

HIRF – SEPARATION OF GLAZED OPENINGS

DISCUSSION

The amendments to the Alberta Building Code 2006 addressing high-intensity residential fires include restrictions on the size and spacing of individual glazed openings in an exposing building face.

As a part of the effort to reduce the impacts of high-intensity residential fires, the size and spacing of individual glazed openings in an exposing building face was considered. In the event of a fire, an over-sized glazed opening or two openings close enough to one another to effectively function as one large opening would result in a high heat flux through the openings, increasing the exposure of the adjacent building. While the HIRF amendments served to address this issue by requiring individual openings to have their areas restricted and be spaced at least 2 m apart, it was not the intent to fully eliminate all closely-spaced windows.

In situations where the limiting distance is not more than 2 m or the building is not sprinklered throughout, the Code now stipulates that individual glazed openings must be separated from one another by at least 2 m. Additionally, the area of an individual glazed opening cannot exceed 50% of the maximum allowable aggregate area of openings in the exposing building face (found from Table 9.10.15.4.).

As a result of the Code changes, designers and safety codes officers have inquired as to whether there are circumstances that would permit glazed openings to be spaced closer than 2 m apart, specifically when the collective area of the closely-spaced openings is no greater than the area of an individual glazed opening described in Sentence 9.10.15.4.(3). This STANDATA has been developed to clarify whether or not such a glazed opening configuration is permitted.

CODE REFERENCES

Sentences 9.10.15.4.(3) and (4) state:

9.10.15.4. Glazed Openings in Exposing Building Face

...

- 3) Individual glazed openings in an *exposing building face* shall have a projected area that is not more than 50% of the maximum allowable aggregate area of glazed openings determined in Sentence (1), unless
- a) the *building* is *sprinklered* throughout, or

Unless stated otherwise, all Code references in this STANDATA are to Division B of the Alberta Building Code 2006.



Issue of this STANDATA is authorized by
the Acting Chief Building Administrator

[Original Signed]
Chris Salvian, P.Eng.



SAFETY CODES COUNCIL

b) the *limiting distance* is more than 2 m.

4) An individual glazed opening described in Sentence (3) shall be separated by not less than 2 m horizontally and 2 m vertically from any other glazed opening that is located on the same *exposing building face* and within the same *fire compartment*. (See A-3.2.3.1.(6) in Appendix A.)

INTERPRETATION

An individual glazed opening is permitted to have an area that is not more than 50% of the maximum allowable aggregate of glazed openings for the exposing building face, as provided in Sentence 9.10.15.4.(3). A cluster of windows (spaced <2 m apart) with a combined area equivalent to that of the individual glazed opening mentioned above would allow for the passage of a heat flux no greater than that for the single individual opening. Therefore such a cluster shall be permitted, provided that the collective area of the openings contained within the cluster does not exceed 50% of the maximum allowable aggregate area of glazed openings for the exposing building face. The cluster of windows must also be separated from any other individual opening or cluster by 2 m, as illustrated in Figure 1.

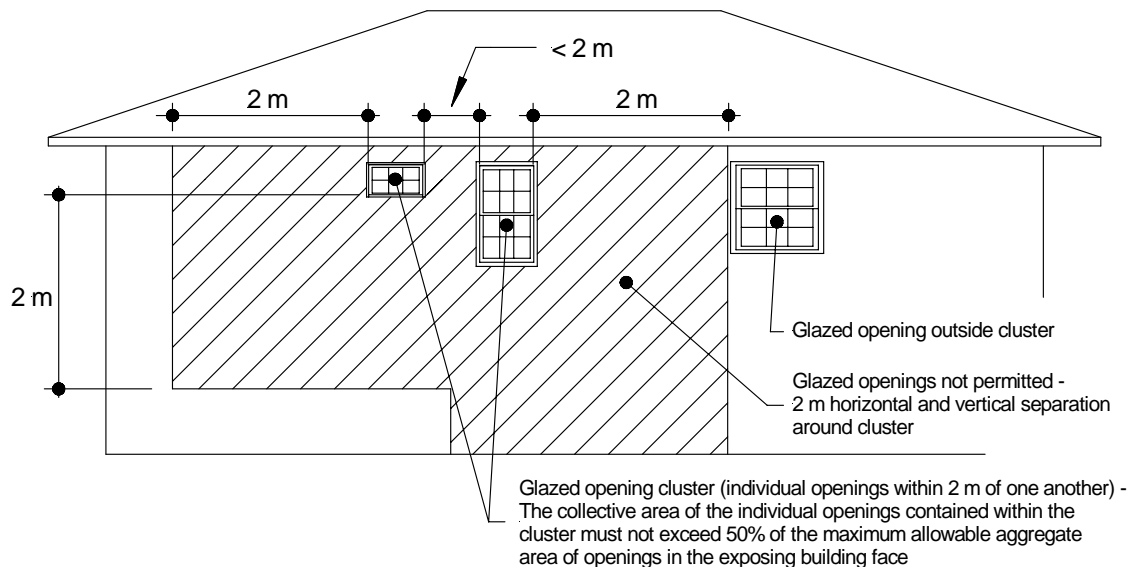


Figure 1 – Window Cluster in Exposing Building Face

This INTERPRETATION is applicable throughout the province of Alberta.