

## PROPOSED CHANGE

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## MODIFICATION PROPOSÉE

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### Comment

### Commentaires

Document	NBC 2005 CNB	Document
Provision	5.4.1.1.(1)(e)	Exigence
Committee	ES-HSB Joint Task Group on Protection Against Radon Ingress	Comité
Minutes	4 <sup>th</sup> meeting of JTG	Procès-verbaux

### EXISTING PROVISION

#### 5.4.1.1. Required Resistance to Air Leakage

(See Appendix A.)

**1)** Where a *building* component or assembly separates interior *conditioned space* from exterior space, interior space from the ground, or environmentally dissimilar interior spaces, the properties and position of the materials and components in those components or assemblies shall be such that they control air leakage or permit venting to the exterior so as to

- provide acceptable conditions for the *building* occupants,
- maintain appropriate conditions for the intended use of the *building*,
- minimize the accumulation of condensation in and the penetration of precipitation into the *building* component or assembly,
- control heat transfer to roofs where ice damming can occur, and
- not compromise the operation of *building* services.

### PROPOSED CHANGE

Add Clause 5.4.1.1.(1)(e) as follows:

**Other Code Provisions Affected: None**

#### 5.4.1.1. Required Resistance to Air Leakage

(See Appendix A.)

**1)** Where a *building* component or assembly separates interior *conditioned space* from exterior space, interior space from the ground, or environmentally dissimilar interior spaces, the properties and position of the materials and components in those components or assemblies shall be such that they control air leakage or permit venting to the exterior so as to

- provide acceptable conditions for the *building* occupants,
- maintain appropriate conditions for the intended use of the *building*,
- minimize the accumulation of condensation in and the penetration of precipitation into the *building* component or assembly,
- control heat transfer to roofs where ice damming can occur, ~~and~~
- [minimize the ingress of airborne radon from the ground with an aim to controlling the indoor radon concentration to an acceptable level, and](#)
- not compromise the operation of *building* services.

### RATIONALE

#### Problem

#### General

See the Summary of Significant Proposed Changes to NBC Parts 5, 6 and 9.

#### Technical

Radon is currently only mentioned in Appendix Note A-5.4.1.1. and not in the body of the Code. Occupants in buildings to which Part 5 applies should also be protected from the potential adverse effects of radon ingress.

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A related proposed change cross-references Part 5 and Part 6 from Subsection 9.13.4. as an acceptable solution for buildings other than dwelling units.

### **Justification – Explanation**

#### **General**

See the Summary of Significant Proposed Changes to NBC Parts 5, 6 and 9.

#### **Technical**

The proposed change inserts a performance target related to radon into the requirements for air leakage. This should prompt the designer to consider the occurrence of radon when designing the air barrier system at assemblies in contact with the ground.

Further guidance is provided in the Appendix to this Sentence (see related proposed change).

### **Cost implications**

Where the design of a building incorporates a good air barrier system within assemblies in contact with the ground (Part 5), the incremental cost would be minimal.

Where the design of a building requires the design and installation of a radon mitigation system (Part 5 or Part 6), the cost increase may be significant and will vary depending on the design of the building.

Where subfloor depressurization is considered as a mitigation measure, the installation of a single suction pit and a single exhaust fan can cost up to \$2000. The incorporation of radon suction pits in the building envelope can substantially reduce the cost for retrofitting.

### **Enforcement implications**

This proposed change can be enforced within the existing infrastructure of inspection and enforcement.

### **Who is affected**

Designers, builders, inspectors.

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**OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISION**

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**Provision: 5.4.1.1.(1)**

**Analysis:**

**Attributions**

(a),(b),(ef) [F51,F52,F54,F55-OH1.2]

(a),(b),(c),(e) [F40,F55-OH1.1]

(c) [F55,F61,F63-OH1.3]

**Objective**

OH1 Indoor Conditions

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**OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISION**

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**Provision: 5.4.1.1.(1)**

**Analysis: Unchanged**

**Attributions**

(c) and (d) [F61,F62,F63,F55-OS2.3]

**Objective**

OS2 Structural Safety

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**OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISION**

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**Provision: 5.4.1.1.(1)**

**Analysis: Unchanged**

**Attributions**

(d) [F55,F62-OS3.1]

**Objective**

OS3 Safety in Use

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**OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISION**

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**Provision: 5.4.1.1.(1)**

**Analysis:**

**Attributions**

(ef) [F55,F62-OS1.4] Applies where required life safety systems are incorporated in environmental separators.

**Objective**

OS1 Fire Safety

[Comment](#)

[Commentaires](#)