



TCR 32 – Radon assessment and mitigation

Effective date:

March 1, 2021

Applicable to the following property types:

Office (05.02.01 & 05.03.01)

Universal (05.02.01 & 05.03.01)

Light Industrial/Open Air Retail (05.02.01 & 05.03.01)

Enclosed Shopping Centre (05.02.01 & 05.03.01)

Resolution Summary:

Several modifications and specifications have been made to the question and explanation language for questions 05.02.01 (assessment) and 05.03.01 (mitigation):

05.02.01

- Language has been added to further emphasize that radon is a risk everywhere and all buildings are susceptible (no areas are exempt).
- Testing period has been extended to 91-days (instead of 90 days) to fully encapsulate 3 months.
- BOMA Canada supports testing during the heating season, as recommended by Health Canada Guidelines and the Canadian Association for Radon Scientists and Technologists (CARST). The C-NRPP will determine the appropriate testing period. This language has been moved to the Requirements section (instead of Additional Information).
- The completed risk assessment report must be signed by an individual accredited by C-NRPP.

05.03.01

- The Not Applicable option has been completely removed. The question has instead been reformulated to reward applicants with radon levels below 200 Bq/m³ (can answer Yes) instead of treating it as a neutral answer (would have previously answered N/A).
- References to “Certified Radon Mitigation Professional” have been replaced with “individual certified with the Canadian National Radon Proficiency Program (C-NRPP)”.
- Clarification has been added about when applicants can answer Yes or No:
 - Answer Yes:
 - If radon levels are currently below 200 Bq/m³ (based on original readings or following the implementation of mitigation plans) – as demonstrated by a testing report signed by an individual accredited by C-NRPP. Applicants must provide evidence of post mitigation testing of *at least* all the pre-mitigation tested locations, following Health Canada Guidelines, with no results greater than 200 Bq/m³.
 - If radon levels are above 200 Bq/m³ **but** the building is actively implementing mitigation strategies within the required timeframe (1 year for levels above 600 Bq/m³ or within 2 years for levels between 200-600 Bq/m³). The radon mitigation plan must be signed by an individual accredited by C-NRPP.
 - Answer No:
 - If radon testing has never been conducted in the building
 - If radon testing was conducted but the report is not signed by an individual accredited by C-NRPP.
 - If radon levels are above 200 Bq/m³ – as demonstrated by a testing report signed by an individual accredited by C-NRPP



- If radon levels are above 200 Bq/m³ and the building is **actively** implementing mitigation strategies at the time of verification but these are outside the required timeframe (1 year for levels above 600 Bq/m³ or within 2 years for levels between 200-600 Bq/m³).
- New language has been added to the “Additional Information” section that all buildings with radon would benefit from mitigating measures.

New question wording (changes are marked in red):

| | | | | | | | |
|-------------------------------------|---|-------|----------------|-----|-------|--|----|
| 05.02.01 | Has a radon risk assessment been completed for the building? | | | | | | |
| Explanation & Evaluation | <p>Description: Radon is a colourless, odourless, naturally occurring radioactive gas present in soil, rock and water. In indoor environments, radon gas can penetrate the building envelope and accumulate in hazardous concentration levels. Radon is a risk everywhere and testing is therefore recommended, even in “low-probability areas” (Health Canada, C-NRPP). Radon is a risk in all parts of the country (Health Canada, C-NRPP).</p> <p>Requirements: Radon testing must occur in all occupied areas where the floors or walls are in direct contact with the ground or a crawl space. Health Canada defines an occupied area as one that is, or may be, occupied by an individual for four (4) hours per day. If none of the ground contact floors are occupied, test all occupied rooms on the first occupied floor level above.</p> <p>Long term measurement of these areas is required for a minimum of 91 days. The professional accredited by the Canadian National Radon Proficiency Program (C-NRPP) will determine the valid 91-day testing period for the building during the heating season.</p> <p>Measurement devices approved by C-NRPP must be used. The radon risk assessment report must be signed by an individual certified by the Canadian National Radon Proficiency Program (www.C-NRPP.ca) or local equivalent. Final analysis must be completed by a laboratory certified by C-NRPP or local equivalent. Note, not all measurement protocols require laboratory analyses (e.g., E-PERM Electrets) so long as the analyst is accredited to conduct that analysis through C-NRPP.</p> <p>Additional Information: The Guide for Radon Measurements in Public Buildings recommends an action level of 200 Becquerel per cubic meter (Bq/m³) to minimize health hazards due to indoor radon exposure. The radon risk assessment should be started and completed during the heating season between October and April when radon levels are typically higher in buildings.</p> <p>In the event of high radon test results, the Guide for Radon Measurements in Public Buildings recommends conducting additional diagnostic testing on the upper floors. High radon levels can potentially exist on upper floors due to the upward movement of air from stack effect or if radon is suspected to be emanating from building materials. This diagnostic testing can be conducted using a continuous radon monitor (CRM).</p> | | | | | | |
| | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Scoring</td> <td style="width: 15%;">Yes</td> <td style="width: 70%;">15/15</td> </tr> <tr> <td></td> <td>No</td> <td>0/15</td> </tr> </table> | | Scoring | Yes | 15/15 | | No |
| Scoring | Yes | 15/15 | | | | | |
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| | | |
|-------------------------------------|---|-----|
| 05.03.01 | Are radon levels currently below 200 Bq/m³ or are mitigation strategies being implemented within recommended timeframes to bring radon concentrations to within acceptable limits? | |
| Explanation & Evaluation | <p>Description: Serious health hazards are present where radon concentrations exceed 200 Bq/m³. If levels are detected below 200 Bq/m³ no further testing is required unless major renovations are performed that could significantly impact airflow in the building. Other exceptions include change of use in the lowest-occupied levels.</p> <p>Requirements: Where radon concentrations have been detected between 200 and 600 Bq/m³, remedial action must be taken within two (2) years of detection. For radon concentrations above 600 Bq/m³, remedial action must be taken within one (1) year of detection.</p> <p>Applicants implementing remedial strategies at the time of BOMA BEST verification must provide a copy of the mitigation strategy plan signed by an individual certified by the Canadian National Radon Proficiency Program (C-NRPP) and demonstrate that the mitigation strategies (such as active soil depressurization and mechanical ventilation) are being implemented within the required timeframe (specified above).</p> <p>Applicants who have previously implemented mitigation strategies must demonstrate that re-testing has occurred, including testing of all pre-mitigation locations <i>at a minimum</i>, following Health Canada Guidelines, with no results greater than 200 Bq/m³. Results from the post-mitigation re-testing must be signed by an individual certified by C-NRPP.</p> <p>Additional Information: It should be noted that, while the health risk from exposure at levels below 200 Bq/m³ is small, it may be possible to reduce it even further through remediation.</p> <p>In the event of high radon test results, conduct additional diagnostic testing on the upper floors as per Health Canada's recommendations in "Guide for Radon Measurements in Public Buildings". High radon levels can potentially exist on upper floors due to the upward movement of air from stack effect or if radon is suspected to be emanating from building materials. This diagnostic testing can be conducted using a continuous radon monitor (CRM). Select Not Applicable if radon concentrations are below 200 Bq/m³.</p> | |
| Scoring | Yes | 9/9 |
| | No | 0/9 |
| | Unknown | 0/9 |
| | N/A | 0/0 |