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Proposed Change 1784

Code Reference(s):	NBC20 Div.B 2.2.7.6. (first printing)
Subject:	Large Farm Buildings (General)
Title:	Maximum Sill Height for Windows Used as Exits
Description:	This proposed change introduces a maximum sill height for openable windows used as exits in large farm buildings.
Related Code Change Request(s):	CCR 1603, CCR 1604

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input checked="" type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

Farm buildings are unique in their occupancy, uses, hazards and expected performance. The National Building Code of Canada (NBC) 2020 reflects this by including suitable minimum requirements for farm buildings and agricultural occupancies in Part 2 of Division B.

Currently, openable windows or panels that are used as exits in farm buildings have no requirements for interior sill height. To ensure that the exit can be used in an emergency, a maximum sill height should be specified so that any farm building occupant can quickly evacuate through these openable windows. Window sills that are too high could expose the occupant to an unacceptable risk of being trapped in case of a fire emergency.

Justification

Parts 3 and 9 specify a maximum interior sill height of 900 mm for exits to fire escapes through windows in dwelling units. This proposed change uses the same height for the majority of locations within a farm building.

In areas where openable windows or panels are used as exits in areas of farm buildings that are occupied by livestock, low sill heights could allow access to the opening by the livestock, which could also disrupt ventilation systems, allow the livestock to escape, or defeat biosecurity measures within barns.

A minimum sill height of 1.5 m would be high enough to limit any interference from livestock, while still being a manageable height for occupant egress in an emergency. This height was chosen based on practical use and following the recommendations in explanatory Note A-9.9.10.1.(1) on escape windows from bedrooms in dwelling units.

PROPOSED CHANGE

[2.2.7.6.] 2.2.7.6. Width and Height of Exits

- [1] 1)** The minimum clear width of an exterior doorway used as an *exit* shall be 750 mm.
- [2] 2)** Except as provided in Sentence (3), the minimum headroom clearance in every *exit* shall conform to Article 3.4.3.4.
- [3] --)** Except as provided in Sentence (4)-2025, the bottom of an openable window or panel used as an *exit* shall be not more than 900 mm above the inside floor.
- [4] --)** Where an openable window or panel used as an *exit* is located in a livestock-occupied part of the floor area,
 - [a] --)** the bottom of the openable window or panel shall be not more than 1 500 mm above the inside floor, and
 - [b] --)** a foothold shall be installed not less than 600 mm above the inside floor.
- [5] 3)** An openable window or panel used as an *exit* shall have
 - [a] a)** an opening not less than 900 mm by 550 mm, and
 - [b] b)** a fire escape or stair, where required by Article 2.2.7.9.

Impact analysis

This proposed change is anticipated to have minimal cost implications as the foothold could have various forms and installations (e.g., a piece of wood attached to the wall, an appropriate sized hole in a concrete wall).

This proposed change provides enforceable, safe and practical requirements for the sill height of windows or panels used as exits in farm buildings, which is not currently specified in the NBC. It would also facilitate the quick evacuation of farm building occupants in case of an emergency.

Enforcement implications

This proposed change can be enforced using the existing regulatory framework. Authorities having jurisdiction would already be familiar with these requirements, as they have been in force for Part 3 and Part 9 buildings for some time. The application to Part 2 farm buildings would be similar, with a clear relaxation for livestock-occupied parts of farm buildings.

Who is affected

Those concerned with the design, construction and operation of farm buildings, namely, engineers, architects, building owners and regulators would be affected by this proposed change.

Building owners, in conjunction with designers, would be provided with clear requirements allowing them to design and construct farm buildings that meet their specific requirements.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

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