

Spatial Separation & Fire Department Response Time

April 7, 2014

Background:

The 2010 National Building Code of Canada was adopted in Saskatchewan in May of 2013. One of the significant technical changes is the relationship between fire department response time and how it relates to the design and construction of portions of buildings exposed to other properties.

The code article that relates to single detached dwellings is:

9.10.15.3. Limiting Distance and Fire Department Response

1) Except for the purpose of applying Sentences 9.10.15.2.(2), 9.10.15.4.(3) and 9.10.15.5.(12), a *limiting distance* equal to half the actual *limiting distance* shall be used as input to the requirements of this Subsection, where

- a) the time from receipt of notification of a fire by the fire department until the first fire department vehicle arrives at the *building* exceeds 10 min in 10% or more of all calls to the *building*, and
- b) any *storey* in the *building* is not *sprinklered*.

An example of the impact of this article is as follows:

Sample House - A house is constructed with a side yard limiting distance of 1.2 m (typical zoning regulation)

Scenario 1: Fire department response time demonstrated to meet 10 minutes or less in 90% of the calls to fires, the only limitation on the exposing building face is that the amount of glazed openings (windows) is limited to 7% of the area of the wall.

Scenario 2: Fire department cannot demonstrate they can meet a 10-minute response time to fires in at least 90% of their calls, the exposing building face now has to be constructed as if it were only 0.6 m from the property line.

The limitations would then become:

- 0% allowable unprotected glazing – no windows.
- Wall constructed with a 45 minute fire-resistance rating.
- Cladding must be
 - Non-combustible,
 - Vinyl siding installed over exterior gypsum sheathing, or
 - Fire-retardant wood (flame spread rating < 25) and installed over exterior gypsum sheathing.

Therefore,

in order for the house in Scenario 2 to be constructed with windows (maximum 7% of the area of the wall), no fire fire-separation requirements, and no limits on type of cladding, it must be constructed at 2.4m (8') from the property line.

Fire Department Capacity:

- Municipalities with organized fire departments, full time staff on site at all times, can likely meet the 10-minute response time requirement, but limitations may exist where fire-houses are located too far from certain parts of the municipality.
- Municipalities with organized volunteer fire departments, and that have a fire-department building within the municipality may be able to meet the 10-minute fire department response time requirement, but it must be demonstrated and declared by the local fire chief.
- Municipalities that do not have access to fire-department vehicles within their municipality or region (i.e. rural municipalities, towns that share fire department vehicles stored in another town, etc.) are very unlikely to meet the 10-minute response time requirement.