



## ALTERNATIVE SOLUTIONS

The purpose of this bulletin is to explain the requirements and procedures relating to submissions for Alternative Solutions as outlined in the Manitoba Building Code.

### **What is an Alternative Solution?**

Conformance with the Manitoba Building, Plumbing and Energy Codes (the Codes) is mandatory. The codes permit two options for conformance. The first being the prescriptive approach as laid out in Division B of the Codes. The second option is to propose an Alternative Solution in accordance with the requirements outlined in Section 2.3 of Division C of the Manitoba Building Code.

Some important facts regarding Alternative Solutions include:

- a) An Alternative Solution is specific to a project and cannot arbitrarily be transferred or applied to other designs or projects.
- b) Each Alternative Solution must be demonstrated as meeting the level of performance required by the objective, intent and function statements of the Code article. Every effort must be made to demonstrate that an alternative solution will perform as well as a design that would satisfy the applicable acceptable solution in Division B - not "well enough" but "as well as".
- c) All proposals for an Alternative Solution are to be made by a registered professional, skilled and experienced in the matter.
- d) A proposed Alternative Solution is proprietary to that registered professional.

Acceptance of an Alternative Solution is based on satisfactory documentation submitted to the *Authority Having Jurisdiction* to justify the proposal and not to an existing condition or approval from other projects.

### **What are the submission requirements?**

The person requesting the use of an alternative solution must demonstrate that the proposed alternative solution complies with the Code. The proposal for an Alternative Solution is to include the necessary supporting documentation identified in subsection 2.3.1.1., Division C of the Manitoba Building Code.

The documentation must include a Code analysis outlining the analytical methods and rationales used to determine that a proposed alternative solution will achieve at least the level of performance required by the applicable acceptable solution in Division B of the Code.

Together with the "Request for Evaluation of an Alternative Solution" from Subsection 2.3.1.1. The Code Analysis is to include the documentation listed below.

1. A description of the proposed Alternative Solution.
2. The applicable Division B provisions.
3. Objectives and Functional Statements of Applicable Acceptable Solutions.
4. Intent Statements of Applicable Acceptable Solutions.
5. Evaluation of Performance Levels of the Acceptable Solutions.
6. Evaluation of Performance Levels of the proposed Alternative Solution.
7. Identify any special maintenance or operational requirements.
8. Identify any assumptions, limiting or restricting factors.
9. Testing procedures, engineering studies or building performance parameters considered.
10. Comparison of performance levels of Acceptable Solution vs. Alternative Solution.
11. Other supporting documents.
12. Qualifications of the design professional.

The documentation provided must be of sufficient detail to convey the design intent and to support the validity, accuracy, relevance and precision of the Code Analysis. The proposals are to be submitted with each building permit application and must be accepted prior to the issuance of a building permit.

### **What are the tools available that can be used to demonstrate equivalent levels of performance?**

Design professionals preparing Alternative Solution proposals may use various engineering tools to demonstrate equivalent level of performance, such as:

- Fire and smoke modelling,
- Timed exist analysis,
- Fire zone analysis,
- Fire performance assessment of assemblies,
- Fire hazard analysis.

### **How to apply for an Alternative Solution**

Applications for Alternative Solutions can be submitted to:

RM of Hanover  
Attn: Part 3 Building Inspector  
28 Westland Dr.  
Mitchell, MB R5G 2N9  
[alex.engbrecht@hanovermb.ca](mailto:alex.engbrecht@hanovermb.ca)

### **Is there an opportunity to review my Alternative Solution proposal prior to submitting my application?**

Consultation meetings to discuss pre-design questions and proposed Alternative Solutions strategies can be arranged directly with Alex Engbrecht, Building Inspector. While the preparation and submission of the Alternative Solution is the responsibility of the registered professional, the RM of Hanover may provide comment on the Alternative Solution strategy or may make suggestions to enhance the proposal prior to formal submission.

### **What happens next?**

Upon completion of the Alternative Solution proposal review, the building inspector will issue an evaluation report stating if the proposal is accepted or rejected; the RM of Hanover may request additional supporting documentation. Refusal or acceptance of any proposal is at the discretion of the Building Inspector and applies only to the building under consideration. Acceptance of a proposal does not create, and should not be interpreted to have created, any precedent or obligation for its acceptance on any subsequent projects.

### **Letter of Certification for Completion**

If the Alternative Solution(s) are accepted, a "Letter of Certification for Alternative Solution", signed and sealed by the appropriate design professional, is to be submitted to the building inspector upon completion of the work covered by the Alternative Solution and prior to the final inspection by the building inspector. An occupancy permit will not be issued until this letter of assurance is submitted.

### **Further Information**

Please contact our Building Inspector Alex Engbrecht at (204) 346-7136 or (204) 392-8035 or by email at [alex.engbrecht@hanovermb.ca](mailto:alex.engbrecht@hanovermb.ca) with any questions.



## SECTION D—GENERAL INFORMATION

This section is intended to provide assistance in the completion of this application form. Please read this information thoroughly when completing this application.

### SECTION A—PROJECT INFORMATION

This section is intended to provide general information on the specific project being applied for. The information in this section is required in order for a Request for Evaluation of an Alternative Solution to be reviewed by the RM of Hanover.

- **WORK DESCRIPTION** – Provide a brief description of the scope of work, including the type of occupancy and construction type of building to be constructed or altered.
- **OWNER and DESIGN PROFESSIONAL** – All applications for Alternative Solutions is to be signed and sealed by either an architect or engineer licensed to practice in the Province of Manitoba. An owner or contractor may apply for an alternative solution; however the required documentation is to be prepared by an architect or engineer. Where the design of a building includes proposed alternative solutions that involve more than one person taking responsibility for different aspects of the design, the applicant for the permit is to identify a single person to co-ordinate the preparation of the design, Code Analysis and documentation referred to in Subsection 2.3.1 of division C.

### SECTION B—SUBMISSION REQUIREMENTS

This section is intended to provide the applicant and design team with information regarding the minimum amount of supporting documentation required with the Request for Evaluation of an Alternative Solution. The RM of Hanover may request further information during review in support of any proposed Alternative Solution.

- 1) **DESCRIPTION OF THE PROPOSED ALTERNATIVE SOLUTION** – Provide a description of the Alternative Solution including reduced floor layouts showing the extent and location of the Alternative Solution, and reasons for deviating from the Acceptable Solutions.
- 2) **QUALIFICATIONS OF THE DESIGN PROFESSIONAL** – Provide information about the qualifications, experience and background of the person(s) taking responsibility for the Alternative Solution.
- 3) **APPLICABLE DIVISION B PROVISIONS** – Include sections of referenced standards cited in the applicable Division B provisions.
- 4) **OBJECTIVES and FUNCTIONAL STATEMENTS** – identify the objectives and functional statements associated with the applicable Acceptable Alternative Solutions as per Attribution Tables of Division B.
- 5) **INTENT STATEMENTS** – Identify the intent statements associated with the applicable Acceptable Solutions as per:
  - a. NBC – <http://codes-guides.nrc.ca/IA/10NBC/intentframe.html>
  - b. NFC – <http://codes-guides.nrc.ca/IA/10NFC/intentframe.html>
  - c. NPC – <http://codes-guides.nrc.ca/IA/10NPC/intentframe.html>
  - d. NECB – <http://codes-guides.nrc.ca/IA/11NECB/intentframe.html>
- 6) **EVALUATION OF PERFORMANCE LEVELS OF THE ACCEPTABLE SOLUTIONS** – Describe the performance levels that the MBC is attempting to achieve with the referenced requirements in Division B.
- 7) **EVALUATION OF PERFORMANCE LEVELS OF THE PROPOSED ALTERNATIVE SOLUTIONS** – Provide a Code Analysis outlining the analytical methods and rationales used to determine that a proposed Alternative Solution will achieve at least the level of performance required by 1.2.1.1(1)(b) of Division A. The information is to convey the design intent and to support the validity, accuracy, relevance and precision of the Code Analysis.
- 8) **SPECIAL MAINTENANCE OR OPERATIONAL REQUIREMENTS** – Provide information concerning any special maintenance or operational requirements, including any building component commissioning requirements, that are necessary for the alternative solution to achieve compliance with the MBC after the building is constructed.
- 9) **ASSUMPTIONS, LIMITING OR RESTRICTING FACTORS** – Identify any assumptions, limiting or restricting factors that will support a Code compliance assessment.
- 10) **TESTING PROCEDURES, ENGINEERING STUDIES OR BUILDING PERFORMANCE PARAMETERS** – Identify any testing procedures, engineering studies or building performance parameters that will support a Code compliance assessment.
- 11) **TABULAR COMPARISON OF PERFORMANCE LEVELS** – Compare the performance levels of the Alternative Solutions vs Acceptable solution.

*Example:*

	REQUIRED PERFORMANCE LEVELS
12.7 mm gypsum board as fire block material (the acceptable solution)	Fire blocks shall remain in place and prevent the passage of flames for not less than 15 min when subjected to CAN/ULC-S101, "Fire Endurance Tests of Building Construction and Materials". 3.1.11.7(2)
11 mm thick new proprietary material (the alternative solution)	The material remained in place and prevented the passage of flames for 20 mins when it subjected to CAN/ULC-S101

- 12) **OTHER SUPPORTING DOCUMENTS** – Provide other information or items that may be helpful in the review of the proposed Alternative Solution, such as engineering analysis, mathematical modelling, peer review, published standards not cited in the code, product or material test results, evaluation of scenarios, previous approvals from other authorities, risk analysis, etc.

### SECTION C – DECLARATION OF THE DESIGN PROFESSIONAL

- **DECLARATION OF THE DESIGN PROFESSIONAL** – A statement by the design professional that the proposed Alternative Solutions meet the intent of the Code and it is specific to this project/design and that it is not seen as precedent setting for future developments or if building design conditions change in the future.

### APPENDIX

- **LETTER OF CERTIFICATION FOR COMPLETION OF ALTERNATIVE SOLUTION** – To be submitted to the RM of Hanover before final inspection.

Please contact the RM of Hanover building inspector at (204) 346-7136 or (204) 392-8035 or [alex.engbrecht@hanovermb.ca](mailto:alex.engbrecht@hanovermb.ca) for questions or clarifications.



**LETTER OF CERTIFICATION FOR COMPLETION  
OF ALTERNATIVE SOLUTION**

(This letter is to be submitted after completion of the Alternative Solution but prior to final inspection by the RM of Hanover)

To: RM of Hanover  
Building Inspector

Re: Letter of Certification for Completion of Alternative Solution

Building Permit No.	RM of Hanover Reference No.		Date
Name of Building	Group	Division	Occupancy
Building Address	Town & Postal Code		Legal Description

I hereby give assurance that:

- I have fulfilled my obligations for field review as required for the project as outlined in the previously submitted Letter of Assurance,
- I am a registered professional who is registered in the Province of Manitoba as a member in good standing in the Manitoba Association of Architects or the Association of Professional Engineers and Geoscientists of Manitoba,
- I, (or a suitably qualified person reporting to me, has) have completed periodic reviews of the project at appropriate stages of construction,
- In my professional opinion, the Alternative Solutions have now been completed and installed in a satisfactory manner. Therefore, we give our assurance that the Alternative Solutions, as mentioned in our report, have been provided as intended for this project,
- I am not aware of any deficiencies, or I have reported any deficiencies to the *Authority Having Jurisdiction*, that would compromise compliance with the Objective, Functional and Intent Statements of applicable Alternative Solution.

**Proponent/Design Professional:**

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

(affix professional seal)

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_