


BC BUILDING CODE INTERPRETATION COMMITTEE

A joint committee with members representing
AIBC, EGBC, BOABC

File No: 18-0309

INTERPRETATION

Page 1 of 3

Interpretation Date:	June 18, 2024
Building Code Edition:	BC Building Code 2018
Subject:	EM Power & Manual Controls for Make Up Air Fans Serving Highrise Residential Corridors
Keywords:	Emergency power, Make up air fans
Building Code Reference(s):	3.2.6.2.(5) & (6), 3.2.6.7.(2)(i), 3.2.7.9.(1)(c), 3.3.3.6.
Question:	<p>This project is a Part 3 highrise residential building.</p> <ol style="list-style-type: none">1. If a single make up air (MUA) fan is provided on the roof which supplies air to the residential public corridors on each floor level, does this MUA fan have to be provided with emergency power?2. If separate make up air (MUA) fans are provided on each floor level which supply air to the residential public corridor on the respective floor, do these MUA fans have to be provided with emergency power?3. Does the MUA fan Question 1 require manual controls at the CACF?4. Do the MUA fans in Question 2 require manual controls at the CACF?
Interpretation:	<p>1. No (except as indicated in BCIC Interpretation 18-0019).</p> <p>Sentence 3.2.6.2.(6) requires MUA fans that serve residential public corridors to continue running upon activation of a fire alarm to maintain corridor pressurization. This Sentence does not require the MUA fans to continue running under building loss of power.</p> <p>Clause 3.2.7.9.(1)(c) requires fans be provided with EM power when they are installed to maintain air quality specified in Articles 3.2.6.2. and 3.3.3.6.</p> <p>The MUA fans serving residential public corridors are not required by Subsection 3.2.6. Articles 3.2.6.2. and 3.3.3.6. do not include any measure of air quality for residential</p> <p></p> <hr/> <p>Patrick Shek, P.Eng., CP, FEC, Committee Chair</p>
<p>The views expressed are the consensus of the joint committee with members representing AIBC, EGBC and BOABC, which form the BC Building Code Interpretation Committee. The Building and Safety Standards Branch, Province of BC and the City of Vancouver participate in the committee's proceedings with respect to interpretations of the BC Building Code. The purpose of the committee is to encourage uniform province wide interpretation of the BC Building Code. These views should not be considered as the official interpretation of legislated requirements based on the BC Building Code, as final responsibility for an interpretation rests with the local <i>Authority Having Jurisdiction</i>. The views of the joint committee should not be construed as legal advice.</p>	

BC BUILDING CODE INTERPRETATION COMMITTEE

A joint committee with members representing
AIBC, EGBC, BOABC

File No: 18-0309

INTERPRETATION

Page 2 of 3

public corridors with respect to highrise measures, so Clause 3.2.7.9.(1)(c) does not apply to MUA fans serving residential public corridors.

Sentence 3.2.6.2.(6) was first introduced in the NBCC 2015. The rationale for this change is described in NRC publication NR24-31-2017 as indicated below:

Limits to Smoke Movement, Article 3.2.6.2.

When air-handling units are automatically shut off, positive pressure is lost in the corridors and stairwells, which reverses the direction causing the following problems:

- smoke and fire moves from the suites (now higher air pressure due to fire) into the corridors (new low pressure zone due to fan shutdown),
- smoke and fire is drawn from the suites into the corridors to the stairwells caused by the stack effect when building pressurization units are turned off, and
- firefighters' control of air-handling units is lost and may become irreversible due to fire alarm system override.

These problems reduce life safety and increase danger to evacuating occupants and to responding firefighters from exposure to smoke.

Sentence 3.2.6.2.(6) was added to require corridor pressurization units to remain on to resist or limit the movement of smoke and to protect the means of egress for occupants and access for responding firefighters.

The primary focus of this code change was to keep the make-up air corridor supply fans running under fire alarm. Although corridor make up air fans are not mandated by Subsection 3.2.6., they are commonly installed to meet ASHRAE ventilation requirements to prevent kitchen odors from migrating from residential suites to the public corridors.

Since most residential projects have corridor make up air supply fans the NBCC 2015 code change simply requires that these fans not to automatically shut down under fire



Patrick Shek, P.Eng., CP, FEC, Committee Chair

The views expressed are the consensus of the joint committee with members representing AIBC, EGBC and BOABC, which form the BC Building Code Interpretation Committee. The Building and Safety Standards Branch, Province of BC and the City of Vancouver participate in the committee's proceedings with respect to interpretations of the BC Building Code. The purpose of the committee is to encourage uniform province wide interpretation of the BC Building Code. These views should not be considered as the official interpretation of legislated requirements based on the BC Building Code, as final responsibility for an interpretation rests with the local *Authority Having Jurisdiction*. The views of the joint committee should not be construed as legal advice.

BC BUILDING CODE INTERPRETATION COMMITTEE

A joint committee with members representing
AIBC, EGBC, BOABC

File No: 18-0309

INTERPRETATION

Page 3 of 3

alarm. There was no intent in this code change to mandate the fans to remain operational under building loss of power.

Refer also to BCIC Interpretation 18-0019 for a requirement to connect MUA fans to EM power if the installation of motorized smoke dampers is waived.

2. No (except as indicated in BCIC Interpretation 18-0019).

Refer to answer to Question 1 above.

3. Yes.

Clause 3.2.6.7.(2)(i) requires auxiliary equipment that is identified in Articles 3.2.6.2., 3.2.6.3. and 3.2.6.6. be provided with manual controls at the CACF.

3.2.6.2.(5) requires that air moving fans that serve more than 2 storeys must be provided with manual controls at the CACF.

Since the single MUA fan on the roof serves more than 2 storeys, it requires manual controls at the CACF.

4. No.

Sentence 3.2.6.2.(5) waives the requirement for manual controls at the CACF for fans that serve not more than 2 storeys.

Since the MUA fans in Question 2 only serve 1 storey, they do not require manual controls at the CACF.



Patrick Shek, P.Eng., CP, FEC, Committee Chair

The views expressed are the consensus of the joint committee with members representing AIBC, EGBC and BOABC, which form the BC Building Code Interpretation Committee. The Building and Safety Standards Branch, Province of BC and the City of Vancouver participate in the committee's proceedings with respect to interpretations of the BC Building Code. The purpose of the committee is to encourage uniform province wide interpretation of the BC Building Code. These views should not be considered as the official interpretation of legislated requirements based on the BC Building Code, as final responsibility for an interpretation rests with the local *Authority Having Jurisdiction*. The views of the joint committee should not be construed as legal advice.