

**Submit a comment**

## Proposed Change 2109

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<b>Code Reference(s):</b>	<b>NECB25 Div.B 5.2.3.1. (first printing)</b>
Subject:	Heating, Ventilating and Air-conditioning Systems - Other
Title:	Fan Motor Power Threshold for the Application of Prescriptive Requirements
Description:	This proposed change lowers the threshold for total fan motor power for the application of prescriptive requirements.
Related Code Change Request(s):	CCR 1437

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 checked="" type="checkbox"/> Small Buildings                           | <input checked="" type="checkbox"/> Large Buildings         |
| <input 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 checked="" type="checkbox"/> Energy Efficiency       |
| <input checked="" 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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Currently, Subsection 5.2.3. of the National Energy Code of Canada for Buildings (NECB) applies to HVAC fan systems with a total fan motor nameplate rating of 10 kW or more. Restricting the application of the requirements to systems with higher total fan motor power ratings (i.e., 10 kW or more) misses the opportunity for energy savings that could be realized if the requirements were applied to a lower total nameplate rating.

Additionally, this results in a misalignment between the NECB and Section 6.5.3.1.1 of ANSI/ASHRAE/IES 90.1, "Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings."

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## Justification

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This proposed change would result in energy savings when the requirements are applied to systems with a lower total fan motor nameplate power rating.

This proposed change would also harmonize the requirements of the NECB with ANSI/ASHRAE/IES 90.1 and thus facilitate the adoption and adaption of the NECB.

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## PROPOSED CHANGE

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### [5.2.3.1.] 5.2.3.1. Application

- [1] 1) Except for equipment covered by Article 5.2.12.1. and whose minimum performance includes fan energy, this Subsection applies to all fan systems
  - [a] a) that are used for comfort heating, ventilating or air-conditioning, or any combination thereof, and
  - [b] b) for which the total of all fan motor nameplate ratings is ~~10 kW~~ 3.7 kW or more (see Note A-5.2.3.1.(2)).
- [2] 2) For the purposes of this Subsection, the power demand of a fan system shall be the sum of the demand of all fans required to operate at design conditions to supply air to the *conditioned space*. (See Note A-5.2.3.1.(2).)

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## Impact analysis

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Harmonizing the NECB with ASHRAE 90.1 would help Code users and authorities having jurisdiction to apply the NECB requirements.

The energy savings would be proportional to the number of fan systems that would be otherwise excluded from the application of Subsection 5.2.3.

Applying the requirements to HVAC systems with a lower (i.e., 3.7 kW or more instead of the existing 10 kW or more) total fan motor nameplate power rating would result in energy savings for Code users choosing either the prescriptive path or the performance path.

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## Enforcement implications

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This proposed change can be enforced by the existing infrastructure for enforcing the NECB.

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## Who is affected

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Designers, engineers, builders, energy advisors and building officials.

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## OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

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[\[5.2.3.1.\]](#) 5.2.3.1. ([\[1\]](#) 1) no attributions

[\[5.2.3.1.\]](#) 5.2.3.1. ([\[2\]](#) 2) [F95,F97-OE1.1]