

To: Fire Protection/Detection Equipment Servicing Companies, Municipalities, Local Service Districts, Fire Departments, Building and Facilities Owners/Operators including Regional Health Authorities, School Boards, Municipal and Provincial Governments and Crown Corporations

Fr: Derek Simmons, Director of Fire Services/Fire Commissioner

Date: August 21, 2020

Re: Use and Storage of Alcohol-Based Hand Sanitizer

Now more than ever, the use of alcohol-based hand sanitizer (ABHS) has become an important measure in helping prevent the spread of bacteria and viruses. ABHS contains ethyl alcohol, which readily evaporates at room temperature into an ignitable vapor, and is considered a flammable liquid. Although the incidence of fires related to ABHS is very low, it is vital that ABHS is stored safely and that dispensers are installed and maintained correctly.

The first point of reference for use and storage of flammable and combustible liquids would be found in Part 4 of the National Fire Code of Canada (NFCC). However, the NFCC does not reference ABHS specifically. To ensure the safe use and storage of ABHS, the Fire Services Division is referencing NFPA 101, Life Safety Code (LSC), Chapter 8 (8.7, Special Hazard Protection). The information provided, is intended to identify the differences in requirements, for different occupancy classifications.

Education, Day Care, Health Care and Ambulatory Health Care Occupancies

Occupancy classifications, such as Education, Day Care, Health Care and Ambulatory Health Care have specific requirements for use and storage of ABHS.

Day Care occupancies are permitted to install ABHS dispensers where:

1. Dispensers are installed in rooms or spaces separated from corridors and exits
2. Maximum individual dispenser size is limited to:
 - a. 1.2 L (0.32 gal) for dispensers in rooms
 - b. 2.0 L (0.53 gal) for dispensers in suites of rooms.
3. Dispensers must be separated by a minimum of 1220 mm (48 inches).
4. Not more than 18.9 L (5 gal) shall be stored outside of dispensers, in each smoke compartment.
5. Dispensers shall not be installed above, below, or closer than 25 mm (1 in) to electrical outlets or switches, appliances or other ignition sources.

6. Dispensers installed directly over carpeted floor is only permitted where an automatic sprinkler system is installed.

Health Care and Ambulatory Health Care occupancies are permitted to install ABHS dispensers with an additional criteria for installation in corridor areas. These occupancy classifications shall continue to follow current provincial guidelines and site-specific protocols. Appropriate safety procedures and training for staff, shall be considered a vital part of any guideline or protocol.

1. Where dispensers are installed in a corridor, the corridor shall have a minimum width of 1830 mm (6 ft.)
2. Maximum individual dispenser size is limited to:
 - a. 1.2 L (0.32 gal) in corridors and areas open to corridors or
 - b. 2.0 L (0.53 gal) in rooms or suites of rooms separated from corridors
3. Dispensers must be separated by a minimum of 1220 mm (48 inches).
4. Dispensers shall not be installed above, below, or closer than 25 mm (1 in) to electrical outlets or switches, appliances or other ignition sources.
5. Dispensers installed directly over carpeted floor is only permitted where an automatic sprinkler system is installed.
6. The ABHS solution must not exceed 95 percent alcohol content by volume.
7. Not more than 37.8 L (10 gal) of ABHS shall be in use outside a storage cabinet, in a single smoke compartment or story, whichever is less in area. One dispenser per room off the corridor area is not included in the calculation.
8. Not more than 18.9 L (5 gal) or an amount of ABHS that exceeds that which is necessary for normal maintenance of the area, shall be stored outside of dispensers, in each smoke compartment.

Education occupancies currently follow the same criteria as a Day Care occupancy. In consideration of the importance of reducing the risk of spreading bacteria and viruses, the installation of ABHS dispensers, in school corridor areas, can allow a large number of students and staff to cleanse their hands in a time efficient manner. This would be in addition to the dispensers installed in classrooms and other designated rooms. This change will move Education occupancies in line with the requirements for Health Care and Ambulatory Health Care occupancies, noted above.

All students and staff should receive instruction on the appropriate and effective use of ABHS. The following are best practice recommendations for the use of ABHS:

- ABHS dispensers should be located in key high traffic areas where students are supervised by school staff at all times

- No storage, use or handling of ABHS be permitted in any location where such storage, use or handling would jeopardize egress
- Dispensers shall not be installed to create a projection of more than 101.6 mm (4 inches) into the corridor area

Other Occupancy Classifications

The other remaining occupancy classifications are permitted to use and store ABHS, provided they also meet a criteria:

Assembly Occupancies (Restaurants, Theaters, Auditoriums, Libraries, Churches, etc.)
Detention and Correctional Occupancies
Lodging or Rooming Houses
Hotels and Dormitories
Apartment Buildings
Residential Board and Care Occupancies
Mercantile Occupancies (Department Stores, Drugstores, Supermarkets, etc.)
Business Occupancies
Industrial Occupancies
Storage Occupancies

1. Maximum individual dispenser size is limited to:
 - a. 1.2 L (0.32 gal) in corridors and areas open to corridors or
 - b. 2.0 L (0.53 gal) in rooms or suites of rooms separated from corridors
2. Dispensers must be separated by a minimum of 1220 mm (48 inches).
3. Dispensers shall not be installed above, below, or closer than 25 mm (1 in) to electrical outlets or switches, appliances or other ignition sources.
4. Dispensers installed directly over carpeted floor is only permitted where an automatic sprinkler system is installed.
5. The ABHS solution must not exceed 95 percent alcohol content by volume.
6. Not more than 37.8 L (10 gal) of ABHS shall be in use outside a storage cabinet, in a single smoke compartment or story, whichever is less in area. One dispenser per room off the corridor area is not included in the calculation.
7. Not more than 18.9 L (5 gal) or an amount of ABHS that exceeds that which is necessary for normal maintenance of the area, shall be stored outside of dispensers, in each smoke compartment.

Operation of ABHS Dispensers

Operation of dispensers shall comply with the following criteria:

1. The dispenser shall not release its contents except when the dispenser is activated, either manually or automatically by touch-free activation.
2. Any activation of the dispenser shall only occur when an object is placed within 100 mm (4 in.) of the sensing device.
3. An object placed within the activation zone and left in place shall not cause more than one activation.
4. The dispenser shall not dispense more solution than the amount required for hand hygiene consistent with label instructions
5. The dispenser shall be designed, constructed and operated in a manner that ensures accidental or malicious activation of the dispensing device are minimized.
6. The dispenser shall be tested in accordance with the manufacturer's care and use instructions each time a new refill is installed.

Storage of ABHS Outside of Dispensers

When storing or using an alcohol-based hand sanitizer, fire hazard potential should be considered and steps should be taken to minimize risks. Not more than 18.9 L (5 gal) or an amount of ABHS that exceeds that which is necessary for normal maintenance of the area, shall be stored outside of dispensers, in each smoke compartment.

In cases where an increased amount of storage is a consideration, please consult with the Fire Services Division to ensure a thorough risk assessment has been conducted and direction is provided to comply with building, fire and life safety code requirements.

When stored properly and used as directed, the likelihood of experiencing a fire associated with hand sanitizer is minimal. However, as with any flammable liquid, it is necessary to exercise caution with alcohol-based hand sanitizer. It is also imperative that no storage, use or handling of ABHS be permitted in any location where such storage, use or handling would jeopardize egress from any occupancy.

For further information regarding ABHS requirements please contact the Fire Service Division of the Department of Municipal Affairs and Environment at (709) 729-1608 or your local fire department.