

CSA – B149.2 – 2020 – V10 Major Revisions
PROPANE STORAGE AND HANDLING CODE

New CSA-B149.2-2020 New and Revised Clause	Current Code CAN/CSA-B149.2-15 Clauses	Recommendations, Interpretations and Rationale
CSA B149.2 – 2020 – Major Revisions		
Scope – new containers, and propane as a refrigerant		
Requirement for Cylinders <ul style="list-style-type: none"> - Non-refillable - Inspection and filling - Sleeves, and - Hot Air Balloons 		
Automated cylinder exchange machines		
Filling plants & container refill centers – Location of tanks and protection		
Dispensing system – Manufacturing and certification		
Vaporizers- Emergency shut-down systems, and certification		
Annex O (normative) Use of Non-Refillable Propane Cylinders in Laboratories/Classrooms in Schools, Colleges and Universities		
Annex Q (informative) Temporary use of cylinders at shows, exhibitions or other similar events		
Annex R (informative) Inspection and servicing of pressure relief devices (PRDs) on tanks		

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CSA – B149.2 - 2020	CSA – B149.2 - 2015	INTERPRETATIONS AND RATIONALE
1 Scope		
<p>1.2 This Code does not apply to</p> <ul style="list-style-type: none"> a) transportation of propane; b) manufacture, selection, and use of standardized means of containment under the <i>Transportation of Dangerous Goods Act and Regulations</i>; c) new containers which have not contained propane or used containers identified as having been purged to less than 5 % of the LEL as determined by a calibrated gas meter; d) marine or pipeline terminals; e) gas where used as a feedstock in petroleum refineries or chemical plants; f) utility pipeline distribution and transmission pipelines; g) refrigerated storage or underground formations for propane; h) propane used on boats; i) propane used as a propellant in aerosol containers; j) butane fuel cylinders of 6.2 oz (175 g) capacity or less; k) any equipment extending downstream from the inlet to any container pressure regulator (commonly referred to as first-stage regulator); l) the installation of propane fuel system components and containers on vehicles covered by CSA B149.5; and m) propane used as refrigerant. 	<p>Revised This Code does not apply to</p> <ul style="list-style-type: none"> (a) transportation of propane; (b) manufacture, selection, and use of standardized means of containment under the <i>Transportation of Dangerous Goods Act and Regulations</i>; (c) marine or pipeline terminals; (d) gas where used as a feedstock in petroleum refineries or chemical plants; (e) utility pipeline distribution and transmission pipelines; (f) refrigerated storage or underground reservoirs for propane; (g) propane used on boats; (h) propane used as a propellant in aerosol containers; (i) butane fuel cylinders of 5.3 oz (150 g) capacity or less; (j) any equipment extending downstream from the inlet to any container pressure regulator (commonly referred to as first-stage regulator); and (k) the installation of propane fuel system components and tanks on vehicles covered by CSA B149.5; and 	<p>At item (c) a new empty container that never contained propane, The requirements for an empty condemned cylinder are prescribed by the CSA Standards for cylinders, spheres, and tubes for the transportation of dangerous goods and CGA Standards for Visual Inspection of Steel Compressed Gas Cylinders.</p> <p>At item (g), the term “reservoirs” is used to describe underground formations or cavities, either natural or man-made. However, the use of this term brings some confusion in the French version as “reservoirs” is used in the sense of a “tank” complying with CSA B51 and which can be put underground. For consistency, it is being changed to align with the CSA Z341 “Storage of hydrocarbons in underground formations”.</p> <p>At item (j), the current edition of the Code indicates that butane cylinders of 150 g capacity or less are not covered by the B149.2 code. There is in the market place cylinders larger than 150 g but are still of the non-fillable type that should not be covered by the code.</p> <p>At item (l) Consistent with the title of CSA B149.5</p> <p>At item (m) to clarify the exclusion of propane use from the scope of B149.2 that propane used a refrigerant is outside the scope.</p>

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6 Cylinder systems	6 Cylinder systems	
6.1 Requirements for cylinders	6.1 Requirements for cylinders	
<p>6.1.1 Refillable cylinders shall be manufactured, tested, inspected, requalified, and marked in accordance with the requirements of CSA B339.</p> <p>Non-refillable cylinders shall either be TC 39M as per Clause 6.1.3 or TC specification 2P, 2Q and 2R as per Clause 6.1.4.</p>	<p>Revised Refillable cylinders shall be manufactured, tested, inspected, requalified, and marked in accordance with the requirements of CSA B339.</p>	<p>Code now includes the reference standards for non-fillable cylinders.</p>
<p>6.1.12 On a cylinder from which liquid is to be withdrawn</p> <p>a) the liquid service connection of the cylinder valve shall be threaded with other than the standard female POL thread; and</p> <p>b) the liquid service outlet of the cylinder valve shall be provided with an internal excess-flow valve, except for a cylinder for use in a hot air balloon and in accordance with the exemption 1.50 Hot Air Balloon Cylinder under the <i>Transportation of Dangerous Goods (TDG) Regulations</i> of Transport Canada.</p>	<p>Revised On a <i>cylinder</i> from which liquid is to be withdrawn</p> <p>(a) the liquid service connection of the <i>cylinder valve</i> shall be threaded with other than the standard female <i>POL</i> thread; and</p> <p>(b) the liquid service outlet of the <i>cylinder valve</i> shall be provided with an <i>internal excess-flow valve</i></p>	<p>Transport Canada revised the regulations for cylinders used on hot air balloons, and harmonized with NFPA 58.</p>
6.4 Purging and filling of cylinders	6.4 Purging and filling of cylinders	
<p>6.4.5 A sleeve on the cylinder shall be removed to facilitate the visual inspection prior to filling the cylinder.</p>	<p>New/Relocated Clause 6.4.6 <i>Cylinders</i> manufactured to Specification TC-39M and <i>aerosol containers</i> shall not be refilled.</p>	<p>Due to corrosion, and other imperfections that may be hidden by the cylinder labeling sleeves, they must be removed prior to visual inspection.</p>

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<p>6.4.7 A prefill inspection shall be required for filling a hot air balloon cylinder.</p>	<p><u>New</u></p>	<p>The same rules apply to the storage of cylinders used for hot air ballooning (when they are not located in the balloon basket). Transport Canada has harmonized with North America regarding propane cylinders for use in a hot air balloon.</p> <p>Cont.</p>
<p>6.4.8 The acceptability of a hot air balloon cylinder for filling can be verified by finding the cylinder listed in the flight log for that aircraft and in accordance with Clause 6.1.12 b).</p>	<p><u>New</u></p>	<p>Cont.</p>
<p>6.4.9 Subject to Clauses 5.2.1 and 5.2.2, a hot air balloon crew member shall be present and supervise the proper filling of the cylinders under the provisions of Clause 6.1.12 b).</p>	<p><u>New</u></p>	<p>Cont.</p>
<p>6.4.10 Hot air balloon cylinders shall not be required to be removed from the aircraft for filling.</p>	<p><u>New</u></p>	<p>Cont.</p>
<p>6.5 Storage and use of cylinders at locations other than filling plants</p>	<p>6.5 Storage and use of cylinders at locations other than filling plants</p>	
<p>6.5.1 General</p>	<p>6.5.1 General</p>	

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<p>6.5.1.8 Except as permitted in Clauses 6.5.2.6.1 for cylinder exchange cages, an outdoor cylinder storage area, special cylinder storage room, or a cylinder storage building described in Error! Reference source not found. shall be located in accordance with Error! Reference source not found. with respect to</p> <ul style="list-style-type: none"> (a) the nearest building or group of buildings; (b) the line of adjoining property that may be built upon; (c) public thoroughfares or sidewalks; and (d) the line of adjoining property occupied by schools, churches, hospitals, athletic fields, or other points of public gathering. 	<p>Revised An outdoor <i>cylinder</i> storage area, special <i>cylinder</i> storage room, or a <i>cylinder</i> storage <i>building</i> described in Error! Reference source not found. shall be located in accordance with Error! Reference source not found. with respect to</p> <ul style="list-style-type: none"> (a) the nearest <i>building</i> or group of <i>buildings</i>; (b) the line of adjoining property that may be built upon; (c) public thoroughfares or sidewalks; and (d) the line of adjoining property occupied by schools, churches, hospitals, athletic fields, or other points of public gathering. 	<p>This is an editorial clarification in follow-up to combining all cylinder exchange cage rules under 6.5.2.6.1</p>
<p>6.5.2.6 Cylinder exchange requirements</p>	<p>6.5.2.6 Cylinder exchange requirements</p>	

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<p>6.5.2.6.1 Propane cylinder exchange for resale</p> <p>Facilities operating cylinder exchange stations for propane that are accessible to the public shall comply with the following requirements:</p> <ul style="list-style-type: none"> a) Cylinders shall be secured in a lockable, ventilated metal cabinet or other approved enclosure. b) No more than four adjacent cabinets may be located against a noncombustible building wall at one retail site. c) No more than one cabinet may be located against a combustible wall. d) Each cabinet shall contain no more than 500 lb (225 kg) of propane. e) Each cabinet shall be located a minimum of: <ul style="list-style-type: none"> i) 3 ft (0.9 m) from any building opening, ii) 10 ft (3 m) from any mechanical air intake, and iii) 25 ft (7.6 m) from the line of adjoining property occupied by schools, churches, hospitals, athletic fields, or other points of public gathering. f) Cylinders shall be accessible only by authorized personnel or by use of an automated exchange system in accordance with Error! Reference source not found. g) A sign shall be posted on the entry door of the business operating the cylinder exchange stating “DO NOT BRING PROPANE CYLINDERS INTO THE BUILDING”.* <p><i>*The equivalent French wording is “NE PAS APPORTER DES BOUTEILLES DE PROPANE À L’INTÉRIEUR DU BATIMENT”.</i></p> h) An emergency contact information sign shall be posted within 10 ft (3 m) of the cylinder storage cabinet. i) Electrical equipment within 5 ft (1.5 m) of cylinders stored for resale shall meet the requirements of Error! Reference source not found., Part K. j) Protection of cylinders for resale shall be in accordance with Error! Reference source not found. b). however, protection shall not be 	<p>Revised</p> <p>In addition to other requirements of Clause 6.5. such as Clause 6.5.1.9 and Table 6.3 facilities operating cylinder exchange stations for propane that are accessible to the public shall comply with the following requirements:</p> <ul style="list-style-type: none"> (a) Cylinders shall be secured in a lockable, ventilated metal cabinet or other approved enclosure. (b) Cylinders shall be accessible only by authorized personnel or by use of an automated exchange system in accordance with Error! Reference source not found. (c) A sign shall be posted on the entry door of the business operating the cylinder exchange stating “DO NOT BRING PROPANE CYLINDERS INTO THE BUILDING”.* <p><i>*The equivalent French wording is “NE PAS APPORTER DES BOUTEILLES DE PROPANE À L’INTÉRIEUR DU BATIMENT”.</i></p> (d) An emergency contact information sign shall be posted within 10 ft (3 m) of the cylinder storage cabinet. (e) Electrical equipment within 5 ft (1.5 m) of cylinders stored for resale shall meet the requirements of Error! Reference source not found., part K. (f) Protection of cylinders for resale shall be in accordance with Error! Reference source not found.(b). 	<p>This is an editorial movement of the rules found as fine print under Table 6.3 into the body of the code, facilitated by the creation of clauses in the code that is dedicated to this type of installation.</p>

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required for 20 lb (9 kg) cylinders provided they are in cabinets as noted in Clause 6.5.2.6.1 a).		

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<p>6.5.2.6.2 Automated cylinder exchange machine</p> <p>Cylinder exchange stations that include an automated vending system for exchanging cylinders shall comply with the following additional requirements:</p> <ul style="list-style-type: none"> a) The automated cylinder exchange machine shall only permit access to a single cylinder per individual transaction. b) Cabinets storing cylinders shall be designed such that cylinders can only be placed inside when they are oriented in the upright position. c) Devices operating door releases for access to stored cylinders may be permitted to be pneumatic, mechanical or electrically powered. d) A manual override control shall be permitted for use by authorized personnel. On an automated cylinder exchange machine, the vending system shall not be capable of returning to automatic operation after a manual override until the system has been inspected and reset by authorized personnel. e) Inspections shall be conducted by authorized personnel to verify that all cylinders are secured, access doors are closed, and the automated cylinder exchange machine has no visible damage or obvious defects that necessitate placing the station out of service. f) In lieu of meeting the requirements for ventilated enclosures in Clause 6.5.1.14 or 6.5.2.6.1 a), an automated cylinder exchange machine shall be well ventilated through means of free or forced ventilation with six or more air changes per hour in the event of a propane leak. g) The system shall be equipped with a propane detector, and if the system detects a propane leak, the automated cylinder exchange machine will put itself in an out of service condition and send an electronic notification to the supplier. h) The area where the automated cylinder exchange machine is located shall be illuminated. i) All moving mechanisms in the automated cylinder exchange machine shall be of non-sparking construction. 	<p>Revised</p> <p>Cylinder exchange stations that include an automated vending system for exchanging cylinders shall comply with the following additional requirements:</p> <ul style="list-style-type: none"> (a) The automated cylinder exchange machine shall only permit access to a single cylinder per individual transaction. (b) Cabinets storing cylinders shall be designed such that cylinders can only be placed inside when they are oriented in the upright position. (c) Devices operating door releases for access to stored cylinders may be permitted to be pneumatic, mechanical or electrically powered. (d) A manual override control shall be permitted for use by authorized personnel. On an automated cylinder exchange machine, the vending system shall not be capable of returning to automatic operation after a manual override until the system has been inspected and reset by authorized personnel. (e) Inspections shall be conducted by authorized personnel to verify that all cylinders are secured, access doors are closed, and the automated cylinder exchange machine has no visible damage or obvious defects that necessitate placing the station out of service. (f) There shall be a system, activated by a fusible link, designed to create a temporary inert atmosphere in the interior of the cabinet. (g) The system shall be equipped with a propane detector, and if the system detects a propane leak, the automated cylinder exchange machine will put itself in an out of service condition and send an e-mail notification to the supplier. (h) The area where the automated cylinder exchange machine is located shall be illuminated. (i) All moving mechanisms in the automated cylinder exchange machine shall be of non-sparking construction. 	<p>This is to clarify the intent of new clause 6.5.2.6.2(f).</p> <p>When an automated machine uses forced ventilation to meet the well ventilated requirement, there is no need to have the forced ventilation system operating continuously when there isn't a propane leak.</p> <p>A machine only needs to be ventilated if a hazard is present.</p> <p>As an example, if there is no propane vapour in the air, an air change within the machine will not change its atmosphere.</p> <p>New technology other than “only” e-mail such as text messages electronic notification is acceptable.</p>

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<p>6.10 Handling of cylinders at shows, exhibitions or other similar events</p> <p>The handling of cylinders at shows, exhibitions or other similar events shall comply with Annex Q.</p>	<p><u>New</u></p>	<p>Guide the use of cylinders at shows, exhibitions or other similar events.</p>
<p>6.11 Handling of cylinders in classrooms</p> <p>The handling of cylinders in classrooms shall comply with Annex Q.</p>	<p><u>New</u></p>	<p>Guide the use of cylinders in classrooms such as in schools and colleges.</p>
<p>7 Tank systems, filling plants, and refill centres</p>	<p>7 Tank systems, filling plants, and refill centres</p>	
<p>7.8 Installation of underground tanks</p>	<p>7.8 Installation of underground tanks</p>	
<p>7.8.19</p> <p>A second stage regulator that is to be used for underground tank installation shall be installed above-ground and protected as necessary from exposure to weather conditions.</p>	<p><u>New</u></p>	<p>The intent is to eliminate the installation of a twin-stage regulator inside the dome of an underground tank. To improve safety in the event of an incident caused by flooding, and water run-off during a thaw cycle.</p>
<p>7.11 Tank supports</p>	<p>7.11 Tank supports</p>	

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<p>7.11.3 A vertical tank of 125 USWG or less shall be installed in accordance with Error! Reference source not found. of this Code.</p> <p>A vertical tank greater than 125 USWG capacity shall be secured to a reinforced concrete base (see Figure B.2) that</p> <ul style="list-style-type: none"> a) extends at least 1 ft (300 mm) from all sides of the tank surface of the pad and shall be above grade level; b) has footings located below the frost line that are designed to have a maximum bearing pressure on the soil of 2000 lb/ft² (95 kPa); c) limits the distance between the bottom of the tank and the concrete pad to a maximum of 30 in (750 mm); and d) is subject to the approval of the authority having jurisdiction. 	<p>Revised A vertical tank of 125 USWG or less shall be installed in accordance with Error! Reference source not found. of this Code.</p> <p>A vertical tank greater than 125 USWG capacity shall be secured to a reinforced concrete base (see Figure B.2) that</p> <ul style="list-style-type: none"> a) extends at least 1 ft (300 mm) from all sides of the tank surface of the pad and shall be above grade level; b) has been designed to have a maximum bearing pressure on the soil of not more than 2000 lb/ft² (95 kPa); c) limits the distance between the bottom of the tank and the concrete pad to a maximum of 30 in (750 mm); and d) is subject to the approval of the authority having jurisdiction. 	<p>A base that is simply laid over soil could be subject to movement due to climatic conditions such as frost and may not be adequate for a vertical tank.</p>
<p>7.17 Container filling locations with provisions for container storage</p>	<p>7.17 Container filling locations with provisions for container storage</p>	

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<p align="center">Table 7.5</p> <p>Location of tanks at filling plants and container refill centres</p> <table border="1"> <thead> <tr> <th data-bbox="204 667 379 743">Total water capacity per of tanks, USWG (L)</th> <th data-bbox="387 526 561 743">Minimum distance, ft (m), between tank and property line; adjacent concrete or masonry building wall with no building openings or windows within the specified clearances; or source of ignition</th> <th data-bbox="569 550 720 743">Minimum distance, ft (m), between tank and building openings, windows, or building wall other than concrete or masonry</th> <th data-bbox="728 623 852 743">Minimum distance, ft (m), between tank and adjacent tank*</th> <th data-bbox="860 599 964 743">Minimum distance, ft (m), between tank and near side of main rail line†</th> </tr> </thead> <tbody> <tr> <td>Up to and including 2000 (7500)</td> <td>10 (3)</td> <td>25 (7.6)</td> <td>3 (0.9)</td> <td>25 (7.6)</td> </tr> <tr> <td>Over 2000 (7500) up to and including 5000 (19 000)</td> <td>15 (5)‡</td> <td>25 (7.6)</td> <td>3 (0.9)</td> <td>100 (30)</td> </tr> <tr> <td>Over 5000 (19 000) up to and including 10 000 (38 000)</td> <td>25 (7.6)‡</td> <td>25 (7.6)</td> <td>3 (0.9)</td> <td>100 (30)</td> </tr> <tr> <td>Over 10 000 (38 000) up to and including 30 000 (113 550)</td> <td>50 (15.2)‡</td> <td>50 (15.2)</td> <td>5 (1.5)</td> <td>100 (30)</td> </tr> <tr> <td>Over 30 000 (113 550) up to and including 70 000 (264 950)</td> <td>75 (22.5)‡</td> <td>75 (22.5)</td> <td>1/4 of the sum of diameters of adjacent tanks</td> <td>100 (30)</td> </tr> <tr> <td>Over 70 000 (264 950) up to and including 90 000 (340 650)</td> <td>100 (30)‡</td> <td>100 (30)</td> <td>1/4 of the sum of diameters of adjacent tanks</td> <td>100 (30)</td> </tr> </tbody> </table>	Total water capacity per of tanks, USWG (L)	Minimum distance, ft (m), between tank and property line; 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Total water capacity per of tanks, USWG (L)	Minimum distance, ft (m), between tank and property line; adjacent concrete or masonry building wall with no building openings or windows within the specified clearances; or source of ignition	Minimum distance, ft (m), between tank and building openings, windows, or building wall other than concrete or masonry	Minimum distance, ft (m), between tank and adjacent tank*	Minimum distance, ft (m), between tank and near side of main rail line†																																																																				
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Over 5000 (19 000) up to and including 10 000 (38 000)	25 (7.6)‡	25 (7.6)	3 (0.9)	100 (30)																																																																				
Over 10 000 (38 000) up to and including 30 000 (113 550)	50 (15.2)‡	50 (15.2)	5 (1.5)	100 (30)																																																																				
Over 30 000 (113 550) up to and including 70 000 (264 950)	75 (22.5)‡	75 (22.5)	1/4 of the sum of diameters of adjacent tanks	100 (30)																																																																				
Over 70 000 (264 950) up to and including 90 000 (340 650)	100 (30)‡	100 (30)	1/4 of the sum of diameters of adjacent tanks	100 (30)																																																																				
Total water capacity of tanks, USWG (L)	Minimum distance, ft (m), between tank and property line; adjacent concrete or masonry building wall with no building openings or windows within the specified clearances; or source of ignition	Minimum distance, ft (m), between tank and building openings, windows, or building wall other than concrete or masonry	Minimum distance, ft (m), between tank and adjacent tank*	Minimum distance, ft (m), between tank and near side of main rail line†																																																																				
Up to and including 2000 (7500)	10 (3)	25 (7.6)	3 (0.9)	25 (7.6)																																																																				
Over 2000 (7500) up to and including 5000 (19 000)	15 (5)‡	25 (7.6)	3 (0.9)	100 (30)																																																																				
Over 5000 (19 000) up to and including 10 000 (38 000)	25 (7.6)‡	25 (7.6)	3 (0.9)	100 (30)																																																																				
Over 10 000 (38 000) up to and including 30 000 (113 550)	50 (15.2)‡	50 (15.2)	5 (1.5)	100 (30)																																																																				
Over 30 000 (113 550) up to and including 70 000 (264 950)	75 (22.5)‡	75 (22.5)	1/4 of the sum of diameters of adjacent tanks	100 (30)																																																																				
Over 70 000 (264 950) up to and including 90 000 (340 650)	100 (30)‡	100 (30)	1/4 of the sum of diameters of adjacent tanks	100 (30)																																																																				

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New CSA-B149.2-2020 New and Revised Clause	Current Code CAN/CSA-B149.2-15 Clauses	Recommendations, Interpretations and Rationale
7.19 Container refill centres	7.19 Container refill centres	
7.19.4 Protection against vehicular traffic (see Annex B)	7.19.4 Protection against vehicular traffic (see Annex B)	
<p>7.19.4.2 Guardrails used for the protection of a tank shall be</p> <p>(a) of the steel deep beam type, 12 x 162 in (300 x 4050 mm), supported by 6 in (150 mm) minimum pressure-treated wooden posts buried not less than 36 in (900 mm) below grade and located not more than 75 in (1875 mm) apart, centre to centre, and the bottom of the beam shall be 18 in (450 mm) above grade; or</p> <p>(b) of the reinforced concrete barrier type, commonly referred to as the New Jersey Turnpike barrier, not less than 30 in (750 mm) in height. See Figure D.1 in Annex D for an illustration of a typical barrier such as Ontario Provincial Standard Drawing precast concrete barrier (OPSD-920.010 or, 911series); and</p> <p>(c) the maximum spacing between the barriers shall not exceed 54 in (1380 mm).</p>	<p>Revised Guardrails used for the protection of a tank shall be</p> <p>(a) of the steel deep beam type, 12 x 162 in (300 x 4050 mm), supported by 6 in (150 mm) minimum pressure-treated wooden posts buried not less than 36 in (900 mm) below grade and located not more than 75 in (1875 mm) apart, centre to centre, and the bottom of the beam shall be 18 in (450 mm) above grade; or</p> <p>(b) of the reinforced concrete barrier type, commonly referred to as the New Jersey Turnpike barrier, not less than 30 in (750 mm) in height, with a width of base not less than the height. See Figure E.1 in Annex E for an illustration of a typical barrier.</p>	<p>Corrects an error in the reference to the Figure and Annex.</p> <p>Removed the design requirement for the barrier since they are not typically built that way.</p>

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New CSA-B149.2-2020 New and Revised Clause	Current Code CAN/CSA-B149.2-15 Clauses	Recommendations, Interpretations and Rationale
<p>7.19.4.5 Protection of tanks used to supply propane to buildings or sites under construction, repair or improvement may be accomplished by the installation of posts, guardrails or reinforced concrete barriers as required in clauses 7.19.4.1, 7.19.4.2 and 7.19.4.3 or by using:</p> <ul style="list-style-type: none"> (a) concrete castings, weighting at least 900 lb (410 kg) and not less than 30 in (750 mm) in height. Any opening between barriers shall not exceed 54 in (1350 mm); (b) a continuous berm pile having a minimum height of 36 in (900 mm), or (c) other means of protection that are equivalent to the protection requirements of 7.19.4.1, 7.19.4.2 and 7.19.4.3 shall be acceptable. <p>Distances between barriers and tanks shall be in compliance with the typical illustrations shown in Annex B.</p>	<p><u>New</u></p>	<p>Provides alternative methods of protection for temporary use, at locations under construction, repair or improvement.</p>
<p>7.20 Dispensing system</p>	<p>7.20 Dispensing system</p>	
<p>7.20.12 After December 31, 2025, vehicle fuel dispensers shall be equipped with a nozzle designed and manufactured to ISO 19825 for type K15.</p> <p><i>Note: During the transition, adaptors from the ACME fill system will be allowed, provided they are marked for the service, pressure and manufacturers name.</i></p>	<p><u>NEW</u></p>	<p>This new technology eliminates the manually threading of the ACME filler on to the receptacle, resulting in increased safety and lower emissions. It will become mandatory in NFPA 58 after 2020.</p>

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<p>7.20.13 Vehicle fuel Dispensers shall be listed to UL 495 or certified to CAN-1-12.4.</p>	<p><u>New</u></p>	<p>Compliance with UL 495 is a more current standard than the CSA B12.4 and is the standard used in the US. The difference between the requirements in C22.2 No 22 and NFPA 70 is the requirement highlighted below: the requirement for an isolated ground from the intrinsically safe barrier. NFPA 70/UL 495 allowed for the I.S. barrier to be grounded to the main grounding block. The CEC is in the process of revising Section 20 of the CEC to allow UL 495 approved dispensers.</p>
<p>9 Vaporizers</p>	<p>9 Vaporizers</p>	
<p>9.1.10 An emergency shutdown system shall be installed in any tank system supplying propane to a direct-fired vaporizer. The emergency shutdown system may be of the electrical, pneumatic or mechanical type or a combination thereof and the means to activate the emergency shutdown system shall be located at least 25 feet (7.6 m) from the direct-fired vaporizer/s. The emergency shutdown system when activated shall initiate shut-off of the liquid line at the tank location that is connected to the vaporizer. </p>	<p><u>Revised</u> An emergency shutdown system shall be installed in any tank system supplying propane to a direct-fired vaporizer. The electric or pneumatic or mechanical shutoff system shall be able to be activated by pushing a panic button, or pulling a chain or cable that shall be located a least 25 ft (7.6 m) away from the vaporizer and tank(s) and shall be able to shut off the supply of propane to the vaporizer by closing the valves at the liquid line and the gaseous line at the tank.</p>	<p>The intent is to have a reasonably safe place to activate the device in the event of an unplanned escape of liquid propane or fire at the vaporizer.</p>
<p>9.2 Indirect vaporizers</p>	<p>9.2 Indirect vaporizers</p>	

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New CSA-B149.2-2020 New and Revised Clause	Current Code CAN/CSA-B149.2-15 Clauses	Recommendations, Interpretations and Rationale
<p>9.2.4 A boiler that provides the heat required for producing steam, hot water, or another heating medium to an indirect vaporizer shall be located in a place that is separated from any compartment or room containing an indirect vaporizer, a pump, or propane/air mixing equipment by a fire-separation of 2 h fire-resistance rating of propane-vapour-tight construction. The compartment or room containing the indirect vaporizer, pump, or propane/air mixing equipment with or without an air compressor shall be ventilated to the outdoors near the floor line and the ceiling.</p>	<p>Revised A boiler that provides the heat required for producing steam, hot water, or another heating medium to an indirect vaporizer shall be located in a place that is separated from any compartment or room containing an indirect vaporizer, a pump, or propane/air mixing equipment by a fire separation of 2 h fire-resistance rating of propane-vapour-tight construction. The compartment or room containing the indirect vaporizer, pump, or propane/air mixing equipment shall be ventilated to the outdoors near the floor line and the roof.</p>	<p>A compressor may be required in a compartment or a room containing an indirect vaporizer.</p>
<p>9.3.5 The direct-fired vaporizer shall be certified to ULC/ORD-C1349 or UL 1349.</p>	<p>New</p>	<p>Added code reference to the appropriate Other Recognized Document (ORD). ORD's are recognized by the Standards Council of Canada.</p>

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New CSA-B149.2-2020 New and Revised Clause	Current Code CAN/CSA-B149.2-15 Clauses	Recommendations, Interpretations and Rationale
<p>Annex O (normative) Use of Non-Refillable Propane Cylinders in Laboratories/Classrooms in Schools, Colleges and Universities</p> <p><i>Note: This Annex is a mandatory part of the code.</i></p>	<p><u>New</u></p>	<p>To guide the use of cylinders in classrooms in schools and colleges.</p>
<p>O.1 Scope/General Requirements</p>		
<p>O.1.1 These requirements apply to the use of non-refillable propane cylinders in laboratories/classrooms in schools, colleges and universities.</p>		
<p>O.1.2 Instead of permanently installed gas systems feeding gas outlets for small appliances such as portable Bunsen burners, the appliances may be connected to non-refillable cylinders in accordance with the conditions described below.</p>		
<p>O.1.3 The appliances and cylinders shall be used for educational and instructional purposes only.</p>		
<p>O.1.4 Propane cylinders shall be of the approved non-refillable type (TC-39, TC-2P and TC-2Q), commonly referred to as “single-trip” – with the maximum capacity of 16 oz.</p>		
<p>O.2 Classroom Quantities</p>		
<p>O.2.1 No more than the quantity of cylinders required to fuel the appliance shall be brought into the laboratory/classroom.</p>		
<p>O.2.2 Not more than 20 cylinders may be connected for use in a laboratory/classroom at one time or one cylinder to every two students, whichever number is lower.</p>		

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New CSA-B149.2-2020 New and Revised Clause	Current Code CAN/CSA-B149.2-15 Clauses	Recommendations, Interpretations and Rationale
O.3 Classroom/ Laboratory Use		
O.3.1 Cylinders shall either be directly connected to the appliance or with an approved hose.		
O.3.2 Only one cylinder per appliance shall be used.		
O.3.3 An appliance connected to a cylinder shall not be located so as to obstruct an entrance or exit of a laboratory or the pathway to such an exit or entrance or a stairway.		
O.3.4 The appliances/cylinders shall be secured by the use of non-combustible stand or equivalent so as to prevent accidental tip over.		
O.3.5 A leak test, using a leak detection solution or a gas detector, shall be carried out on all connections each time the cylinder is connected to the appliance for use. A source of ignition shall not be used to check for leaks.		
O.3.6 At no time can appliances and cylinders be moved from the work station while operating.		
O.3.7 Appliances shall be disconnected at the end of class.		
O.3.8 The cylinder's connections shall be leak tested immediately after disconnection.		

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New CSA-B149.2-2020 New and Revised Clause	Current Code CAN/CSA-B149.2-15 Clauses	Recommendations, Interpretations and Rationale
<p>O.3.9 A portable fire extinguisher classified not less than 10 BC shall be located in each laboratory/classroom where the appliances and cylinders are used.</p>		
<p>O.4 Training and Responsibilities</p>		
<p>O.4.1 The instructor/teacher shall be in control of the operation of all appliances and cylinders to ensure safe operation and handling.</p>		
<p>O.4.2 All instructors and teachers supervising the use of these cylinders shall be trained and knowledgeable in the safe use of both the appliances and cylinders.</p>		
<p>O.4.3 Students shall not be allowed to connect or disconnect cylinders until they have been properly trained on the connecting/disconnecting procedure of a cylinder to an appliance.</p>		
<p>O.5 Cylinder Storage and Removal</p>		
<p>O.5.1 No cylinders shall be stored overnight in the laboratory/classroom that is not designed for cylinder storage.</p>		
<p>O.5.2 All cylinders, used and spares shall be stored overnight in accordance with the AHJ either outdoors or indoors in a special cylinder storage room.</p>		
<p>O.5.3 All cylinders that have been depleted of their product shall be treated the same as full or partly full and the storage and handling of them shall be in accordance with this Code.</p>		

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New CSA-B149.2-2020 New and Revised Clause	Current Code CAN/CSA-B149.2-15 Clauses	Recommendations, Interpretations and Rationale
<p>Annex Q (informative) <i>Temporary use of cylinders at shows, exhibitions or other similar events</i></p> <p>Note: <i>This informative Annex has been written in normative language to facilitate adoption where users of the Code or regulatory authorities wish to adopt it formally as additional requirements to this Code.</i></p> <p>Q.1 Use of propane cylinders indoors</p> <p>Q 1.1 A cylinder shall be labeled "Propane", "Liquid Petroleum (LP) Gas" or "Danger: flammable gas". This label shall be easily readable and affixed in a conspicuous location.</p> <p>Q.1.2 A cylinder containing a maximum of 20 lbs (9 kg) of propane and not connected to any other cylinder may be used indoors to supply propane to an appliance. The total propane capacity of cylinders installed indoors shall not exceed 1 lb (0.5 kg) per 200 ft² (18 m²) of floor area.</p> <p>Q.1.3 A cylinder in use within a building shall not be located within 50 ft (15 m) of an exit or stairway.</p> <p>Q.1.4 A cylinder valve connection shall be equipped with an excess flow valve that activates at a flow of not more than 100 scfh (2.8 m³/h) at a pressure of 100 psig (690 kPa) or a device that limits the flow equivalent to that through a No. 60 DMS (1 mm) drill orifice at 100 psig (690 kPa). A cylinder shall be equipped with an overfill protection device (OPD) valve.</p>	<p><u>New</u></p>	<p>To guide the use of cylinders at shows, exhibitions or other similar events.</p>

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New CSA-B149.2-2020 New and Revised Clause	Current Code CAN/CSA-B149.2-15 Clauses	Recommendations, Interpretations and Rationale
<p>Q.1.5 A certified pressure regulator shall be installed on a cylinder and be suitable for use with the appliance connected to the cylinder.</p> <p>Q.1.6 A cylinder valve shall be closed when the appliance connected to the cylinder is not in use.</p> <p>Q.1.7 A cylinder connected to an appliance shall be secured or located in a place to prevent accidental tip over.</p> <p>Q.1.8 A certified portable fire extinguisher classified in accordance with CAN/ULC-S508 of at least 10-B.C rating shall be located within 25 ft (7.5m) of a cylinder.</p> <p>Q.1.9 A cylinder not connected for use shall be stored outdoors.</p> <p>Q.1.10 Connections at a cylinder and at the appliance connected to the cylinder shall be tested for leaks with a leak detection solution or any other proven leak detection method at the time the cylinder is connected. Additionally, this test shall be conducted daily upon activation. A source of ignition shall not be used to check for leaks.</p>		

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New CSA-B149.2-2020 New and Revised Clause	Current Code CAN/CSA-B149.2-15 Clauses	Recommendations, Interpretations and Rationale
<p>Annex R (informative)</p> <p>Inspection and servicing of pressure relief devices (PRDs) on tanks</p> <p><i>Note: This informative Annex has been written in normative language to facilitate adoption where users of the Code or regulatory authorities wish to adopt it formally as additional requirements to this Code.</i></p> <p>R.1 PRDs of tanks shall be visually inspected periodically to ensure that there are no impediments that will prevent them from operating properly. The frequency of the periodic visual inspection depends on the operating environment and the manufacturer’s recommendation, but shall not exceed 5 years.</p> <p>R.2 The PRD inspection shall be recorded at a minimum interval of every five years. The record shall include the date of inspection and the person carrying out the inspection. The inspection will ensure that:</p> <ul style="list-style-type: none"> a) The outlet and, where applicable, weep hole are open and free to discharge; b) There are no signs of corrosion, cracks, debris, tampering, or other mechanical damage; c) There is no leakage; d) The manufacturers data plate or markings are present in accordance with UL132*; e) The set pressure of the PRD less than or equal to the MAWP of the tank; f) The PRD’s discharge meets the requirements of NFPA 58; 	<p><u>New</u></p>	<p>Consistency with CSA B51.</p>

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<p>g) The discharge is directed to a safe location, and any piping installed is adequately supported and does not obstruct the discharge;</p> <p>h) The seal (where applicable) has not been broken;</p> <p>i) The rain cap, where applicable, has been installed.</p> <p>j) The name of the PRD manufacturer; and</p> <p>k) The date on which the PRD was put into service.</p> <p><i>*Not all valves will have a name plate. If there is no nameplate the markings are stamped into the body of the valve. All valves should be marked with the manufacturer's name or an abbreviation, the manufacturer's part number, set pressure, capacity, date or date code for year of manufacture, and the UL rating code symbol.</i></p> <p>R.3 In addition to the periodic visual inspection specified in R2, if the discharge piping in an LPG service governed by this Code is fabricated from a material, such as carbon steel that can corrode and form internal scale, the discharge piping shall be removed to inspect the pressure relief device and the piping. Any scale buildup in the discharge piping shall be removed.</p> <p>R.4 Tanks of greater than 2500 USWG shall have the relief valves rebuilt/certified or replaced every 10 years.</p> <p>R.5 Tanks of 2500 USWG or less shall have the relief valves rebuilt/certified or replaced every 25 years</p>		
<p>END</p>		