

V 11- DRAFT- CSA - B149.2 - 2025
PROPANE STORAGE AND HANDLING CODE

DRAFT - CSA - B149.2 - 2025	CSA - B149.2 - 2020	INTERPRETATIONS AND RATIONALE
CSA B149.2 – 2025 – Major Revisions		



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Interprovincial/Territorial Gas Advisory Council (IGAC)	Interprovincial Gas Advisory Council (IGAC)	IGAC Committee List to be updated based on committee list at the time of voting

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<p><u>SDG Sustainable Development Goals (SDG)</u> <u>-Foreword</u></p> <p><u>CSA Group develops and maintains standards across a broad range of topics, most of which support the United Nations Sustainable Development Goals (UN SDGs) towards shaping a sustainable and resilient future. Through a robust mapping process, connections between CSA B149.2:25 and the following SDGs have been identified:</u></p>	<p>NEW</p>	

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<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>SDG</p> <hr/> <p>Targets</p> </div> <div style="text-align: center;">  <p>7 AFFORDABLE AND CLEAN ENERGY</p> </div> <div style="text-align: center;">  <p>11 SUSTAINABLE CITIES AND COMMUNITIES</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="text-align: center;"> <p>7.1</p> </div> <div style="text-align: center;"> <p>11</p> </div> </div> <p><u>Alt Text: SDG 1: No Poverty, SDG 2: Zero Hunger, SDG 3: Good Health and Well-being, SDG 4: Quality Education, SDG 5: Gender Equality, SDG 6: Clean Water and Sanitation, SDG 7: Affordable and Clean Energy, SDG 8: Decent Work and Economic Growth, SDG 9: Industry,</u></p>		

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<p><u>Innovation and Infrastructure, SD, 10: Reduced Inequality, SDG 11: Sustainable Cities and Communities, SDG 12: Responsible Consumption and Production, SDG 13: Climate Action, SDG 14: Life Below Water, SDG 15: Life on Land, SDG 16: Peace and Justice Strong Institutions</u> CSA B149.2:25 has notable linkages with the following SDGs:</p> <ul style="list-style-type: none"> • <u>SDG 7: Affordable and Clean Energy</u> • <u>SDG 11: Sustainable Cities and Communities</u> <p>For further information on CSA Group's SDG Mapping initiative, please visit: https://www.csagroup.org/sdg/ <u>Disclaimer</u> Note: It is important to note that although some sStandards standards-based solutions explicitly support SDG</p>		

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<p><u>targets, not all eStandards standards and documents link to the SDGs. Standards users Users of CSA documents should always take care and be specific when claiming their support of SDGs through the use of eStandards standards and other documents. The SDG mapping outcomes made available by CSA Group are intended to assist users in their evaluation of how the application of a eStandard standard or other document may can support their work towards SDG achievement.</u></p>		

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CSA B149.2:250 Propane storage and handling code	CSA B149.2:20 Propane storage and handling code	
1 Scope 1.1 <u>Inclusions</u>	1 Scope 1.1	RFC B149.2-20-28 Rationale: Clause 1.2 k) specifies the threshold where the CSA B149.2 ends and the CSA B149.1 begins. It is understood from the last meeting that the first stage regulator is part of the CSA B149.2 and its outlet is the threshold with the CSA B149.1. If the term “inlet” is used, it could be understood that the second stage regulator is part of the equipment and therefore part of the CSA B149.1. Otherwise, if “inlet” is kept, this could be interpreted that it is only the container that is in the scope of the CSA B149.2. The proposed modification clarifies the threshold in CSA B149.1 and is complimentary to the CSA B149.2.

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<p>1.2 Exclusions This Code does not apply to k) any equipment extending downstream from the inlet tooutlet of any <u>propane</u> container pressure regulator (commonly referred to as first-stage regulator);</p>	<p>1.2 This Code does not apply to k) any equipment extending downstream from the inlet to any container pressure regulator (commonly referred to as first-stage regulator);</p>	<p>RFC B149.2-20-28 Rationale: Clause 1.2 k) specifies the threshold where the CSA B149.2 ends and the CSA B149.1 begins. It is understood from the last meeting that the first stage regulator is part of the CSA B149.2 and its outlet is the threshold with the CSA B149.1. If the term “inlet” is used, it could be understood that the second stage regulator is part of the equipment and therefore part of the CSA B149.1. Otherwise, if “inlet” is kept, this could be interpreted that it is only the container that is in the scope of the CSA B149.2. The proposed modification clarifies the threshold in CSA B149.1 and is complimentary to the CSA B149.2.</p>

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<p>1.45 Units of measurement <u>The values given in US customary units are the units of record for the purposes of this Standard Code. The values given in parentheses are for information and comparison only.</u> The values given in yard/pound units are the standard, unless noted otherwise. This Code contains SI (metric) equivalents to yard/pound units so that the Code can be used in SI (metric) units. SI (metric) equivalents may be approximate unless they are the standard.</p>	<p>1.4 The values given in yard/pound units are the standard, unless noted otherwise. This Code contains SI (metric) equivalents to yard/pound units so that the Code can be used in SI (metric) units. SI (metric) equivalents may be approximate unless they are the standard.</p>	
<p>B149.3:2025 Code for the field approval of fuel-related components on burning appliances and equipment</p>	<p>B149.3-20 Code for the field approval of fuel-related components on appliances and equipment</p>	

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DRAFT - CSA - B149.2 - 2025	CSA - B149.2 - 2020	INTERPRETATIONS AND RATIONALE
<p>B622-14 (R2019) Selection and use of highway tanks, TC portable tanks, and ton containers for the transportation of dangerous goods, Class 2</p>	<p>B622-14 (R2019) Selection and use of highway tanks, TC portable tanks, and ton containers for the transportation of dangerous goods, Class 2</p>	
<p>Z240 MH Series-16 (R2021) Manufactured homes: Z240.4.1-16 (R2021) Installation requirements for gas-burning appliances in manufactured homes</p>	<p>Z240 MH Series-16 Manufactured homes: Z240.4.1-16 Installation requirements for gas-burning appliances in manufactured homes</p>	
<p>CSA-12.4:22CAN-1-12.4-M84(R2018) Power-operated LP-gas dispensing equipment Dispensing devices for propane fuel for highway vehicles</p>	<p>CAN-1-12.4-M84(R2018) Dispensing devices for propane fuel for highway vehicles</p>	

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Z240 RV Series-14 (R2020) Recreational vehicles: Z240.4.2-14 (R2020) Installation requirements for propane appliances and equipment in recreational vehicles	Z240 RV Series-14 Recreational vehicles: Z240.4.2-14 Installation requirements for propane appliances and equipment in recreational vehicles	
AIChE (American Institute of Chemical Engineers) <u>Guidelines for Hazard Evaluation Procedures, third edition</u>	New	

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<p><u>MIACC (Major Industrial Accidents Council of Canada)</u> <u>Risk-based Land Use Planning Guidelines:</u></p> <p>https://www.cheminst.ca/wp-content/uploads/2019/04/the20accompanying20cover20note-1.pdf</p> <p><u>UL (Underwriters Laboratories Inc.)ULSE Inc.</u> <u>UL 132: (2021)-(2015)</u> Safety Relief Valves for Anhydrous Ammonia and LP-Gas</p> <p><u>UL 495 (2016/2022)</u></p>	<p>UL (Underwriters Laboratories Inc.) UL 132- 2015 Safety Relief Valves for Anhydrous Ammonia and LP-Gas</p>	

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<p><u>Standard for Power-Operated Dispensing Devices for LP-Gas</u></p> <p><u>UL 567 (20212014)</u></p> <p><u>Standard for Emergency Breakaway Fittings, Swivel Connectors and Pipe-Connection Fittings for Petroleum Products and LP-Gas</u></p> <p><u>UL 1349:2023-(2017)</u> Outline of Investigation for LP-Gas Vaporizers</p> <p><u>ANSI/CAN/ULC1275:2021-2014</u> Standard for Flammable Liquid Storage Cabinets</p> <p><u>UL 2227-(2007)</u> Standard for Overfilling Prevention Devices</p>	<p>1349-2017 Outline of Investigation for LP-Gas Vaporizers</p> <p>ANSI/CAN//ULC12751275-2014 Standard for Flammable Liquid Storage Cabinets</p> <p>2227-2007 Standard for Overfilling Prevention Devices</p>	

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<p>495-2016 Standard for Power-Operated Dispensing Devices for LP-Gas</p> <p>567-2014 Standard for Emergency Breakaway Fittings, Swivel Connectors and Pipe-Connection Fittings for Petroleum Products and LP-Gas</p> <p><u>ULSE Inc./ ULC (Underwriters' Laboratories of Canada)</u></p> <p>ANSI/CAN/UL/ULC 1275:2021 Standard for Flammable Liquid Storage Cabinets</p> <p>ULC (Underwriters' Laboratories of Canada) ANSI/CAN/UL/ULC/ORD-C-1275:2021-84 Guide for the Investigation of Storage Cabinets for Flammable</p>	<p>495-2016 Standard for Power-Operated Dispensing Devices for LP-Gas</p> <p>567-2014 Standard for Emergency Breakaway Fittings, Swivel Connectors and Pipe-Connection Fittings for Petroleum Products and LP-Gas</p> <p>ULC (Underwriters' Laboratories of Canada) ULC/ORD-C1275-84 Guide for the Investigation of Storage Cabinets for Flammable</p>	

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<p>Liquid Flammable Liquid Storage Cabinets</p> <p>CAN/ULC-S104-15-R2020CAN4-S104-2010 Standard Method for Fire Tests of Door Assemblies</p>	<p>Liquid Flammable Liquid Storage Cabinets</p> <p>CAN4-S104-2010 Standard Method for Fire Tests of Door Assemblies</p>	

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		<p>RFC B149.2-20-21r2 Rationale: A new edition of CGSB standard CAN/CGSB-43.123 has been published in April 2022. Among the revision to the standard is the inclusion of three new container categories: TC-2P1, TC-2P2, and TC-2Q2. The new TC-2P2 specification is for gas cartridges intended to be used for liquified petroleum gases. In order to be consistent with the new CAN/CGSB-43.123, the B149.2 should be revised as proposed above.</p>

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<p>3 Definitions</p> <p>Aerosol container — a non-refillable container meeting the requirements for 2P, <u>2P1</u>, 2Q, <u>2Q2</u> or 2R aerosol containers for containment and transportation of propane under the <i>Transportation of Dangerous Goods Regulations</i> of Transport Canada.</p> <p>Air supply (with respect to the installation of an appliance)— combustion air, flue gas dilution air, and ventilation air.</p> <p>Combustion air — the air required for satisfactory combustion of propane, including excess air.</p> <p>Flue gas dilution air—the ambient air that is admitted to a</p>	<p>3 Definitions</p> <p>Aerosol container — a non-refillable container meeting the requirements for 2P, 2Q, or 2R aerosol containers for containment and transportation of propane under the <i>Transportation of Dangerous Goods Regulations</i> of Transport Canada.</p>	<p>RFC B149.2-20-21r2</p> <p>Rationale: A new edition of CGSB standard CAN/CGSB-43.123 has been published in April 2022. Among the revision to the standard is the inclusion of three new container categories: TC-2P1, TC-2P2, and TC-2Q2. The new TC-2P2 specification is for gas cartridges intended to be used for liquified petroleum gases.</p> <p>In order to be consistent with the new CAN/CGSB-43.123, the B149.2 should be revised as proposed above.</p>

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<p>venting system at the draft hood, draft diverter, or draft regulator.</p> <p>Ventilation air — air that is admitted to a space containing an appliance to replace air exhausted through a ventilation opening or by means of exfiltration.</p> <p>Appliance — a device to convert propane into energy; the term includes (including any component, control, wiring, piping, or tubing required to be part of the device).</p> <p>Branch line — the part of a piping or tubing system that conveys propane from the main piping or tubing or header to an appliance(s).</p>		

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<p>Burner — a device or group of devices that forms forming an integral unit for the introduction of propane, with or without air or oxygen, into the combustion zone for ignition.</p> <p>Continuous pilot — see Pilot.</p> <p>Flexible metallic hose — an all-metallic flexible propane conduit.</p> <p>Flue collar — that portion of an appliance designed for the attachment of a draft hood, vent connector, or venting system.</p> <p>Flue gas dilution air — see Air supply.</p>		

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<p><u>Gas cartridge</u> — a non-refillable container meeting the requirements for 2P, 2P2, or 2Q gas cartridges for containment and transportation of propane under theTransport Canada's Transportation of Dangerous Goods Regulations of TransportCanada.</p> <p>Pilot — a flame that is used to ignite a gas/air or propane/air mixture at the main burner(s).</p> <p>Continuous pilot — a pilot that burns without turndown throughout the entire time the burner is in service, whether the main burner is firing or not.</p>	<p>New</p>	<p>RFC B149.2-20-21r2</p> <p>Rationale: A new edition of CGSB standard CAN/CGSB-43.123 has been published in April 2022. Among the revision to the standard is the inclusion of three new container categories: TC-2P1, TC-2P2, and TC-2Q2. The new TC-2P2 specification is for gas cartridges intended to be used for liquified petroleum gases.</p> <p>In order to be consistent with the new CAN/CGSB-43.123, the B149.2 should be revised as proposed above.</p>

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<p><u>Self-service vehicle fuel dispenser – Aa vehicle fuel dispenser for use by the public for conducting dispensing operations.</u></p> <p>TC — Transport Canada.</p>	<p>New</p>	<p>RFC B149.2-20-39 Rationale: Public refuelling of Autogas vehicles is currently allowed in Europe and is allowed in many states in America. Beginning January 2024 NFPA 58 will introduce language that will allow public refuelling of Autogas vehicles throughout the USA.</p>
<p><u>Underground tank – a tank which that is buried completely or partly below the ground level and covered with earth, sand, or other material or mounded partly below the ground level or above ground level and covered with earth, sand, or other material.</u></p>	<p>New</p>	<p>RFC B149.2-20-26 Rationale: The code mentions only underground tanks while mounded tanks are not mentioned as such but are subjected to the same issues that underground tanks are. The definition encloses underground tanks are either buried or mounded.</p>

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<p>Vaporizer — a device for converting liquid propane to vapour by means other than atmospheric heat transfer through the surface of the container.</p> <p><u>Direct-fired tank heater — an open-flame device that applies hot gas from the combustion chamber directly to a portion of the container surface in contact with propane liquid. Considered to be a source of ignition. Does not include devices certified for use in hazardous locations.</u></p>	<p>Vaporizer — a device for converting liquid propane to vapour by means other than atmospheric heat transfer through the surface of the container.</p>	

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<p>Direct-fired tank heater — an open flame device that applies hot gas from the combustion chamber directly to a portion of the container surface in contact with propane liquid. Considered to be a source of ignition. Does not include devices certified for use in hazardous locations.</p>		
<p>Ventilation air — see Air supply.</p> <p>Zero governor — a regulating device that is adjusted to deliver propane at atmospheric pressure within its flow rating</p>		

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<p>4.10.2 <u>Light and or flashlight use</u> A light, including a flashlight, used in connection with a search for propane leakage shall be of a Class I, Group IIA type <u>suitable for Group IIA hazardous locations.</u></p>	<p>4.10.2 A light, including a flashlight, used in connection with a search for propane leakage shall be of a Class I, Group IIA type.</p>	<p>RFC B149.2-20-43 Rationale: The Canadian Electric Code utilizes the Zone System for classification of hazardous areas. It is incorrect to call out “Class I” in conjunction with the Zone System – this terminology is only applicable to the Division System for hazardous areas. In 4.10.2 & 4.10.3, the wording of each clause is modified to delete the reference to “Class I” and to match the language of 8.5.2 (change to “suitable for Group IIA hazardous locations”, instead of “of a Group IIA type”) In Table 7.6, each header is modified to delete the reference to “Class I”, and the footnotes are modified to properly correspond with Table 63 from the CEC. In Note 1, capital letter “I” should be used instead of number “1” to refer to the Class of the Division System. In Note 2, “Class I” is added to</p>

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		<p>the Division System items (a) and (b) to properly correspond with Table 18 from the CEC. In 8.2.2 & 8.5.2, the wording of each clause is modified to delete the reference to "Class I".</p>

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<p>4.10.3 <u>Electrical switches</u> An electric switch either in or adjacent to an area of propane leakage shall not be operated unless it is of a Class I, Group IIA type <u>suitable for Group IIA hazardous locations</u>.</p>	<p>4.10.3 An electric switch either in or adjacent to an area of propane leakage shall not be operated unless it is of a Class I, Group IIA type.</p>	<p>RFC B149.2-20-43 Rationale: The Canadian Electric Code utilizes the Zone System for classification of hazardous areas. It is incorrect to call out “Class I” in conjunction with the Zone System – this terminology is only applicable to the Division System for hazardous areas. In 4.10.2 & 4.10.3, the wording of each clause is modified to delete the reference to “Class I” and to match the language of 8.5.2 (change to “suitable for Group IIA hazardous locations”, instead of “of a Group IIA type”) In Table 7.6, each header is modified to delete the reference to “Class I”, and the footnotes are modified to properly correspond with Table 63 from the CEC. In Note 1, capital letter “I” should be used instead of number “1” to refer to the Class of the Division System. In Note 2, “Class I” is added to</p>

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		<p>the Division System items (a) and (b) to properly correspond with Table 18 from the CEC. In 8.2.2 & 8.5.2, the wording of each clause is modified to delete the reference to "Class I".</p>

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<p>5.2.3 Container limitations Propane shall not be put into</p> <p>a) a cylinder, or aerosol container, <u>or gas cartridge</u> specifically designed for butane or one that does not conform with the requirements of CSA B340 or CGSB 43.123, respectively; or</p> <p>b) a tank specifically designed for butane or one having a maximum allowable working pressure (MAWP) of less than 250 psig (1.72 MPa).</p>	<p>5.2.3 Propane shall not be put into</p> <p>a) a cylinder or aerosol container specifically designed for butane or one that does not conform with the requirements of CSA B340 or CGSB 43.123, respectively; or</p> <p>b) a tank specifically designed for butane or one having a maximum allowable working pressure (MAWP) of less than 250 psig (1.72 MPa).</p>	<p>RFC B149.2-20-21r2 Rationale: A new edition of CGSB standard CAN/CGSB-43.123 has been published in April 2022. Among the revision to the standard is the inclusion of three new container categories: TC-2P1, TC-2P2, and TC-2Q2. The new TC-2P2 specification is for gas cartridges intended to be used for liquified petroleum gases. In order to be consistent with the new CAN/CGSB-43.123, the B149.2 should be revised as proposed above.</p>

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<p>5.5 Line relief valves When a final-stage pressure regulator is not equipped with an internal relief valve, <u>line pressure relief valves shall comply with the requirements of Clause 5.3.4 of CSA B149.1.</u> it shall have immediately downstream a line relief valve with a discharge setting of not less than a) 2 times and not more than 3 times the delivery pressure on systems operating up to 5 psig (35 kPa); or b) 1.5 times and not more than 2 times the delivery pressure on systems operating at more than 5 psig (35 kPa). The relieving pressure setting of the line relief valve shall be not higher than that of the lowest-rated component or accessory located downstream.</p>	<p>5.5 Line relief valves When a final-stage pressure regulator is not equipped with an internal relief valve, it shall have immediately downstream a line relief valve with a discharge setting of not less than a) 2 times and not more than 3 times the delivery pressure on systems operating up to 5 psig (35 kPa); or b) 1.5 times and not more than 2 times the delivery pressure on systems operating at more than 5 psig (35 kPa). The relieving pressure setting of the line relief valve shall be not higher than that of the lowest-rated component or accessory located downstream.</p>	<p>RFC B149.2-20-15r2 Rationale: B149.2:20 Cl. 5.5 is copied from B149.1-15 Cl. 5.3. B149.1:20 updated Cl. 5.3, therefore B149.2 should be updated accordingly to bring the codes in line to one another.</p>

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<p><u>5.12.7 Vehicles equipped with propane appliances in repair garages</u> <u>Vehicles equipped with propane appliances shall be allowed indoors in a repair garage when</u> <u>a) the repair garage is attended by personnel trained in the repair and maintenance of vehicles equipped with propane appliances;</u> <u>and</u> <u>b) propane storage containers installed on the vehicle have all shut-off valves in the closed position, except when propane is required to test the propane gas piping or gas appliances.</u> <u>Vehicles parked or stored indoors in a repair garage when the repair garage is unattended shall meet the requirements of eClause 5.12.6.</u></p>	<p>New</p>	<p>RFC B149.2-20-38 Rationale: Follow up RFC to RFI B149.2-20-11 and the corresponding B149.5 RFI. The following clause appears in CSA B149.5:20 (unchanged in the running draft for 2025)</p>

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<p>6.1 Requirements for cylinders 6.1.1 Refillable cylinders 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, 2P1, 2P2, 2Q, 2Q2 and 2R as per Clause 6.1.4.</p>	<p>6.1 Requirements for cylinders 6.1.1 Refillable <i>cylinders</i> 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>RFC B149.2-20-21r2 Rationale: A new edition of CGSB standard CAN/CGSB-43.123 has been published in April 2022. Among the revision to the standard is the inclusion of three new container categories: TC-2P1, TC-2P2, and TC-2Q2. The new TC-2P2 specification is for gas cartridges intended to be used for liquified petroleum gases. In order to be consistent with the new CAN/CGSB-43.123, the B149.2 should be revised as proposed above.</p>

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<p>6.1.2 <u>Overfill prevention device</u> Except for <u>the following, refillable vapour service cylinders manufactured after January 1, 2008 with a capacity of 4 lb (1.8 kg) through 40 lb (18.1 kg) shall be equipped with an overfill prevention device in compliance with UL 2227:</u> a) cylinders used in industrial truck service; and b) cylinders identified and used for industrial welding and cutting gases, refillable vapour service cylinders manufactured after January 1, 2008 with a capacity of 4 lb (1.8 kg) through 40 lb (18.1 kg) shall be equipped with an overfill prevention device (OPD) in compliance with UL 2227.</p>	<p>6.1.2 Except for a) cylinders used in industrial truck service; and b) cylinders identified and used for industrial welding and cutting gases, refillable vapour service cylinders manufactured after January 1, 2008 with a capacity of 4 lb (1.8 kg) through 40 lb (18.1 kg) shall be equipped with an overfill prevention device (OPD) in compliance with UL 2227.</p>	

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<p>6.1.4 <u>Specification TC 2P, 2P1, 2P2, 2R, 2Q and 2Q2</u> TC Specification 2P, <u>2P1, 2P2</u>, 2R, <u>2Q</u> and 2Q2 non-refillable aerosol containers shall be manufactured, tested, inspected, and marked in accordance with the requirements of CGSB-43.123.</p>	<p>6.1.4 TC Specification 2P, 2R, and 2Q non-refillable <i>aerosol containers</i> shall be manufactured, tested, inspected, and marked in accordance with the requirements of CGSB-43.123.</p>	<p>RFC B149.2-20-21r2 Rationale: A new edition of CGSB standard CAN/CGSB-43.123 has been published in April 2022. Among the revision to the standard is the inclusion of three new container categories: TC-2P1, TC-2P2, and TC-2Q2. The new TC-2P2 specification is for gas cartridges intended to be used for liquified petroleum gases. In order to be consistent with the new CAN/CGSB-43.123, the B149.2 should be revised as proposed above.</p>

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<p>6.5.1.3 Dwelling unit storage Not more than three aerosol containers, <u>gas cartridges</u> or non-refillable cylinders manufactured to Specification TC-39M, filled with propane liquid or vapour, shall be stored in a dwelling unit</p>	<p>6.5.1.3 Not more than three aerosol containers, or non-refillable cylinders manufactured to Specification TC-39M, filled with propane liquid or vapour, shall be stored in a dwelling unit.</p>	<p>RFC B149.2-20-21r2 Rationale: A new edition of CGSB standard CAN/CGSB-43.123 has been published in April 2022. Among the revision to the standard is the inclusion of three new container categories: TC-2P1, TC-2P2, and TC-2Q2. The new TC-2P2 specification is for gas cartridges intended to be used for liquified petroleum gases. In order to be consistent with the new CAN/CGSB-43.123, the B149.2 should be revised as proposed above.</p>

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<p align="center">Table 6.3 Cylinder storage clearances (See Clauses 6.5.1.8, 6.5.2.6.1, and 6.5.3.2.)</p> <table border="1"> <tr> <td>501 (225) to 2500 (1135)</td> <td>15 (4.5) <u>10 (3)</u></td> <td>25 (7.6)</td> </tr> </table>	501 (225) to 2500 (1135)	15 (4.5) <u>10 (3)</u>	25 (7.6)	<p align="center">Table 6.3 Cylinder storage clearances (See Clauses 6.5.1.8, 6.5.2.6.1, and 6.5.3.2.)</p> <table border="1"> <tr> <td>501 (225) to 2500 (1135)</td> <td>15 (4.5)</td> <td>25 (7.6)</td> </tr> </table>	501 (225) to 2500 (1135)	15 (4.5)	25 (7.6)	<p>Table 6.3 RFC B149.2-20-10 Rationale: The objective here is to try and create equivalent requirements for cylinders and tanks used in a consumer application and correct terminology used in 7.10.2; “important building, group of buildings, or line of adjoining property that can be built upon” is not common language to Table 7.4.</p>
501 (225) to 2500 (1135)	15 (4.5) <u>10 (3)</u>	25 (7.6)						
501 (225) to 2500 (1135)	15 (4.5)	25 (7.6)						

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<p>6.5.2.1 General Except as permitted-required in Clauses 6.5.2.4, 6.5.3.2, 6.5.4.2, and 6.5.5.2, cylinders shall be fenced in accordance with Clause 6.5.2.2 or 6.5.2.3 or shall be enclosed in a cabinet, cage, or other means in accordance with Clause 6.5.1.14, 6.5.2.6, or 6.5.10.</p>	<p>6.5.2.1 Except as permitted in Clauses 6.5.2.4, 6.5.3.2, 6.5.4.2, and 6.5.5.2, cylinders shall be fenced in accordance with Clause 6.5.2.2 or 6.5.2.3 or shall be enclosed in a cabinet, cage, or other means in accordance with Clause 6.5.1.14, 6.5.2.6, or 6.5.10.</p>	

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<p>6.5.2.4 Outdoor industrial building cylinder storage A cylinder stored outdoors against an industrial building on the property of the user shall meet the requirements of Clause 6.5.1. The fencing or storage cabinet required by Clause 6.5.2.1 shall <u>may</u> not be mandatory<u>required</u>, provided that</p> <p>c) all cylinders are not less than 25 ft (7.6 m) from any other building, <u>a line of adjoining property</u> line, or point of assembly;</p>	<p>6.5.2.4 A cylinder stored outdoors against an industrial building on the property of the user shall meet the requirements of Clause 6.5.1. The fencing or storage cabinet required by Clause 6.5.2.1 shall not be mandatory, provided that</p> <p>c) all cylinders are not less than 25 ft (7.6 m) from any other building, property line, or point of assembly;</p>	<p>RFC B149.2-20-36r2 Rationale: This docket is to review and clarify all requirements from a property line or a line of adjoining property. The clauses 6.5.1.8, 6.5.2.6.1, 7.8.12, 7.8.13, 7.12.5, 7.12.6, 7.14.2 and 7.17.1 are already defined from a line of adjoining property. After revision of all requirements, we recommend to change from a property line to a line of adjoining property on the clause 6.5.2.4 only. Please note the intent is to be consistent with the other existing clauses and it will be harmonized with NPFA 58 requirements.</p>

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<p><u>6.5.3.9 Cylinders below grade</u> <u>Other than one- and two-family dwellings and row housing, a cylinder in use may be placed below grade in a well-ventilated area with no source of ignition within 10 ft (3 m) and installed on a solid, level and non-combustible base.</u></p>	<p>New</p>	<p>RFC B149.2-20-22r2 Rationale: Proper propane cylinder locations at a construction site have long been a challenge specifically with commercial projects. Historically, it has been interpreted that propane cylinders that are connected for use have not been allowed to be installed below grade. On a larger site early in construction this has limited the options contractors, suppliers and general contractors have for safe efficient construction. With a maximum gas hose length of 75 ft. (24 m), options to access across large distances have included rigid piping extending into an excavation where proper pipe support and protection can be marginal. This, in conjunction with the ever-changing nature of a construction site makes safe practices difficult. This proposed change provides an</p>

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		<p>alternative option of equivalent or greater safety than at grade placement.</p> <p>Another consideration is that the propane at construction sites allows for use of propane cylinders within a building under construction (clause 6.5.3.5). It does not limit where in that building it is allowed. (parkade, basement)</p> <p>And if the building is under construction and unoccupied, 6.5.3.5 e) allows that the cylinder is not required to be under direct supervision at all times.</p> <p>Filling of the cylinders would remain at grade level as outlined in 6.5.3.4 a) and discussed in a subsequent section of this document. There would be some additional steps involved in moving the cylinders from in the excavation and should follow 6.5.3.7 which includes the use of a construction hoist.</p>

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		<p>Construction is a fluid process where conditions and requirements for temporary heat are continually changing onsite. Section 6.5.3 of the CSA B149.2-20 Cylinders at Construction Sites allows for conditions to exist on a construction site that would not normally be an acceptable practice. These conditions exist for a short period of time and are not intended for long term use.</p> <p>Section 6.5.3 Cylinders at Construction Sites includes 6.5.3.9 Cylinders on building rooftops, which provides special circumstance for the temporary use of propane on a roof top during construction or repair and 6.8 Rooftop installation of cylinder systems is for a permanent or longer-term location. This further suggests that 6.7 Installation of cylinders should be intended for a permanent or longer-term use of a cylinder and that it would not apply to a construction</p>

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		site unless the cylinder is being filled on site in the location it is being used.

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<p>6.7.4 Below grade <u>Except as specified in eClause 6.5.3.9, Aa</u> cylinder shall not be installed below grade. This requirement shall not prohibit an installation in a compartment or recess below grade level, such as a niche in a slope or terrace wall that is used for no other purpose, provided that</p>	<p>6.7.4 A cylinder shall not be installed below grade. This requirement shall not prohibit an installation in a compartment or recess below grade level, such as a niche in a slope or terrace wall that is used for no other purpose, provided that</p>	<p>RFC B149.2-20-22r2 Rationale: Proper propane cylinder locations at a construction site have long been a challenge specifically with commercial projects. Historically, it has been interpreted that propane cylinders that are connected for use have not been allowed to be installed below grade. On a larger site early in construction this has limited the options contractors, suppliers and general contractors have for safe efficient construction. With a maximum gas hose length of 75 ft. (24 m), options to access across large distances have included rigid piping extending into an excavation where proper pipe support and protection can be marginal. This, in conjunction with the ever-changing nature of a construction site makes safe practices difficult. This proposed change provides an</p>

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		<p>alternative option of equivalent or greater safety than at grade placement.</p> <p>Another consideration is that the propane at construction sites allows for use of propane cylinders within a building under construction (clause 6.5.3.5). It does not limit where in that building it is allowed. (parkade, basement)</p> <p>And if the building is under construction and unoccupied, 6.5.3.5 e) allows that the cylinder is not required to be under direct supervision at all times.</p> <p>Filling of the cylinders would remain at grade level as outlined in 6.5.3.4 a) and discussed in a subsequent section of this document. There would be some additional steps involved in moving the cylinders from in the excavation and should follow 6.5.3.7 which includes the use of a construction hoist.</p>

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		<p>Construction is a fluid process where conditions and requirements for temporary heat are continually changing onsite. Section 6.5.3 of the CSA B149.2-20 Cylinders at Construction Sites allows for conditions to exist on a construction site that would not normally be an acceptable practice. These conditions exist for a short period of time and are not intended for long term use.</p> <p>Section 6.5.3 Cylinders at Construction Sites includes 6.5.3.9 Cylinders on building rooftops, which provides special circumstance for the temporary use of propane on a roof top during construction or repair and 6.8 Rooftop installation of cylinder systems is for a permanent or longer-term location. This further suggests that 6.7 Installation of cylinders should be intended for a permanent or longer-term use of a cylinder and that it would not apply to a construction</p>

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		site unless the cylinder is being filled on site in the location it is being used.

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<p><u>6.9.36.7.8 Separation</u> <u>Except as prohibited in Clause 6.9, a cylinder of 420 lb (191 kg) or less or system of a maximum of four cylinders for a total capacity of 420 lb (191 kg) or less may be installed adjacent to a tank containing a flammable or combustible liquid, provided that the capacity of the tank of such liquid is 250 gal (1150 L) or less. When the capacity of the tank of flammable or combustible liquid is in excess of 250 gal (1150 L) or the total capacity of a maximum of four cylinders is in excess of 420 lb (191 kg), the separation between the cylinder system and the flammable or combustible liquid tank shall be not less than 20 ft (6.1 m).</u></p>	<p>6.9.3</p>	<p>RFC B149.2-20-16 Rationale: The clause does not consider more than one cylinder or quantity of propane like 7.1.8 for tanks. There is a void to be filled. Clause 6.9.3 should be reworded to follow the same approach as 7.1.8. Clause 6.5.1.10 is only for cylinders in storage, not installed ones. Clause 7.1.8 is as follows: Except as prohibited in Clause 7.1.7, a propane tank of 125 USWG (475 L) capacity or less may be installed adjacent to a tank containing flammable or combustible liquid, provided that the capacity of the tank of such liquid is 250 gal (1150 L) or less. When the capacity of either tank is in excess of the applicable limits, the separation between the propane tank and the flammable or combustible liquid tank shall be</p>

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		not less than 20 ft (6.1 m). In the case of an underground tank, the separation may be reduced to 10 ft (3 m). Finally, clause 6.9.3 should be moved to a new clause: 6.7.8.

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<p>6.9.3 A cylinder may be installed adjacent to a tank containing a flammable or combustible liquid, provided that the capacity of the tank of such liquid is 250 gal (1150 L) or less. When the capacity of the tank of flammable or combustible liquid exceeds 250 gal (1150 L), the separation between the cylinder and the tank shall be a minimum of 20 ft (6.1 m).</p>	<p>6.9.3 A cylinder may be installed adjacent to a tank containing a flammable or combustible liquid, provided that the capacity of the tank of such liquid is 250 gal (1150 L) or less. When the capacity of the tank of flammable or combustible liquid exceeds 250 gal (1150 L), the separation between the cylinder and the tank shall be a minimum of 20 ft (6.1 m).</p>	<p>RFC B149.2-20-16 Rationale: The clause does not consider more than one cylinder or quantity of propane like 7.1.8 for tanks. There is a void to be filled. Clause 6.9.3 should be reworded to follow the same approach as 7.1.8. Clause 6.5.1.10 is only for cylinders in storage, not installed ones. Clause 7.1.8 is as follows: Except as prohibited in Clause 7.1.7, a propane tank of 125 USWG (475 L) capacity or less may be installed adjacent to a tank containing flammable or combustible liquid, provided that the capacity of the tank of such liquid is 250 gal (1150 L) or less. When the capacity of either tank is in excess of the applicable limits, the separation between the propane tank and the flammable or combustible liquid tank shall be</p>

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		not less than 20 ft (6.1 m). In the case of an underground tank, the separation may be reduced to 10 ft (3 m). Finally, clause 6.9.3 should be moved to a new clause: 6.7.8.
<p>7.1.10 Interconnected Tanks in Liquid Service Tanks that have liquid interconnections shall be installed so that the maximum permitted filling level of each tank is at the same elevation. Vertical tanks used in liquid service shall not be manifolded to horizontal tanks. Vertical tanks of different dimensions shall not be manifolded together.</p>	<p>7.1.10 Tanks that have liquid interconnections shall be installed so that the maximum permitted filling level of each tank is at the same elevation. Vertical tanks used in liquid service shall not be manifolded to horizontal tanks. Vertical tanks of different dimensions shall not be manifolded together.</p>	

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<p><u>7.1.10.1 Elevation</u> <u>Tanks that have liquid interconnections shall be installed so that the maximum permitted filling level of each tank is at the same elevation except as allowed in Clause 7.1.10.2.</u></p> <p><u>7.1.10.2 Container evacuation at a filling plant</u> <u>Notwithstanding Clause 7.1.10.1, a tank connected to a main storage tank(s) at a filling plant, which is intended to evacuate containers, shall may be permitted to be installed at any elevation, provided a backflow prevention device(s) is installed in the liquid service between a main storage tank(s) and the evacuation tank(s).</u></p> <p><u>7.1.10.3 Vertical tank restrictions</u></p>	<p>New</p>	<p>RFC B149.2-20-23r2 Rationale: This change is to clarify the application of this clause.</p>

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<u>Vertical tanks used in liquid service shall not be manifolded to horizontal tanks or vertical tanks of different dimensions.</u> RFC B149.2-20-23r2 Rationale: This change is to clarify the application of this clause.		

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<p>7.2.4 Shut-off valve or other device location A shut-off valve or other device shall not be installed between a relief valve and a tank, except: that a shut-off valve may be used when the full required flow capacity is maintained through another relief valve; <u>or an integrated management system from the manufacturer shall be established that controls the operation of the isolation valve that does not inhibit the operation of the PRV while installed.</u></p>	<p>7.2.4 A shut-off valve or other device shall not be installed between a relief valve and a tank, except: that a shut-off valve may be used when the full required flow capacity is maintained through another relief valve.</p>	<p>RFC B149.2-20-31 Rationale: B51.19 is aligned but also provides an exclusion not afforded in B149.2. Current wording indicates: 12.2.2.2 Isolation valves shall not be installed in the relief path unless (a) the installation has been authorized by regulatory authority; and (b) an approved management system is implemented to control the operation of the isolation valve; or (c) the installation meets the requirements of Clause 12.2.2.3. In a recent B51 RFI, use of an external PRV was considered allowable when coupled with a check valve device (RFI attached in RFC). Proposed revision would be to add the</p>

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		<p>equivalent clause to B149.2 including the current wording, and the exclusion in B51.</p> <p>The new clause allows for harmonized wording between B51 and B149.2 and allows for the use of existing technology deemed viable by the B51 Clause 12 committee RFI.</p> <p>If the committee would be amenable, specific allowance for the use of an isolation valve purpose specific to an external PRV application would be more helpful than the reference to the B51 clause in order to avoid industry having to reach out to 26 different regulatory agencies for approval. The valve combination details are provided in a presentation attached, along with additional information if required during the addressing of the RFC.</p>

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<p>7.8.1 General An <u>underground propane</u> tank shall only be installed underground <u>in accordance with the manufacturer's installation instructions and Clause 7.8</u>with the approval of the authority having jurisdiction.</p>	<p>7.8.1 A tank shall only be installed underground with the approval of the authority having jurisdiction.</p>	<p>RFC B149.2-20-35 Rationale: The current requirement is strictly an administrative requirement with the inference of a permit or approval process that does not belong in a technical code. The proposed change intends to remove this administrative requirement which belongs in the jurisdictional regulatory framework and provides additional instruction and support for an installer by referring to the manufacturer's installation instructions and the B149.2 code. The requirement that an underground tank installation be approved by the AHJ does not add any increase in safety for the industry. The large amount of effort put into the development of technical requirements within Clause 7.8 provides a very detailed framework for the installation of an underground tank that has contributed to the safe and</p>

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		successful installation of 1,000s of underground tanks over the years in Canada.
<p>7.8.4 Sacrificial Anodes If cathodic protection is provided by the use of sacrificial anodes, a) the outer surface of the tank shall be blast cleaned so that all surfaces are free from dirt, grease, and loose material; b) the outer surface of the tank shall be coated to a thickness of 0.016 in (0.4 mm) with a compound conforming to the requirements of either CAN/ULC-S603.1 or CAN/CGSB-1.184 or UL 1746;</p>	<p>7.8.4 If cathodic protection is provided by the use of sacrificial anodes, a) the outer surface of the tank shall be blast cleaned so that all surfaces are free from dirt, grease, and loose material; b) the outer surface of the tank shall be coated to a thickness of 0.016 in (0.4 mm) with a compound conforming to the requirements of either CAN/ULC-S603.1 or CAN/CGSB-1.184;</p>	<p>RFC B149.2-20-42 Rationale: The proposed change would allow the use of the standard UL-1746 which is widely used by coating and tank manufacturers.</p>
<p>7.10.1 Tank location Except as permitted required in Clause 5.11 of this Code and Clause 5.4.1 of CSA B149.5, every tank shall be located outside of a building.</p>	<p>7.10.1 Except as permitted in Clause 5.11 of this Code and Clause 5.4.1 of CSA B149.5, every tank shall be located outside of a building.</p>	

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<p><u>7.10.2 Location of above-ground tanks for consumer applications</u> <u>An above-ground tank used in a consumer application shall be located in accordance with Table 7.4.</u></p> <p><u>7.10.32 Clearances for consumer tanks less than 125 USWG (475 L)</u> Notwithstanding the requirements in Clause 7.10.2, A tank used in a consumer application shall be located in accordance with Table 7.4, except that a) a maximum of four tanks, each less than 125 USWG (475 L), that are manifolded together to form a system may be located against a common wall of a building. Not more than one such manifold system may be located against a common wall of a building unless separated by a clearance of 10 ft (3 m); and</p>	<p>New</p> <p>7.10.2 A tank used in a consumer application shall be located in accordance with Table 7.4, except that</p> <p>b) when the single largest tank in a manifolded system is allowed in Clause 7.10.2a), then the aggregate capacity is not used when determining clearance to an important building, group of buildings, or line of adjoining property that can be built upon.–The largest single tank in the manifolded system shall be used to determine the clearances required in Table 7.4.</p>	<p>RFC B149.2-20-10 Rationale: The objective here is to try and create equivalent requirements for cylinders and tanks used in a consumer application and correct terminology used in 7.10.2; “important building, group of buildings, or line of adjoining property that can be built upon” is not common language to Table 7.4.</p>

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<p>b) when the single largest tank in a manifolded system is allowed in Clause 7.10.32 Item a), then the aggregate capacity is not used when determining the minimum distances between the tanks and a property line, and buildings, a building openings and property lines or a source of ignition clearance to an important building, group of buildings, or line of adjoining property that can be built upon. The largest single tank in the manifolded system shall be used to determine the clearances <u>distances</u> required in Table 7.4.</p>		

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<p>7.10.34 Clearances for consumer tanks over 125 USWG (475 L) Notwithstanding the requirements in Clause 7.10.2, A tank used in a consumer application shall be located in accordance with Table 7.4, except that a) for capacities over 125 USWG (475 L) and up to and including 500 USWG (1900 L), the clearance distance from a building walls may be reduced to 3 ft (1 m) for a single tank, provided that i) the building wall is of concrete or masonry construction; ii) there is a minimum of 10 ft (3 m) to the nearest building opening; and iii) the tank is used only for vapour service; and b) for capacities over 125 USWG (475 L) and up to and including 5000 USWG (19 000 L), the clearances distances from a building</p>	<p>7.10.3 A tank used in a consumer application shall be located in accordance with Table 7.4, except that a) for capacities over 125 USWG (475 L) and up to and including 500 USWG (1900 L), the clearance from building walls may be reduced to 3 ft (1 m) for a single tank, provided that i) the building wall is of concrete or masonry construction; ii) there is a minimum of 10 ft (3 m) to the nearest building opening; and iii) the tank is used only for vapour service; and b) for capacities over 125 USWG (475 L) and up to and including 5000 USWG (19 000 L), the clearances from building walls of other than concrete or masonry construction may be reduced to the clearances specified for concrete or masonry wall construction if</p>	<p>RFC B149.2-20-19r2 Rationale: Both Clauses 7.10.2 and 7.10.3 refer to Table 7.4 for proper distances. However, on a standpoint of regulation, it is not the proper way to write in a way that a code refers and duplicate requirements for compliancy. The proposed wording hopefully corrects this. The term “distance” is more appropriate than “clearance” in that context and used in the Table 7.4 the terms “ building”, “building opening”, “property line” and “source of ignition” reflect more accurately the terms used in the table 7.4 columns.</p>

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<p>walls of other than concrete or masonry construction may be reduced to the clearances <u>distances</u> specified for concrete or masonry wall construction if protection acceptable to the authority having jurisdiction is provided.</p>	<p>protection acceptable to the authority having jurisdiction is provided.</p>	
<p>7.12.4 Clearance from any drain, sewer, or pit A tank and its equipment shall be located not less than 25 ft (7.6 m) from any drain, sewer, or pit unless the <u>drain, sewer, or pit</u> is equipped with an automatic flammable vapour leak detection system.</p>	<p>7.12.4 A tank and its equipment shall be located not less than 25 ft (7.6 m) from any drain, sewer, or pit unless the pit is equipped with an automatic flammable vapour leak detection system.</p>	<p>RFC B149.2-20-13 Rationale: the intent of this clause to allow a drain, sewer, or pit to be installed closer than 25 ft as long as is an automatic flammable vapour leak detection system within the drain, sewer, or pit.</p>

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<p>7.12.5 Transfer connection location <u>Except at container refill centres, a tank truck or cargo liner transfer connection shall be located not less than</u> <u>a) 25 ft (7.6 m) from the line of adjoining property and any source of ignition;</u> <u>b) 10 ft (3 m) from any pump or compressor if housed in one or more separate buildings;</u> <u>c) 10 ft (3 m) from any storage tank; and</u> <u>d) 10 ft (3 m) from a container filling building.</u></p>	<p>New</p>	<p>RFC B149.2-20-3r3 Rationale: Clause 7.17.4 does not really belong in Clause 7.17. It should be relocated in Clause 7.12 where it makes more sense to find it there and attributed the Clause number 7.12.5 Note that existing Clauses 7.12.5 to 7.12.13 should be renumbered to 7.12.6 to 7.12.14 for the insertion of former Clause 7.17.4.</p>
<p>7.14.2 Container fenced area When stored outdoors, a container shall be inside the fenced area of a filling plant and shall a) be stored 25 ft (7.6 m) or more from the <u>line of adjoining property</u> line;</p>	<p>7.14.2 When stored outdoors, a container shall be inside the fenced area of a filling plant and shall (a) be stored 25 ft (7.6 m) or more from the property line;</p>	<p>RFC B149.2-20-24 Rationale: This change is to clarify the application of the clause and to be consistent with other requirements i.e. 6.5.1.8, 7.12.6 and 7.17.1). This will be harmonized with NPFA 58 requirements.</p>

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<p>7.17 Container filling locations <u>and buildings</u> with provisions for container storage</p>	<p>7.17 Container filling locations with provisions for container storage</p>	<p>RFC B149.2-20-3r3 Rationale: The proposed change does not modify the requirements of Clause 7.17 but adds clarification to understand the rationale of the Clauses 7.17.1, 7.17.2, 7.17.3. It is not obvious as what “locations” refer to. One has to read clause 7.17.2 to understand that a location may also be a building. It should not be the case: requirements of Clause 7.17.1 should be self-contained. The title of the subsection 7.17 is also proposed to be changed in order to be consistent and consequent with its clauses (7.17 1 to 7.17.3).</p>

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<p>7.17.1 <u>Location</u> <u>A</u> Container filling locations <u>or building</u> with provisions for container storage shall be located not less than</p>	<p>7.17.1 Container filling locations with provisions for container storage shall be located not less than</p>	<p>RFC B149.2-20-3r3 Rationale: The proposed change does not modify the requirements of Clause 7.17 but adds clarification to understand the rationale of the Clauses 7.17.1, 7.17.2, 7.17.3. It is not obvious as what “locations” refer to. One has to read clause 7.17.2 to understand that a location may also be a building. It should not be the case: requirements of Clause 7.17.1 should be self-contained.</p> <p>The title of the subsection 7.17 is also proposed to be changed in order to be consistent and consequent with its clauses (7.17 1 to 7.17.3).</p>

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<p>7.17.3 Building construction A container filling or storage building, or a building containing a pump and/or a compressor, or a building containing a vaporizer shall</p> <ul style="list-style-type: none"> a) be built of or covered with noncombustible materials, except that rafters, floor, and studs that are exposed to the interior may be of wood; b) be ventilated with openings to the outside air in at least two walls, exclusive of doors, at floor level and at or near the ceiling <u>on each of the two walls</u>. Each opening shall have an opening to floor area ratio of not less than 1:600. These ventilation openings shall be not less than 10 ft (3 m) horizontally from any air intake of any appliance or air-moving equipment or any other opening into any building; c) have floor at or above grade. Any space below a floor shall be 	<p>7.17.3 A container filling or storage building, a building containing a pump and compressor, or a building containing a vaporizer shall</p> <ul style="list-style-type: none"> b) be ventilated with openings to the outside air in at least two walls, exclusive of doors, at floor level and at or near the ceiling. Each opening shall have an opening to floor area ratio of not less than 1:600. These ventilation openings shall be not less than 10 ft (3 m) horizontally from any air intake of any appliance or air-moving equipment or any other opening into any building; d) have two or more exits when the travel distance to an exit is more than 15 ft (4.5 m). Additional exits shall be provided when the 	<p>RFC B149.2-20-11 Rationale: Subclause f) of Clause 7.17.3 was added into the 2015 Edition to specifically address buildings containing a vaporizer and in doing so inadvertently imposed the same requirement on container filling and storage buildings to have all pressure relief devices be vented to the exterior which is in impractical considering the hundreds of cylinders with pressure relief valves that are stored and filled in any one building. Additionally, these buildings are designed to handle the release of propane, whether through a connect/disconnect or a relief valve, by meeting the requirements of subclause a) through e). The vaporizer section already has a reference to 7.17.3 so if we are to keep the requirement, this would be the most appropriate section and not "Container filling locations with</p>

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<p>well ventilated and kept free of combustible material or the space shall be filled in with tamped earth;</p> <p>d) have two or more exits when the travel distance to an exit is more than 15 ft (4.5 m). Additional exits shall be provided when the distance between exits in the same wall is more than 75 ft (22.5 m); <u>and</u></p> <p>i) exit doors shall swing to open outward; and</p> <p>ii) any latch on an exit door shall be only of the magnetic or friction type; <u>and</u></p> <p>e) have explosion relieving to the outdoors of not less than 1 ft² (0.1 m²) for each 50 ft³ (1.4 m³) of building volume. The type of explosion relief venting shall be one of the following:</p> <p>i) an open area;</p>	<p>distance between exits in the same wall is more than 75 ft (22.5 m); and</p> <p>i) exit doors shall swing to open outward; and</p> <p>ii) any latch on an exit door shall be only of the magnetic or friction type;</p> <p>e) have explosion relieving to the outdoors of not less than 1 ft² (0.1 m²) for each 50 ft³ (1.4 m³) of building volume. The type of explosion relief venting shall be one of the following: an open area;</p> <p>i) an outwardly opening sash;</p> <p>ii) an explosion-relief panel; or</p> <p>iii) single-strength glass; and</p>	<p>provision for container storage”.</p> <p>RFC B149.2-20-20</p> <p>Rationale: It is not clear at item (b) if two openings are required on each wall or two openings on two walls. Considering the use of the building, two openings on each wall should be the minimum.</p> <p>As per clause 9.3.4 mentions that a direct fired vaporizer can be installed in a building constructed in accordance with 7.17.3. However, the building is exclusively for the vaporizer and clause 7.17.3 is for “Container filling locations with provisions for container storage” with provisions for pump or compressor and requirements of vaporizers should be kept</p>

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<p>ii) an outwardly opening sash; iii) an explosion-relief panel; or iv) single-strength glass; and,</p> <p>f) have all pressure relief valve discharges vented to the exterior, and shall not be within 3 ft (0.9 m) of a ventilation opening unless the relief discharges vertically upward and is above the roof line.</p>	<p>f) have all pressure relief valve discharges vented to the exterior, and shall not be within 3 ft (0.9 m) of a ventilation opening unless the relief discharges vertically upward and is above the roof line.</p>	<p>in Clause 9. In fact, Clauses 9.1.4 and 9.3.4 do refer to Clause 7.17.3 as needed. It should be worded that if a building contains a pump or a compressor and not both as the « and » implies. 9.3.4 A direct-fired vaporizer may be installed in a building used exclusively to house it and its related equipment, provided that the building is constructed in accordance with Clause 7.17.3, and a sign is prominently displayed on the exterior of the building at all entrances with the wording “WARNING: STORAGE OF ANY MATERIALS AND EQUIPMENT IS PROHIBITED”* (in lettering that is a minimum of 2 in (50 mm) high). *The equivalent French wording is “AVERTISSEMENT : L’ENTREPOSAGE DE MATÉRIAUX OU D’APPAREILLAGES EST INTERDIT”.</p>

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<p>7.17.4 Except at container refill centres, a tank truck or cargo liner transfer connection shall be located not less than a) 25 ft (7.6 m) from the line of adjoining property and any source of ignition; b) 10 ft (3 m) from any pump or compressor if housed in one or more separate buildings; c) 10 ft (3 m) from any storage tank; and d) 10 ft (3 m) from a container filling building.</p>	<p>7.17.4 Except at container refill centres, a tank truck or cargo liner transfer connection shall be located not less than a) 25 ft (7.6 m) from the line of adjoining property and any source of ignition; b) 10 ft (3 m) from any pump or compressor if housed in one or more separate buildings; c) 10 ft (3 m) from any storage tank; and d) 10 ft (3 m) from a container filling building.</p>	<p>RFC B149.2-20-3r3 Rationale: Clause 7.17.4 does not really belong in Clause 7.17. It should be relocated in Clause 7.12 where it makes more sense to find it there and attributed the Clause number 7.12.5 Note that existing Clauses 7.12.5 to 7.12.13 should be renumbered to 7.12.6 to 7.12.14 for the insertion of former Clause 7.17.4.</p>

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<p style="text-align: center;">Table 7.6 Electrical classification (See Clauses 6.5.1.11, 6.5.1.12, 6.5.2.6.1, 7.13, 7.19.5, and 8.8.1 and Figures F.1, F.2, and F.3.)</p> <p>The values in this table are metric and governare the standard. Imperial <u>US customary</u> is given for reference only</p> <p style="text-align: center;">Zone of Class I, Group IIA</p> <p>‡ When classifying the extent of the hazardous area the extent of a hazardous area is being classified, consideration shall be given to possible variations in the spotting-locating of tank cars and tank</p>	<p style="text-align: center;">Table 7.6 Electrical classification (See Clauses 6.5.1.11, 6.5.1.12, 6.5.2.6.1, 7.13, 7.19.5, and 8.8.1 and Figures F.1, F.2, and F.3.)</p> <p>The values in this table are metric and govern. Imperial is given for reference only.</p> <p style="text-align: center;">Zone of Class I, Group IIA</p> <p>‡ <i>When classifying the extent of the hazardous area, consideration shall be given to possible variations in the spotting of tank cars and tank vehicles at the unloading points and the effect these variations</i></p>	<p>RFC B149.2-20-43 Rationale: The Canadian Electric Code utilizes the Zone System for classification of hazardous areas. It is incorrect to call out “Class I” in conjunction with the Zone System – this terminology is only applicable to the Division System for hazardous areas. In 4.10.2 & 4.10.3, the wording of each clause is modified to delete the reference to “Class I” and to match the language of 8.5.2 (change to “suitable for Group IIA hazardous locations”, instead of “of a Group IIA type”) In Table 7.6, each header is modified to delete the reference to “Class I”, and the footnotes are modified to properly correspond with Table 63 from the CEC. In Note 1, capital letter “I” should be used instead of number “1” to refer to the Class of the Division System. In Note 2, “Class I” is added to</p>

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<p>vehicles at the unloading points and the effect these variations of actual spotting pointlocating may have on the point of connection. § Where specified for the prevention of fire or explosion during normal operation, ventilation is considered adequate where provided in accordance with the provisions of this Code.</p> <p>Notes: 1) For additions to, modifications of, renovations to, or operation and maintenance of existing facilities employing the Division system of classification for Class 4I locations, the Division system of classification may continue in use. 2) When using the Division system, for the purpose of this Ttable the following minimum hazardous location classification substitution may be used: a) <u>Class I</u>, Division 1 = for areas classified Zone 1; and</p>	<p>of actual spotting point may have on the point of connection. § Where specified for the prevention of fire or explosion during normal operation, ventilation is considered adequate where provided in accordance with the provisions of this Code.</p> <p>Notes: 1) For additions to, modifications of, renovations to, or operation and maintenance of existing facilities employing the Division system of classification for Class 4I locations, the Division system of classification may continue in use. 2) When using the Division system, for the purpose of this Table the following minimum hazardous location classification substitution may be used: a) Division 1 = for areas classified Zone 1; and b) Division 2 = for areas classified Zone 2.</p>	<p>the Division System items (a) and (b) to properly correspond with Table 18 from the CEC. In 8.2.2 & 8.5.2, the wording of each clause is modified to delete the reference to "Class I".</p>

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<p>b) <u>Class I, Division 2</u> = for areas classified Zone 2. Zone 1 rated equipment is not permitted in Division 1 locations; for additional information, see Canadian Electrical Code, Part I.</p>	<p><i>Zone 1 rated equipment is not permitted in Division 1 locations; for additional information, see Canadian Electrical Code, Part I.</i></p>	
<p>7.20.9 Breakaway quick-closing coupling The vehicle fuel dispenser hose shall be equipped with a breakaway quick-closing coupling listed<u>certified to UL 567</u> (of a type that closes in both directions when uncoupled) to minimize the escape of propane from the uncoupled components in the event that the breakaway coupling becomes accidentally uncoupled. The maximum tensile force necessary to effect breakaway shall be 88 lbf (391 N) in any horizontal direction.</p>	<p>7.20.9 The vehicle fuel dispenser hose shall be equipped with a breakaway quick-closing coupling (of a type that closes in both directions when uncoupled) to minimize the escape of propane from the uncoupled components in the event that the breakaway coupling becomes accidentally uncoupled. The maximum tensile force necessary to effect breakaway shall be 88 lbf (391 N) in any horizontal direction.</p>	<p>RFC B149.2-20-12 Rationale: There are published product standards that address prescriptive requirements such as the one in 7.20.9. The breakaway quick-closing couplings mentioned in this clause are designed, manufactured and listed to UL 567. This will also harmonize requirements with NFPA 58, making it easier for manufacturer's to comply.</p>

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<p>7.20.13 <u>Vehicle fuel dispenser certification</u> Vehicle fuel dispensers <u>used for custody fuel transfers</u> shall be <u>listed-certified</u> to UL 495 or <u>certified to CAN-1-CSA</u> 12.4.</p>	<p>7.20.13 Vehicle fuel dispensers shall be listed to UL 495 or certified to CAN-1-12.4.</p>	<p>RFC B149.2-20-33 Rationale: The proposed change would allow users, fleets, and others to measure their own consumption using a meter that is not listed to UL 495 or certified to the CSA 12.4. The use of these meters is for internal use only and they are typically not registered with Weights and Measures Canada.</p>

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<p><u>7.20.14 Self-Service Vehicle Fuel Dispensers</u></p> <p><u>7.20.14.1 Training exemption</u> Where self-service vehicle fuel dispensers in accordance with Clause 7.20.14 are available to the public, the requirements of Clause 5.2.1 shall not apply.</p> <p><u>7.20.14.2 Certification</u> Self-service vehicle fuel dispensers shall be listed to UL 495 or certified to CSA 12.4.</p> <p><u>7.20.14.3 Nozzle</u> Self-service vehicle fuel dispensers shall be equipped with a</p>	<p>New</p>	<p>RFC B149.2-20-39 Rationale: Public refuelling of Autogas vehicles is currently allowed in Europe and is allowed in many states in America. Beginning January 2024 NFPA 58 will introduce language that will allow public refuelling of Autogas vehicles throughout the USA.</p>

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<p><u>nozzle designed and manufactured to ISO 19825 for type K15.</u></p> <p><u>7.20.14.4 Emergency instructions</u> <u>Refuelling and emergency instructions shall be conspicuously provided in the dispensing area.</u></p> <p><u>7.20.14.5 Emergency shut-off</u> <u>An emergency shut-off switch that closes the internal or emergency shut off valve and opens the electrical circuit serving the dispenser shall be located not less than 6m (20 ft (6 m) and not more than 100 ft (30 m (100ft)) from the dispenser.</u></p> <p><u>7.20.14.6 Output pressure</u> <u>The output pressure of the dispensing system shall not exceed</u></p>		

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<u>350 psig (2.4MPa) (350 psig).</u>		

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<p>7.21.1 <u>Tanks not intended for transport</u> Requirements for the transportation of tanks not intended for transport and containing not more than 5% capacity are prescribed in CSA B622 by theTransport Canada's <u>Transportation of Dangerous Goods Regulations</u> of <u>Transport Canada</u>.</p>	<p>7.21.1 Requirements for the transportation of tanks not intended for transport and containing not more than 5% capacity are prescribed in CSA B622.</p>	<p>RFC B149.2-20-37r2 Rationale: This change is to harmonize to CSA B622. Please note the references from B622 are linked to B620 for the definitions and constructions standards. See below all details. References: CSA B620-20 Highway tanks and TC portable tanks for the transportation of dangerous goods 6.2 Steel portable tanks – Specification TC 51 6.2.1 Constructions standards TC 51 tanks shall be of seamless or welded construction, or a combination of both; of a volumetric capacity greater than or equal to 450 L (120 US gal, 100 imp. Gal); and</p>

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		<p>designed and constructed in accordance with Clauses 6.1 and 6.2 CSA B622:20 Selection and use of highway tanks and TC portable tanks for the transportation of dangerous goods, Class 2 6.1 Classification, prohibition, and exemption under the TDG Act and Regulations Clause 6 provides requirements for the handling, offering for transport, and transportation of dangerous goods in large containers that are neither prohibited from transportation nor exempted by the TDG Regulations. Table 2 - 24) Tanks constructed in accordance with CSA B51, Part 1, but not meeting the requirements of specification TC 51 may be offered for transportation, if they are emptied to the greatest extent possible and in no case</p>

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		<p>shall they contain more liquefied gas than 5% of their volumetric capacity. Transport Canada - Transport Dangerous Goods Containers, Standards and Requirements The TDG Regulations distinguish between “Small Means of Containment” and “Large means of containment”. Small Means of Containment are containers with a capacity less than or equal to 450L. Some examples include bags, boxes, combination containers, composite containers, drums, jerricans, cylinders, some intermediate bulk containers as well as other types of containers. Large means of containment are containers with a water capacity greater than 450L. Some examples include highway tanks, tank cars, portable tanks, tubes and intermediate bulk containers, as well as other types of containers.</p>

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		The TDG Regulations prescribe requirements and specific safety standards depending on which of these respective container types is to be used.

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<p>8.5.2 <u>Portable lights</u> Portable lights used in connection with the storage and handling of propane shall be suitable for Class I, Group IIA hazardous locations.</p>	<p>8.5.2 Portable lights used in connection with the storage and handling of propane shall be suitable for Class I, Group IIA hazardous locations.</p>	<p>RFC B149.2-20-43 Rationale: The Canadian Electric Code utilizes the Zone System for classification of hazardous areas. It is incorrect to call out "Class I" in conjunction with the Zone System – this terminology is only applicable to the Division System for hazardous areas. In 4.10.2 & 4.10.3, the wording of each clause is modified to delete the reference to "Class I" and to match the language of 8.5.2 (change to "suitable for Group IIA hazardous locations", instead of "of a Group IIA type") In Table 7.6, each header is modified to delete the reference to "Class I", and the footnotes are modified to properly correspond with Table 63 from the CEC. In Note 1, capital letter "I" should be used instead of number "1" to refer to the Class of the Division System. In Note 2, "Class I" is added to</p>

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		the Division System items (a) and (b) to properly correspond with Table 18 from the CEC. In 8.2.2 & 8.5.2, the wording of each clause is modified to delete the reference to "Class I".

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<p>9.1.4 Building requirements A building or room used for propane vaporizing or mixing shall:</p> <ul style="list-style-type: none"> a) <u>comply with the requirements of Clause 7.17.3, except that the floor of the building shall be built of noncombustible materials; and</u> b) <u>have all pressure relief valve discharges vented to the exterior, and shall not terminate within 3 ft (0.9 m) of a ventilation opening unless the relief discharges vertically upward and is above the roof line.</u> 	<p>9.1.4 A building or room used for propane vaporizing or mixing shall comply with the requirements of Clause 7.17.3.</p>	<p>RFC B149.2-20-11 Rationale: Subclause f) of Clause 7.17.3 was added into the 2015 Edition to specifically address buildings containing a vaporizer and in doing so inadvertently imposed the same requirement on container filling and storage buildings to have all pressure relief devices be vented to the exterior which is impractical considering the hundreds of cylinders with pressure relief valves that are stored and filled in any one building. Additionally, these buildings are designed to handle the release of propane, whether through a connect/disconnect or a relief valve, by meeting the requirements of subclause a) through e). The vaporizer section already has a reference to 7.17.3 so if we are to keep the requirement, this would be the most appropriate section and not "Container filling locations with</p>

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		provision for container storage”. RFC B149.2-20-29 Rationale: There is no requirement for vaporizer installation inside a building as Clause 7.17.3 now (TC meeting of October 25 2022) excludes vaporizer installation inside a building. This new clause goes along with Clause 9.1.12 intent.

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<p>9.3.4 Building A direct-fired vaporizer may be installed in a building used exclusively to house it and its related equipment, provided that the building is constructed in accordance with Clause 7.17.3 and 9.1.4, and a sign is prominently displayed on the exterior of the building at all entrances with the wording “WARNING: STORAGE OF ANY MATERIALS AND EQUIPMENT IS PROHIBITED”* in lettering that is a minimum of 2 in (50 mm) high”.</p> <p>* The equivalent French wording is “AVERTISSEMENT : L’ENTREPOSAGE DE MATÉRIAUX OU D’APPAREILLAGES EST INTERDIT”.</p>	<p>9.3.4 A direct-fired vaporizer may be installed in a building used exclusively to house it and its related equipment, provided that the building is constructed in accordance with Clause 7.17.3 , and a sign is prominently displayed on the exterior of the building at all entrances with the wording “WARNING: STORAGE OF ANY MATERIALS AND EQUIPMENT IS PROHIBITED”* in lettering that is a minimum of 2 in (50 mm) high”.</p> <p>* <i>The equivalent French wording is “AVERTISSEMENT : L’ENTREPOSAGE DE MATÉRIAUX OU D’APPAREILLAGES EST INTERDIT”.</i></p>	<p>RFC B149.2-20-11 Rationale: Subclause f) of Clause 7.17.3 was added into the 2015 Edition to specifically address buildings containing a vaporizer and in doing so inadvertently imposed the same requirement on container filling and storage buildings to have all pressure relief devices be vented to the exterior which is in impractical considering the hundreds of cylinders with pressure relief valves that are stored and filled in any one building. Additionally, these buildings are designed to handle the release of propane, whether through a connect/disconnect or a relief valve, by meeting the requirements of subclause a) through e). The vaporizer section already has a reference to 7.17.3 so if we are to keep the requirement, this would be the most appropriate section and not “Container filling locations with</p>

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		provision for container storage”.

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Annex F (informative) <i>Reference diagram for electrical classification</i> <u>Note: This annex is not a mandatory part of this Code.</u>	Annex F (informative) <i>Reference diagram for electrical classification</i>	
I.1.2 Words and phrasesAbbreviations The following abbreviations of words and phrases apply in this Code: B&SG — Brown and Sharpe gauge GSG — galvanized sheet gauge MSG — manufacturers standard gauge WC — water capacity wt — weight	I.1.2 The following abbreviations of words and phrases apply in this Code: B&SG — Brown and Sharpe gauge GSG — galvanized sheet gauge MSG — manufacturers standard gauge WC — water capacity wt — weight	RFC B149.2-20-30 Rationale: These abbreviations are not used in this code.

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<p align="center">Table I.12 To convert volumes of one kind of gas to volumes of a different kind of gas passing through an orifice or regulator (See Table I.11.) (See Clause I.3)</p>	<p align="center">Table I.12 To convert volumes of one kind of gas to volumes of a different kind of gas passing through an orifice or regulator (See Table I.11.)</p>	<p>RFC B149.2-20-41 Table I.11 – the multipliers from Table I.11 are meant to be applied to the results obtained from the “Rule of Thumb” vaporization capacity formula results from Table I.10 (see below). Table I.12 is an incorrect reference. Table I.12 – the contents of Table I.12 are standalone, the information from Table I.11 is not related to Table I.12 so the reference should be removed.</p>

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<p>O.1.4 <u>Cylinder certification</u></p> <p>Propane cylinders shall be of the approved non-refillable type (TC-39, TC-2P, <u>TC-2P1, TC-2P2, TC-2Q, and TC-2Q2, and TC-2R</u>), commonly referred to as “single-trip” — with the maximum capacity of 16 oz.</p>	<p>O.1.4</p> <p>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>RFC B149.2-20-21r2</p> <p>Rationale: A new edition of CGSB standard CAN/CGSB-43.123 has been published in April 2022. Among the revision to the standard is the inclusion of three new container categories: TC-2P1, TC-2P2, and TC-2Q2. The new TC-2P2 specification is for gas cartridges intended to be used for liquified petroleum gases. In order to be consistent with the new CAN/CGSB-43.123, the B149.2 should be revised as proposed above.</p>

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<p>Annex Q (informativenormative) Temporary use of cylinders at shows, exhibitions, or other similar events</p> <p>Note: <u><i>This Annex is a mandatory part of this Code.</i></u> <i>This informative Annex has been written in normative mandatory 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>Annex Q (informative) Temporary use of cylinders at shows, exhibitions or other similar events</p> <p>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.</p>	