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BT Bulletin - Access Routes & Water Supply

The intent of this brochure is to provide code articles and background information with regards to provisions for fire-fighting as outlined in the National Building Code, and to help explain when fire hydrants are required, and where they should be located to facilitate fire-fighters' access to buildings.

3.2.5.1. Access to Above-grade Storeys

1) Except for *storeys* below the *first storey*, direct access for firefighting shall be provided from the outdoors to every *storey* that is not *sprinklered* throughout and whose floor level is less than 25 m above *grade*, by at least one unobstructed window or access panel for each 15 m of wall in each wall required to face a *street* by Subsection 3.2.2.

2) An opening for access required by Sentence (1) shall

a) have a sill no higher than 900 mm above the inside floor, and

b) be not less than 1 100 mm high by not less than

i) 550 mm wide for a *building* not designed for the storage or use of *dangerous goods*, or

ii) 750 mm wide for a *building* designed for the storage or use of *dangerous goods*.

3) Access panels above the *first storey* shall be readily openable from both inside and outside, or the opening shall be glazed with plain glass.

3.2.5.4. Access Routes:

1) A *building* which is more than 3 *storeys* in *building height* or more than 600 m_2 in *building area* shall be provided with access routes for fire department vehicles

a) to the *building* face having a principal entrance, and

b) to each *building* face having access openings for firefighting as required by Articles 3.2.5.1. and 3.2.5.2. (See Appendix A.)

3.2.5.5. Location of Access Routes:

1) Access routes required by Article 3.2.5.4. shall be located so that the principal entrance and every access opening required by Articles 3.2.5.1. and 3.2.5.2. are located not less than 3 m and not more than 15 m from the closest portion of the access route required for fire department use, measured horizontally from the face of the *building*.

2) Access routes shall be provided to a *building* so that

a) for a *building* provided with a fire department connection, a fire department pumper vehicle can be located adjacent to the hydrants referred to in Article 3.2.5.15.,

b) for a *building* not provided with a fire department connection, a fire department pumper vehicle can be located so that the length of the access route from a hydrant to the vehicle plus the unobstructed path of travel for the firefighter from the vehicle to the *building* is not more than 90 m, and

c) the unobstructed path of travel for the firefighter from the vehicle to the *building* is not more than 45 m.

3) The unobstructed path of travel for the firefighter required by Sentence (2) from the vehicle to the *building* shall be measured from the vehicle to the fire department connection provided for the *building*, except that if no fire department connection is provided, the path of travel shall be measured to the principal entrance of the *building*.

4) If a portion of a *building* is completely cut off from the remainder of the *building* so that there is no access to the remainder of the *building*, the access routes required by Sentence (2) shall be located so that the unobstructed path of travel from the vehicle to one entrance of each portion of the *building* is not more than 45 m.

3.2.5.6. Access Route Design:

1) A portion of a roadway or yard provided as a required access route for fire department use shall

a) have a clear width not less than 6 m, unless it can be shown that lesser widths are satisfactory,
b) have a centreline radius not less than 12 m,
c) have an overhead clearance not less than 5 m,
d) have a change of gradient not more than 1 in 12.5 over a minimum distance of 15 m,
e) be designed to support the expected loads imposed by firefighting equipment and be surfaced with concrete, asphalt or other material designed to permit accessibility under all climatic conditions,
f) have turnaround facilities for any dead-end portion of the access route more than 90 m long, and
g) be connected with a public thoroughfare.

A-3.2.5.6.(1) Fire Department Access Route. The design and construction of fire department access routes involves the consideration of many variables, some of which are specified in the requirements in the Code. All these variables should be considered in relation to the type and size of fire department vehicles available in the municipality or area where the building will be constructed. It is appropriate, therefore, that the local fire department be consulted prior to the design and construction of access routes. See Figure 1 on Page 3.

A-3.2.5.7.(1) Water Supply. The intent of Sentence 3.2.5.7.(1) is that an adequate water supply for firefighting be readily available and of sufficient volume and pressure to enable emergency response personnel to control fire growth so as to enable the safe evacuation of occupants and the conduct of search and rescue operations, prevent the fire from spreading to adjacent buildings, and provide a limited measure of property protection.

The water supply requirements for buildings containing internal fire suppression systems, including sprinkler systems and standpipe systems, are contained in specific standards referenced in the Code. Compliance with the referenced standard, including any variations made by this Code, is deemed to satisfy the intent of Sentence 3.2.5.7.(1). However, it will be necessary to verify that an adequate source of water is available at the building site to meet the required quantities and pressures.

For a building with no internal fire suppression system, the determination of the minimum requirements applicable to the water supply for firefighting is relevant mainly to building sites not serviced by municipal water supply systems. For building sites serviced by municipal water supply systems, where the water supply duration is not a concern, water supply flow rates at minimum pressures is the main focus of this provision. However, where municipal water supply capacities are limited, it may be necessary for buildings to have supplemental water supplies on site or readily available.

The sources of water supply for firefighting purposes may be natural or developed. Natural sources may include ponds, lakes, rivers, streams, bays, creeks, and springs. Developed sources may include aboveground tanks, elevated gravity tanks, cisterns, swimming pools, wells, reservoirs, aqueducts, artesian wells, tankers, hydrants served by a public or private water system, and canals. Consideration should be given to ensuring that water sources will be accessible to fire department equipment under all climatic conditions. The volume of on-site water supply is dependent on the building size, construction, occupancy, exposure and environmental impact potential, and should be sufficient to allow at least 30 minutes of fire department hose stream use.

Definition – *Street:*

Street means any highway, road, boulevard, square or other improved thoroughfare 9 m or more in width, that has been dedicated or deeded for public use and is accessible to fire department vehicles and equipment.

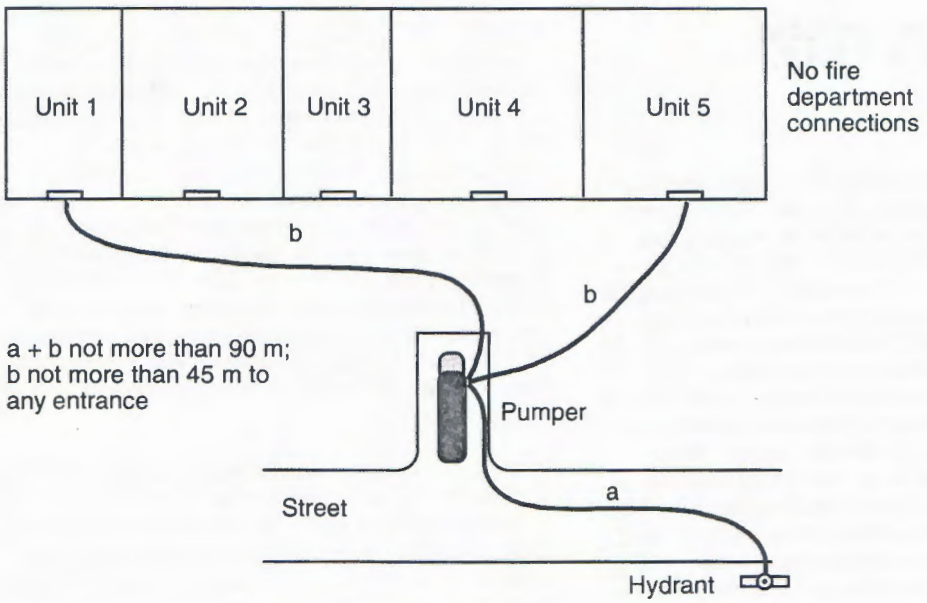

Figure
Pumper vehicle location for subdivided building

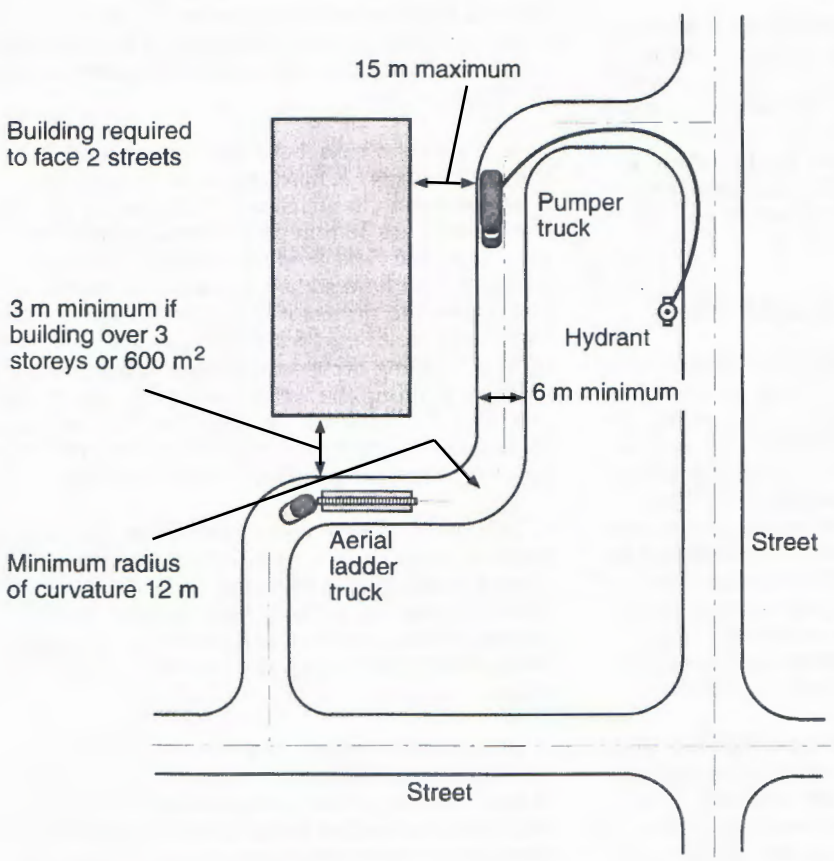

Figure
Fire department access routes