# Lunch & Learn

## Flashings & other Part 9 Building Envelope Components

12pm August 21st, 2025

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# Disclaimer

Information presented today does not directly represent the opinions of the Building Officials Association of BC (BOABC). This presentation is conceptual and for informal educational purposes only. The presenter and Association takes no responsibility for application of any concepts or interpretations in this presentation to specific projects. The slides must not be considered complete or exhaustive. Code provisions have been generally represented and may not reflect all exceptions.

# Land Acknowledgement

# Welcome!

## Today's Session:

- International Flashing Awareness Day
- The Building Envelope
- Water Management System
- Flashings
- BCAB 1965

# International Flashing Awareness Day

What is it?

Celebrated annually on August 26th each year!

Started by Canadians!

Lots of great, fun content focused on the importance of flashings!

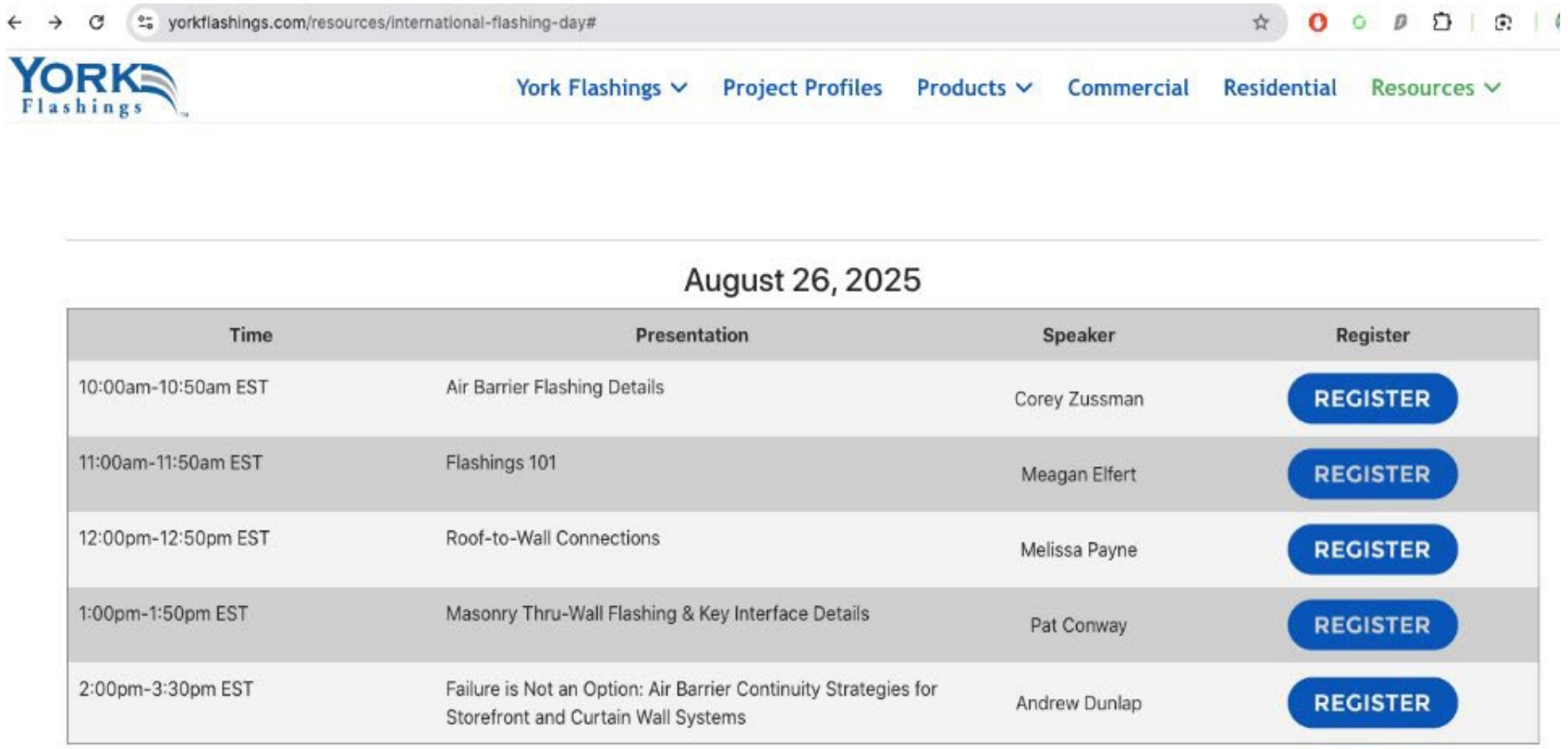
Good opportunities to network with industry!

Search Google, Instagram, Youtube etc.


Photo: YorkFlashings.com

# International Flashing Awareness Day

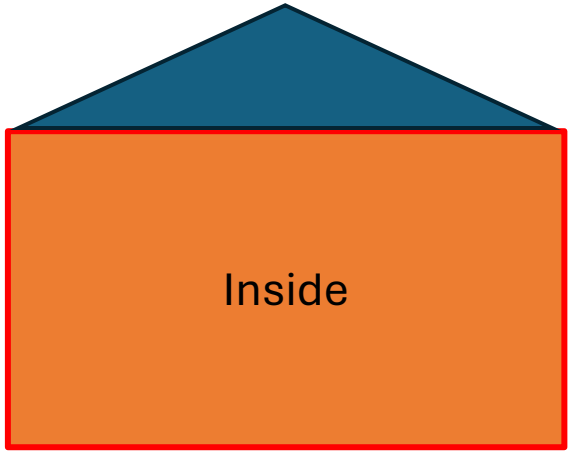
What is it?



# Building Envelope

What is it?

**The building envelope is the system of assemblies and materials that separate the inside of a building from the outside environment.**
**This separation is achieved through a series of control layers that work together to protect the structure and create a durable, safe, and comfortable indoor environment.**




Outside

Also Outside

# Building Envelope

How Does it Work?

The "Big 4" Control Layers

Bulk Water Control Layer

Air Control Layer

Vapor Control Layer*

Thermal Control Layer

also Sound, Light, Pests…

# Building Envelope

## How Does it Work

**1. The Hierarchy (Most to Least Important)**
Building scientists generally agree on this order of importance:

- **Rain / Bulk Water Control**
  - Keep liquid water out first (rain, snow, groundwater).
  - If you lose this battle, nothing else matters — rot, corrosion, and mold follow.
  - Examples: cladding, overhangs, flashings, WRB, pan flashings.

- **Air Control**
  - Air leaks can move *100× more moisture* than diffusion.
  - Uncontrolled airflow also destroys energy efficiency and comfort.
  - Examples: sealed sheathing, taped WRB, airtight drywall, spray foam.

- **Vapour Control**
  - Slows the *molecular diffusion* of water vapour through assemblies.
  - Important for condensation control but less critical than bulk water/air.
  - Examples: polyethylene sheet, vapour-retardant paints, smart membranes.

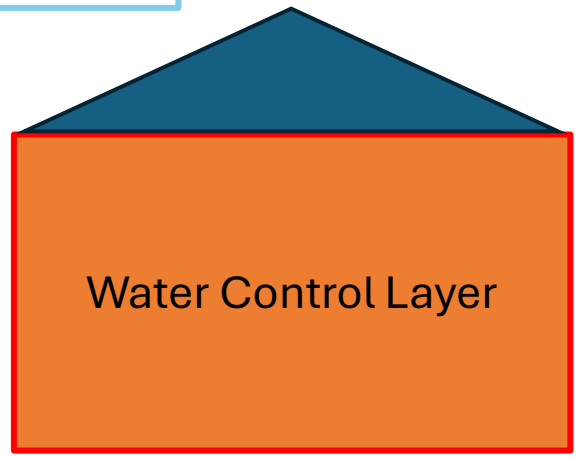
- **Thermal Control**
  - Insulation to keep inside warm in winter, cool in summer.
  - Last in hierarchy because insulation fails if wet or bypassed by air leakage.
  - Examples: batt, board, spray foam, continuous exterior insulation.

# Bulk Water Control Layer

How Does it Work?

Bulk Water Sources

Rain/Snow




Wind Driven Rain/Snow

Water in the Ground

Plumbing Leaks

Interstitial Condensation

# Bulk Water Control Layer

How Does it Work?

Bulk Water Control Layer Components

Roofing

Eaves

Gutters/Downspouts

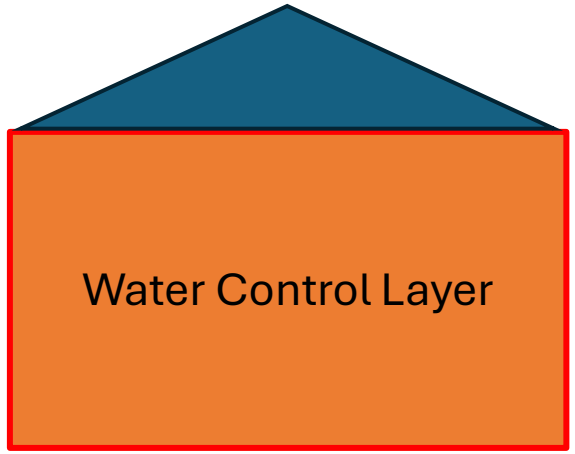
Windows

Doors

Flashings

Trim

Sealants




Sheathing Membrane

Drainage Plane

Cladding

Foundation Drainage

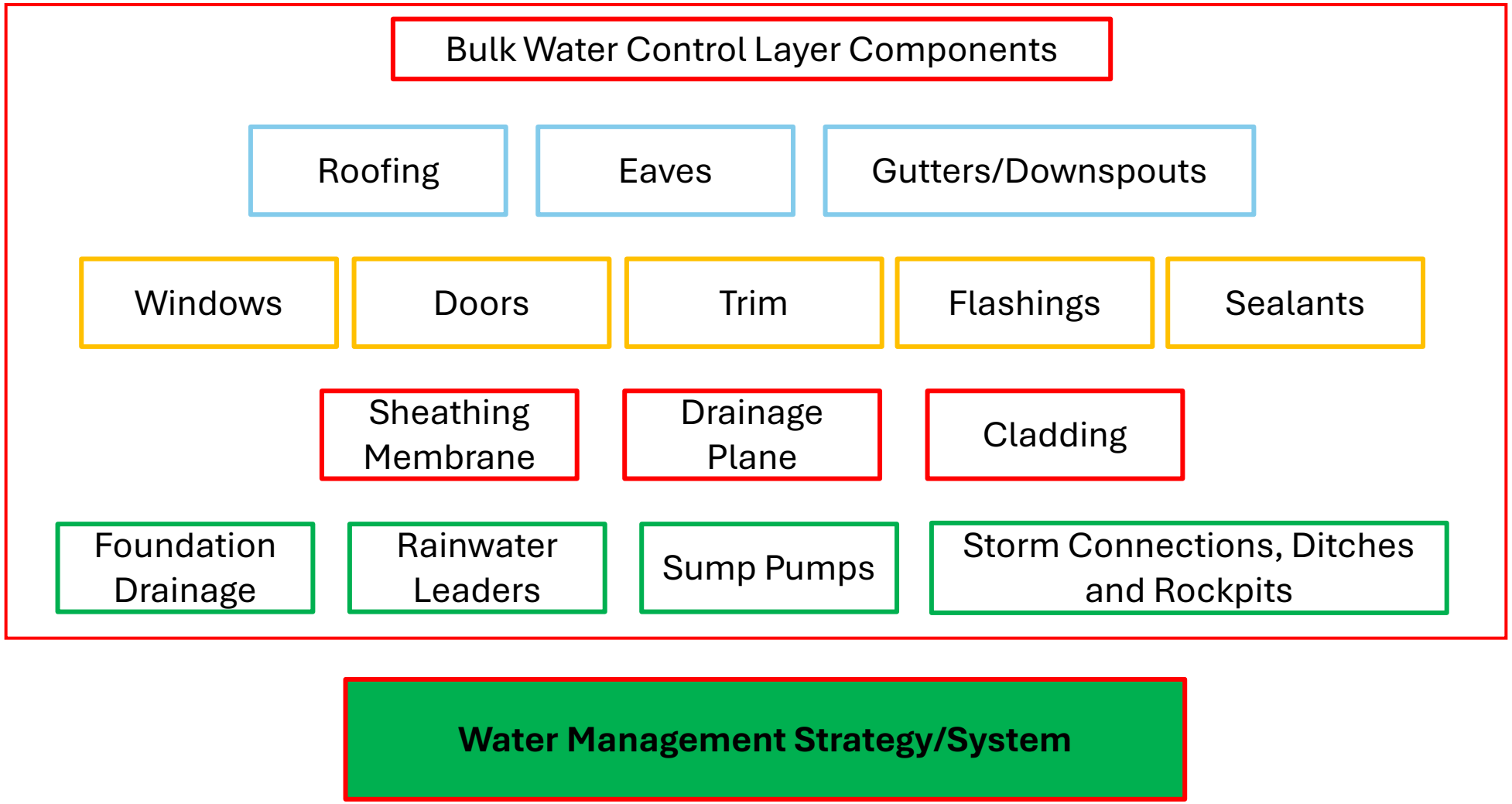
Rainwater Leaders

Sump Pumps

Storm Connections, Ditches and Rockpits

# Bulk Water Control Layer

How Does it Work?



# Water Management System

What is it?

Water Management System

A **water management strategy** is the planned system of design features, materials, and details that control, shed, drain, and dry water before it can cause damage. It relies on **redundancy**—if water bypasses one layer, the next manages it safely—and adapts to the **climate zone** and **building type**, since risk and consequence vary with rainfall, snow, and wind exposure.

These principles are often described as the 4 D's of water management: Deflection, Drainage, Drying, and Durability.

# Water Management System

How Does it Work?

Four D's of a Water Management Strategy

| | |
|---|---|
| Deflect | Keep as much water off the building as possible with roofs, overhangs, and cladding. The "Shingle Principle". |
| Drain | Provide clear pathways (flashings, gaps, weeps) for water that gets in to flow back out. |
| Dry | Use materials and designs that allow assemblies to release moisture through evaporation or ventilation. |
| Durability | Choose components that can safely tolerate occasional wetting without failing. |

# Water Management System

How Does it Work?

Four D's of Water Management Strategy

| | | | | |
|---|---|---|---|---|
| Deflect | Roofing | Flashings | Eaves | Cladding |
| Drain | Gutters/Downspouts | Foundation Drainage | Rainwater Leaders | Drainage Plane |
| Dry | Sheathing Membrane | | | |
| Durability | Sealants | Standards | | |

# Water Management System

Where does Part 9 of the BC Building Code fit in?

9.7. Windows, Doors and Skylights

9.27. Cladding

9.28. Stucco

9.19. Roof Spaces

9.26. Roofing

9.13. Dampproofing, Waterproofing and Soil Gas Control

9.18. Crawl Spaces

9.16. Floors-on-Ground

9.3. Materials, Systems and Equipment

9.25. Heat Transfer, Air Leakage and Condensation Control

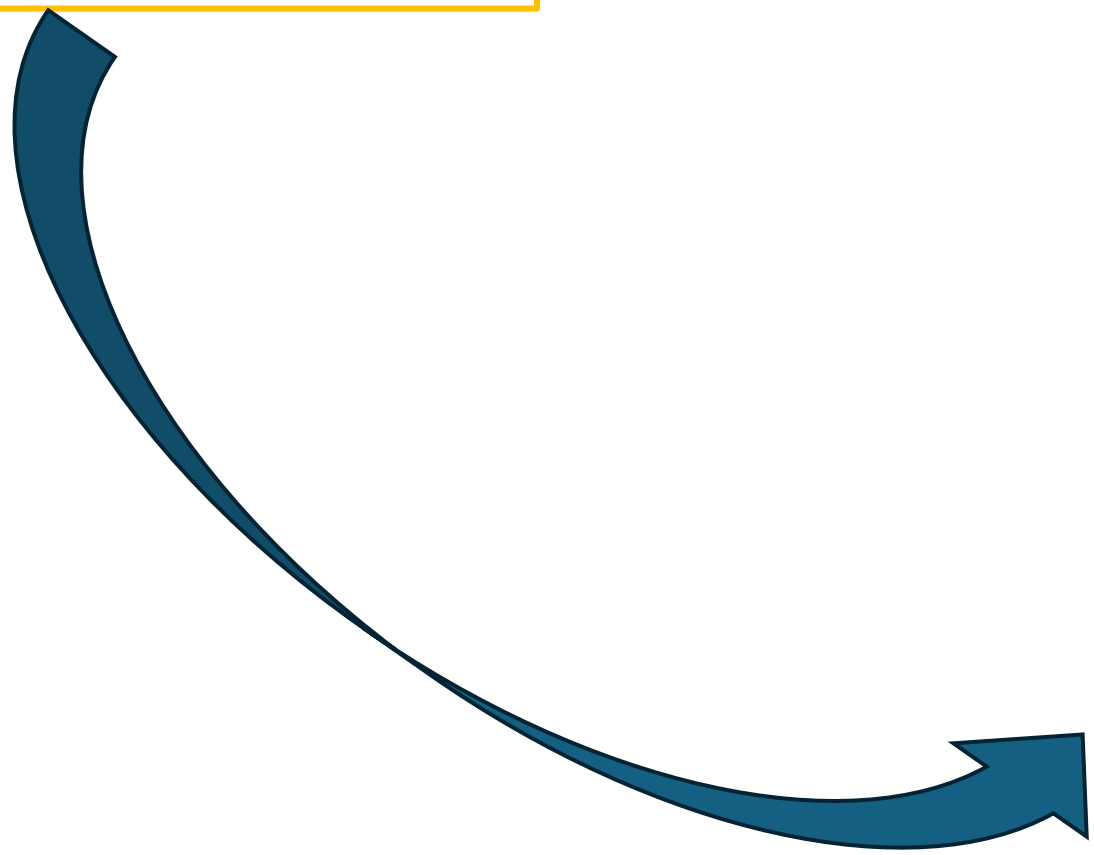
9.14. Drainage

9.20. Masonry and Insulating Concrete Form Walls Not In Contact with the Ground

# Water Management System

Where does Part 9 of the BC Building Code fit in?

9.27. Cladding



But what about Flashings?

# Water Management System

Where does Part 9 of the BC Building Code fit in?

9.27. Cladding

9.27.2 Required Protection From Precipitation

9.27.2.3 First and Second Planes of Protection

9.27.3 Second Plane of Protection

9.27.3.8. Flashing Installation

# Water Management System

Where does Part 9 of the BC Building Code fit in?

9.27. Cladding

## Section 9.27. Cladding

### 9.27.1. Application

#### 9.27.1.1. General

**1)** Where lumber, wood shingles, shakes, fibre-cement shingles, planks and sheets, plywood, OSB, waferboard, hardboard, vinyl, insulated vinyl, polypropylene, aluminum or steel, including trim and soffits, are installed as cladding on wood-frame walls or above-ground flat insulating concrete form walls exposed to precipitation, the cladding assembly shall comply with

a) Subsections 9.27.2. to 9.27.13., or

b) Part 5.

*Source: BC Building Code 2024, Province of British Columbia*

# Water Management System

Where does Part 9 of the BC Building Code fit in?

9.27.2 Required Protection From Precipitation

**9.27.2. Required Protection from Precipitation**

(See Note A-9.27.2.)

**9.27.2.1. Minimizing and Preventing Ingress and Damage**

**1)** Except where exterior walls are protected from precipitation or where it can be shown that precipitation ingress will not adversely affect occupant health or safety, exterior walls shall be designed and constructed to

a) minimize the ingress of precipitation into the assembly, and

b) prevent the ingress of precipitation into interior space.

(See Note A-9.27.2.1.(1).)

**2)** Except where exterior walls are protected from specific mechanisms of deterioration, such as mechanical impact and ultraviolet radiation, exterior walls shall be designed and constructed to minimize the likelihood of their required performance being reduced to an unacceptable level as a result of those mechanisms.

*Source: BC Building Code 2024, Province of British Columbia*

# Water Management System

Where does Part 9 of the BC Building Code fit in?

9.27.2.3 First and Second Planes of Protection

**9.27.2.3. First and Second Planes of Protection**

**1)** Where walls required to provide protection from precipitation comprise cladding assemblies with first and second planes of protection,

a) the first plane of protection shall

i) consist of cladding with appropriate trim, accessory pieces and fasteners, and

ii) be designed and constructed to minimize the passage of rain and snow into the wall by minimizing holes and managing precipitation ingress caused by the kinetic energy of raindrops, surface tension, capillarity, gravity, and air pressure differences (see Subsection 9.27.4.),

b) the second plane of protection shall be designed and constructed to (see Subsection 9.27.3.)

i) intercept all rain and snow that gets past the first plane of protection, and

ii) effectively dissipate any rain or snow to the exterior, and

c) the protection provided by the first and second planes of protection shall be maintained

i) at wall penetrations created by the installation of components and services such as windows, doors, ventilation ducts, piping, wiring and electrical outlets, and

*Source: BC Building Code 2024, Province of British Columbia*

# Water Management System

Where does Part 9 of the BC Building Code fit in?

9.27.3 Second Plane of Protection

**9.27.3. Second Plane of Protection**

**9.27.3.1. Elements of the Second Plane of Protection**
(See Note A-9.27.3.1.)

**1)** The second plane of protection shall consist of a drainage plane having an appropriate inner boundary and flashing to dissipate rainwater to the exterior.

**2)** Except for cladding systems conforming to Subsection 9.27.14., the inner boundary of the drainage plane shall comply with Articles 9.27.3.2. to 9.27.3.6.

**3)** The protection provided by the second plane of protection shall be maintained

a) at wall penetrations created by the installation of components and services such as windows, doors, ventilation ducts, piping, wiring and electrical outlets, and

b) at the interface with other wall assemblies.

**4)** Flashing material and its installation shall comply with Articles 9.27.3.7. and 9.27.3.8.

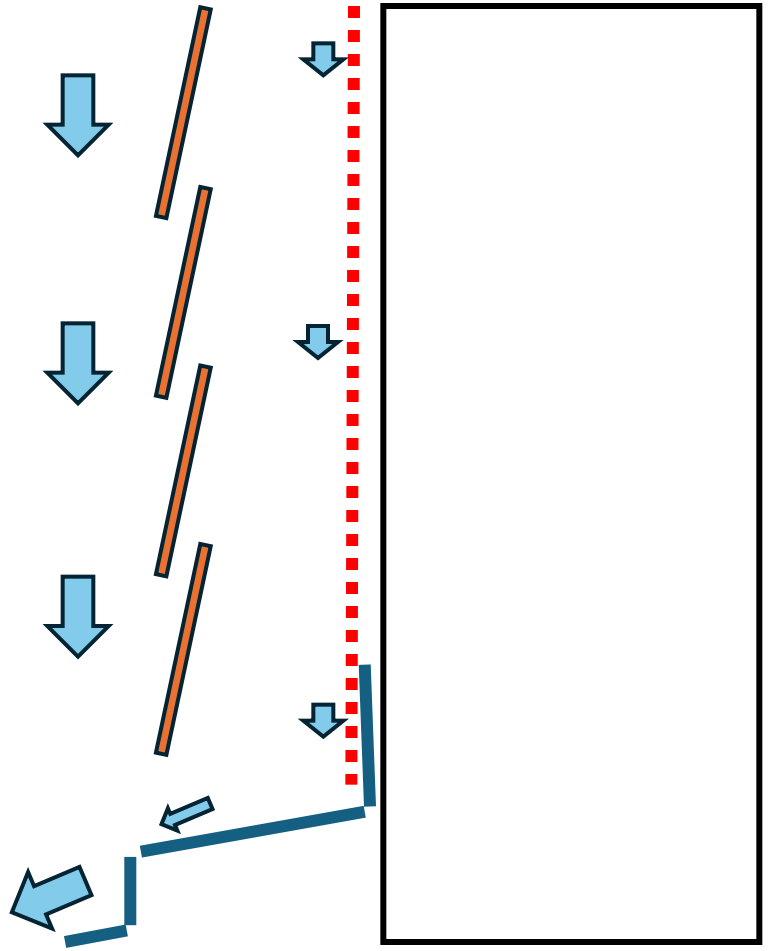
*Source: BC Building Code 2024, Province of British Columbia*

# Water Management System

Where does Part 9 of the BC Building Code fit in?

Planes of Protection

Outside



Inside

# Water Management System

Where does Part 9 of the BC Building Code fit in?

9.27.3.8. Flashing Installation

Where to install:

**9.27.3.8. Flashing Installation**

**1)** Except as provided in Sentence (2), flashing shall be installed at

a) every horizontal junction between cladding elements,

b) every horizontal offset in the cladding, and

c) every horizontal line where the cladding substrates change and where

i) the substrates differ sufficiently for stresses to be concentrated along that line, or

ii) the installation of the cladding on the lower substrate may compromise the drainage of moisture from behind the cladding above.

(See Note A-9.27.3.8.(1).)

*Source: BC Building Code 2024, Province of British Columbia*

# Water Management System

Where does Part 9 of the BC Building Code fit in?

9.27.3.8. Flashing Installation

Construction Definition:

**4)** Flashing described in Sentences (1) and (3) shall

a) extend not less than 50 mm upward inboard of the sheathing membrane or sheathing installed in lieu of the sheathing membrane (see Article 9.27.3.4.),

b) have a slope of not less than 6% toward the exterior after the expected shrinkage of the *building* frame,

c) terminate at each end with an end-dam

  i) with a height in millimetres not less than 25 mm or 1/10 the value of the 1-in-5 driving rain wind pressure in Pa, and

  ii) at the height defined in Subclause (c)(i), extending to the face of the adjacent cladding,

d) lap not less than 10 mm vertically over the *building* element below, and

e) terminate in a drip offset not less than 5 mm outward from the outer face of the *building* element below.

(See Note A-9.27.3.8.(4).)

*Source: BC Building Code 2024, Province of British Columbia*

# Flashings

How Does it Work

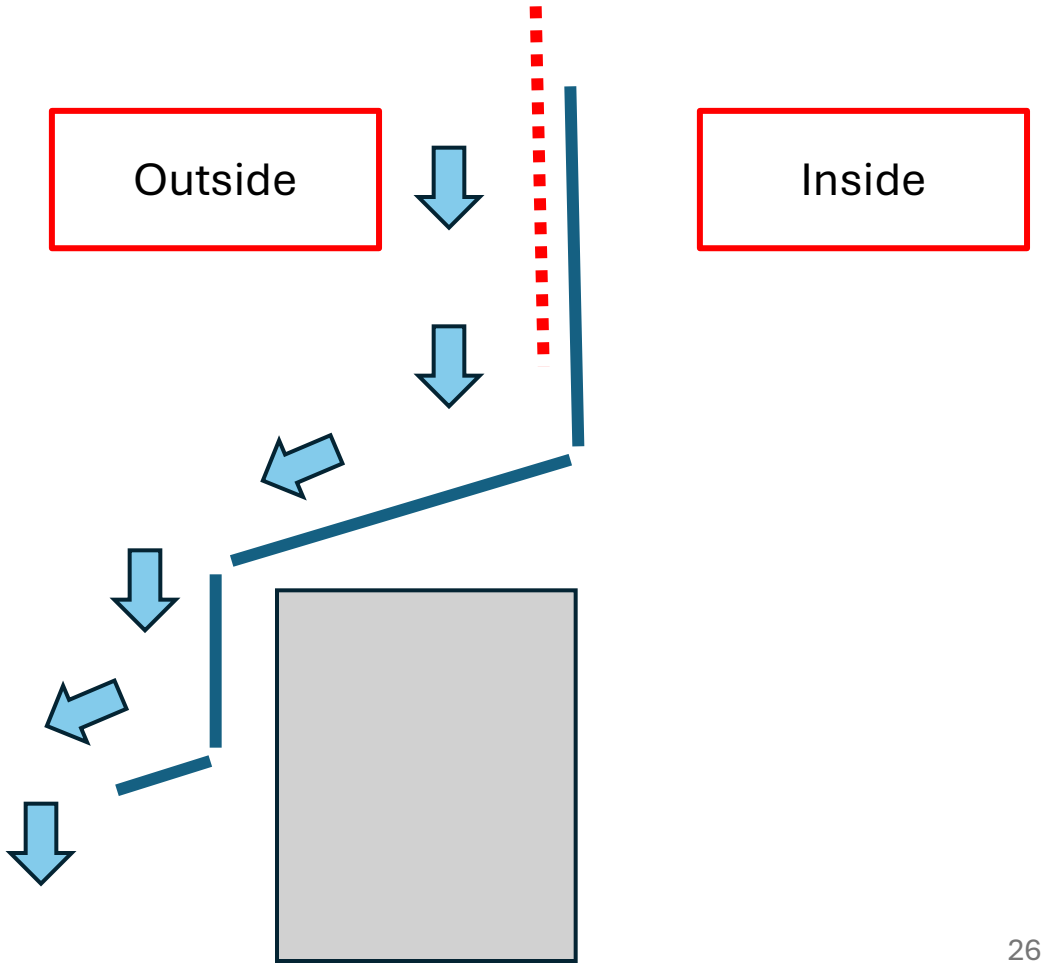
No code "definition"

50mm lap behind sheathing membrane

Minimum 6% slope after building shrinkage

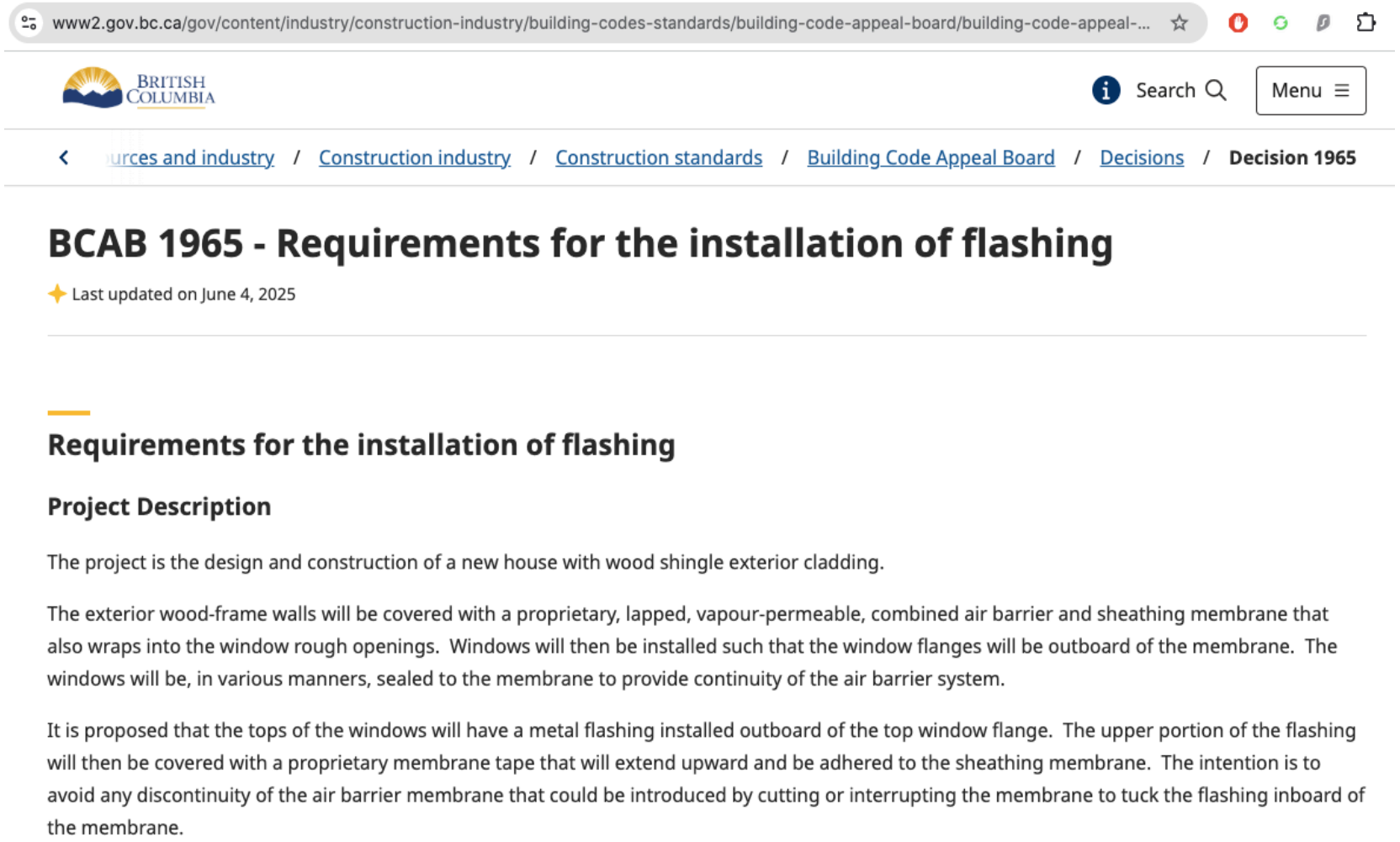
10mm drop below component below

5mm horizontal offset at termination



# BCAB 1965

How Did We Get here?



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BRITISH COLUMBIA

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## BCAB 1965 - Requirements for the installation of flashing

Last updated on June 4, 2025

### Requirements for the installation of flashing

#### Project Description

The project is the design and construction of a new house with wood shingle exterior cladding.

The exterior wood-frame walls will be covered with a proprietary, lapped, vapour-permeable, combined air barrier and sheathing membrane that also wraps into the window rough openings. Windows will then be installed such that the window flanges will be outboard of the membrane. The windows will be, in various manners, sealed to the membrane to provide continuity of the air barrier system.

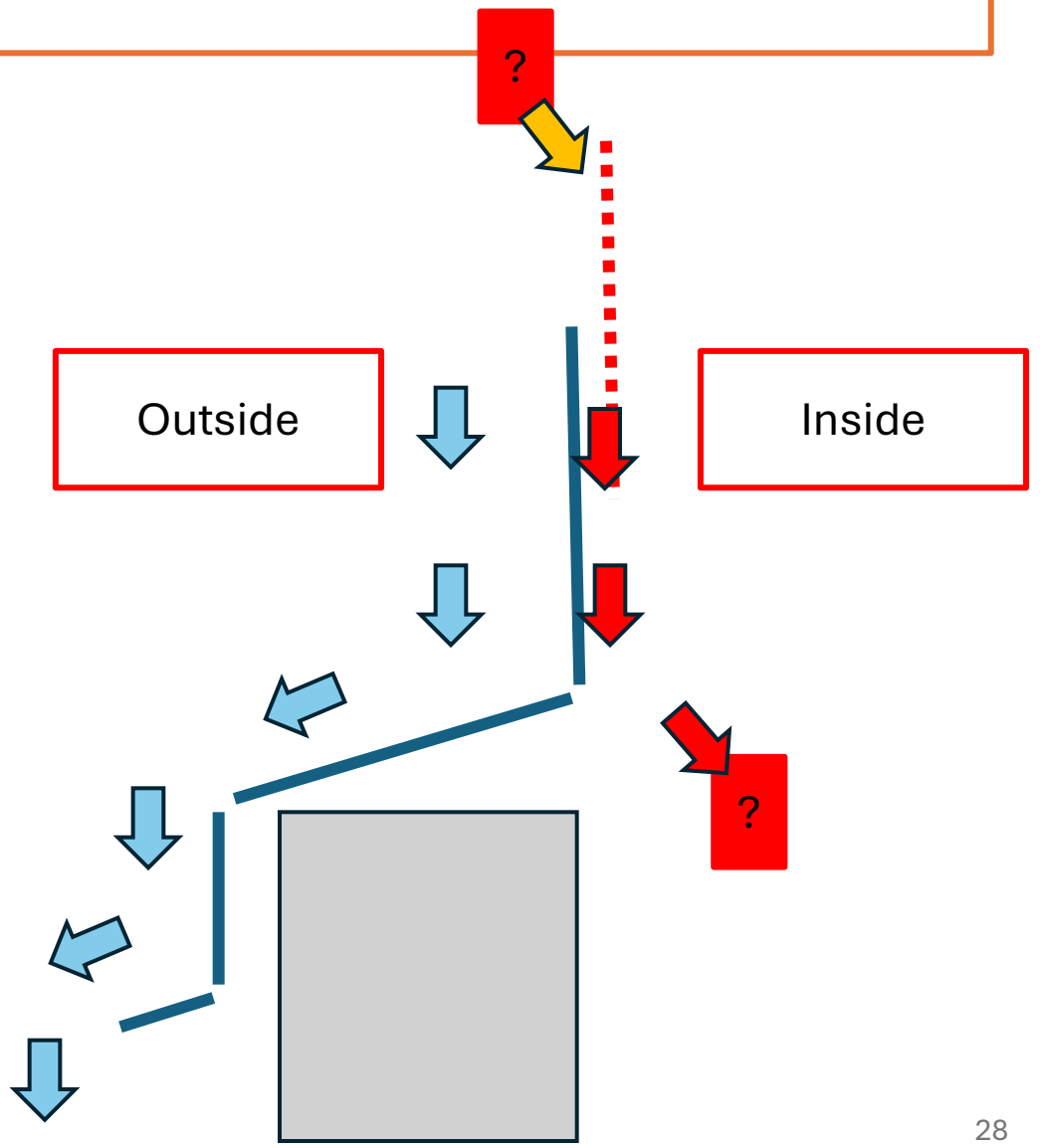
It is proposed that the tops of the windows will have a metal flashing installed outboard of the top window flange. The upper portion of the flashing will then be covered with a proprietary membrane tape that will extend upward and be adhered to the sheathing membrane. The intention is to avoid any discontinuity of the air barrier membrane that could be introduced by cutting or interrupting the membrane to tuck the flashing inboard of the membrane.

# BCAB 1965

How Did We Get here?

50mm lap **outboard** of sheathing membrane

Negative lap taped with proprietary flashing tape



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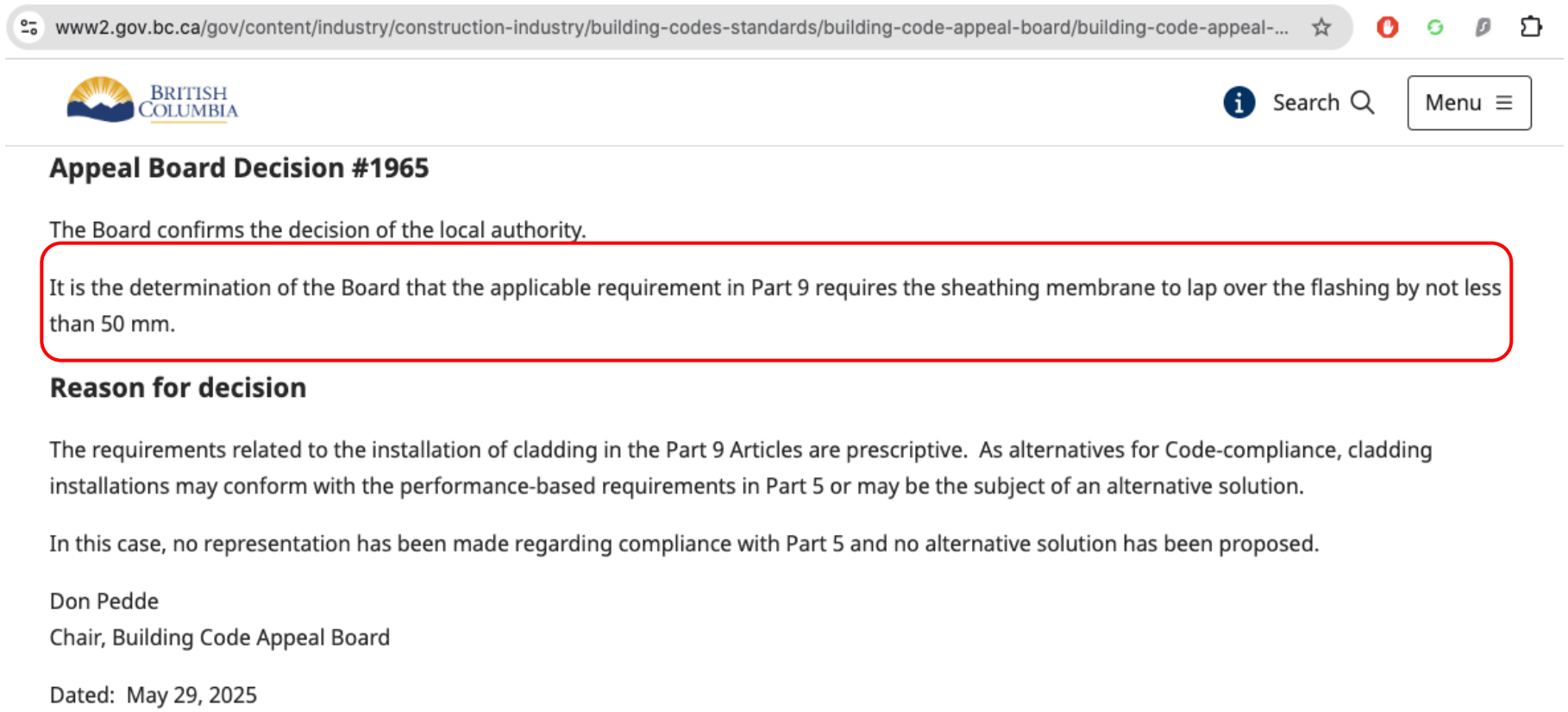
How Did We Get here?



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BRITISH COLUMBIA

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**Appeal Board Decision #1965**

The Board confirms the decision of the local authority.

It is the determination of the Board that the applicable requirement in Part 9 requires the sheathing membrane to lap over the flashing by not less than 50 mm.

**Reason for decision**

The requirements related to the installation of cladding in the Part 9 Articles are prescriptive. As alternatives for Code-compliance, cladding installations may conform with the performance-based requirements in Part 5 or may be the subject of an alternative solution.

In this case, no representation has been made regarding compliance with Part 5 and no alternative solution has been proposed.

Don Pedde
Chair, Building Code Appeal Board

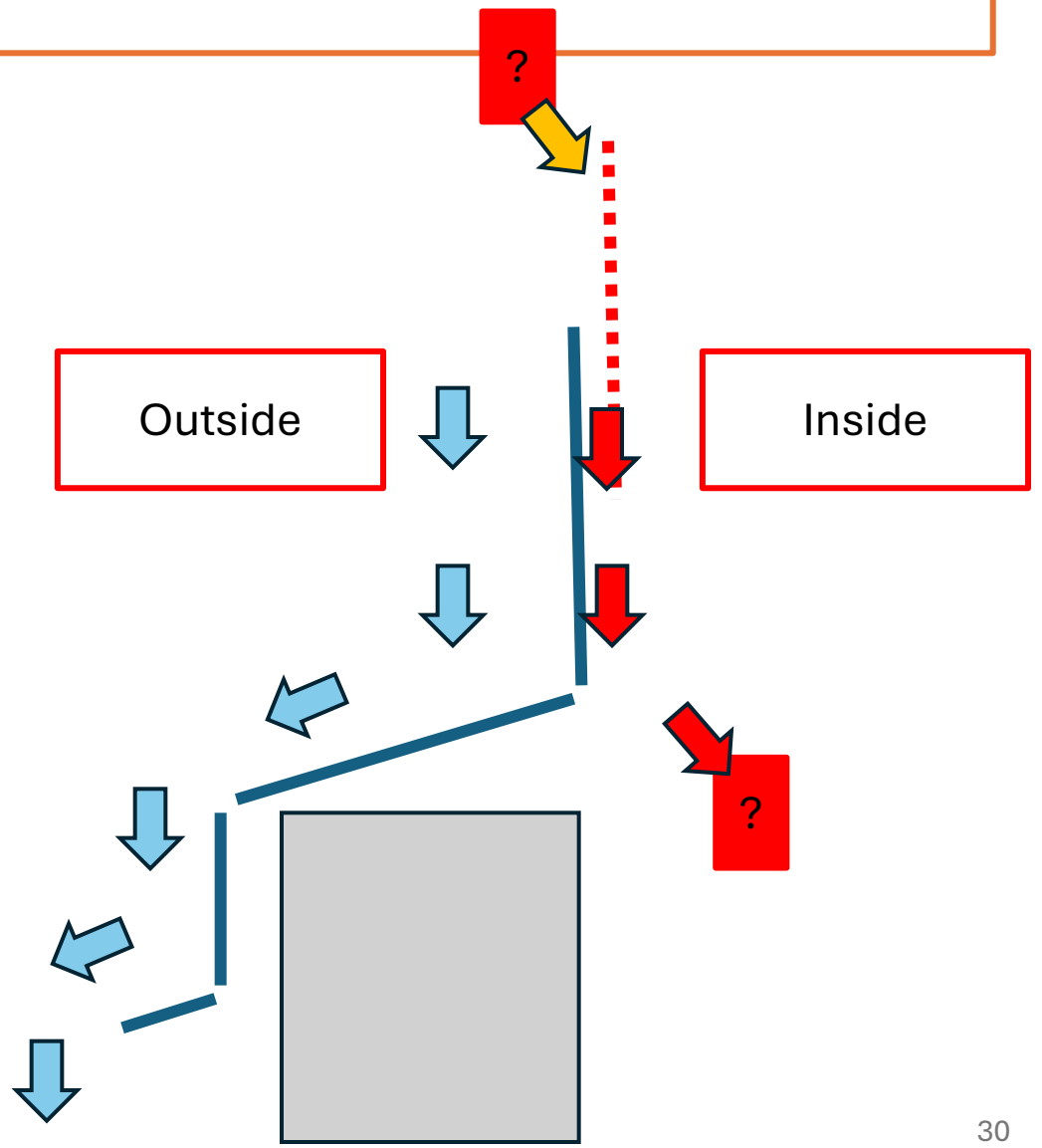
Dated: May 29, 2025

# BCAB 1965

How Did We Get here?

"Will this perform as constructed?"

"Is this Code compliant as presented?"



# High Performance Designs

## Building Science Corporation Documentation

This "terminate" the "reverse lap" thing is a big deal. There are a couple of ways we have learned to do this. In commercial buildings we often use "pressure bars" or a continuous bead of sealant to glue the top edge of the reverse lap to the underlying membrane or sheathing (Photograph 7). A pressure bar is just what it sounds like – a strip of metal with a gasket attached to it that is mechanically fastened though the layers to the structure compressing a gasket to seal the reverse lap.[4] We have to thank the roofing industry for this technology. Nice job roofers.


**Photograph 7: Termination** – This "terminate" the reverse lap thing is a big deal. A continuous bead of sealant is used to glue the top edge of the reverse lap to the underlying membrane or sheathing.

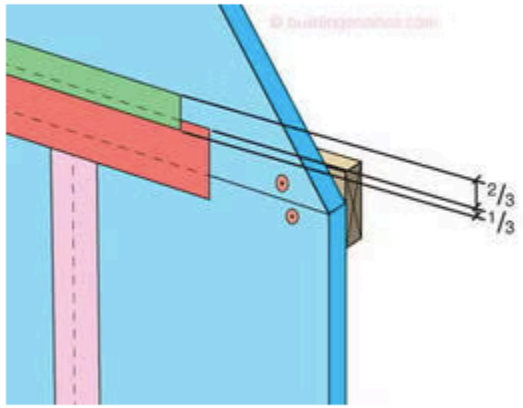
*Source: Building Science Corporation, BSI-067: Stuck On You*

# High Performance Designs

Building Science Corporation Documentation

sealant in the joint covered with a mesh reinforcing then all of this painted over. But then again I am old school on this stuff.

Back to this termination thing. With flashing tapes we tend to terminate them two ways – with either a sheathing tape or a bead of sealant (Photograph 14 and Figure 4). A sheathing tape does not need to be terminated – it terminates itself.

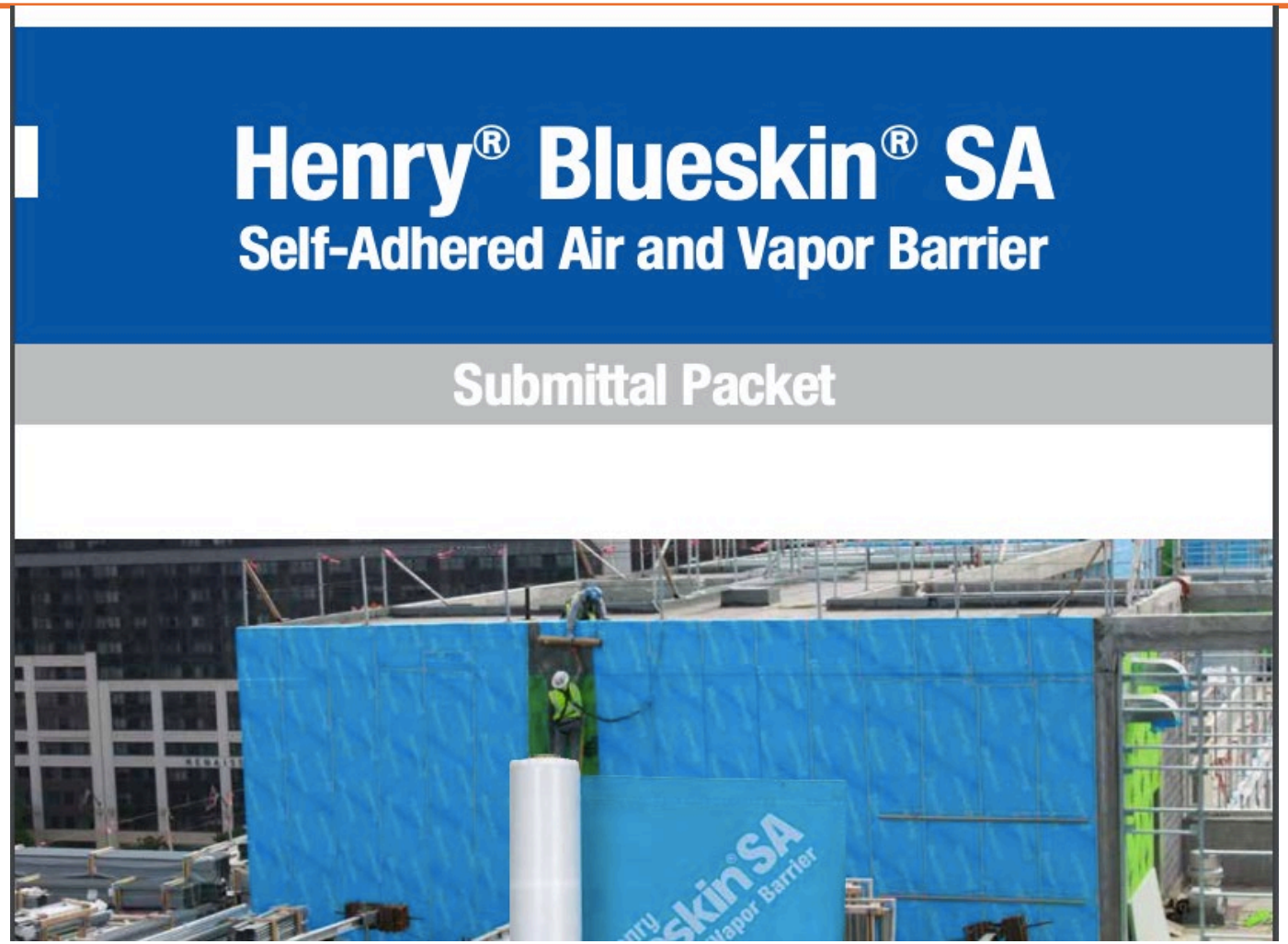




**Photograph 14: More Termination (above left)** - With flashing tapes we tend to terminate them two ways – with either a sheathing tape or a bead of sealant. A sheathing tape does not need to be terminated – it terminates itself.

*Source: Building Science Corporation, BSI-067: Stuck On You*

# New and Novel Products

Henry Blueskin SA – no CCMC Listing Found




*Source: Henry.com*

# New and Novel Products

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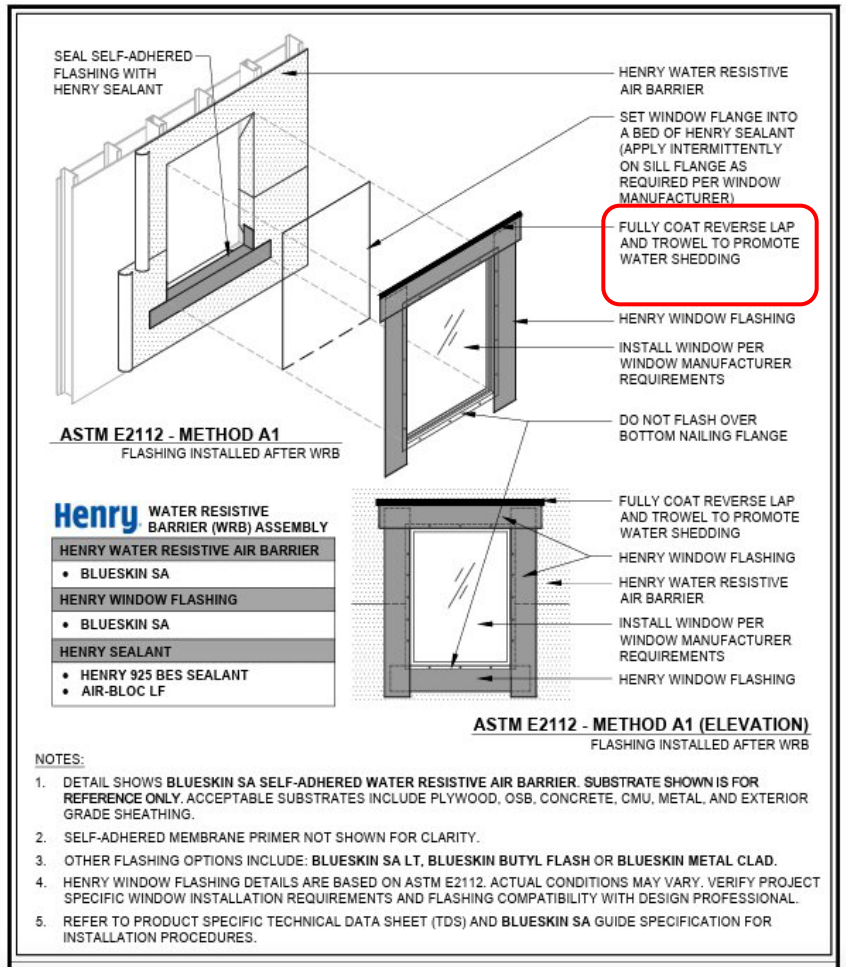
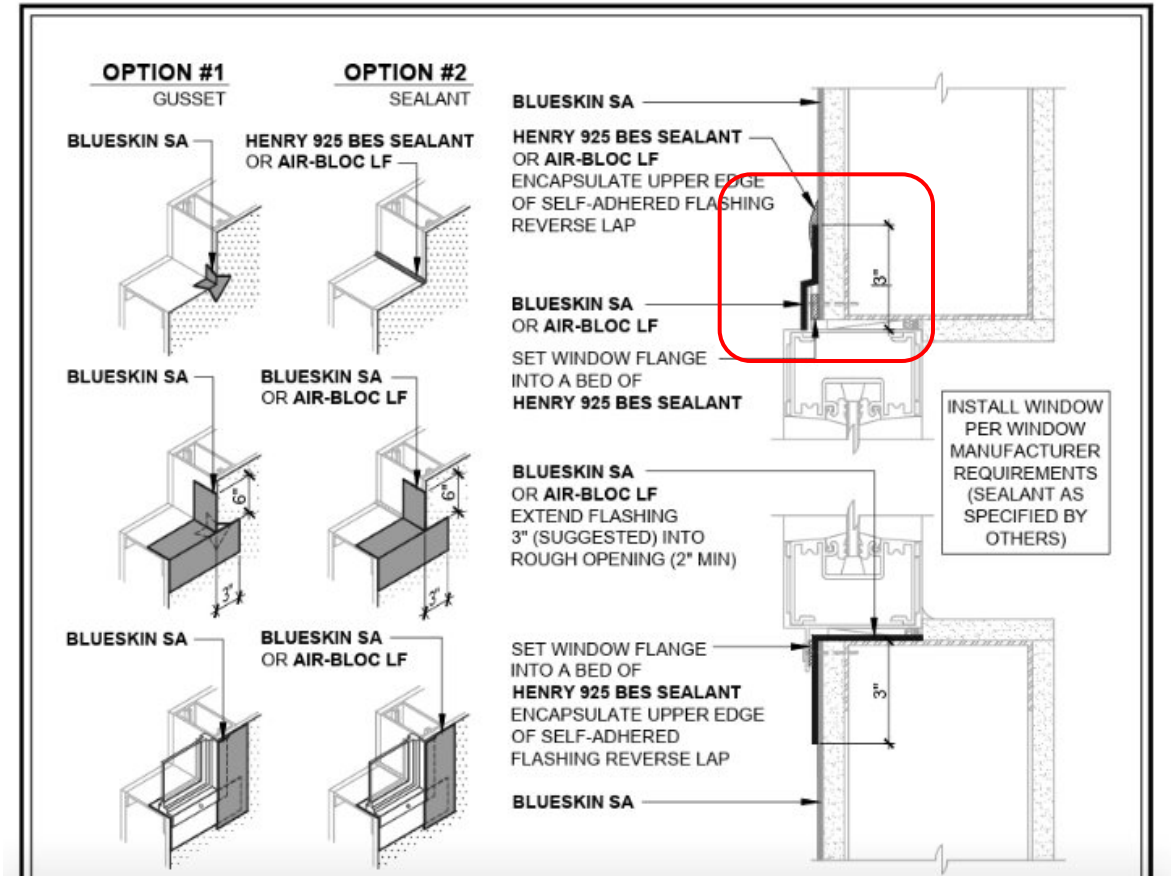
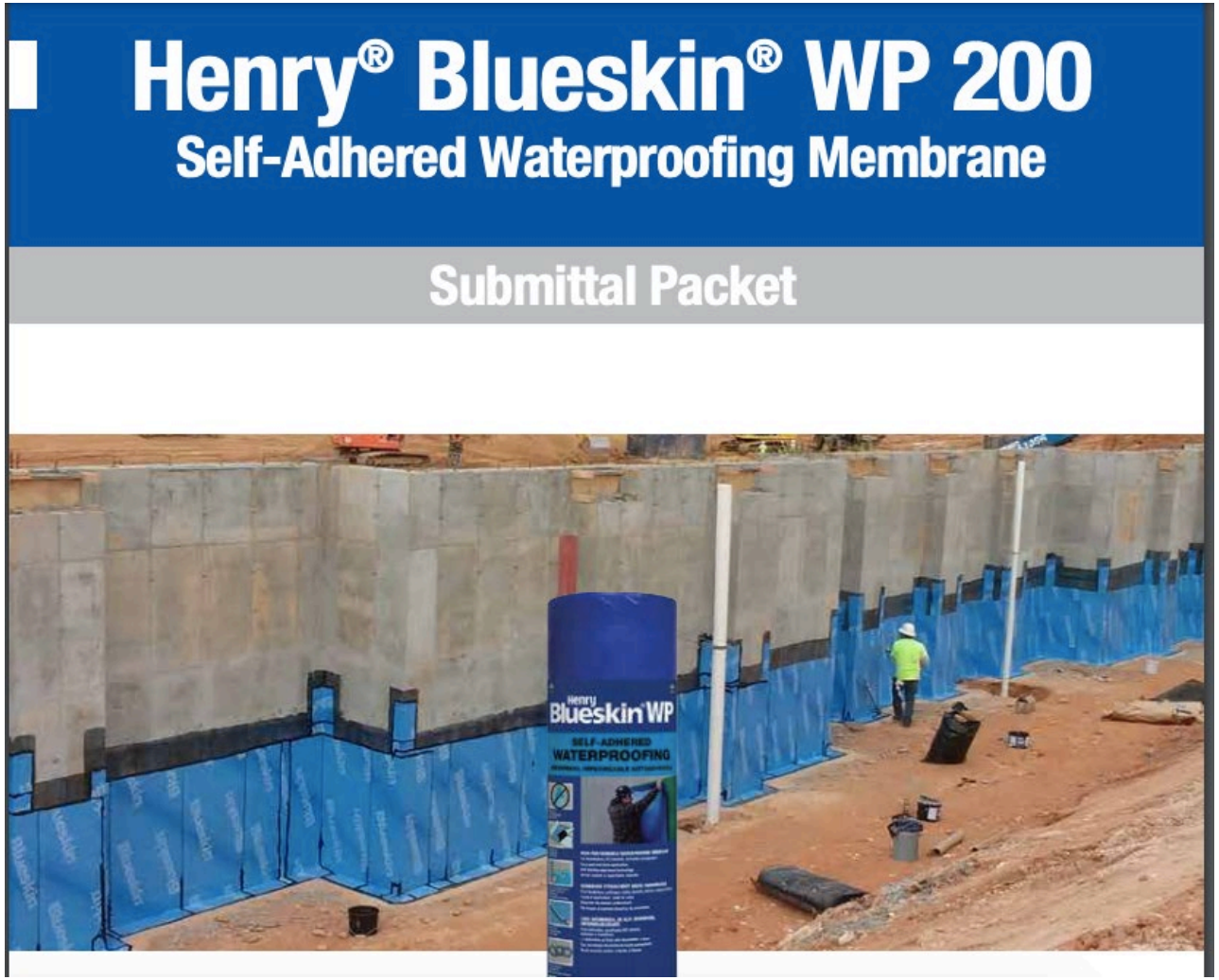



*Source: Henry.com*

# New and Novel Products

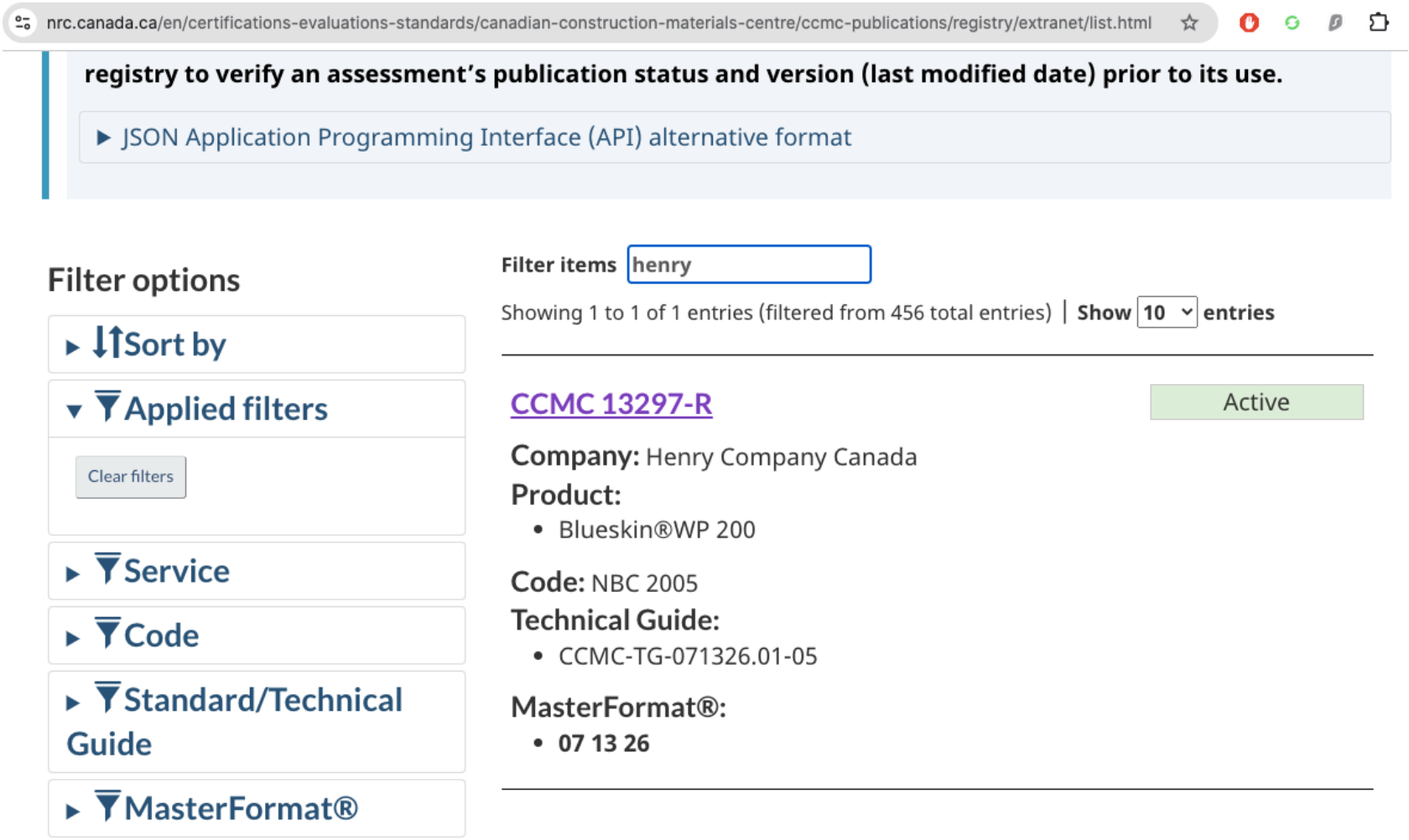
Henry WP200 CCMC Listing




*Source: Henry.com*

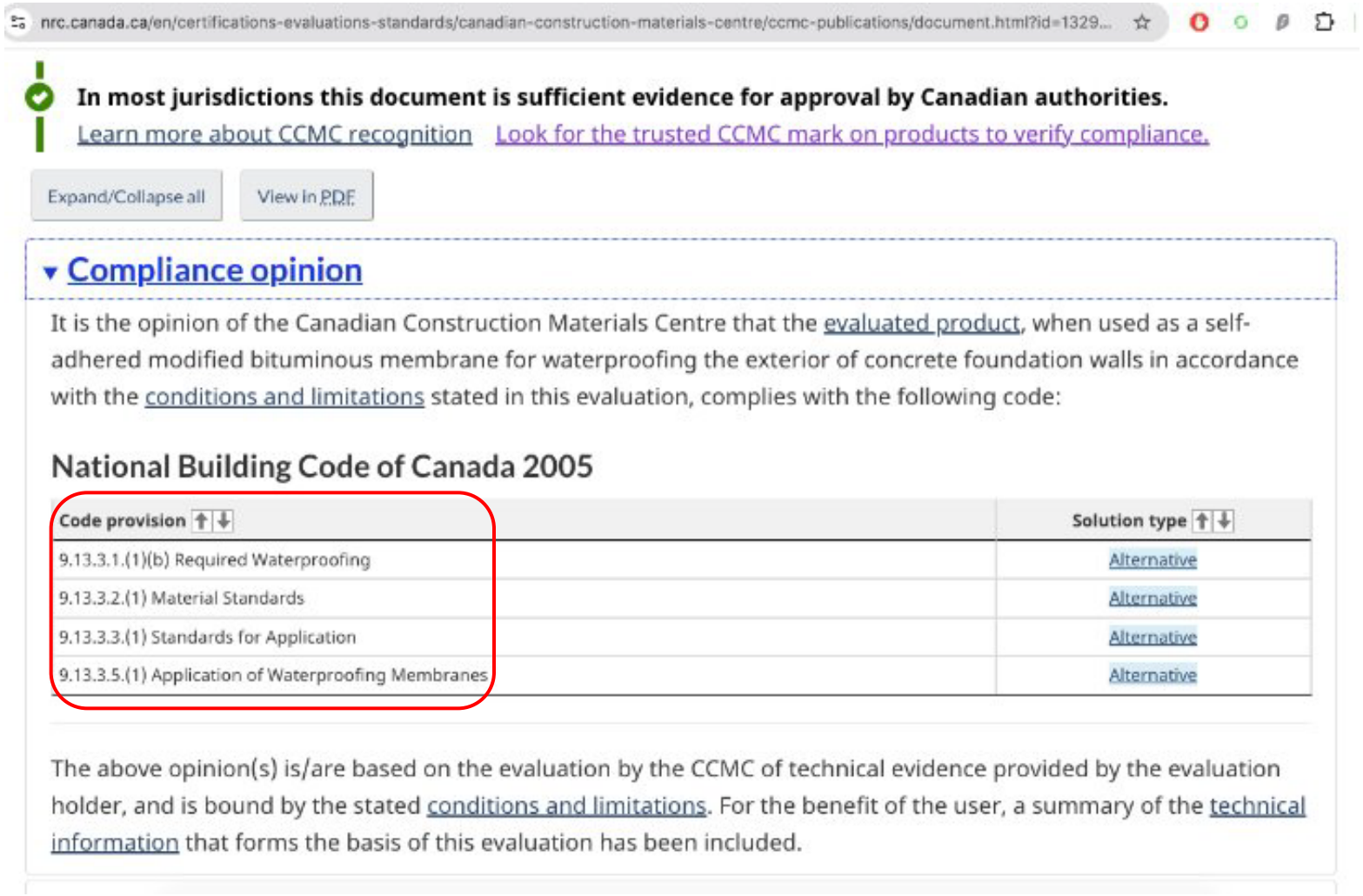
# New and Novel Products

Henry WP200 CCMC Listing



# New and Novel Products

Henry CCMC Listing



nrc.canada.ca/en/certifications-evaluations-standards/canadian-construction-materials-centre/ccmc-publications/document.html?id=1329...

**In most jurisdictions this document is sufficient evidence for approval by Canadian authorities.**

Learn more about CCMC recognition  Look for the trusted CCMC mark on products to verify compliance.

Expand/Collapse all  View in PDF

## Compliance opinion

It is the opinion of the Canadian Construction Materials Centre that the evaluated product, when used as a self-adhered modified bituminous membrane for waterproofing the exterior of concrete foundation walls in accordance with the conditions and limitations stated in this evaluation, complies with the following code:

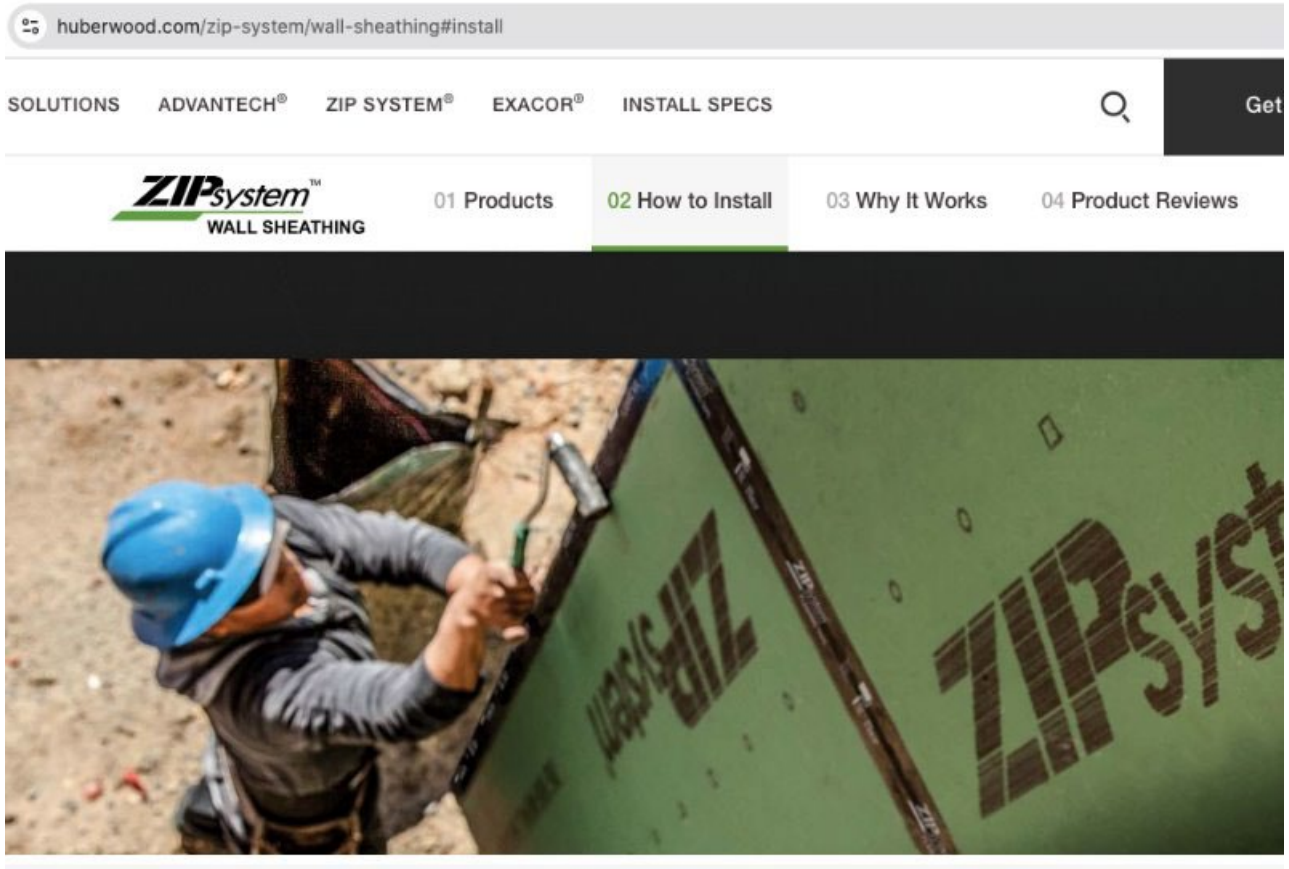
### National Building Code of Canada 2005

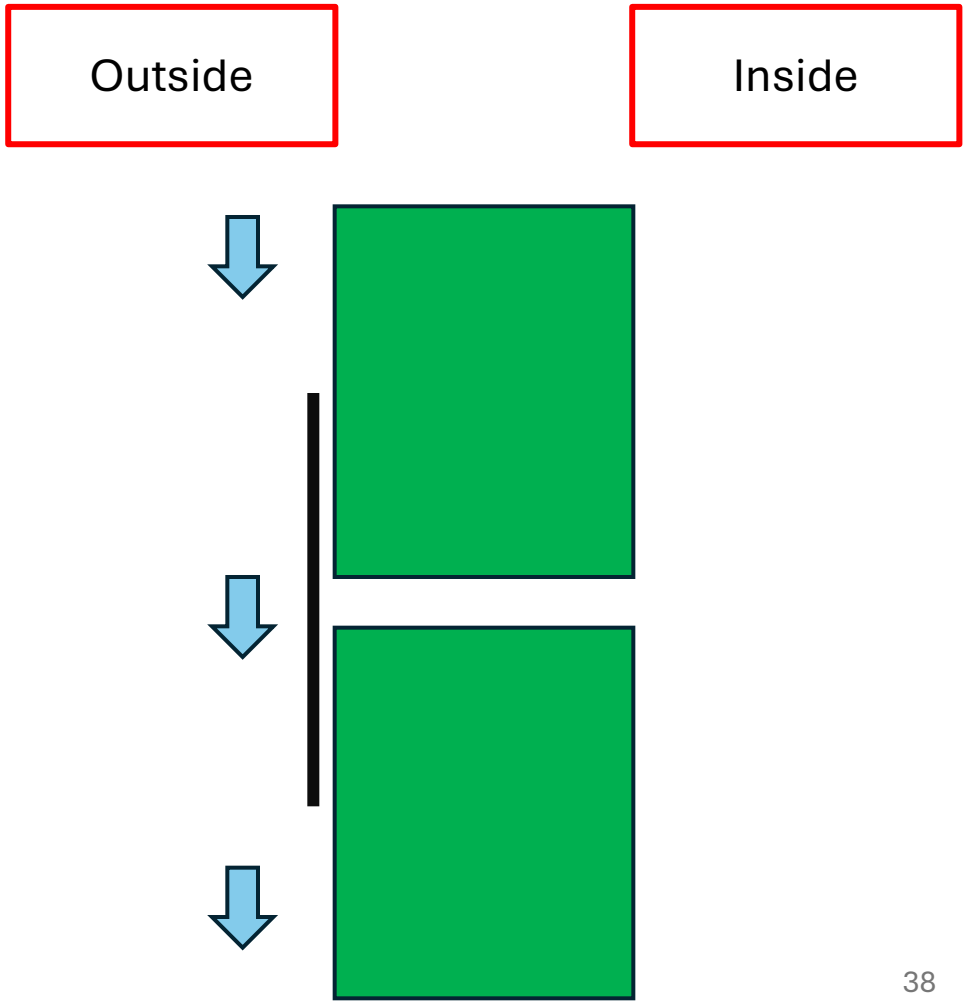
| Code provision | Solution type |
|---|---|
| 9.13.3.1.(1)(b) Required Waterproofing | Alternative |
| 9.13.3.2.(1) Material Standards | Alternative |
| 9.13.3.3.(1) Standards for Application | Alternative |
| 9.13.3.5.(1) Application of Waterproofing Membranes | Alternative |

The above opinion(s) is/are based on the evaluation by the CCMC of technical evidence provided by the evaluation holder, and is bound by the stated conditions and limitations. For the benefit of the user, a summary of the technical information that forms the basis of this evaluation has been included.

# New and Novel Products

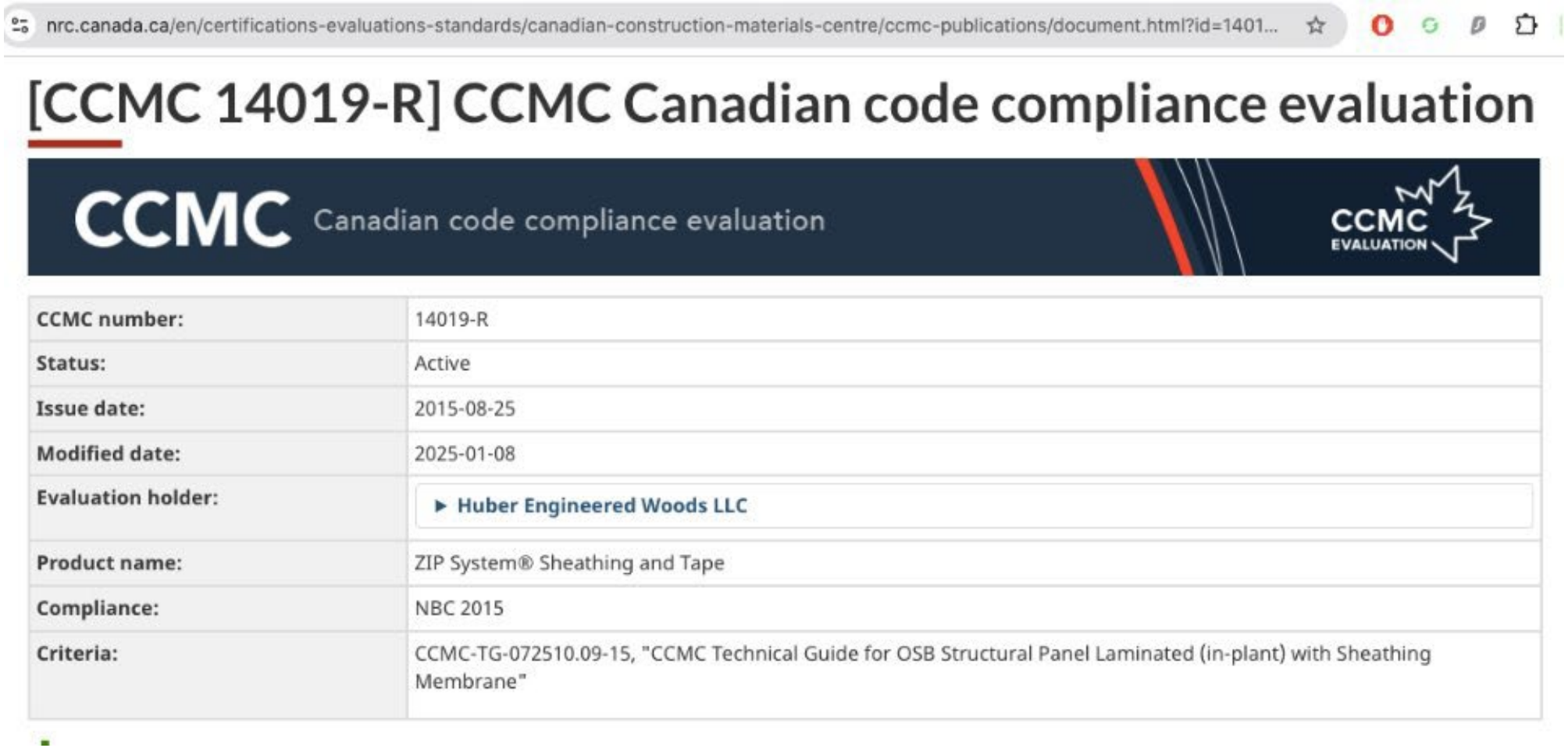
Zip Sheathing System CCMC Listing



# New and Novel Products

Zip Sheathing System CCMC Listing



# New and Novel Products

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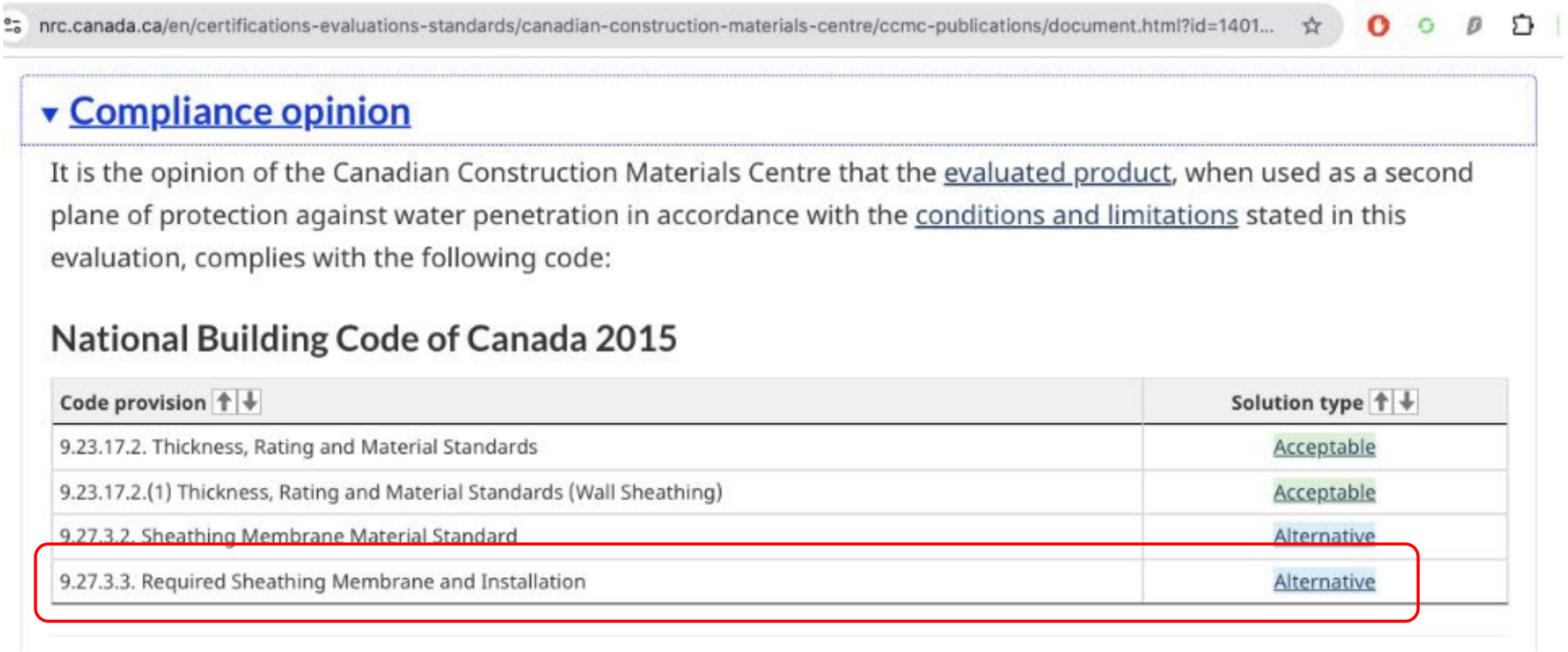

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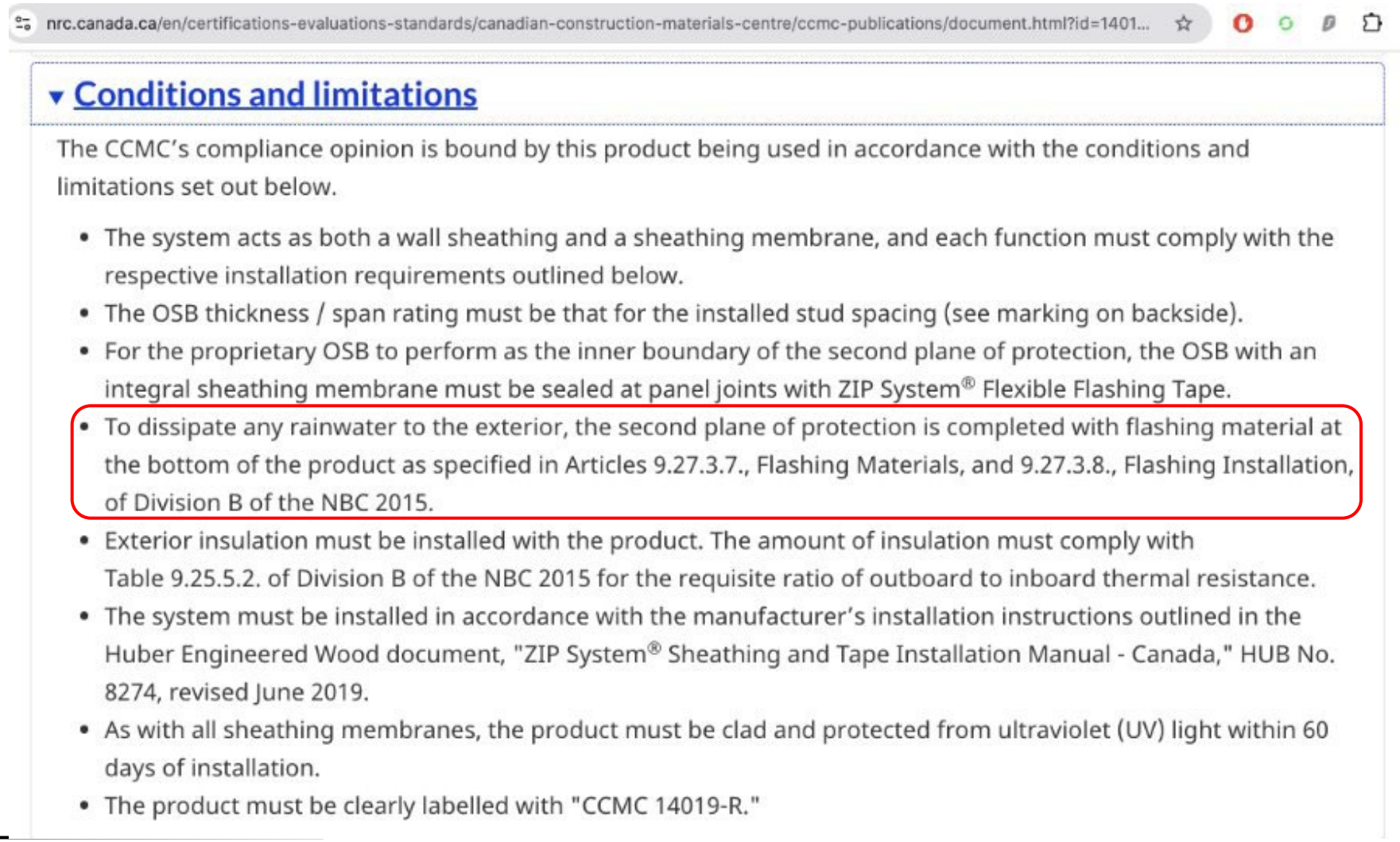
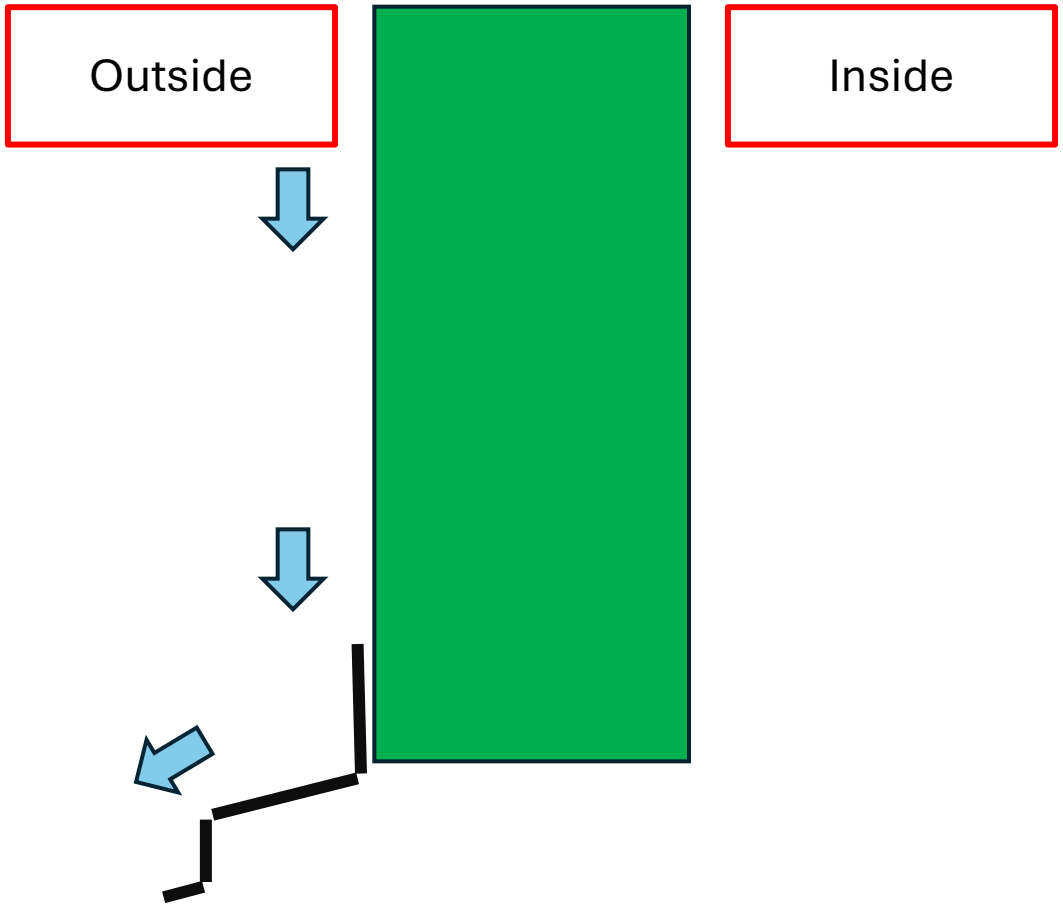
Zip Sheathing System CCMC Listing



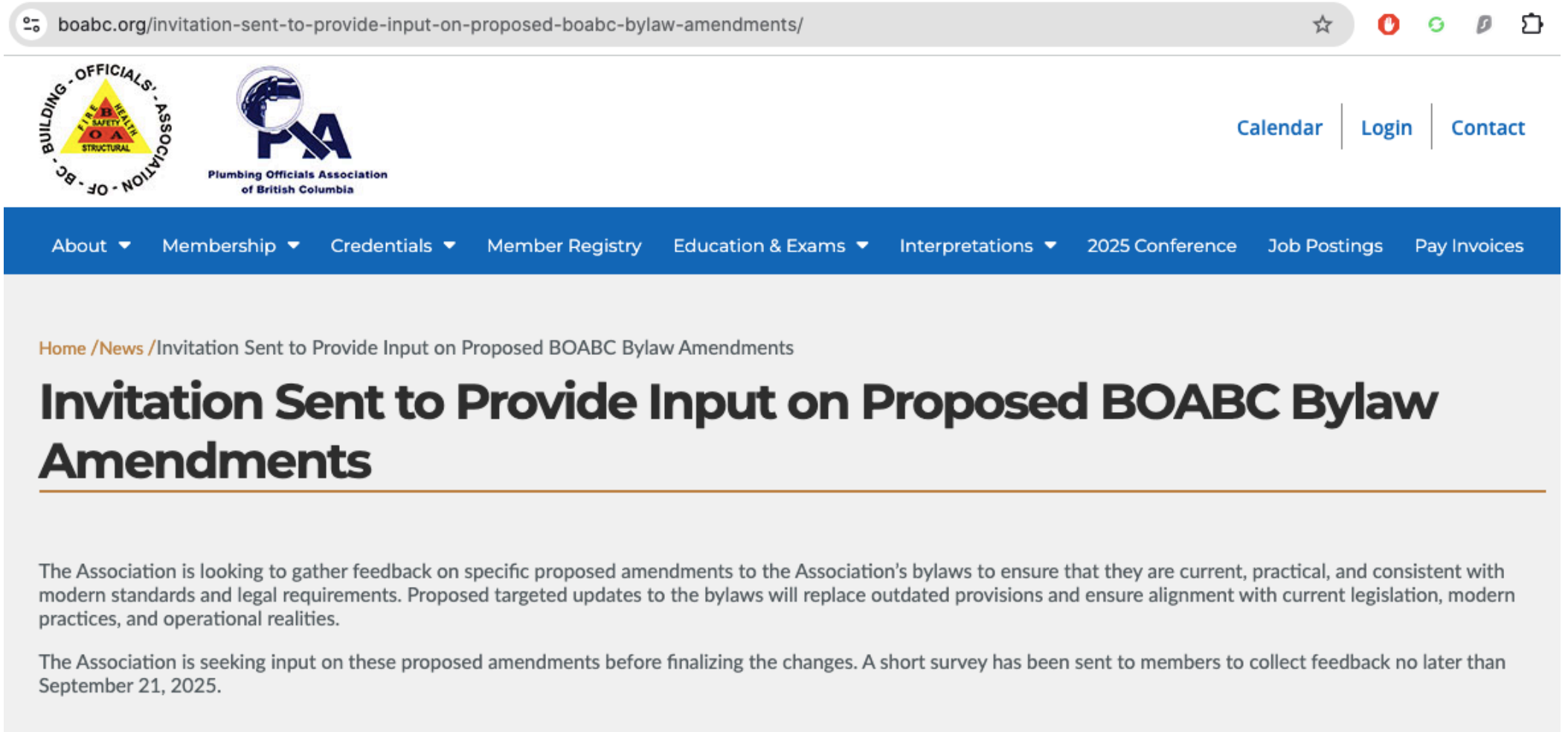
# New and Novel Products

Zip Sheathing System CCMC Listing



# Association News

Draft Bylaws for Comment



# End/Questions:

Tim Warner
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