Evaluation Report CCMC 13315-R
JetSpray®

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1. Opinion

It is the opinion of the Canadian Construction Materials Centre (CCMC) that "JetSpray®," when used as a thermal insulation in accordance with the conditions and limitations stated in Section 3 of this Report, complies with the National Building Code (NBC) of Canada 2015:

- Clause 1.2.1.1.(1)(a) of Division A, using the following acceptable solutions from Division B:
  - Clause 9.25.2.2.(1)(e), Insulation Materials
  - Sentence 9.25.2.4.(4), Installation of Loose-Fill Insulation

This opinion is based on the CCMC evaluation of the technical evidence in Section 4 provided by the Report Holder.

2. Description

The product is loose-fill, glass fibre thermal insulation that is installed in walls using a blowing machine. The pneumatic hoses on the machine mist the thermal insulation with water as the insulation is being injected into the walls. The dry insulation is misted with water during the installation process to cause the moistened fibre to meld at interstitial points, forming a cohesive mat.

A water-activated adhesive is added to the thermal insulation at the manufacturing plant.

The thermal insulation used is "Jet Stream® MAX," CCMC 13404-L, which is compliant with CAN/ULC-S702-09, "Standard for Mineral Fibre Thermal Insulation for Buildings."

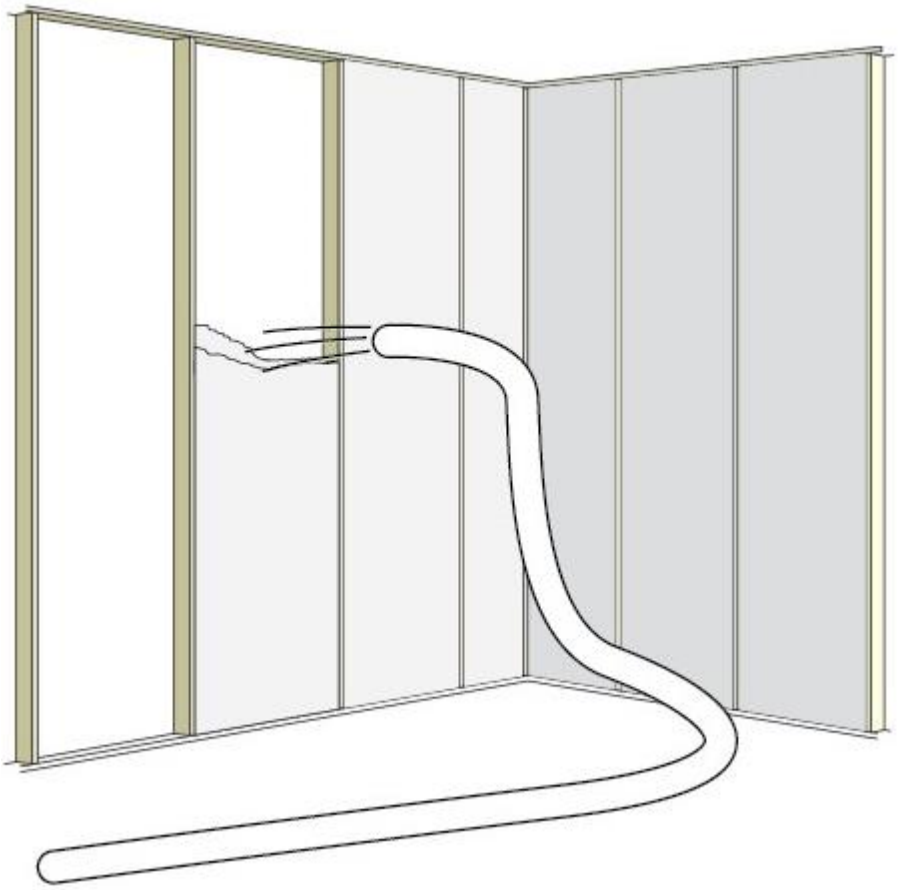

Figure 1. Illustration of installation method for "JetSpray®"

3. Conditions and Limitations

The CCMC compliance opinion in Section 1 is bound by "JetSpray®" being used in accordance with the conditions and limitations set out below:

- The installation must be done by a licensed installer in accordance with the manufacturer's installation instructions. The person or persons installing the product must carry a certification card bearing their signature and must be certified as competent in such work by Knauf Insulation GmbH or a licensee holding a current "JetSpray®" licence agreement. The licensee must be responsible for ensuring that installation work performed under a licence agreement is done in a workmanlike manner and in accordance with recommendations provided by Knauf Insulation GmbH.
- The products must be applied to framed walls where one side is closed. Cavities between studs must be filled one at a time, applying the insulation from the bottom to the top. If necessary, screed the excess insulation flush with the stud face. Vapour barriers may only be installed after the thermal insulation is measured to have a moisture content of 15% or less. The application density can vary with the type of blowing apparatus used. The local licensed applicator should be consulted for the correct application density.
- The insulation must be kept at least 75 mm (or as required in building regulations or safety codes) from heat-emitting devices such as recessed light fixtures. There should be a minimum 50 mm (2 in.) clearance from the sidewalls of Type A chimneys (see CAN/ULC-S604-M91, "Standard for Factory-Built Type A Chimneys") or of Type B and Type L vents (see CAN/CSA-B149.1-05, "Natural Gas and Propane Installation Code" and CAN/CSA-B149.2-05, "Propane Storage and Handling Code").
- The installer must comply with the requirements of Sentence 9.25.2.4.(4) and Article 9.3.2.5., Moisture Content, of Division B of the NBC 2015; i.e., the moisture content of lumber must not be greater than 19% at the time of installation. This percentage can be confirmed in one of the following ways:
    - the moisture content of the wood frame may be checked with a moisture meter and proven to be below 19%; or
    - if the roof and external insulating sheathing have been applied and the indoor space (with or without additional space heating) allows drying of the wood-frame members, a seven-day drying period may be considered to have achieved the appropriate moisture content.
- The application of these products is limited to walls that enclose the thermal insulation with wall coverings. Exposed applications and horizontal applications are not permitted. Table 3.1 outlines the coverage required for the product.

Table 3.1 Application and Coverage Requirements for the Product

RSI (m^2·K/W)	Cavity Depth (mm)	Applied Density (kg/m^3)	Bag Usage (Bags/100 m^2)	Maximum Coverage (m^2/Bag)
2.5	89	24.0	14.7	6.8
3.9	140		23.2	4.3
5.1	184		30.5	3.3
6.5	235		38.9	2.6
2.7	89	30.4	18.7	5.4
4.1	140		29.4	3.4
5.5	184		38.6	2.6
7.0	235		49.3	2.0

4. Technical Evidence

The Report Holder has submitted technical documentation for the CCMC evaluation. Testing was conducted at laboratories recognized by CCMC. The corresponding technical evidence for this product is summarized below.

4.1 Material Requirements

4.1.1 Thermal Insulation

The thermal insulation used is "Jet Stream® MAX," CCMC 13404-L, which is compliant with CAN/ULC-S702.

4.2 Performance Requirements

4.2.1 Moisture Content and Density

The results for density and moisture content were determined from material taken from three identical wall cavities. The insulation was installed in accordance with the manufacturer's instructions at densities ranging from 30.4 kg/m^3 to 36 kg/m^3. Samples from each cavity were taken, conditioned and then weighed to give the results tabulated in Table 4.2.1.1.

Table 4.2.1.1 Results of Testing the Moisture Content and Density of the Product

Specimen	Moisture Content (%)	Density (kg/m^3)
A	15.2	31.56
B	19.0	34.14
C	12.5	30.75
Average	15.6	32.15

4.2.2 Thermal Resistance

The average test specimen density and average thermal resistance values tested at a thickness of 150 mm are outlined in Table 4.2.2.1.

Table 4.2.2.1 Results of Testing the Specimen Density and Thermal Resistance of the Product

Specimen	Specimen Density (kg/m^3)	Corresponding Thermal Resistance (m^2·K/W)
A	30.56	4.27
B	31.00	4.31
C	30.86	4.36
Average	30.81	4.31

5. Other Technical Evidence

5.1 Additional Performance Data Requested by the Report Holder

Data in this section does not form part of the CCMC opinion in Section 1.

Table 5.1.1 Results of Testing the Fire Protection Requirements of the Product

Property	Result
Smoulder resistance	No evidence of flaming combustion during the tests
Flame-spread classification (FSC)	5
Smoke-developed classification (SDC)	5

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Plant(s)

Site manufactured

Plant(s) Material

Shasta Lake, CA, USA
Lanett, AL, USA
Shelbyville, IN, USA
Albion, MI, USA

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