

Section 4.2. Container Storage and Handling

4.2.1. Scope

4.2.1.1. Application

- 1) Except as provided in Sentence (2), this Section shall apply to the storage, handling and use of *flammable liquids* or *combustible liquids* that are in
 - a) containers conforming to Clauses 4.2.3.1.(1)(a) to (d) having an individual capacity of not more than 230 L,
 - b) portable tanks conforming to Clause 4.2.3.1.(1)(e) having an individual capacity of not more than 2 500 L, or
 - c) intermediate bulk containers conforming to Clause 4.2.3.1.(1)(a) having an individual capacity of not more than 3 000 L.
- 2) Except as otherwise stated in this Code, this Section shall not apply to
 - a) bulk plants covered in Section 4.7., *refineries* covered in Section 4.9. and *distilleries* covered in Section 4.10.,
 - b) liquids in the fuel tank of motors or engines,
 - c) *distilled beverage alcohol* in *closed containers* when stored in conformance with Part 3,
 - d) food and pharmaceutical products when in *closed containers* having a capacity of not more than 5 L, or
 - e) products containing not more than 50% by volume of water-miscible *flammable liquids* or *combustible liquids* with the remainder of the solution being non-flammable, when in *closed containers* having a capacity of not more than 5 L.
- 3) Portable tanks having a capacity greater than 2 500 L shall be installed in conformance with Section 4.3.
- 4) For the purpose of this Section, *unstable liquids* shall meet the requirements for Class IA liquids.
- 5) Except as otherwise stated, requirements for containers in this Part shall also apply to portable tanks described in Sentence (1).

4.2.2. General

4.2.2.1. Prohibited Locations

- 1) *Flammable liquids* or *combustible liquids* shall not be stored in or adjacent to *exits*, elevators or principal routes that provide *access to exits*.

4.2.2.2. Storage Arrangement and Conditions

- 1) *Flammable liquids* and *combustible liquids* shall be stored in stable piles such that they will not collapse under normal operating conditions.
- 2) *Flammable liquids* and *combustible liquids* shall not be stored in areas where they may be subject to
 - a) temperature extremes or atmospheric pressure that could cause their containers to become deformed or rupture, or
 - b) physical impact or temperature extremes that could cause a chemical reaction or chemical instability such that a fire could occur.

4.2.2.3. Separation from Other Dangerous Goods

- 1) Except as provided in Sentence (2), *flammable liquids* and *combustible liquids* shall be separated from other *dangerous goods* in conformance with Sections 3.2. and 3.3.
- 2) For the purpose of applying Table 3.2.7.6., Class IIIA and B3 liquids shall be treated as *dangerous goods* classified as *flammable liquids*. (See Note A-4.2.2.3.(2).)

4.2.3. Containers and Portable Tanks

4.2.3.1. Design and Construction

1) Except as permitted in Article 4.2.3.3., containers and portable tanks for *flammable liquids* or *combustible liquids* shall be built in conformance with the following:

- a) TC SOR/2008-34, “Transportation of Dangerous Goods Regulations (TDGR),”
- b) CSA B376-M, “Portable Containers for Gasoline and Other Petroleum Fuels,”
- c) CSA B306-M, “Portable Fuel Tanks for Marine Use,”
- d) ULC/ORD-C30, “Safety Containers,” or
- e) CSA B620, “Highway Tanks and TC Portable Tanks for the Transportation of Dangerous Goods.”

4.2.3.2. Markings or Labels

1) Except as provided in Sentence (2) and Article 4.2.3.1., containers for *flammable liquids* or *combustible liquids* shall be distinctly marked or labelled in easily legible type that is in contrast to any other printed matter on the label with a warning to indicate that

- a) the material in the container is flammable,
- b) it should be kept away from heat, sparks and open flames, and
- c) it should be kept closed when not in use.

2) Markings referred to in Sentence (1) are not required when the container is labelled in conformance with

- a) TC SOR/2008-34, “Transportation of Dangerous Goods Regulations (TDGR),”
- b) HC R.S.C., 1985, c. H-3, “Hazardous Products Act,” or
- c) HC S.C. 2002, c. 28, “Pest Control Products Act.”

4.2.3.3. Other Types of Containers

1) The storage, handling and use of *flammable liquids* or *combustible liquids* in a container other than one of those listed in Article 4.2.3.1. shall be permitted only if

- a) the required purity of the liquid would be affected by containers of the types listed in Article 4.2.3.1. or if the liquid would cause the excessive corrosion of those types of containers,
- b) the container not conforming to Article 4.2.3.1. has a capacity of not more than 1 L if used for Class I liquids and not more than 5 L if used for Class II or IIIA liquids, or
- c) the container not conforming to Article 4.2.3.1. is a sample container used for quality control purposes or for testing by regulatory officials.

4.2.4. Assembly and Residential Occupancies

4.2.4.1. Application

1) This Subsection shall apply to the storage and handling of *flammable liquids* and *combustible liquids* in *buildings* classified as *assembly* or *residential occupancies*, except that it shall not apply to nonresidential schools, universities or colleges covered in Subsection 4.2.6.

4.2.4.2. Maximum Quantities

1) Except as provided in Sentence (4) and in Articles 4.2.4.5. and 4.2.4.6., the maximum quantity of *flammable liquids* or *combustible liquids* stored in a *fire compartment* with a *fire-resistance rating* of at least 1 h shall conform to Sentences (2) and (3).

2) When a single class of *flammable liquid* or *combustible liquid* is stored in a *fire compartment* with a *fire-resistance rating* of at least 1 h, the total quantity of liquid shall not exceed

- a) 30 L of Class I liquids,
- b) 150 L of Class II liquids, or
- c) 600 L of Class IIIA liquids.

3) When 2 or more classes of *flammable liquid* or *combustible liquid* are stored in the same *building*, the total quantity permitted for each class of liquid shall be calculated as follows:

$$\frac{q_I}{30} + \frac{q_{II}}{150} + \frac{q_{IIIA}}{600} \leq 1$$

where

q_I = the actual quantity of Class I liquids present,

q_{II} = the actual quantity of Class II liquids present,

q_{IIIA} = the actual quantity of Class IIIA liquids present.

4) Quantities of *flammable liquids* or *combustible liquids* exceeding those permitted in Sentence (1) are permitted, provided they are kept

- a) in storage cabinets conforming to Subsection 4.2.10., except that the total quantity of *flammable liquids* and *combustible liquids* stored in such cabinets shall not exceed the quantity permitted for one cabinet, or
- b) in a storage room conforming to Subsection 4.2.9. and having no openings that communicate directly with the public portions of the *building*.

4.2.4.3. Storage Cabinets and Storage Rooms

- 1) The storage cabinets referred to in Sentence 4.2.4.2.(4) shall not be located above or below the *first storey*.
- 2) The location of storage rooms referred to in Sentence 4.2.4.2.(4) shall conform to Article 3.3.2.16. and Sentence 3.3.4.3.(4) of Division B of the British Columbia Building Code.

4.2.4.4. Exterior Balconies

- 1) *Flammable liquids* and *combustible liquids* shall not be stored on exterior balconies.

4.2.4.5. Dwelling Units

- 1) Not more than 30 L of *flammable liquids* and *combustible liquids*, of which not more than 10 L shall be Class I liquids, are permitted to be stored in each *dwelling unit*. (See Sentence 4.1.1.1.(3) for oil-burning *appliances*.)

4.2.4.6. Attached Garages and Sheds

- 1) Not more than 50 L of *flammable liquids* and *combustible liquids*, of which not more than 30 L shall be Class I liquids, are permitted to be stored in a garage or shed attached to a *dwelling unit*.

4.2.5. Mercantile Occupancies

4.2.5.1. Application

- 1) This Subsection applies to the storage and handling of *flammable liquids* and *combustible liquids* in *mercantile occupancies*.

4.2.5.2. Maximum Quantities

- 1) Except as provided in Sentence (5), the quantities of *flammable liquids* and *combustible liquids* stored in *mercantile occupancies* shall not exceed those in Sentences (2) to (4).
- 2) In unsprinklered *mercantile occupancies*, the maximum quantity of *flammable liquids* and *combustible liquids* permitted to be stored in a single *suite* shall be the lesser of
 - a) 8 L/m² of the total area of the *suite*, provided that not more than 2 L/m² are Class I liquids, of which not more than 0.3 L/m² shall be Class IA, Class IB, or any combination of these 2 classes, or
 - b) 8 000 L, provided that not more than 2 000 L are Class I liquids, of which not more than 300 L shall be Class IA, Class IB, or any combination of these 2 classes.

3) In *sprinklered mercantile occupancies*, the maximum quantity of *flammable liquids* and *combustible liquids* permitted to be stored in a single *suite* shall be the lesser of

- a) 24 L/m² of the total area of the *suite*, provided that not more than 6 L/m² are Class I liquids, of which not more than 1 L/m² shall be Class IA, Class IB, or any combination of these 2 classes, or
- b) 24 000 L, provided that not more than 6 000 L are Class I liquids, of which not more than 1 000 L shall be Class IA, Class IB, or any combination of these 2 classes.

4) For the purposes of calculating permissible quantities in Sentences (2) and (3), *mercantile occupancies* of less than 250 m² *floor area* shall be assumed to be 250 m² in area.

5) Quantities of *flammable liquids* and *combustible liquids* in excess of those permitted in Sentences (2) to (4) shall be kept in a storage area conforming to Subsection 4.2.7.

4.2.5.3. Containers

1) *Flammable liquids* and *combustible liquids* in *mercantile occupancies* shall be kept in *closed containers*.

2) *Closed containers* of Class I and II liquids shall not be stacked more than 1.5 m high on floors, or 1 m high on individual fixed shelves.

3) Class I liquids in *closed containers* are permitted to be stored in *basements* of *mercantile occupancies*.

4.2.5.4. Transfer

1) Except as permitted in Sentence (2), in *mercantile occupancies*, the transfer of *flammable liquids* or *combustible liquids* from or into containers shall only be permitted in a storage room conforming to Subsection 4.2.9. (See Note A-4.2.5.4.(1).)

2) Tinting operations involving paint containers not exceeding 25 L in capacity may be carried out in *mercantile occupancies* outside of a storage room conforming to Subsection 4.2.9.

4.2.6. Business and Personal Services, Educational, Care, Treatment and Detention Occupancies

4.2.6.1. Application

1) This Subsection shall apply to the storage, handling and use of *flammable liquids* and *combustible liquids* in *business and personal services, care, treatment* or *detention occupancies* and shall include nonresidential schools, universities and colleges.

4.2.6.2. Storage Cabinets and Storage Rooms

1) Except as permitted in Article 4.2.6.3., *flammable liquids* and *combustible liquids* shall be kept in *closed containers* and stored

- a) in cabinets conforming to Subsection 4.2.10., except that the total quantity of *flammable liquids* and *combustible liquids* stored in such cabinets shall not exceed the quantity permitted for one cabinet, or
- b) in a room having no openings communicating directly with the public portions of the *building* and conforming to Subsection 4.2.9.

4.2.6.3. Maximum Quantities

1) Except as provided in Sentence (2), the storage of *flammable liquids* and *combustible liquids* outside of a cabinet or storage room required in Article 4.2.6.2. is permitted, provided such storage does not exceed

- a) 10 L, including not more than 5 L of Class I liquids, in a single room, or
- b) 250 L, including not more than 60 L of Class II liquids, or 10 L of Class I liquids, in a single *fire compartment* with a *fire-resistance rating* of at least 45 min.

2) In the automotive shops or industrial arts area of an educational facility, storage of up to 75 L of *flammable liquids* and *combustible liquids*, including not more than 25 L of Class I liquids, shall be permitted outside of a cabinet or storage room as required in Article 4.2.6.2.

4.2.6.4. Containers

1) Where individual containers with a capacity of more than 5 L are required for storage of *flammable liquids* or *combustible liquids* in a *building*, safety containers of not more than 25 L capacity conforming to ULC/ORD-C30, “Safety Containers,” shall be used.

4.2.6.5. Separation of Dangerous Goods

1) *Flammable liquids* or *combustible liquids* stored in cabinets or storage rooms shall be separated from other *dangerous goods* in conformance with Article 4.2.2.3.

4.2.7. Industrial Occupancies**4.2.7.1. Application**

1) Except as provided in Subsection 4.2.12. regarding self-service storage *buildings*, this Subsection applies to the storage of *flammable liquids* and *combustible liquids* in *closed containers* in *industrial occupancies*.

4.2.7.2. Storage Facilities

- 1) In *industrial occupancies*, *flammable liquids* and *combustible liquids* shall be stored
- in conformance with Subsection 4.2.8.,
 - in cabinets conforming to Subsection 4.2.10.,
 - in rooms conforming to Subsection 4.2.9., or
 - in storage areas conforming to Article 4.2.7.5.

4.2.7.3. Fire Compartments

1) *Fire compartments* regulated by this Subsection shall be separated from the remainder of the *building* by a *fire separation* having a *fire-resistance rating* of at least 2 h.

4.2.7.4. Dispensing and Transfer

1) Except as permitted in Subsection 4.2.8. and in Sentence (2), the dispensing or transfer of Class I or II liquids shall be conducted in rooms conforming to Subsection 4.2.9.

2) It is permitted to dispense or transfer Class I or II liquids in a storage area conforming to Article 4.2.7.5. provided

- the storage area does not exceed 100 m², and
- the dispensing or transfer operations conform to the applicable requirements of Subsection 4.2.9.

4.2.7.5. Maximum Quantities

1) Except as provided in Sentence (2), the storage of *flammable liquids* and *combustible liquids* in storage areas specified in Clause 4.2.7.2.(1)(d) shall

- conform to Table 4.2.7.5.-A
 - where it consists of palletized or solid piled storage, or
 - where stored in *racks* in *buildings* not protected in conformance with Article 4.2.7.6., or
- conform to Table 4.2.7.5.-B where stored in *racks* in *buildings* protected in conformance with Article 4.2.7.6.

Table 4.2.7.5.-A
Indoor Container Storage (Palletized or Solid Piled Storage and Unprotected Rack Storage)
 Forming Part of Sentences 4.2.7.5.(1) and (4), 4.2.8.4.(3) and 4.2.9.1.(3)

Class of Liquid	Storage Level	Protected Storage ⁽¹⁾			Unprotected Storage		
		Maximum Quantity per ISA ⁽²⁾ , L	Maximum Storage Height, m	Maximum Quantity per Fire Compartment, L	Maximum Quantity per ISA(2), L	Maximum Storage Height, m	Maximum Quantity per Fire Compartment, L
Class IA	<i>First storey</i>	10 000	1.5	50 000	2 500	1.5	2 500
	<i>Storeys above the first storey</i>	7 500	1.5	30 000	2 500	1.5	2 500
	<i>Basement</i>	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
Class IB or IC	<i>First storey</i>	20 000	2.0	60 000	10 000	1.5	10 000
	<i>Storeys above the first storey</i>	10 000	2.0	50 000	10 000	1.5	10 000
	<i>Basement</i>	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
Class II	<i>First storey and storeys above the first storey</i>	40 000	3.0	100 000	15 000	3.0	30 000
	<i>Basement</i>	25 000	1.5	25 000	Not Permitted	Not Permitted	Not Permitted
Class IIIA	<i>First storey and storeys above the first storey</i>	60 000	6.0	200 000	50 000	4.5	100 000
	<i>Basement</i>	40 000	3.0	100 000	Not Permitted	Not Permitted	Not Permitted

Notes to Table 4.2.7.5.-A:

- (1) See Article 4.2.7.6.
 (2) *Individual storage area.*

Table 4.2.7.5.-B
Indoor Container Storage (Protected Rack Storage)⁽¹⁾
 Forming Part of Sentences 4.2.7.5.(1) and (4)

Class of Liquid	Storage Level	Maximum Height, m	Maximum Quantity per ISA ⁽²⁾ and per Fire Compartment, L
Class IA	First storey	7.5	30 000
	Storeys above first storey	4.5	17 000
	Basement	Not Permitted	Not Permitted
Class IB or IC	First storey	7.5	60 000
	Storeys above first storey	4.5	35 000
	Basement	Not Permitted	Not Permitted
Class II	First storey	7.5	100 000
	Storeys above first storey	7.5	100 000
	Basement	4.5	35 000
Class IIIA	First storey	12.0	200 000
	Storeys above first storey	6.0	200 000
	Basement	6.0	100 000

Notes to Table 4.2.7.5.-B:

(1) See Article 4.2.7.6.

(2) Individual storage area.

2) Where a *building* or part of *building* is designed for the storage of *flammable liquids* or *combustible liquids*, there is no limit on the total quantity of storage per *fire compartment* provided the *building* or part of *building* is separated from adjacent *buildings* or parts of *buildings* by

- a) a *firewall* having a *fire-resistance rating* of at least 4 h, or
- b) spatial separation in conformance with the British Columbia Building Code.

(See Note A-4.2.7.5.(2).)

3) Where containers for 2 or more liquids having different *flash points* are stored together in a single *individual storage area*, the maximum quantity permitted in the *individual storage area* shall equal that permitted for the liquid with the lowest *flash point*.

4) When *flammable liquids* or *combustible liquids* are stored in solid pile or *rack* storage configurations or a combination of both in a single *fire compartment*, the maximum quantity permitted for each class of liquid shall be calculated as follows:

$$\left\{ \frac{q_{IA}}{Q_{IA}} + \frac{q_{IB}}{Q_{IB}} + \frac{q_{IC}}{Q_{IC}} + \frac{q_{II}}{Q_{II}} + \frac{q_{IIIA}}{Q_{IIIA}} \right\}_{\text{Rack}} + \left\{ \frac{q_{IA}}{Q_{IA}} + \frac{q_{IB}}{Q_{IB}} + \frac{q_{IC}}{Q_{IC}} + \frac{q_{II}}{Q_{II}} + \frac{q_{IIIA}}{Q_{IIIA}} \right\}_{\text{Solid Pile}} \leq 1$$

where

q_{IA} , q_{IB} or q_{IC} = the actual quantity of Class IA, IB or IC liquids present in a *rack* or solid pile,

q_{II} = the actual quantity of Class II liquids present in a *rack* or solid pile,

q_{IIIA} = the actual quantity of Class IIIA liquids present in a *rack* or solid pile,

Q_{IA} , Q_{IB} , Q_{IC} = the maximum quantity of Class IA, IB or IC liquids permitted in Table 4.2.7.5.-A or Table 4.2.7.5.-B for the arrangement,

Q_{II} = the maximum quantity of Class II liquids permitted in Table 4.2.7.5.-A or Table 4.2.7.5.-B for the arrangement,

Q_{IIIA} = the maximum quantity of Class IIIA liquids permitted in Table 4.2.7.5.-A or Table 4.2.7.5.-B for the arrangement.

4.2.7.6. Fire Suppression Systems

- 1) Where protection is required by this Code, storage areas for *flammable liquids* and *combustible liquids* shall be
 - a) *sprinklered* in conformance with NFPA 30, “Flammable and Combustible Liquids Code,” or
 - b) protected by an automatic fire suppression system.

(See Note A-4.2.7.6.(1).)

4.2.7.7. Clearances

- 1) The clearance between the top of storage and the lowest structural members shall not be less than 450 mm.
- 2) The clearance between the top of storage and the ceiling sprinkler deflectors or other overhead fire protection systems shall be in accordance with the standard used for the design of the respective system.
- 3) A clearance of not less than 400 mm shall be maintained between stored *flammable liquids* and *combustible liquids* and walls, except that where the width of storage adjacent to the wall is not more than 1.5 m, such wall clearance is not required. (See Note A-4.2.7.7.(3).)

4.2.7.8. Aisles

- 1) Except as provided in Article 4.2.7.9., main aisles, access aisles and aisles defining *individual storage areas* shall be in conformance with Article 3.2.2.2.

4.2.7.9. Separation from Other Dangerous Goods

- 1) *Flammable liquids* and *combustible liquids* shall not be stored with other *dangerous goods* unless in conformance with Article 4.2.2.3.

4.2.7.10. Separation from Combustible Products

- 1) Except for Class I commodities, *flammable liquids* and *combustible liquids* shall not be stored in the same *individual storage area* with other products listed in Sentence 3.2.1.1.(1).

4.2.7.11. Absorbents

- 1) Absorbent materials shall be available in the storage area for use in clean-up of spilled *flammable liquids* or *combustible liquids* in conformance with Article 4.1.6.3.

4.2.8. Incidental Use**4.2.8.1. Application**

- 1) Except as otherwise noted in this Part, this Subsection applies to *industrial occupancies* where the use, storage and handling of *flammable liquids* or *combustible liquids* is secondary to the principal activity.
(See Note A-4.2.8.1.(1).)

4.2.8.2. Maximum Quantities

- 1) Except as provided in Sentences (2) and (3) and in Article 4.2.8.4., the quantity of *flammable liquids* and *combustible liquids* permitted to be located outside of storage rooms conforming to Subsections 4.2.7., 4.2.9. or 4.3.14., or storage cabinets conforming to Subsection 4.2.10., in any one *fire compartment* of a *building*, shall not be more than
 - a) 600 L of *flammable liquids* and *combustible liquids* in *closed containers*, of which not more than 100 L shall be Class IA liquids, and
 - b) 5 000 L of Class IB, IC, II and IIIA liquids in *storage tanks* or portable tanks.
- 2) Where required for normal plant activity, quantities of *flammable liquids* and *combustible liquids* are permitted to exceed those specified in Sentence (1), but shall not be greater than the supply for one day of normal operation.
- 3) Where larger quantities than those permitted by Sentence (2) are required, such quantities shall be in *storage tanks* installed in conformance with Sentence 4.3.13.4.(2).

4.2.8.3. Handling

1) Areas in which *flammable liquids* or *combustible liquids* are transferred from one container or *storage tank* to another, or where they are used in such a way as to release potentially explosive concentrations of flammable vapours, shall be separated from possible sources of ignition by a spatial separation of not less than 6 m, or by a *fire separation*. (See Note A-4.2.8.3.(1).) (See also Note A-4.1.5.2.(1).)

4.2.8.4. General Storage Areas

1) In a general storage area covered in Subsection 3.2.3., quantities of *flammable liquids* and *combustible liquids* are permitted to exceed those in Sentence 4.2.8.2.(1) provided the storage area is in conformance with Sentences (2) to (6).

2) The storage area referred to in Sentence (1) shall be *sprinklered* in conformance with Article 3.2.3.3., providing a level of protection not less than that required for Class IV commodities stored up to a height of 6 m.

3) The height of storage of *flammable liquids* and *combustible liquids* shall be not more than that permitted for unprotected storage in Table 4.2.7.5.-A.

4) When a single class of liquid is stored, the total quantity in a single *fire compartment* shall be not more than

- a) 2 500 L of Class IB and IC liquids,
- b) 5 000 L of Class II liquids, or
- c) 10 000 L of Class IIIA liquids.

5) When 2 or more classes of liquid are stored in the same *fire compartment*, the total quantity permitted for each class of liquid shall be calculated as follows:

$$\frac{q_I}{2500} + \frac{q_{II}}{5000} + \frac{q_{IIIA}}{10,000} \leq 1$$

where

- q_I = the actual quantity of Class IB and IC liquids present,
 q_{II} = the actual quantity of Class II liquids present,
 q_{IIIA} = the actual quantity of Class IIIA liquids present.

6) When 2 or more classes of liquid are stored in the same *individual storage area*, the maximum quantity permitted in the *individual storage area* shall be that permitted for the liquid with the lowest limit listed in Sentence (4).

4.2.9. Rooms for Container Storage and Dispensing

4.2.9.1. Maximum Quantities

1) Except as provided in Sentences (2) and (3), where *flammable liquids* and *combustible liquids* are stored in a room required in this Part, the storage densities averaged over the total room area and the total quantities of such liquids shall conform to Table 4.2.9.1.

Table 4.2.9.1.
Rooms for Container Storage and Dispensing
 Forming Part of Sentences 4.2.9.1.(1) and (2)

Maximum Quantity, L	Minimum Fire Separation Around Room, h	Maximum Density, L/m ²
10 000	2	200
1 500	1	100

2) The maximum quantities and densities of *flammable liquids* and *combustible liquids* shown in Table 4.2.9.1. are permitted to be doubled provided the storage room is protected by an automatic fire suppression system conforming to Article 4.2.7.6.

3) The maximum quantities of Class I liquids in an unprotected storage room with a *fire separation* having a *fire-resistance rating* of not less than 2 h shall

- a) not exceed those specified for unprotected storage in Table 4.2.7.5.-A, and
- b) comply with Sentences 4.2.7.5.(3) and (4).

4.2.9.2. Spill Control

- 1) Storage rooms referred to in Article 4.2.9.1. shall be liquid-tight where the walls join the floor.

4.2.9.3. Aisles

1) The contents of *flammable liquid* and *combustible liquid* storage rooms referred to in Article 4.2.9.1. shall be arranged to provide aisle widths of not less than 1 m.

4.2.9.4. Dispensing

1) Dispensing of *flammable liquids* or *combustible liquids* from containers having a capacity of more than 30 L shall be by pumps or through self-closing valves, designed in conformance with good engineering practice. (See Note A-4.1.8.3.(1).)

4.2.9.5. Explosion Venting

1) Except for the storage of *distilled beverage alcohol*, where Class IA or IB liquids are used, dispensed or stored in open containers within a storage room, or where Class IA liquids are stored in containers exceeding 4 L in capacity, the room shall be designed to prevent critical structural and mechanical damage from an internal explosion in conformance with Sentence 3.3.6.4.(2) of Division B of the British Columbia Building Code. (See Note A-3.2.8.2.(1)(d).)

4.2.10. Cabinets for Container Storage

4.2.10.1. Containers

1) *Flammable liquids* and *combustible liquids* stored in cabinets required in this Part shall be in *closed containers* conforming to Article 4.2.3.1.

4.2.10.2. Maximum Quantity per Cabinet

- 1) The maximum quantity of *flammable liquids* and *combustible liquids* stored in a cabinet shall be 500 L.

4.2.10.3. Maximum Quantity per Fire Compartment

1) Except as provided in Sentences (2) and (3), the total quantity of *flammable liquids* and *combustible liquids* stored in cabinets in a single *fire compartment* shall not exceed the quantity permitted in Article 4.2.10.2. for 3 cabinets.

2) In *industrial occupancies*, quantities of *flammable liquids* and *combustible liquids* greater than those specified in Sentence (1) are permitted in a single *fire compartment* if

- a) the total quantity stored in a group of cabinets is not more than the quantity permitted for 3 cabinets, and
- b) the distance between groups of cabinets described in Clause (a) is not less than 30 m.

3) In *care, treatment or detention occupancies*, the total quantity of *flammable liquids* and *combustible liquids* stored in cabinets in a single *fire compartment* shall not exceed the quantity permitted for one cabinet.

4.2.10.4. Labelling

1) Cabinets for container storage shall be labelled in conspicuous lettering to indicate that the cabinet contains flammable materials and that open flames must be kept away.

4.2.10.5. Fire Endurance

1) Storage cabinets required in this Part shall conform to ULC/ORD-C1275, “Guide for the Investigation of Storage Cabinets for Flammable Liquid Containers.”

4.2.10.6. Ventilation

- 1) When a storage cabinet required in this Part is provided with ventilation openings,
- the ventilation openings shall be sealed with materials providing a fire protection at least equivalent to that required for the construction of the cabinet, or
 - the cabinet shall be vented outdoors using vent piping providing a fire protection at least equivalent to that required in Clause (a) for seals.

4.2.11. Outdoor Container Storage**4.2.11.1. Quantities and Clearances**

1) Except as provided in Sentence (2), the quantities and clearances for *flammable liquids* and *combustible liquids* stored in containers in outdoor storage areas shall conform to Table 4.2.11.1.

Table 4.2.11.1.
Outdoor Container Storage
Forming Part of Sentence 4.2.11.1.(1)

Class of Liquid	Maximum Total Quantity, per Pile, L	Minimum Distance between Piles, m	Minimum Distance to a Property Line or to a Building on the Same Property, m
Class IA	5 000	1.5	6
Class IB or I C	15 000	1.5	6
Class II	35 000	1.5	6
Class IIIA	85 000	1.5	6

- 2) The clearances required in Sentence (1) do not apply where not more than 5 000 L of *flammable liquids* or *combustible liquids* are stored adjacent to a *building* on the same property, provided that either
- the *building* is limited to 1 *storey* in *building* height and is used primarily for the storage or handling of *flammable liquids* or *combustible liquids*, or
 - the exposed wall has a *fire-resistance rating* of at least 2 h and has no openings within 3 m of such outdoor storage.

4.2.11.2. Mixed Storage

1) Where 2 or more liquids with different *flash points* are stored outdoors in containers that form a single pile, the maximum total quantity permitted in the pile shall be equal to that permitted for the liquid with the lowest *flash point*.

4.2.11.3. Fire Department Access

1) An access route not less than 6 m wide constructed in conformance with Subsection 3.2.5. of Division B of the British Columbia Building Code shall be provided in outdoor storage areas to permit the approach of fire department vehicles to within 60 m of any part of a pile.

4.2.11.4. Spill Control

1) Outdoor storage areas for *flammable liquids* or *combustible liquids* shall be designed to accommodate possible spillage in conformance with Subsection 4.1.6.

4.2.11.5. Fencing

1) An outdoor area used for the container storage of *flammable liquids* or *combustible liquids* shall be fenced in conformance with Article 3.3.2.6.

4.2.12. Reserved