Section 3.1. General

3.1.1. Scope

3.1.1.1. Application

1) Except as provided in Sentence 5.5.5.1.(1), this Part applies to the storage of combustible products and *dangerous goods*, both inside and outside of *buildings*. (See Note A-3.1.1.1.(1).)

3.1.1.2. Radioactive Materials

1) *Dangerous goods* classified as radioactive materials shall be stored in conformance with CNSC SOR/2000-209, "Nuclear Safety and Control Act (S.C. 1997, c.9)."

3.1.1.3. Explosives

1) The storage of *dangerous goods* classified as explosives shall be in conformance with NRCan R.S.C., 1985, c. E-17, "Explosives Act," and its Regulations.

3.1.1.4. Compressed Gases

(See Note A-3.1.1.4.)

1) This Part shall not apply to

a) facilities operated by manufacturers or distributors at which *dangerous goods* classified as compressed gases are manufactured, or containers are filled or distributed, provided that storage and handling is in conformance with good engineering practice (see Note A-3.1.1.4.(1)(a)), and

b) the storage and dispensing of *dangerous goods* classified as flammable gases at *fuel-dispensing stations* covered in Section 4.6.

2) Except as provided in this Part, the storage and handling of liquefied petroleum gases shall conform to the British Columbia Gas Safety Regulation.

3) Except as provided in this Part, the storage and handling of natural gas shall conform to the British Columbia Gas Safety Regulation.

3.1.2. Dangerous Goods

3.1.2.1. Classification

1) Classes and divisions of *dangerous goods* referred to in this Code shall mean

a) their primary and first subsidiary classification as defined in Part 2 of TC SOR/2008-34, "Transportation of Dangerous Goods Regulations (TDGR)," or

b) the categories and subcategories established by the "Workplace Hazardous Materials Information System (WHMIS)" for controlled products determined in Part 7 of HC SOR/2015-17, "Hazardous Products Regulations."

2) Substances classified as miscellaneous *dangerous goods* shall be stored according to the hazard they present based on their properties as *dangerous goods*.

3) For the purposes of this Code, *dangerous goods* classified as *flammable liquids* shall mean *flammable liquids* and *combustible liquids* as defined in Subsection 4.1.2.

3.1.2.2. Ambient Temperature

1) Ammonium nitrate classified as oxidizers and *dangerous goods* classified as compressed gases shall not be stored in an area where the ambient air temperature is higher than 52°C.

2) *Dangerous goods* shall not be stored in areas where the ambient temperature may cause them to become unstable or susceptible to undesirable reactions.

3) *Dangerous goods* shall be stored in refrigerated areas where such refrigeration is necessary to stabilize the substances.

3.1.2.3. Packages and Containers

1) *Dangerous goods* shall be stored in packages or containers

a) made of materials that are compatible with the product they contain, and

b) of durable construction and designed to resist damage from normal material handling activities.

2) Where the package or container for a specific type of *dangerous goods* is subject to a standard established by a transportation regulatory authority, such package or container shall conform with the applicable standard. (See Note A-3.1.2.3.(2).)

3.1.2.4. Storage Arrangement and Conditions

1) *Dangerous goods* shall be stored in stable piles such that they will not collapse under normal operating conditions.

2) In addition to the provisions of Article 3.1.2.2., *dangerous goods* 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.

3.1.2.5. Compressed Gases

1) Cylinders and tanks of *dangerous goods* classified as compressed gases shall be protected against mechanical damage.

2) Cylinders of *dangerous goods* classified as compressed gases that are in storage shall be

a) protected against valve damage (see Note A-3.1.2.5.(2)(a)), and

b) firmly secured in a position that will not interfere with the operation of the cylinder valve assembly.

3) Cylinders of *dangerous goods* classified as compressed gases shall be transported in devices designed to provide restraint against movement in any direction.

4) Except for portable fire extinguishers, cylinders of *dangerous goods* classified as compressed gases shall not be stored

a) in any *exit* or corridor providing *access to exits*,

b) under any fire escape, outside *exit* stair, passage or ramp, or

c) within 1 m of any *exit*.

3.1.2.6. Reactive Materials

(See Note A-3.1.2.6.)

1) Reactive materials shall be stored based on their properties when classified as *dangerous goods*.

2) Reactive materials that are unstable and susceptible to reactions, such as polymerization, or self-accelerating decomposition initiated by heat, shock, vibration, light, an increase in pressure, or sound waves, shall be stored in a location and manner that will prevent the undesired reaction.

3) Reactive materials that may react with water or humidity shall be stored in sealed containers in a dry location.

4) Reactive materials that ignite spontaneously in air shall be stored in a liquid that is inert to the material, in an inert atmosphere or in sealed containers.

5) For the purposes of this Code, unstable *dangerous goods* shall be considered as reactive materials based on their reactive properties.

3.1.2.7. Fire Safety Plan

1) In addition to the information required in Section 2.8., where *dangerous goods* are stored or handled, the fire safety plan shall include the names, addresses and telephone numbers of persons to be contacted in case of fire during non-operating hours.

2) Where the *dangerous goods* referred to in Sentence (1) consist of *dangerous goods* classified as radioactive materials, the fire safety plan shall also include

a) methods to control a fire emergency and to recover radioactive materials and equipment containing radioactive materials safely and efficiently,

b) the names, addresses and telephone numbers of primary and alternative sources of expert radiation safety advice and assistance, and

c) the location of primary and alternative sources of radiation survey instruments.

3.1.3. Industrial Trucks

3.1.3.1. Industrial Trucks

1) Except as provided in Sentences (2) and (3), the designation, use, maintenance and operation of industrial trucks shall conform to NFPA 505, "Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operations."

2) Fuel-fired industrial trucks shall conform to ULC/ORD-C558, "Guide for the Investigation of Internal Combustion Engine-Powered Industrial Trucks."

3) Battery-powered industrial trucks shall conform to ULC/ORD-C583, "Guide for the Investigation of Electric Battery Powered Industrial Trucks."

3.1.3.2. Fuel-Fired Industrial Trucks

1) Fuel-fired industrial trucks shall be stored

a) in detached *buildings*,

b) in areas separated from the remainder of the storage area by a *fire separation* having a *fire-resistance rating* of not less that 1 h, or

c) in areas where the vehicles will not create a fire hazard to the storage area.

2) Except as provided in Sentence (3), fuel-fired industrial trucks shall be refuelled only at designated locations outside *buildings*.

3) Fuel-fired industrial trucks that are fuelled by replaceable propane cylinders are permitted to have their cylinders replaced indoors provided

a) cylinder replacement is done at a safe location that is at least 7.5 m from ignition sources, open pits and underground entrances,

b) the cylinders' valves are closed,

c) when an automatic quick-closing coupling that closes in both directions when uncoupled is not provided, the engine is operated until the fuel in the system is consumed, and

d) spare propane cylinders are stored in conformance with Subsection 3.3.5. and the British Columbia Gas Safety Regulation.

4) Each fuel-fired industrial truck shall be equipped with at least one portable extinguisher having a minimum rating of 2-A:30-B:C.

3.1.3.3. Battery-Powered Industrial Trucks

1) Battery-charging installations for battery-powered industrial trucks shall be located

a) at least 1.5 m from combustible materials,

b) when serving more than 2 trucks, in well ventilated areas,

c) in areas where flammable gases or vapours, *combustible dusts* or *combustible fibres* are not present in hazardous quantities, and

d) in areas where precautions are taken to prevent ignition sources, such as open flames, sparks or electric arcs.

2) Battery-charging installations for battery-powered industrial trucks shall be equipped with at least one portable extinguisher having a minimum rating of 2-A:30-B:C.

3.1.3.4. Training

1) Only trained and authorized personnel shall be permitted to

a) operate industrial trucks,

b) replace or refuel propane cylinders for fuel-fired industrial trucks,

c) refuel fuel-fired industrial trucks, or

d) charge batteries for battery-powered industrial trucks.

3.1.4. Electrical Installations

3.1.4.1. Hazardous Locations

1) Where wiring or electrical equipment is located in areas in which flammable gases or vapours, combustible dusts or combustible fibres are present in quantities sufficient to create a hazard, such wiring and electrical equipment shall conform to Sentence 3.3.6.2.(4) of Division B of the British Columbia Building Code.