

Proposed Change 2240

Code Reference(s):	NBC25 Div.B 9.32.3.10. (first printing)
Subject:	Heating, Ventilating and Air-conditioning Systems
Title:	Replacement of a Withdrawn Standard with New Standards for Fans
Description:	This proposed change updates the referenced standards for the testing of fans by replacing CAN/CSA-C260-M, "Rating the Performance of Residential Mechanical Ventilating Equipment," with ANSI/ASHRAE 51-25 (ANSI/AMCA 210-25), "Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating," and ANSI/AMCA 300-24, "Reverberation Room Methods of Sound Testing of Fans."
Related Code Change Request(s):	CCR 597

This change could potentially affect the following topic areas:

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|---|---|
| ☐ Division A | ☒ Division B |
| ☐ Division C | ☒ Design and Construction |
| ☐ Building operations | ☒ Housing |
| ☒ Small Buildings | ☐ Large Buildings |
| ☐ Fire Protection | ☐ Occupant safety in use |
| ☐ Accessibility | ☐ Structural Requirements |
| ☐ Building Envelope | ☐ Energy Efficiency |
| ☒ Heating, Ventilating and Air Conditioning | ☐ Plumbing |
| | ☐ Construction and Demolition Sites |

Problem

The National Building Code of Canada (NBC) currently references CAN/CSA-C260-M90, "Rating the Performance of Residential Mechanical Ventilating Equipment." However, CSA Group has withdrawn this standard, and there are no products on the market that are currently tested or listed in accordance with it. Continuing to reference CAN/CSA-C260-M in the NBC creates an enforcement gap because designers and contractors cannot demonstrate compliance, and building officials cannot verify fan capacity or sound ratings, using an obsolete standard.

Justification

To ensure that the NBC remains enforceable and aligned with current industry practice, references to CAN/CSA-C260-M should be replaced with active standards that provide equivalent or superior methods of testing.

This proposed change updates the referenced standard to ANSI/ASHRAE 51-25 (ANSI/AMCA 210-25), "Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating," for fan airflow capacity testing, and to ANSI/AMCA 300-24, "Reverberation Room Methods of Sound Testing of Fans," for sound ratings.

ANSI/ASHRAE 51-25 (ANSI/AMCA 210-25) and ANSI/AMCA 300-24 are widely recognized standards that are currently used by manufacturers and provide reliable and verifiable test data. Introducing them in the NBC would eliminate the need to reference a withdrawn CSA standard, ensure that performance data for fans could be consistently verified, and avoid confusion for designers, contractors, manufacturers and building officials.

PROPOSED CHANGE

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[9.32.3.10.] 9.32.3.10. Fans

(See Note A-9.32.3.10.)

- [1] 1)** Except as provided in Sentence (4), capacity ratings for required fans shall be determined in accordance with
 - [a] a) ANSI/ASHRAE 51-25 (ANSI/AMCA 210-25), "Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating", ~~CAN/CSA-C260-M, "Rating the Performance of Residential Mechanical Ventilating Equipment", ANSI/AMCA 210-25/ASHRAE 51-25, "Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating,"~~ or
 - [b] b) HVI Publication 916, "Airflow Test Procedure".
- [2] 2)** Sound ratings for fans shall be determined in accordance with
 - [a] a) ANSI/AMCA 300-24, "Reverberation Room Methods of Sound Testing of Fans", ~~CAN/CSA-C260-M, "Rating the Performance of Residential Mechanical Ventilating Equipment",~~ or
 - [b] b) HVI Publication 915, "Loudness Testing and Rating Procedure".
- [3] 3)** Capacity ratings for fans shall be measured at the external static pressure differentials shown in Table 9.32.3.10.-A.
- [4] 4)** Fans in heat/energy recovery ventilators used to provide one or more required fans shall have their airflow at normal temperature rated in accordance with CAN/CSA-C439, "Laboratory methods of test for rating the performance of heat/energy-recovery ventilators".
- [5] 5)** Where a heat/energy recovery ventilator is used to provide one or more

required fans, it shall have a low-temperature ventilation reduction factor of not less than 50% when tested in accordance with CAN/CSA-C439, "Laboratory methods of test for rating the performance of heat/energy-recovery ventilators", at an outdoor temperature at least as low as the outdoor design temperature for the location where the ventilation system is to be installed, but the outdoor design temperature need not be lower than -25°C .

Table [\[9.32.3.10.-A\]](#) 9.32.3.10.-A
Minimum External Static Pressure Differential for Rating of Fans
Forming Part of Sentence [\[9.32.3.10.\]](#) 9.32.3.10.([3] 3)

Fan Configuration or Application	Minimum External Static Pressure Differential to be Used in Determining Rated Capacity
Fans installed with ducts connected on both sides, any application	100 Pa (0.4 inch water column)
Fans installed with ducts on one side only, used as the principal ventilation fan in exhaust-only systems permitted by Article 9.32.3.6.	62 Pa (0.25 inch water column)
Other required fans	25 Pa (0.1 inch water column)

- [6] 6)** Fans, including make-up air supply fans, installed to satisfy Articles 9.32.3.3. to 9.32.3.8. with less than 1 m of duct between themselves and the visible interior surfaces of rooms other than unfinished *basements*, furnace rooms, utility rooms and attics, shall have a sound rating complying with Table 9.32.3.10.-B when operating at the required flow rate.
- [7] 7)** Mechanical ventilation devices shall conform to CSA C22.2 No. 113, "Fans and ventilators".

Table 9.32.3.10.-B 9.32.3.10.-B
Maximum Sound Rating for Fans
Forming Part of Sentence [9.32.3.10.] 9.32.3.10.([6] 6)

Fan Application	Maximum Sound Rating, sones	
	~~Rated according to CAN/CSA-C260-M~~	Rated according to <u>ANSI/AMCA 300-24</u> or HVI Publication 915
Principal ventilation fan	~~2.0~~	2.5
Supplemental fans installed in bathrooms and their make-up air fans	~~2.5~~	3.5
Supplemental fans installed in kitchens and their make-up air fans	~~No rating required~~	No rating required

Impact analysis

This proposed change should have minimal to no cost implications for the industry and regulators.

Manufacturers already test fans in accordance with the cited ANSI/ASHRAE and ANSI/AMCA standards, which are internationally recognized and widely applied in the North American market.

This proposed change would benefit designers and specification writers by deleting references to a withdrawn standard and introducing references to new standards that are already used in the industry.

This proposed change would benefit building officials and enforcement agencies by eliminating ambiguity and ensuring that fan capacity and sound ratings are based on current test methods. This proposed change would increase consistency in compliance verification and avoid disputes related to an unavailable or obsolete standard.

Overall, this proposed change would benefit stakeholders by clarifying and modernizing the NBC.

Enforcement implications

This proposed change would allow building officials to verify fan capacity and sound ratings using active and available standards, which would eliminate relying on a withdrawn CSA standard and improve consistency in enforcement.

Who is affected

Designers and specification writers would be able to reference updated and available standards when selecting and documenting fans.

Contractors and installers would be assured that specified products are tested in accordance with current methods and are readily available in the market.

Manufacturers and suppliers already use ANSI/AMCA standards, so no additional testing burden is expected.

Building officials and regulators would be able to refer to clear and enforceable standards when verifying the performance capacity and sound ratings of fans.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

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[\[9.32.3.10.\]](#) 9.32.3.10. ([\[1\]](#) 1) [F40,F50,F52,F53-OH1.1] [F51,F52-OH1.2]

[\[9.32.3.10.\]](#) 9.32.3.10. ([\[1\]](#) 1) [F53,F63-OS2.3]

[\[9.32.3.10.\]](#) 9.32.3.10. ([\[2\]](#) 2) [F81-OH1.1,OH1.2]

[\[9.32.3.10.\]](#) 9.32.3.10. ([\[3\]](#) 3) [F53-OH1.1,OH1.2]

[\[9.32.3.10.\]](#) 9.32.3.10. ([\[3\]](#) 3) [F53-OS3.4]

[\[9.32.3.10.\]](#) 9.32.3.10. ([\[4\]](#) 4) [F40,F50,F52,F53-OH1.1] [F51,F52-OH1.2]

[\[9.32.3.10.\]](#) 9.32.3.10. ([\[5\]](#) 5) [F81-OH1.1,OH1.2]

[\[9.32.3.10.\]](#) 9.32.3.10. ([\[6\]](#) 6) [F81-OS3.4]

[\[9.32.3.10.\]](#) 9.32.3.10. ([\[6\]](#) 6) [F81-OH1.1,OH1.2]

[\[9.32.3.10.\]](#) 9.32.3.10. ([\[7\]](#) 7) [F40,F50,F52,F53-OH1.1] [F51,F52-OH1.2]

[\[9.32.3.10.\]](#) 9.32.3.10. ([\[7\]](#) 7) [F81-OS3.4]