ROCKY VIEW COUNTY

BUILDING SERVICES

Spray Foam Insulation

Guideline

Guideline ESP - 03

Purpose

Rocky View County is to be notified by a builder or owner of any Spray Foam Insulation which is going to be used in construction.

This guideline has been developed to help improve consistency with the installation, education and enforcement of spray foam insulation when installed for new or renovated construction for all buildings under the scope of the Alberta Building Code.

Code Reference

National Building Code 2019 Alberta Edition Division B Article 9.10.17.10, Article 9.25.4.2., Article 3.1.4.2., and Article 3.1.5.15.
2015 IIlustrated Users Guide – NBC 2015 Part 9 of Division B Housing and Small Buildings

Summary

The requirements of this Guideline are applicable to, and provide clarity towards the installation of spray foam insulation within a building, and the application of the requirements within the National Building Code – 2019 Alberta Edition (NBC-2019AE) to ensure compliance is achieved.

Interpretation

Below are some common scenarios and questions regarding the installation of spray foam insulation within a residential building. When installing spray foam insulation within a building, the building / owner must ensure that the products being installed have met the following requirements noted below.

1. Construction Materials Center (CCMC) - All spray foam insulation to be used in Canada must have a current listing with the CCMC. In addition to the CCMC listing, the material must meet Can/ULC S705.1 Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam

2. Vapour Barrier Performance

   a) A CCMC listing may indicate that the Spray Foam can be used as an air/vapour barrier. This detail can be confirmed by reference to Sub Sections 9.25.3 and 9.25.4 of the National

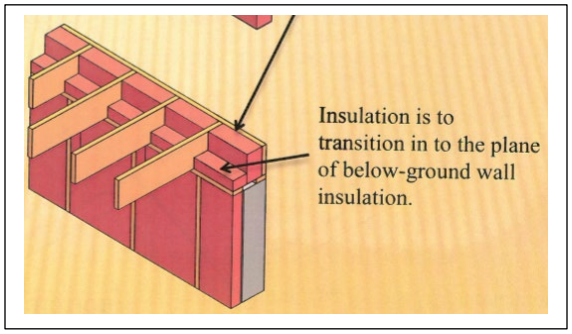
Building Code 2019 Alberta Edition within the document. This documentation must also include a description of the tested wall and ceiling assemblies.

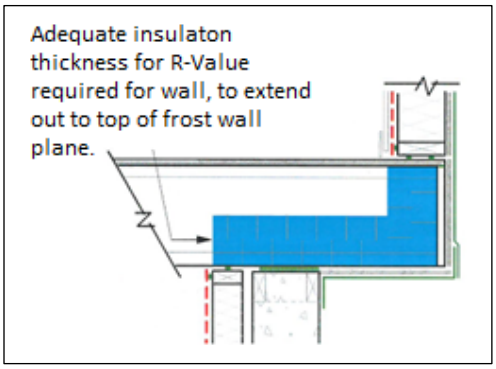
b) Where the spray foam has not been recognized by the CCMC as an air/vapour barrier, a Building Envelope Professional Engineer must certify any Spray Foam being used as a Vapour Barrier. The Professional is to supply Rocky View County with a report supporting the products use as an air/vapour barrier with reference to Sub Sections 9.25.3 and 9.25.4 of the National Building Code 2019 Alberta Edition.

3. Certified Installer - Spray Foam may only be installed by a certified installer. A label must be placed within the dwelling at the electrical panel, stating the installers certification and the product applied.

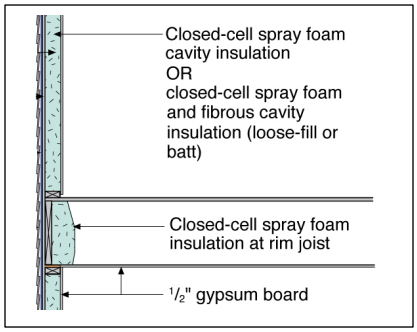
4. Application Within Joist Ends or Rim Joists - Spray foam insulation applied to the joist ends or within rim joists must maintain the continuity of the insulation through-out the wall assembly. Where spray foam is installed on the interior of a joist end or rim joist location, the spray foam must provide the minimum R-Value required along the vertical rim joist and extend out and over the top of the interior wall top plate, maintaining the continuous thickness needed for the minimum R-Value required for the wall.

   A 2lb spray foam which had been approved for use as a vapour barrier, will be accepted when installed within a joist end or rim joist location.





5. Application within Wall Space - Spray foam applied within wall cavities shall maintain the thickness required for the necessary R-Value throughout the wall system.



6. Acting as the Vapour Barrier – A CCMC spray foam product which has been tested and approved as a vapour barrier, can be installed in a wall, floor or roof assembly without the requirement for an additional vapour barrier. Confirm with the CCMC Report, but typically, a minimum thickness of 2" of spray foam is required for the spray foam to act as a vapour barrier.

7. Thermal Barriers – Spray foam exposed to the interior side of an air duct system or exposed to living space must be covered and protected by a thermal barrier. Applicable products that can be used as thermal barriers are:
   a) 12.7 mm thick gypsum board,
   b) Plywood, Hardboard, Insulating fibreboard or OSB of an appropriate thickness based on support spacing,
   c) 0.38 mm thick sheet metal with a melting point not below 650 degrees Celsius (not permitted in residential occupancies),
   d) Masonry,
   e) Concrete, or
   f) Any product which meets the requirements of classification B when tested to CAN/CSA-S124 "*Test for the Evaluation of Protective Coverings for Foamed Plastic*".

8. Within a Roof Space – A ventilation space shall be provided between insulation and the roof sheathing in accordance with National Building Code 2019 Alberta Edition Sentence 9.19.1.1. (1). Where no roof ventilation is provided within a roof space (including decks or balconies acting as roofs), a Building Envelope Professional Engineer review is required.

9. Bonus Room Floor Assemblies Above Garages – The subfloor may act as the vapour barrier as per industry standard. Vapour barriers installed on the cold side (garage) are not acceptable. Drywall installed within the garage is acceptable as the air barrier. Installation of the insulation must conform to the requirements of the National Building Code 2019 Alberta Edition Section 9.25 and Section 9.36. and may include products such as batt, and open and closed cell spray foam.

10. Contact with Heat Emitting Ducts - Any spray foam in contact with supply air ducting must provide testing / evaluation through the CCMC indicating conformance to the ASTM C411 "*Hot-Surface Performance of High-Temperature Thermal Insulation*" standard. Insulation and coverings on pipes shall be composed of material suitable for the operating temperature of the system to withstand deterioration from softening, melting, mildew and mold.

    Where a tested product is not being installed, a suitable separation between the insulation and any heat emitting ducts must be provided.

11. Installed under Slab – Closed cell (2 lb) spray foam is an acceptable application under a slab to meet the air barrier requirements for radon under the National Building Code 2019 Alberta Edition Article 9.25.3.6. Although these products cannot be tested to CANCGSB-51.34M, as long as they meet the requirements of a vapour barrier, they satisfy the intent of this Article.

12. Within a Ceiling Space – Where spray foam is installed within a ceiling space, which is acting as a return air cavity, the spray foam must be protected by a thermal barrier. An example of this scenario is within a heated floor space/ceiling space located above an attached garage. When the floor/ceiling space is provided with a heat and return air vent, the space acts as a return air plenum. Foamed plastic located within this space must be protected from exposure by a thermal barrier.

13. Within a Wall or Ceiling Cavity – Where spray foam is installed within a wall assembly which acts as a return air plenum, the spray foam must be protected by a thermal barrier.

14. ICF Walls – Where an ICF foundation is installed, the interior walls of rigid insulation which are exposed to adjacent space within the building, must be protected with a thermal barrier.

15. Crawl Spaces – Where spray foam or rigid insulation is located within a crawl space, the spray foam does not require thermal protection unless the crawl space:
    a) Is provided with supply air and return air, and acts as a return air plenum, or
    b) Provides a use or occupancy, such as a storage room or service room.

16. Penetration Through Spray Foam – Where a vent or duct penetrates through or is surrounded by spray foam, such as a dryer pipe, the material of the vent or duct must be one that:
    a) Does not react adversely with the spray foam product, and
    b) Does not permit squishing of the duct/vent therefore reducing the airflow required.

17. Open Cell (½ lb.) Under Closed Cell (2 lb.) – Where closed cell (2 lb.) spray foam is being installed as the vapour barrier, the closed cell (2 lb.) foam cannot be installed over open cell (½ lb.) spray foam. Manufacturers' have confirmed that due to the flexible nature of open cell (½ lb.) foam, it is impossible to measure/confirm that the appropriate thickness of closed cell (2 lb.) foam required to achieve the vapour barrier, has been applied.

Reference

Approval Date	• April, 2020
Last Review Date	• April, 2020