



MEMORANDUM

DATE 21 May 2019
TO Standing Committee on Housing and Small Buildings *via Nedjma Belrechid, Technical Advisor*
FROM Standing Committee on Energy Efficiency *via Morched Zeghal, Technical Advisor*
RE: **Cross-Committee Coordination**

Background

During the most recent meeting of the Standing Committee on Energy Efficiency (SC-EE), May 15-17, 2019, several PCFs were considered and approved for submission to public review.

These PCFs will increase efficiencies and reduce energy use within the scope Section 9.36. and the National Energy Code for Buildings. During discussion and analysis of the PCFs related to Part 9 construction, several non-energy related issues were identified that the SC-EE agreed should be brought to the attention of the Standing Committee on Housing and Small Buildings (SC-HSB) for consideration and possible action.

Discussion

Required Cooling

As solar heat gain is not addressed by Codes, increased overheating risks may occur in buildings when building envelopes are tightened while concurrently using high solar heat gain windows. Overheating will need to be addressed by mechanical cooling to avoid potential comfort and health risks for occupants. Requirements for mandatory cooling, similar to existing requirements for mandatory heating in Section 9.33., may be necessary to address this risk. The PCFs have some provisions related to assessing cooling loads in energy models, however requirements for the design and installation of cooling equipment is not within the scope of Section 9.36. or the NECB.

Air Barriers Separating Attached Dwelling Units

Discussions on air tightness testing have identified that a common practice in the industry is to install an air barrier between attached dwelling units. While not required by Part 9, a continuous air barrier installed between dwelling units makes air tightness testing significantly easier to conduct, improves energy efficiency, and provides potential reduction of sound and smell transmission between dwelling units. The SC-HSB should consider if existing provisions in Part 9 adequately address common installation practices in the industry and identify if there are any potential risks or benefits associated with the installation of additional air barriers, between attached dwelling units, beyond what is currently required in Part 9.

Attachment of Exterior Insulation and Cladding

Increased performance expectations for the building envelope is likely to lead to the installation of thermal insulation exterior to the sheathing. Insulation thicknesses more than 3” may become more common, creating a need to address provisions in Part 9 for the installation of exterior insulation and cladding over exterior insulation.

The installation of exterior combustible insulation may also change the risk of fire spread between buildings, especially during construction while the insulation is not protected by cladding. The SC-EE suggests that the SC-HSB consider if an increased risk is created by the installation of increased insulation, and if those risks requires changes to Part 9.

Improved Air Tightness and Soil Gas Ingress

Improvements in the effectiveness of the air barrier may create an increased risk of negative pressure within a dwelling unit relative to the exterior. The SC-HSB should consider if improvements in air barrier effectiveness, approaching levels under 0.6 ACH₅₀, present any increased risk related to soil gas ingress or if ventilation requirements are required to protect from depressurization.

Decreased Heating Loads and HVAC Sizing

Improvements in energy efficiency will lead to a reduction in heating load in buildings as well as possible changes to the size and design of ventilation systems. The SC-EE has identified that Part 9 may require additional provisions to ensure that appropriately sized mechanical equipment is installed. One possible risk that has been identified is that requirements in Section 9.32. and 9.33. may lead to the installation of HVAC equipment that is not appropriately sized and may lead to equipment short-cycling, causing a decrease in equipment performance and durability. Improvement in the effectiveness of the air barrier may also require a re-evaluation of the basic assumptions in Part 9 regarding the amount of ventilation air that enters a building through uncontrolled air leakage and any necessary changes to ensure adequate supply and distribution of fresh air and the adequate removal of exhaust air.

Recommendation

SC-EE recommends the SC-HSB to review and consider the issues above for possible action.



MEMORANDUM

DATE 13 March, 2020
TO Standing Committee on Energy Efficiency *via Morched Zeghal, Technical Advisor*
Standing Committee on Housing and Small Buildings *via Nedjma Belrechid, Technical Advisor*
FROM CCBFC Executive Committee
RE: Mandating of airtightness testing and addressing potentially unintended consequences of proposed energy efficiency requirements

Issue

- 1) The Executive Committee (EC) of the CCBFC informed the Standing Committee on Energy Efficiency (SC-EE) of the lack of support to mandate air tightness testing in the NECB and NBC 9.36. However, the SC-EE developed proposed changes that would mandate air tightness testing in some of the compliance paths for energy efficiency technical requirements.
- 2) The EC has also considered questions from stakeholders regarding the resolution of potential unintended consequences before the finalization of the proposed changes for 2020 codes. The EC wishes to urgently communicate direction to the SC-EE and the SC-HSB so that as much action as possible can be taken in the remaining time of this code cycle.

EC Direction

1) Mandating of airtightness testing

The EC has confirmed that the Provincial/Territorial Policy Advisory Committee on Codes (PTPACC) does not support mandatory airtightness (blower door) testing at this time. The EC acknowledges the efforts by SC-EE to balance the short timeline for the development of energy efficiency requirements for the 2020 codes with the need to not compromise the process.

The EC wishes to remind the SC-EE that the code development process allows for significant technical revisions of proposed changes if it can be demonstrated that such revisions would not cause further adverse reactions. The EC directs SC-EE to revise the proposed changes such that airtightness testing is not mandatory in any compliance path for buildings and houses (NECB and Section 9.36.) – at this time.

The EC encourages the SCEE to review the information on airtightness testing again including cost and capacity. At the same time, in preparation for the 2020-25 code cycle, the EC will continue to discuss this issue with the PTPACC as codes evolve and as tiers are implemented.

2) Addressing potentially unintended consequences

In the interest of making sure that due diligence was done and that future code requirements offer effective regulatory solutions when published, the EC wishes to remind SCEE and SCHSB that the work on unintended consequences is of the utmost importance before the energy efficiency requirements for houses (NECB and Section 9.36.) can be finalized for the 2020 code.

The EC expects a report from both SCs as to how the effect of unintended consequences have been addressed and that the newly proposed changes do not cause any adverse effects on the 'house as a system'.