

# Part 5

## Environmental Separation

### Section 5.1. General

#### 5.1.1. Scope

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- 1) This Part is concerned with
  - a) the control of condensation
    - i) in *building* components and assemblies, and
    - ii) on *building* materials, components and assemblies, and
  - b) the transfer of heat, air, moisture and sound through
    - i) *building* materials, components and assemblies, and
    - ii) interfaces between *building* materials, components and assemblies.

(See Note A-5.1.1.1.(1).)

##### 5.1.1.2. Maritime Climate

- 1) This Part includes special provisions to deal with the potentially damaging effects of Vancouver's maritime climate, including the possibility of rapid decay in structural members. (See Note A-5.1.1.2.)

#### 5.1.2. Application

##### 5.1.2.1. Exposure to Exterior Space or the Ground and Separation of Dissimilar Environments

- 1) Except as provided in Sentence (2), this Part applies, as described in Subsection 1.3.3. of Division A, to
  - a) *building* materials, components and assemblies exposed to exterior space or the ground, including those separating interior space from exterior space or separating interior space from the ground,
  - b) *building* materials, components and assemblies separating environmentally dissimilar interior spaces (See Note A-5.8.), and
  - c) site materials, components, assemblies and grading that may affect environmental loads on *building* materials, components and assemblies exposed to exterior space or the ground.

(See Note A-5.1.2.1.(1).)

- 2) *Buildings* or portions of *buildings* not required to provide environmental separation, not exposed to exterior environmental loads or intended only for summer seasonal use need not conform to this Part where it can be shown, to the satisfaction of the *Chief Building Official* that the health or safety of *building* users, the intended use of the *building* and the operation of *building* services will not be adversely affected. (See Note A-5.1.2.1.(2).)

##### 5.1.2.2. Building Envelope Professional Requirements

- 1) The *Building Envelope Professional* shall conduct reviews, and provide letters as required in Sentences (2) and (3), on *buildings* or portions of *buildings* with a cladding system over wood framing or light steel framing and on all residential *buildings* within the scope of Part 5 with respect to Section 5.4., 5.5. and 5.6. (See Note A-5.1.2.2.(1).)

- 2) The *Building Envelope Professional* shall, prior to issuance of a *building permit*, provide the *Chief Building Official* with a completed, signed and sealed commitment letter in the form attached as Schedule D at the end of this part.

- 3) The *Building Envelope Professional* shall, prior to issuance of an *occupancy permit*, provide the *Chief Building Official* with a completed, signed and sealed completion letter in the form attached as Schedule C-D at the end of this Part.

### 5.1.3. Definitions

#### 5.1.3.1. Defined Words

- 1) Words that appear in italics are defined in Article 1.4.1.2. of Division A.

### 5.1.4. Resistance to Loads and Deterioration

#### 5.1.4.1. Structural and Environmental Loads

(See Note A-5.1.4.1.)

1) *Building* materials, components and assemblies that separate dissimilar environments or are exposed to the exterior shall have sufficient capacity and integrity to resist or accommodate

- a) all environmental loads, and effects of those loads, that may reasonably be expected having regard to
  - i) the intended use of the *building*, and
  - ii) the environment to which the materials, components and assemblies are subject, and
- b) all structural loads, and effects of those loads, that may reasonably be expected.

2) Where *building* materials, components or assemblies perform more than one function, they shall satisfy the requirements of all of those functions. (See Note A-5.1.4.1.(2).)

3) Compliance with Clause (1)(a) shall be demonstrated by design complying with Subsection 5.2.1. and construction conforming to that design.

4) Compliance with Clause (1)(b) shall be demonstrated by design complying with Subsection 5.2.2., and construction conforming to that design, with regard to

- a) materials, components and assemblies, and associated loads, that are identified in Part 4,
- b) air pressure loads imposed on *air barrier systems*,
- c) wind up-lift imposed on roofing, and
- d) hydrostatic pressure imposed on the means of protection from moisture in the ground.

5) For materials, components, assemblies and loads to which Sentence (4) does not apply, compliance with Clause (1)(b) shall be demonstrated

- a) by design complying with Subsection 5.2.2. for individual applicable loads and construction conforming to that design, or
- b) in the case of common materials, components and assemblies, and their installation, by proven past performance over a period of several years for individual applicable loads.

(See Note A-5.1.4.1.(5).)

6) Materials, components and assemblies separating dissimilar environments and assemblies exposed to the exterior, including their connections, that are subject to structural loads as defined in Article 5.2.2.1., shall

- a) transfer such loads to the *building* structure without adverse effects on the performance of other materials, components or assemblies,
- b) not deflect to a degree that adversely affects the performance of other materials, components or assemblies (See Note A-5.1.4.1.(6)(b) and (c).), and
- c) be designed, and constructed according to that design, to accommodate (See Note A-5.1.4.1.(6)(b) and (c).)
  - i) the maximum relative structural movement that may reasonably be expected, and
  - ii) construction tolerances that may be reasonably expected.

(See Article 4.1.3.5., Sentence 4.1.3.3.(2) and Subsection 4.1.8. for information on different types of structural movements.) (See Note A-5.1.4.1.)

**5.1.4.2. Resistance to Deterioration**

(See Note A-5.1.4.2.)

**1)** Except as provided in Sentence (2), materials used in *building* components and assemblies that separate dissimilar environments, or in assemblies exposed to the exterior, shall be

- a) compatible with adjoining materials, and
- b) resistant to any mechanisms of deterioration that may reasonably be expected, given
  - i) the nature and function of the materials, and
  - ii) the exposure and climatic conditions in which they will be installed.

**2)** Material compatibility and deterioration resistance are not required where it can be shown that incompatibility or uncontrolled deterioration will not adversely affect any of

- a) the health or safety of *building* users,
- b) the intended use of the *building*, or
- c) the operation of *building* services.

**3)** Design and *construction* of *building* components and assemblies described in Article 5.1.2.1. shall be in accordance with good practice as described in CSA S478, “Guideline on Durability in Buildings”.

**5.1.5. Other Requirements****5.1.5.1. Requirements in Other Parts of the By-law**

- 1)** Energy utilization, structural and fire safety requirements of other Parts of this By-law shall apply.