



CHESTERMERE

Alberta Energy Code 9.36 for houses and small buildings

The energy efficiency requirements in Section 9.36 of the Alberta Building Code were developed by the National Research Council and Natural Resources Canada to improve the energy efficiency of Canadian buildings and reduce greenhouse gas emissions.

Before you start

Section 9.36 of the Alberta Building Code 2014 covers the principal building components and systems in a house or small building, including the building envelope, heating and hot water systems. It applies to small buildings, which are defined in Clause 9.36.1.3 of the Alberta Building Code 2014.

If your building is an assembly, care and detention, medium or high hazard industrial building, or is any other building type exceeding 600m² in building area or three storeys in height: it is within the scope of the National Energy Code of Canada for Buildings (NECB), not Section 9.36 of the Alberta Building Code. You must follow the NECB requirements instead. The City of Chestermere will review new building plans to verify compliance with Section 9.36 or the NECB. These requirements became mandatory on Nov. 1, 2016.

How do I comply with Section 9.36

Unlike Alberta's safety codes, there are several paths that you can choose to demonstrate compliance with Section 9.36. This is a critical decision for the designer and can affect both submission requirements and team members. The various compliance path types are prescriptive, trade-off, and performance compliance.

Prescriptive path

This path involves following the prescriptive requirements of Subsection 9.36.2, 9.36.3 and 9.36.4. It is typically the simplest compliance path to follow, but may not be appropriate for all buildings.

It is important to note that prescriptive path compliance for any part of the 9.36 requires meeting all requirements in that part. If this is impossible or undesirable, another compliance path should be selected.

Trade-off path

If you need more flexibility in your design, a trade-off path allows you to trade elements within the above ground building envelope to demonstrate an equivalent level of performance without meeting every prescriptive requirement found in 9.36.2.





Trade-off path requires a calculation to demonstrate that while your proposed design may not exactly meet the prescriptive requirements found in Section 9.36 overall, the amount of energy consumed will be the same or less than would be consumed by following strict prescriptive compliance. For example, if your design contains a regular framed wall with studs at 24" on the centre and a tall wall with studs at 12" on the centre, you may be able to compensate for the lesser value of the tall wall by improving the insulation in the regular wall or improving the thermal performance of the ceiling.

It is important to note that trade-off path has limitations and rules on how to calculate what may be traded off. These limitations are found in Section 9.36.2.11.?

Performance path

For the most design flexibility, you should choose to use a performance compliance path. This approach is found in subsection 9.36.5 and is only applicable to houses and buildings containing residential occupancies.

For the performance compliance path, you must demonstrate that the proposed design will not consume more energy than an equivalent building built to prescriptive requirements, using an approved building energy simulation tool (computer software). Performance compliance can allow for trade-offs between building systems, and might be the only compliance path that is practical for certain buildings.

National Energy Code of Canada for Buildings 2011

While this may be considered overly complex for the typical house or small commercial building, it is permitted to use the NECB as a means of demonstrating compliance with Section 9.36. If you choose this path, it is important to understand you must use the NECB fully. There is no way to use parts of 9.36 and the NECB in combination to show compliance.

FAQs

I am adding to or renovating my house. Do I need to upgrade the whole house to the new standard?

No, the addition will be required to meet the new standards within 9.36 but all existing parts of the house are unaffected.

If a building was required to meet 9.36 at the time of its construction, any future renovation must demonstrate that they do not reduce the level of compliance previously achieved. Where the renovations involve new construction or installation of new systems covered in 9.36 those should meet the requirements.





Do I need an architect or engineer to deal with this?

Not necessarily. Section 9.36 can be followed without any kind of professional. However, the requirements of the performance compliance path are quite detailed. In order to get the most benefit out of this process, it may be advisable to use a consultant familiar with the necessary software and calculations.

My building isn't heated. Does Section 9.36 apply to me?

Section 9.36 does not apply to a building or part of a building that isn't heated. Garages attached to houses do not fall under this exemption.

If I use R20 insulation, does that make my wall R20?

No. Section 9.36 introduces effective Rsi values which take account of all parts of a construction assembly not just the insulation component. Heat loss due to parts of the assembly interrupting the insulation such as studs must now be calculated to determine the effective Rsi value.

Why does my stud spacing matter?

The stud spacing matters because if your studs are closer together, the proportion of framing is greater and the amount of insulation in the assembly is less.

Do I have to insulate my attached garage?

Yes, attached garages must be insulated to the same level as required for the house walls.

Do I have to insulate my detached garage?

No. Detached garages are considered spaces not required to be conditioned and are not covered by Section 9.36.

Electrical

Does 9.36 cover the lighting inside my building?

No, 9.36 has no requirements related to the electrical systems of your building.

Do I have to use LED lighting now?

No, 9.36 does not impose any restrictions on type or amount of light fixtures within your building.





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Performance Compliance modelling

Which climate data should I use for modelling?

Section 9.36 references the climate data from Appendix C of the Alberta Building Code.

Is calculation software available?

Yes, software is available from a number of commercial sources. The Government of Canada also provides software called HOT2000, available free of charge from Natural Resources Canada.

I already have calculation software, can I still use it?

Yes, provided your software meets the **ANSI/ASHRAE 140 standard**.

The compliance paths you choose must be indicated on your completed 9.36 project summary form and submitted at the time of building permit application. The 9.36 project summary guide provides assistance on completing this form.

- Form E
- Trade-off Calculator

Helpful Links & Resources

- Canadian Home Builders' Association - Alberta Illustrated Guide for the Alberta Building Code 9.36. Prescriptive Energy Efficiency Requirements for Houses
- Canadian Home Builders' Association - Alberta Rsi Per Climate Zone Summary
- Information on energy efficient housing
- Municipal Affairs Alberta energy codes information

