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## Proposed Change 1939

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<b>Code Reference(s):</b>	<b>NBC20 Div.B 3.2.3.7.(4) (first printing)</b> <b>NBC20 Div.B 3.2.5.12. (first printing)</b>
Subject:	Automatic Sprinkler System
Title:	Clarification of the Requirement for Sprinklers in Combustible Attic or Roof Spaces
Description:	This proposed change clarifies the requirement for sprinklers in combustibles attic or roof spaces by removing "throughout" from Clause 3.2.3.7.(4)(b) and introducing a new Sentence 3.2.5.12.(8) and an accompanying Note.

This change could potentially affect the following topic areas:

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|--|---|
| <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 checked="" type="checkbox"/> Small Buildings                | <input checked="" type="checkbox"/> Large Buildings         |
| <input checked="" type="checkbox"/> Fire Protection                | <input 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  |

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## Problem

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In the National Building Code of Canada (NBC) 2020 and National Fire Code of Canada (NFC) 2020, there are approximately 200 instances of the phrase "sprinklered throughout" when referring to the installation of sprinkler systems in a building or part thereof.

Use of this phrase can lead to confusion regarding the sprinkler installation requirements in the NBC, particularly since the various referenced NFPA standards for sprinkler systems (NFPA 13, "Standard for the Installation of Sprinkler Systems"; NFPA 13R, "Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies"; and NFPA 13D, "Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes") do not require sprinkler protection for certain areas or spaces within a sprinklered building or storey.

A review of all instances of "sprinklered throughout" in the NBC and NFC identified a single case in the NBC where the original intent was to mandate the installation of sprinklers throughout the space, regardless of the exemptions listed in the referenced standards for sprinkler systems.

This proposed change also introduces NBC Sentence 3.2.5.12.(8)-2025 and its explanatory Note. The NBC requires the installation of automatic sprinkler systems for the protection of combustible attic or roof spaces. Misinterpretation of the intent of the Code could lead to a fire not being suppressed or controlled, which could result in the spread of fire to other parts of the building, which could cause harm to persons and building damage.

This proposed change clarifies the intent of the Code by using consistent wording.

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## Justification

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The phrase "sprinklered throughout" in the NBC creates the potential for confusion among Code users as to whether the combustible attic or roof spaces do not require sprinklers in accordance with the relevant standards for sprinkler systems: NFPA 13, "Standard for the Installation of Sprinkler Systems"; NFPA 13R, "Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies"; or NFPA 13D, "Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes." All three of these installation and design standards permit various areas or spaces within a building, storey or floor area to be exempt from installation of sprinkler systems.

This proposed change removes the word "throughout" from the phrase "sprinklered throughout" in Clause 3.2.3.7.(4)(b); for consistency, the same editorial change would be made in other locations of the Code where "sprinklered throughout" appears.

Notwithstanding the exemptions listed in the referenced NFPA standards, the intent of the Code is to always require the protection of combustible attic or roof spaces in accordance with Clause 3.2.3.7.(4)(b) where noncombustible cladding is not provided and no other clause of Sentence 3.2.3.7.(4) applies.

This proposed change also clarifies the existing requirements by introducing a new Sentence and explanatory Note. The new notwithstanding provision in Sentence 3.2.5.12.(8)-2025 is consistent with the existing notwithstanding provisions for balconies and closets, and other spaces below a roof in Sentence 3.2.5.12.(7). In addition, the new explanatory Note clarifies the intent. A cross-reference to Sentence 3.2.5.12.(8)-2025 would also be added to Sentence 3.2.3.7.(4).

This proposed change ensures the intent of the Code is clear and avoids potential conflicts with the application of the provisions of the referenced standards for sprinkler systems.

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## PROPOSED CHANGE

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### **[3.2.3.7.] 3.2.3.7. Construction of Exposing Building Face**

- [1] 4)** Except as provided in Articles 3.1.4.8. and 3.1.6.9., the requirement in Table 3.2.3.7. for *noncombustible* cladding for *buildings* or *fire compartments* where the maximum permitted area of *unprotected openings* is more than 25% but not more than 50% of the *exposing building face* is permitted to be waived where
- [a] a) the *limiting distance* is greater than 5 m,
  - [b] b) the *building* or *fire compartment* and all *combustible attic and/or roof spaces* are *sprinklered throughout*, (see Sentence [3.2.5.12.\(8\)-2025](#)),
  - [c] c) the cladding
    - [i] i) conforms to Subsections 9.27.6., 9.27.7., 9.27.8., 9.27.9. or 9.27.10.,
    - [ii] ii) is installed without furring members, or on furring not more than 25 mm thick, over gypsum sheathing at least 12.7 mm thick or over masonry, and
    - [iii] iii) after conditioning in conformance with ASTM D2898, "Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing", has a *flame-spread rating* not greater than 25 on the exterior face when tested in accordance with Sentence 3.1.12.1.(1),
  - [d] d) the cladding
    - [i] i) conforms to Subsection 9.27.12.,
    - [ii] ii) is installed with or without furring members over gypsum sheathing at least 12.7 mm thick or over masonry,
    - [iii] iii) has a *flame-spread rating* not greater than 25 when tested in accordance with Sentence 3.1.12.1.(2), and
    - [iv] iv) does not exceed 2 mm in thickness, exclusive of fasteners, joints and local reinforcements (see Note A-3.2.3.7.(4)(d)(iv)), or
  - [e] e) the exterior wall assembly complies with Article 3.1.5.5. or 3.1.5.6.

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### **[3.2.5.12.] 3.2.5.12. Automatic Sprinkler Systems**

- [1] 1)** Except as permitted by Sentences (2) to (4) and (9), an automatic sprinkler system shall be designed, constructed, installed and tested in conformance with NFPA 13, "Standard for the Installation of Sprinkler Systems". (See Note A-3.2.5.12.(1).)
- [2] 2)** Instead of the requirements of Sentence (1), NFPA 13R, "Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies", is permitted to be used for the design, construction and installation of an automatic sprinkler system installed
- [a] a) in a *building of residential occupancy* throughout that
    - [i] i) is not more than 4 *storeys* in *building height* and conforms to

Article 3.2.2.47., 3.2.2.49., 3.2.2.51., 3.2.2.52. or  
or 3.2.2.55., or

[ii] ii) is not more than 3 *storeys* in *building height* and conforms to  
Article 9.10.1.3., or

[b] b) in a *building of care occupancy* with not more than 10 occupants  
that is not more than 3 *storeys* in *building height* and conforms to  
one of Articles 3.2.2.42. to 3.2.2.46.

(See Note A-3.2.5.12.(2).)

**[3] 3)** Instead of the requirements of Sentence (1), NFPA 13D, "Standard for the  
Installation of Sprinkler Systems in One- and Two-Family Dwellings and  
Manufactured Homes", is permitted to be used for the design,  
construction and installation of an automatic sprinkler system installed

[a] a) in a *building of residential occupancy* throughout that contains not  
more than two *dwelling units*,

[b] b) in a *building of care occupancy*, provided

[i] i) it contains not more than two *suites of care occupancy*,

[ii] ii) it has not more than five residents throughout, and

[iii] iii) a 30-minute water supply demand can be met, and

[c] c) in a *building of residential occupancy* throughout that contains more  
than two *dwelling units*, provided

[i] i) except for a *secondary suite*, no *dwelling unit* is located above  
another *dwelling unit*,

[ii] ii) all *suites* are separated by a vertical *fire separation* having a  
*fire-resistance rating* of not less than 1 h that provides  
continuous protection from the top of the footing to the  
underside of the roof deck, with any space between the top of  
the wall and the roof deck tightly filled with mineral wool or  
*noncombustible* material,

[iii] iii) each *dwelling unit* has its own sprinkler water supply provided  
in accordance with NFPA 13D, "Standard for the Installation of  
Sprinkler Systems in One- and Two-Family Dwellings and  
Manufactured Homes",

[iv] iv) a passive purge sprinkler system design is used as described  
in NFPA 13D, "Standard for the Installation of Sprinkler  
Systems in One- and Two-Family Dwellings and Manufactured  
Homes", and

[v] v) where the sprinkler system is taken into consideration for the  
reduction of *limiting distance*, all rooms, including closets,  
bathrooms and attached garages, that adjoin an *exposing  
building face* are sprinklered, notwithstanding any exemption  
stated in NFPA 13D, "Standard for the Installation of Sprinkler  
Systems in One- and Two-Family Dwellings and Manufactured  
Homes".

(See Note A-3.2.5.12.(2).)

**[4] 4)** If a *building* contains fewer than 9 sprinklers, the water supply for these

sprinklers is permitted to be supplied from the domestic water system for the *building* provided the required flow for the sprinklers can be met by the domestic system.

- [5] 5) If a water supply serves both an automatic sprinkler system and a system serving other equipment, control valves shall be provided so that either system can be shut off independently.
- [6] 6) Notwithstanding the requirements of the standards referenced in Sentences (1) and (2) regarding the installation of automatic sprinkler systems, sprinklers shall not be omitted in any room or closet in the *storey* immediately below a roof assembly. (See Note A-3.2.5.12.(6).)
- [7] 7) Notwithstanding the requirements of the standards referenced in Sentences (1) and (2) regarding the installation of automatic sprinkler systems, in *buildings* conforming to Article 3.2.2.48., 3.2.2.51., 3.2.2.57. or 3.2.2.60., sprinklers shall be provided for balconies and decks exceeding 610 mm in depth measured perpendicular to the exterior wall. (See Note A-3.2.5.12.(7).)
- [8] --) Notwithstanding the requirements of the standards referenced in Sentences (1) and (2) regarding the installation of automatic sprinkler systems, in *buildings* conforming to Clause 3.2.3.7.(4)(b), sprinklers shall be installed in *combustible attic or roof spaces*. (See Note A-3.2.5.12.(8)-2025.)
- [9] 8) Sprinklers in elevator machine rooms shall have a temperature rating not less than that required for an intermediate temperature classification and shall be protected against physical damage. (See Note A-3.2.5.12.(8).)
- [10] 9) Except as provided in Subsection 3.2.8., closely spaced sprinklers and associated draft stops need not be installed around floor openings in conformance with NFPA 13, "Standard for the Installation of Sprinkler Systems".

**Note A-3.2.5.12.(8)-2025 Sprinkler Protection in Combustible Attic or Roof Spaces.**

NFPA 13, "Standard for the Installation of Sprinkler Systems," and NFPA 13R, "Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies," describe many different cases where concealed spaces in combustible attic or roof spaces do not require sprinklers for compliance with those standards.

However, under Clause 3.2.3.7.(4)(b), where the building or fire compartment is not provided with noncombustible cladding, sprinklers must be installed throughout the attic or roof spaces, regardless of whether these spaces are exempted from the sprinkler requirements of the applicable referenced standard.

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## Impact analysis

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This proposed change clarifies the intent of the Code by removing "throughout" from Clause 3.2.3.7.(4)(b) and using consistent wording in Sentence 3.2.5.12.(8) and its explanatory Note. No additional costs are expected where the intent of the Code is consistently and correctly applied.

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## Enforcement implications

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This proposed change clarifies the intent of the requirements, which should aid in the understanding and enforcement of the Code.

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## Who is affected

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Authorities having jurisdiction, designers and contractors.

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## OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

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[\[3.2.3.7.\]](#) 3.2.3.7. ([\[1\]](#) 4) [F03,F02-OP3.1]

[\[3.2.5.12.\]](#) 3.2.5.12. ([\[1\]](#) 1) [F02,F81,F82-OS1.2]

[\[3.2.5.12.\]](#) 3.2.5.12. ([\[1\]](#) 1) [F02,F81,F82-OP1.2]

[\[3.2.5.12.\]](#) 3.2.5.12. ([\[2\]](#) 2) [F02,F81-OS1.2]

[\[3.2.5.12.\]](#) 3.2.5.12. ([\[2\]](#) 2) [F02,F81-OP1.2]

[\[3.2.5.12.\]](#) 3.2.5.12. ([\[3\]](#) 3) [F02,F81-OS1.2]

[\[3.2.5.12.\]](#) 3.2.5.12. ([\[3\]](#) 3) [F02,F81-OP1.2]

[\[3.2.5.12.\]](#) 3.2.5.12. ([\[4\]](#) 4) [F02-OS1.2]

[\[3.2.5.12.\]](#) 3.2.5.12. ([\[4\]](#) 4) [F02-OP1.2]

[\[3.2.5.12.\]](#) 3.2.5.12. ([\[5\]](#) 5) [F81-OS1.2]

[\[3.2.5.12.\]](#) 3.2.5.12. ([\[5\]](#) 5) [F81-OP1.2]

[\[3.2.5.12.\]](#) [3.2.5.12.](#) ([\[6\]](#) 6) **no attributions**

[\[3.2.5.12.\]](#) 3.2.5.12. ([\[6\]](#) 6) [F02-OS1.2]

[\[3.2.5.12.\]](#) 3.2.5.12. ([\[6\]](#) 6) [F02-OP1.2]

[3.2.5.12.] 3.2.5.12. ([7] 7) ~~[F03-OS1.2]~~

[3.2.5.12.] 3.2.5.12. ([7] 7) [F03-OP1.2]

[3.2.5.12.] 3.2.5.12. ([7] 7) [F03-OP3.1]

[3.2.5.12.] -- ([8] --) **no attributions**

[3.2.5.12.] -- ([8] --) [F03-OP1.2]

[3.2.5.12.] 3.2.5.12. ([9] 8) [F81-OS3.3,OS3.6]

[3.2.5.12.] 3.2.5.12. ([10] 9) **no attributions**