

FIRE SAFETY AND HAND HYGIENE IN HEALTHCARE FACILITIES

PURPOSE

The purpose of this variance is to assist the Fire Safety Codes Officer (SCO) and healthcare personnel with the application of the Alberta Fire Code 2014 (AFC 2014) related to the safe storage and handling of hand hygiene products in healthcare facilities.

DISCUSSION

Regulatory officials are concerned about the potential fire and occupational safety hazards associated with the storage and use of products that contain 60% or greater alcohol concentration (ethanol). The product is available in an alcohol rinse, gel or foam and is a Class IB flammable liquid. The AFC 2014 defines a Class IB flammable liquid as having a flash point below 22.8°C and a boiling point at or above 37.8°C. Flash point information on products should be readily available from Safety Data Sheets (SDS).

Health Canada, Alberta Health and Wellness, Centre for Disease Control and Prevention, and the Joint Commission on Accreditation of Healthcare Organizations are implementing policies that require healthcare workers to use alcohol based hand hygiene products in hospitals and other health care settings. The policies are resulting in the installation of alcohol based hand hygiene products in patient rooms, corridors and other areas throughout healthcare facilities. In addition, the National Fire Protection Association (NFPA) Life Safety Code Committee has developed technical amendments to permit the safe use of these products.

Regulatory authorities and healthcare facility operators need to be aware of requirements in the AFC 2014, Alberta Building Code 2014 (ABC 2014) and NFPA Life Safety Code on how alcohol based hand hygiene products are regulated.

The health care practice of using alcohol based hand hygiene products in health care facilities has never been contemplated in the AFC 2014 and is now a standard of clinical care as per international, national and provincial practice guidelines. For this reason the NFPA Life Safety Code has been amended to accommodate the use of these products. The NFPA Life Safety Code is substantially different from Part 4 of the National Fire Code and the AFC 2014 regarding the storage and use of alcohol based hand hygiene products. The National Fire Code of Canada and the AFC 2014 have not been updated to align with the NFPA Life Safety Code to specifically address these products.

Unless stated otherwise, all Code references in this STANDATA are to Division B of the Alberta Fire Code 2014.

Issue of this STANDATA is authorized by
the Provincial Fire Administrator

[Original Signed]
Tina Parker



CODE REFERENCES

AFC 2014 Articles 4.2.6.3., 4.2.10.2. and 4.2.10.3. specify the quantities of flammable liquids permitted in rooms and fire compartments of health care facilities.

Sentence 4.2.6.3.(1) states:

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
- 10 L, including not more than 5 L of Class I liquids, in a single room, or
 - 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.

Sentence 4.2.10.2.(1) states:

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.

Sentence 4.2.10.3.(1) states:

4.2.10.3. Maximum Quantity per Fire Compartment

- 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.

Section 2.8. Emergency Planning. Provides facility operators with guidance in developing and implementing a fire safety plan that should include the control of fire hazards that may be presented by alcohol based hand hygiene products. The safety plan must address the storage, use, dispensing and disposal of flammable liquid containers.

Section 2.8. Emergency Planning, Sentence 2.8.1.1.(1) states:

Section 2.8. Emergency Planning**2.8.1.1. Application**

- 1) Fire emergency procedures conforming to this Section shall be provided for
- every *building* containing an *assembly, care, treatment* or *detention occupancy*,
 - every *building* required by the ABC to have a fire alarm system,
 - demolition and construction sites regulated under Section 5.6.,
 - storage areas required to have a fire safety plan in conformance with Articles 3.2.2.5., 3.3.2.9. and 3.3.6.7.
 - areas where *flammable liquids* or *combustible liquids* are stored or handled, in conformance with Article 4.1.5.5., and
 - areas where hazardous processes or operations occur, in conformance with Article 5.1.5.1.

Article 4.1.5.5. states:

4.1.5.5. Emergency Planning

- 1) Except as provided in Sentence (2), emergency planning measures conforming to Section 2.8. shall be provided for all *buildings*, parts of *buildings* and open areas described in Article 4.1.1.1.
- 2) The fire safety plan required as part of the emergency planning measures in Sentence (1) shall be retained on site for reference by the *authority having jurisdiction* and personnel.

The ABC 2014 applies to the use of alcohol based hand hygiene products when the containers are mounted in care facility corridors. Sentence 3.3.1.9. (3) limits an object located within 1980 mm of the floor to not project more than 100 mm horizontally into the corridor.

Containers that project more than 100 mm must be recessed or located in a manner that does not obstruct a barrier-free path of travel where the object may create a hazard to a visually impaired person traveling adjacent to the wall.

ABC 2014, Division B, Sentences 3.3.1.9.(3) and (4) states:

3.3.1.9. Corridors

- 3) Except as permitted by Sentence (4), obstructions located within 1 980 mm of the floor shall not project more than 100 mm horizontally into an *exit* passageway, a *public corridor*, a corridor used by the public or a corridor serving classrooms or patients' sleeping rooms in a manner that would create a hazard for a person with a visual disability traveling adjacent to the walls.
 - 4) The horizontal projection of an obstruction referred to in Sentence (3) is permitted to be more than 100mm provided the clearance between the obstruction and the floor is less than 680 mm. (See Appendix A.)
- A-3.3.1.9. (4) Obstruction in Corridor. The sweep of a cane used by blind or visually impaired persons normally detects obstructions that are within 680 mm of the floor. Any obstruction above this height would not normally be detected and can, therefore, create a hazard if it projects more than 100 mm into the path of travel.

APPLICATION

This variance applies to healthcare facilities.

VARIANCE

This variance provides approximately equivalent or greater safety performance with respect to persons and property as that provided for by the Safety Codes Act.

By combining the various requirements of the AFC 2014, ABC 2014 and NFPA Life Safety Code (LSC), a safe operating guideline may be established and adopted as a variance or alternative solution under the AFC 2014 as per Article 2.2.2.2. of Division C.

Persons applying this variance shall comply with the following conditions:

1. This variance only applies in fully sprinklered healthcare facilities.
2. Dispensers in corridors and rooms cannot exceed 1.2 L capacity. (LSC)
3. Dispensers in suites of patient rooms cannot exceed 2 L capacity. (LSC)
4. One dispenser complying with sentences 2 or 3 per room and located in that room shall not be included in the aggregated quantity address in sentence 9.

5. Dispensers be located a minimum of 1.2 m apart from each other. (LSC)
6. Operation of the dispensers shall meet the requirements outlined in the LSC.
7. Dispensers are not to be installed over or directly adjacent to an ignition source. (LSC)
8. Dispensers are not to be installed over carpeted areas. (LSC)
9. Not more than an aggregate 40 L of alcohol-based hand-rub solution shall be in use outside of a storage cabinet in a single fire compartment.
10. Maximum additional 40 L may be stored in a 45 min. rated storage room within a single fire compartment. (LSC)

This Variance is applicable throughout the province of Alberta.

Note:

The Canadian Oxford Dictionary, 2nd Edition defines “room” as *a part of a building enclosed by walls or partitions, floor and ceiling*. Curtains or folding dividers do not fall within the definition of a room. The ABC 2014 sets out the minimum requirements for rooms within a healthcare facility.