

Building Advisory B23-014  
September 17, 2026

Subject: New Products, Materials and Systems used in Building Construction

### Purpose:

The City of Calgary has, over the years and several building code cycles, seen a steady demand from builders, developers, applicants, designers and manufacturers seeking to specify and use new, innovative products and technologies in buildings. Due to the delayed nature of adopting building codes and new regulations, often the acceptance of these new products and technologies does not keep pace with the development of new products and materials themselves. In some cases, the product or technology may have been developed and tested in a country that has no equivalent testing standard in Canada, or it may not have a standard developed to facilitate its evaluation and inclusion in building construction. Navigating the requirements for code acceptance of new, innovative material or equipment can be challenging for those not familiar with the process. The intent of this advisory is to address the issue of acceptance of materials and systems submitted for building permits to the City of Calgary under the requirements of the National Building Code - Alberta Edition (NBC - [AE]).

### Background:

The building code follows an established standards development and conformity assessment process, which can be found in the preface to the latest edition of the 2023 NBC (AE); a summary of which follows:

#### ***Relationship of the NBC (AE) to the Standards Development and Conformity Assessment***

##### ***Canadian Standards:***

*Canada's National Standards System (NSS) is a network of accredited organizations concerned with standards development, certification, testing and inspection that is established under the auspices of the Standards Council of Canada Act. Standards development and assessment of conformity provisions in the NBC(AE) are supported by several of the following member organizations accredited as standards development organizations in Canada:*

- *Air-Conditioning, Heating and Refrigeration Institute (AHRI)*
- *ASTM International*
- *Bureau de normalisation du Québec (BNQ)*
- *Canadian General Standards Board (CGSB)*
- *CSA Group*
- *International Association of Plumbing and Mechanical Officials (IAPMO)*
- *ULC Standards*
- *Underwriters' Laboratories Inc. (UL)*

##### ***Non-Canadian Standards:***

*There are a number of areas where Canadian standards have not been developed, and where appropriate, reference standards from other countries have been adopted (such as the American Society of Heating, Refrigerating and Air-Conditioning Engineers [ASHRAE] and the National Fire Protection Association [NFPA]).*

## ***Relationship of the NBC (AE) to the Standards Development and Conformity Assessment cont.***

*\*\*\*Tables 1.3.1.2. and D-1.1.2. of Division B in the code list the referenced standards within the code. The NBC(AE) does not list acceptable proprietary building products. It establishes the criteria of how building materials, products and assemblies achieve requirements. Some of these criteria are explicitly stated in the NBC(AE) while others are incorporated by reference to material or product standards published by standards development organizations. Only those portions of the standards related to the objectives of this Code are mandatory parts of the NBC(AE).*

### ***Conformity Assessment:***

*The NBC(AE) establishes minimum measures, which are set out within its own text or within referenced standards. The Safety Codes Act (SCA) and its Regulations identify who is responsible for carrying out conformity (the Owner, Designer, Manufacturer, Contractor or Vendor).*

*Those responsible for ensuring that materials, appliances, systems and equipment meet the requirements of this Code have several means available to assist them, ranging from on-site inspection to the use of certification services provided by accredited third-party organizations. Test reports or mill certificates provided by manufacturers or suppliers can also assist in the acceptance of products. Engineering reports may be required for more complex products.*

### ***Testing***

*The Standards Council of Canada (SCC) accredits testing and calibration laboratories that are capable of reliably testing products to specified standards. The test results produced by these organizations can be used in the certification, evaluation and qualification of products for compliance with Code provisions. The SCC's website ([www.scc.ca](http://www.scc.ca)) lists accredited testing and calibration laboratories, along with their scope of accreditation.*

### ***Certification***

*Certification is the confirmation by an independent organization that a product, process, service or system meets a requirement. Certification may entail physical examination, testing as specified in appropriate standards, an initial plant inspection, and/or follow-up unannounced plant inspections. This quality control procedure leads to the issuing of a formal assurance or declaration, by means of a certification mark or certificate, that the product, process, service or system is in conformity with specified provisions. In some cases, a product for which no standard exists can be certified using procedures and criteria developed by an accredited certification body and specifically designed to measure the performance of that product. Certification bodies publish lists of certified products and companies. The Standards Council of Canada's website ([www.scc.ca](http://www.scc.ca)) lists accredited certification bodies, along with their scope of accreditation. Several organizations, including the Canadian Construction Materials Centre (CCMC) at the NRC, offer product certification services.*

### ***Evaluation***

*An evaluation is a written opinion by an independent professional organization that a product will perform its intended function. An evaluation is often done to determine the ability of an innovative product, for which no standards exist, to satisfy the intent of a Code requirement. Follow-up plant inspections are not normally part of the evaluation process.*

### ***Qualification***

*Qualification evaluates the ability of a product to perform its intended function by verifying that it meets the requirements of a standard. Qualification normally includes some follow-up plant inspection. Some organizations publish lists of qualified products that meet the specified requirements. Some organizations qualify product manufacturing and/or testing facilities for compliance with the Code and relevant standards.*

## Methods of Acceptance:

Division A, Subsection 1.2.2. from the 2023 National Building Code (AE) [NBC(AE)] provides a prescriptive code path for testing, certification and acceptance for use:

### **Division A, 1.2.2.1. Characteristics of Materials, Appliances, Systems and Equipment**

- 1) All materials, appliances, systems and equipment installed to meet the requirements of this Code shall possess the necessary characteristics to perform their intended functions when installed in a building.
- 2) Evaluation reports issued by the Canadian Construction Materials Centre, National Research Council of Canada, or an organization approved by the Provincial Building Administrator may be used in determining compliance with the requirements of this Code.
- 3) The Provincial Building Administrator may issue lists of materials or products that satisfy the requirements of this Code and, after listing, may be used to fulfill the requirements of this Code.

Sentence one (1) identifies that items must meet minimum intended function for use. This is generally accepted to mean that even if a product, material, equipment, etc. does not need to meet an identified standard in the code for a particular use, it is still required to be fit for purpose. This could mean that a product may be required to have different attributes for different purposes or installation.

### **Example:**

A duct for ventilation purposes only which is contained within a dwelling unit does not have to comply with CAN/ULC-S110, however it still needs to perform its intended purpose and not fall apart or deteriorate due to moisture, time, pressure and tension. Article 9.33.4.1. speaks to SMACNA manuals- SMACNA HVAC Duct Construction Standards Metal and Flexible state that flex must be tested to UL-181 Which includes assessments for resistance to mold growth, humidity, temperature, puncture, static load impact, erosion, pressure, collapse, tension, torsion, bending, and leakage. Without these tests, products could fail under pressure, erode due to humidity, puncture easily, or collapse under negative pressure.

Sentence two (2) identifies the Canadian Construction Materials Centre (CCMC) as an organization that may issue evaluation reports that identify where a product, appliance, equipment, etc. meets a certain standard. For new and innovative building materials, where no recognized standard exists for measuring performance, the CCMC provides a recognized national evaluation service for new and innovative materials, products, systems and services.

Furthermore, Sentence two (2) also identifies that the Provincial Building Administrator (PBA) may approve another organization that may issue evaluation reports along with the CCMC.

At the time of this advisory, the PBA has recognized the following organizations that are accredited by the Standards Council of Canada (SCC) for certifying products where there are applicable standards:

- QAI Laboratories,
- Underwriters Laboratories of Canada Inc./UL Solutions,
- Intertek,
- ICC Evaluation Service,
- APA – The Engineered Wood Association

These approved organizations can issue evaluation reports which may be used to determine compliance with the requirements of the NBC(AE) on conditions held within STANDATAs 23-BCI-005, 23-BCI-006, 23-BCI-007, 23-BCI-013 and 23-BCI-040 respectively.

Sentence three (3) indicates further that the PBA may issue lists of materials or products that satisfy the requirements of the building code. The issuance of listed material has historically been in the form of STANDATA, Variance or Information Bulletin and posted to the Province of Alberta website.

Due to the 2023 NBC (AE) being an objective based code, the above noted prescriptive paths to acceptance of a material, appliance, system or equipment are augmented by a path that may allow acceptance through an alternative solution (A.S.). An A.S., also referred to as a variance, is site and project specific, issued by a Safety Codes Officer (SCO).

**Division A, 1.2.1.1. Compliance with this Code**

- 1) *Compliance with this Code shall be achieved by*
  - a) *complying with the applicable acceptable solutions in Division B (see Note A-1.2.1.1.(1)(a)), or*
  - b) *using alternative solutions that will achieve at least the minimum level of performance required by Division B in the areas defined by the objectives and functional statements attributed to the applicable acceptable solutions (see Note A-1.2.1.1.(1)(b)).*
- 2) *For the purposes of compliance with this Code as required in Clause 1.2.1.1.(1)(b), the objectives and functional statements attributed to the acceptable solutions in Division B shall be the objectives and functional statements referred to in Subsection 1.1.2. of Division B.*

Under Division A, Sentence 1.2.1.1.(1)(b) of the NBC(AE), and per the Safety Codes Act (the Act), a safety codes officer may issue a written variance, with or without terms or conditions, with respect to any thing, process or activity to which the Act applies if the officer is of the opinion that the variance provides approximately equivalent or greater safety performance with respect to persons and property as that provided for by the Act.

**Division C, 2.3.1.1. Documentation**

- 1) *Documentation conforming to this Subsection shall be provided by the person requesting the use of an alternative solution to demonstrate that the proposed alternative solution complies with this Code.*
- 2) *The documentation referred to in Sentence (1) shall include*
  - a) *a Code analysis outlining the analytical methods and rationales used to determine that a proposed alternative solution will achieve at least the level of performance required by Clause 1.2.1.1.(1)(b) of Division A, and*
  - b) *information concerning any special maintenance or operational requirements, including any building component commissioning requirements, that are necessary for the alternative solution to achieve compliance with the Code after the building is constructed.*
- 3) *The Code analysis referred to in Clause (2)(a) shall identify the applicable objectives, functional statements and acceptable solutions, and any assumptions, limiting or restricting factors, testing procedures, engineering studies or building performance parameters that will support a Code compliance assessment.*
- 4) *The Code analysis referred to in Clause (2)(a) shall include information about the qualifications, experience and background of the person or persons taking responsibility for the design.*
- 5) *The information provided under Sentence (3) shall be in sufficient detail to convey the design intent and to support the validity, accuracy, relevance and precision of the Code analysis.*
- 6) *Where the design of a building includes proposed alternative solutions that involve more than one person taking responsibility for different aspects of the design, the applicant for the permit shall identify a single person to co-ordinate the preparation of the design, Code analysis and documentation referred to in this Subsection.*

A proponent (Owner, Designer, Manufacturer, Contractor or Vendor) must identify the applicable objectives and functional statements attributed to the acceptable solution(s) and identify the areas of performance where this equivalency is demonstrated. Additionally, the material proposed to be substituted may be required to perform to a particular standard(s) as identified in Tables 1.3.1.2. and D-1.1.2. of Division B in the code. In such cases, alternative compliance could be demonstrated through third party testing, engineering analysis or comparative evaluation of standards met in other jurisdictions. Professional involvement may be required where required by Section 2.4.



## Advisory:

The following methods are accepted as meeting requirements of the NBC (AE), and are supported for use in construction in Calgary.

- 1) Materials, appliances, systems and equipment that have been certified to meet compliance with a standard by an organization accredited by the Standards Council of Canada to perform the type of testing and certification required. Some products carry manufacturers' labels that indicate to which standard the item was tested, while others carry a compliance label from an accredited third-party certification agency, or
- 2) Materials, appliances, systems and equipment that have been certified to meet compliance with a standard by an organization identified by the Provincial Building Administrator may also carry certification labels or be marked with the applicable identified standard(s), or
- 3) New, innovative materials, appliances, systems and equipment without established manufacturing or certification standards shall be evaluated and listed by a recognized evaluation agency such as CCMC or another accredited testing establishment accredited by the SCC or listed by the PBA. As this process is likely time consuming and lengthy, proponents are encouraged to start this process well in advance of planned usage in the construction of buildings. It is expected that applicants provide applicable testing and evaluation reports demonstrating compliance with relevant standards and Division B of the NBC (AE), or
- 4) New, innovative materials, appliances, systems and equipment for which manufacturing and certification standards do not exist may be accepted as an Alternative Solution. An application for an alternative solution must be submitted as part of a building permit application. The request for alternative solution submission must demonstrate that the proposed variance will achieve an equivalent or greater safety performance than the acceptable solution of Division B. In all instances the applicant will have to provide a rationale as to how all points listed under the Reason for Variance are being addressed and how the alternative proposals will achieve the objectives of the code. Professional involvement will likely be required as part of the Alternative Solution submission. Refer to The City's guide for applying for alternative solutions here: [Guide to Applying for an Alternative Solution \(Variance\)](#)

The use or installation of untested or uncertified-for-use products, materials, equipment and systems are subject to removal and possible replacement at the expense of the Owner in accordance with Division C, Article 2.2.13.5. and provisions within the Safety Codes Act.

This interpretation was accepted by the Codes and Standards Technical Interpretation Committee (CSTIC – September 17, 2026).

Codes & Standards Technical Interpretation Committee  
Development, Business and Building Services  
The City of Calgary

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