

Hydronic Heating Systems for Garage or Accessory Building

Guideline

Guideline ESP- 01

Purpose

This guideline has been developed to help improve consistency with the installation, education and enforcement of a hydronic heating system within Part 9 residential attached or detached garages or accessory buildings, and the insulation installed below that system.



Code Reference

National Building Code 2019 Alberta Edition Division B Article 9.33.4.1. and Article 9.25.2.3.
2015 Illustrated Users Guide – NBC 2015 Part 9 of Division B Housing and Small Buildings 9.33.4.2.
Alberta Municipal Affairs STANDATA 19-BCV-005 “Insulation Below a Heated Floor”
CAN/CSA-B214-16 “Installation Code for Hydronic Heating Systems”



Summary

The requirements of this Guideline are applicable to, and provide clarity towards the options available for ensuring compliance to the National Building Code 2019 Alberta Edition when installing hydronic heating systems within residential attached garages or accessory buildings.



Interpretation

This Guideline provides clarity and direction from Rocky View County on their interpretation of hydronic heating systems and the requirement for insulation below and around an attached or detached, or accessory building floor slab. Based on the information provided within this Guideline, insulation should be installed in the following method(s).

- 1) National Building Code 2019 Alberta Edition Requirements – The NBC-2019AE excludes attached and detached garages from meeting the insulation requirements noted within Section 9.36. Therefore, the design submitted by the Certified Hydronics Designer, the Residential Hydronics Design Technician, or the registered professional engineer must be followed.
- 2) Hydronic Heating Designs – The design and installation of a hydronic heating system is required to comply with applicable regulations or good engineering practice noted in Sentence 9.33.4.1.(1). The applicable regulation referenced for the design should be indicated on the

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plans. Where no direction is given or clarity is needed, the Safety Codes Officer should contact the designer to confirm what is acceptable for the installation.

- 3) Design under CAN/CSA B214 Installation Code for Hydronic Heating Systems – Designs which utilize the CAN/CSA B214 as the design standard, must be installed as per the requirements noted within the design and the standard. As such, a minimum of R-5 insulation shall be placed between the soil and the concrete, extending to the outside edges, and placed on all slab edges. Where the edges are located along the wall adjoining the garage and the house, edge insulation is not required.
- 4) Protection of Insulation – Where insulation is installed along the edges of the garage slab, it must be protected from weather and mechanical damage by a covering such as 6 mm asbestos-cement board, 6 mm preservative-treated plywood, or 12 mm cement parging on wire lath.
- 5) Designs under Other Standards – Designs which utilize another referenced document, such as the HRAI Digest, ASHRAE Handbooks and publications of the Hydronic Institute, must be installed as per the design submitted. Where insulation is identified as being required under the slab, or other locations, the applicable R-Value and location of the insulation shall be installed as per the design submitted. Where no direction is given or clarity is needed, the Safety Codes Officer should contact the designer to confirm what is acceptable.



Additional Information

Alberta Municipal Affairs STANDATA 19-BCV-005 “Insulation Below A Heated Floor”

<https://www.alberta.ca/building-standata.aspx>

Rocky View County Guideline “Hydronic Heating Systems for Dwelling Units”

<https://www.rockyview.ca/Portals/0/Files/BuildingPlanning/Building/Guideline-Hydronic-Heating-Systems-Dwelling-Unit.pdf>



Reference

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- March, 2020

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