

INSULATION FOR ATTACHED GARAGES

PURPOSE

This interpretation was developed to provide a consistent approach for the insulation of attached garages pertaining to framed walls and ceilings adjacent to unconditioned space or the exterior.

DISCUSSION

The requirement for attached garage walls and ceilings to have an interior finish in accordance with Sentence 9.35.4.1.(2) of the Alberta Building Code 2014 (ABC 2014) is to retard the effects of fire on areas beyond its point of origin. This Alberta specific requirement was implemented based on the High Intensity Residential Fires (HIRF) Report.

With thermally insulated walls and ceilings, a vapour barrier in accordance Sentence 9.25.4.1.(1) is required to be installed. This is to limit moisture condensation in the walls and ceilings and reduce the probability of damage to building or facility elements. Since the walls and ceiling of an attached garage are required to have an interior finish, thermal insulation should be installed in the walls and ceilings at the time of construction to satisfy environmental separation requirements. This provision is intended to resist the transfer of air through environmental separators as described in Sentence 9.35.4.4.(1).

With the adoption of energy efficiency minimum standards for housing and small buildings under Section 9.36. of the ABC 2014, the requirement for environmental separation for attached garages is also referenced under Sentence 9.36.2.1.(8). There have been several reports to Municipal Affairs that local authorities have been interpreting Sentence 9.36.2.1.(8) to mean that the attached garage must have the same insulation values as the house. The actual purpose of Sentence 9.36.2.1.(8) is to provide sufficient insulation to maintain environmental separation and protect the building elements of the garage from damage or deterioration.

As a result, the attached garage is not required to be insulated to the same values as the house and does not require the associated construction in order to meet the energy values for the house. An attached garage is treated as unconditioned space and there is no requirement to be able to maintain any set temperature for thermal comfort in an attached garage.

CODE REFERENCES

Sentence 9.25.4.1.(1) states:

9.25.4.1. Required Barrier to Vapour Diffusion

1) Thermally insulated wall, ceiling and floor assemblies shall be constructed with a *vapour barrier* so as to provide a barrier to diffusion of water vapour from the interior into wall spaces, floor spaces or *attic or roof spaces*.

Unless stated otherwise, all Code references in this STANDATA are to Division B of the Alberta Building Code 2014.

Issue of this STANDATA is authorized by
the Provincial Building Administrator

[Original Signed]
Paul Chang

The logo for the Alberta Government, featuring the word "Alberta" in a large, stylized script font, with a small blue square to the right of the letter "a". Below "Alberta" is the word "Government" in a smaller, sans-serif font.

Sentence 9.35.4.1.(2) states:

9.35.4.1. Interior Finish

- 2) The walls and ceilings of an attached garage shall have an interior finish consisting of
- not less than 12.7 mm thick gypsum board conforming to Subsection 9.29.5.,
 - lath and plaster conforming to Subsection 9.29.4., or
 - any material that can be shown to remain in place and prevent the passage of flames for not less than 15 min when subjected to the standard fire exposure in CAN/ULC-S101, "Fire Endurance Tests of Building Construction and Materials."

Sentence 9.35.4.4.(1) states:

9.35.4.4. Thermal Insulation

- 1) The walls and ceilings of an attached garage shall be provided with thermal insulation that conforms to Subsection 9.25.2. (See also Sentence 9.25.2.1.(3).)

Sentence 9.25.2.1.(3) states:

- 3) Sentences (1) and (2) shall not apply once Section 9.36. comes into force on 01 May 2016.

Sentence 9.36.2.1.(8) states:

9.36.2.1. Scope and Application

- 8) The requirements of this Subsection also apply to components of a *building* envelope assembly that separate a heated or unheated attached garage from unconditioned space or the exterior air, where the attached garage serves
- not more than one *dwelling unit*, or
 - a house with a *secondary suite*.

APPLICATION

This INTERPRETATION applies to the exterior framed walls and ceiling of an attached garage adjacent to unconditioned space, such as an attic or the exterior and serving not more than one dwelling unit or a house with a secondary suite.

INTERPRETATION

An attached garage is not required to be insulated to the same energy values as the house and does not require the associated construction in order to meet the energy values for the house. An attached garage is treated as unconditioned space and there is no requirement to be able to maintain any set temperature for thermal comfort in an attached garage. The following conditions apply for insulation of attached garages:

- The exterior framed walls shall be thermally insulated to a minimum nominal insulation value of RSI-2.11 (R12).
- Where batt/loose fill insulation is used, provide no less than full cavity insulation. i.e. 2 x 6 wall RSI-3.52 (R-20) nominal or 2 x 4 wall RSI-2.11 (R12) nominal.
- Exterior above grade concrete garage foundation walls do not require thermal insulation for unconditioned garages.
- The ceiling below attic spaces shall be thermally insulated to a minimum nominal insulation value of RSI-6.0 (R-34).
- Installation of insulation shall conform to Section 9.25.
- Installation of vapour barrier shall conform to Section 9.25.

This INTERPRETATION is applicable throughout the province of Alberta.