the consignor owns or leases, and uses for importing, offering for transport or handling dangerous goods included in Class 3, Flammable Liquids; and
- (d) the number of enhanced Class 111 tank cars that the consignor owns or leases, and uses for importing, offering for transport or handling dangerous goods included in Class 3, Flammable Liquids.

*SOR/2015-100*

**Class 6.2, Infectious Substances**

**5.16 Means of Containment for Class 6.2, Infectious Substances**

- (1) A person must handle, offer for transport or transport dangerous goods included in Category A or Category B of Class 6.2, Infectious Substances, in a means of containment listed for them in column 2, 3 or 4 of the table to this section.  
*SOR/2008-34*
- (2) Despite subsection (1), a Type 1A means of containment may be used in all cases.  
*SOR/2008-34*

*Type 1A, 1B and 1C means of containment are defined in Part 1, Coming into Force, Interpretation, General Provisions and Special Cases.*

*SOR/2008-34*

Table  
*SOR/2008-34*

Item	Column 1 Category	Column 2 Means of containment for cultures	Column 3 Means of containment or biological substances	Column 4 Means of containment for infectious substances intended for disposal
1.	Category A	1A	1B except for the following substances which must be contained in a 1A means of containment: (a) Crimean-Congo Hemorrhagic fever virus; (b) Ebola virus; (c) Flexal virus; (d) Guanarito virus; (e) Hantaviruses causing hemorrhagic fever with renal syndrome; (f) Hantaviruses causing pulmonary syndrome; (g) Hendra virus; (h) Herpes B virus (Cercopithecine Herpesvirus-1) (i) Junin virus; (j) Kyasanur Forest virus; (k) Lassa virus; (l) Machupo virus; (m) Marburg virus; (n) Monkeypox virus; (o) Nipah virus; (p) Omsk hemorrhagic fever virus; (q) Russian Spring-summer encephalitis virus (r) Sabia virus; and (s) Variola (smallpox virus).	1C except for the following substances which must be contained in a 1A means of containment: (a) Crimean-Congo Hemorrhagic fever virus; (b) Ebola virus; (c) Flexal virus; (d) Guanarito virus; (e) Hantaviruses causing hemorrhagic fever with renal syndrome; (f) Hantaviruses causing pulmonary syndrome; (g) Hendra virus; (h) Herpes B virus (Cercopithecine Herpesvirus-1) (i) Junin virus; (j) Kyasanur Forest virus; (k) Lassa virus; (l) Machupo virus; (m) Marburg virus; (n) Monkeypox virus; (o) Nipah virus; (p) Omsk hemorrhagic fever virus; (q) Russian Spring-summer encephalitis virus (r) Sabia virus; and (s) Variola (smallpox virus).
2.	Category B	1B	1B	1C

**5.16.1 Additional Requirements for Type 1B Means of Containment** *SOR/2008-34*

A Type 1B means of containment must be

- (a) capable of passing
  - (i) for liquid substances, the internal pressure test set out in section 4.4 of CGSB-43.125, and
  - (ii) the drop test set out in section 4.5 of CGSB-43.125 except that the height of the drop test may be 1.2 m;
- (b) in compliance with clause 4.2.1(iii) of CGSB-43.125 regarding the requirements for multiple primary means of containment in a single secondary means of containment except that only fragile primary means of containment must be separated or wrapped individually; and
- (c) in compliance with the requirements in section 4.2.2.1 of CGSB-43.125 when it contains a means of cooling the contents.

*SOR/2008-34*

**5.16.2 Medical or Clinical Waste** *SOR/2014-306*

A person must not handle, offer for transport or transport dangerous goods that are UN3291, (BIO) MEDICAL WASTE, N.O.S. of Class 6.2, Infectious Substances, unless the dangerous goods are in a type 1C means of containment that is in compliance with CGSB-43.125.

*SOR/2014-306*

**Class 7, Radioactive Materials**

**5.17 Means of Containment for Class 7, Radioactive Materials**

A person must not handle, offer for transport or transport dangerous goods included in Class 7, Radioactive Materials, in a means of containment unless the means of containment is in compliance with the “Packaging and Transport of Nuclear Substances Regulations”.

**Consolidation Bins** *SOR/2014-159*

**5.18 Consolidation Bins** *SOR/2014-159*

A person must not use a consolidation bin to handle or transport dangerous goods in a road vehicle unless

- (a) the capacity of the consolidation bin is less than or equal to 1.8 m<sup>3</sup> (64 cubic feet);
- (b) the consolidation bin is reusable and constructed of plastic, wood or metal; and
- (c) the consolidation bin is blocked or braced within the road vehicle.

*SOR/2014-159*