

PROPOSED CHANGE

NBC05-DivB-05.04.01.01.-replace-ES-radon-A_ed.doc

MODIFICATION PROPOSÉE

Page: 1 of / de 2

Comment

Commentaires

Document	NBC 2005 CNB	Document
Provision	A-5.4.1.1.	Exigence
Committee	ES-HSB Joint Task Group on Protection Against Radon Ingress	Comité
Minutes	4 th meeting of JTG	Procès-verbaux

EXISTING PROVISION

A-5.4.1.1. Resistance to Air Leakage. An air barrier system in above-grade building components and assemblies separating conditioned space from the exterior will reduce the likelihood of condensation due to air leakage, discomfort from drafts, the infiltration of dust and other pollutants, and interference in the performance of building services, such as HVAC and plumbing. These problems can all lead to serious health or safety hazards.

Currently, the most obvious and significant problems are due to moisture-related material deterioration, such as rot and corrosion, which can lead to the failure of component connections. The infiltration of dust and other pollutants can lead to a wide range of health problems. Where the separator is subject to high moisture levels, the pollutants may include fungus spores. Interference with the performance of building services can lead to unhealthy conditions and potentially hazardous conditions during the heating season in many regions of the country.

There are few buildings intended for human occupancy where the interior space is conditioned but where an air barrier system is not required. Some industrial buildings, for example, may be exempt. This would depend, however, on the particular levels of interior conditioning provided, ventilation levels, protection provided for the workers, and the tolerance of the building's construction to the accumulation of condensation and potential precipitation ingress.

Some industrial buildings are provided with only limited conditioning, for example radiant heating, and ventilation levels are sufficient to reduce relative humidity to a level at which condensation will not accumulate to a degree that is problematic. Conversely, some industrial buildings, due to the processes they contain, operate at very high temperatures and high ventilation levels. In these cases, the building envelope will be maintained at temperatures that will avoid condensation. In both examples above, either the ventilation rates or protective gear required in the work environment would protect the occupants from unacceptable levels of pollutants.

Where adjacent interior environments are sufficiently different, controlling airflow between those spaces is necessary to maintain conditions. Referring again to the industrial building examples above, assemblies separating office space from the work floor would likely require an air barrier system.

An air barrier system may be required in components and assemblies in contact with the ground to control the transfer of soil gases such as radon and methane.

The word "minimize" is used in Sentence 5.4.1.1.(1) because not all moisture accumulation in an assembly need be of concern. Incidental condensation is normal but should be sufficiently rare and in sufficiently limited quantities, and should dry rapidly enough, to avoid material deterioration and the growth of mould or fungi.

PROPOSED CHANGE

Replace Appendix Note A-5.4.1.1. as follows:

Other Code Provisions Affected: None

A-5.4.1.1. Resistance to Air Leakage.

[...]

~~An air barrier system may be required in components and assemblies in contact with the ground to control the transfer of soil gases such as radon and methane.~~

PROPOSED CHANGE

NBC05-DivB-05.04.01.01.-replace-ES-radon-A_ed.doc

MODIFICATION PROPOSÉE

Page: 2 of / de 2

The word “minimize” is used in ~~Sentence~~[Clause](#) 5.4.1.1.(1)(c) because not all moisture accumulation in an assembly need be of concern. Incidental condensation is normal but should be sufficiently rare and in sufficiently limited quantities, and should dry rapidly enough, to avoid material deterioration and the growth of mould or fungi.

[An air barrier system is required in components and assemblies in contact with the ground to control the ingress of radon, and may be required to control the transfer of other soil gases such as methane.](#)

[In addition to an air barrier system, other measures may be required to reduce the radon concentration to a level below the guideline specified by Health Canada. Further information on protection from radon ingress can be found in:](#)

- [“Radon: A Guide for Canadian Homeowners” \(CMHC/HC\),](#)
- [“Guide for Radon Measurements in Public Buildings \(Schools, Hospitals, Care Facilities, Detention Centres\)” \(HC\), and](#)
- [EPA/625/R-92/016, “Radon Prevention in the Design and Construction of Schools and Other Large Buildings.”](#)

RATIONALE

Problem

General

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

Technical

The information on radon currently provided in the Appendix Note is proposed to be moved into Sentence 5.4.1.1.(1). There is currently no guidance on how to protect buildings against high concentrations of radon.

Justification – Explanation

General

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

Technical

The Appendix Note has been changed to be consistent with the related proposed change to Sentence 5.4.1.1.(1). Additional information is now provided for mitigation and measurement.

Cost implications

There are no cost implications for appendix notes as the information provided is meant as guidance only. (See the cost implications in the proposed change to Sentence 5.4.1.1.(1).)

Enforcement implications

Appendix notes facilitate enforcement as they provide further information on Code requirements.

Who is affected

Builders, building officials, designers, owners.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISION

Provision: A-5.4.1.1.

Analysis: N/A

Comment

Commentaires