

High Intensity Residential Fire (HIRF) Requirements

Fire department response time as a condition of building construction requirements have existed in Alberta since the introduction of the Alberta Building Code in 1981. The intent behind the requirements has always been that where the fire department in a municipality cannot respond to a fire in less than 10 minutes, buildings must be located further away from property lines or provided with additional fire protection, such as non-combustible siding, no side-yard windows, and/or sprinkler systems.

Additional fire protection measures slow the spread of fire by containing or suppressing it, and give the fire department vital extra time to arrive before the fire spreads out of control or becomes a high intensity residential fire.

Areas that are serviced by a volunteer fire department are assumed to not meet the 10 minute response time, and must provide a letter from the fire department if claiming otherwise.

As per sections 9.10.15.3, 3.2.3.1, and A-3.2.3.1(8) of the National Building Code - 2023 Alberta Edition, the 10 minute response time is inclusive of *"the time from receipt of notification of a fire by the fire department until the first fire department vehicle capable of beginning suppression activities arrives at the building"*. If the response time is not within 10 minutes in 90% or more of cases, a greater distance is required between buildings.

Setback	Glazed Openings (Windows)	Cladding	Soffits	Projections
Greater than 4.0 meters	No special requirements, standard construction			
2.4 to 4.0 meters	A	No special requirements, standard construction	Requirements, no special standard construction	Requirements, no special standard construction
0.45 to 2.4 meters	No unprotected glazed openings	C	B	D
Less than 0.45 meters	No unprotected glazed openings	C	Not permitted	Not permitted

Closure means a device or assembly for closing an opening through a fire separation or an exterior wall, such as a door, shutter, wired glass or glass block, and includes all components such as hardware, closing devices, frames and anchors.

Unprotected Opening means a doorway, window or opening other than one equipped with a *closure* having the required *fire-resistance rating*, or any part of the *exposed building face* that has a *fire-resistance rating* less than required for the *exposed building face*.

Exposed building face means that part of the exterior wall of a building that faces one direction and is located between ground level and the ceiling of its top storey or, where a building is divided into *fire compartments*, the exterior wall of a *fire compartment* that faces one direction.

Fire compartment means space in a building that is enclosed by exterior walls or is separated from all other parts of the building by enclosing construction providing a *fire separation* having a required *fire-resistance rating*.

Fire-resistance rating means the time in minutes or hours that a material or assembly of materials will withstand the passage of flame and the transmission of heat when exposed to fire under specified conditions of test and performance criteria.

Box A	<ul style="list-style-type: none"> • No individual window can be more than 50% in size of the gross allowable glazed area allowed from Table 9.10.15.4 of the Alberta Building Code. See table below for gross allowable glazed area. • Windows within the same <i>fire compartment</i> are to be separated by 2 meters vertically or horizontally from each other.
Box B	<p>Soffits</p> <ol style="list-style-type: none"> 1. Roof soffits are permitted up to 0.45 meters to the property line, and must be protected by a material listed in clause 3.2.3.6.(5)(b) and have no openings. 2. Soffits are not permitted closer than .45m from the property line. <p>3.2.3.6.(5)(b) States:</p> <ul style="list-style-type: none"> • not less than .38mm thick steel conforming to CAN/CGSB-93.4 • unvented aluminum conforming to CAN/CGSB-93.2-M • Not less than 12.7 mm thick gypsum • Not less than 11 mm thick plywood • Not less than 12.5 mm thick OSB or waferboard • Not less than 11 mm thick lumber conforming to 9.27.6.1.(1)
Box C	<p>Construction of exposed wall – 45 minute fire resistance rating required</p> <p>Cladding is to be:</p> <ul style="list-style-type: none"> • Non-combustible or • Combustible installed over exterior grade gypsum sheathing or over masonry or • Wall assembly tested and approved to the ULCS314 standard
Box D	<p>Combustible enclosed projections (eg. Chimney chases)</p> <ol style="list-style-type: none"> 1. Same construction requirements for exterior walls (45 minute fire rated) 2. Sides are to be constructed the same as the face, no openings 3. If underside of projection exceeds .6m (24 inches) to finished ground level, then protection is required as per 3.2.3.6.(5)(b)

Table 9.10.15.4
Maximum Area of Glazed Openings in Exterior Walls
 Forming part of Sentence 9.10.15.4.(1)

Maximum Total Area of Exposing Building Face, m ²	Maximum Aggregate Area of Glazed Openings, % of Exposing Building Face Area											
	Limiting Distance, m											
	Less than 1.2	1.2	1.5	2.0	4.0	6.0	8.0	10.0	12.0	16.0	20.0	25.0
	HIRF Limiting Distances	2.4	3.0	4.0	8.0	12.0	16.0	20.0	24.0	32.0	40.0	
30	0	7	9	12	39	88	100	—	—	—	—	—
40	0	7	8	11	32	69	100	—	—	—	—	—
50	0	7	8	10	28	57	100	—	—	—	—	—
100	0	7	8	9	18	34	56	84	100	—	—	—
Over 100	0	7	7	8	12	19	28	40	55	92	100	—

- Sprinklers or other options may allow increased glazed openings (windows). Please discuss with a Building Safety Codes Officer.
- Owners and designers are strongly advised to review HIRF/Building Code requirements prior to starting a design.
- This handout is for convenience only. Please refer to the Alberta Building Code to review the complete HIRF requirements.
- For more information, please contact a Park Enterprises Safety Codes Officer at 1-800-621-5440.

IMPORTANT: IF FIRE SUPPRESSION CAN NOT BE STARTED WITHIN 10 MINUTES OF FIRE DEPARTMENT NOTIFICATION, THE LIMITING DISTANCE IS TO BE DOUBLED.







