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*EVALUATION
REPORT*

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OPTIMA Wall Insulation System

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1. Purpose of Evaluation

The proponent sought confirmation from the Canadian Construction Materials Centre (CCMC) that "OPTIMA Wall Insulation System" can serve as thermal insulation in frame walls, in compliance with the intent of the National Building Code of Canada (NBC) 1995.

2. Opinion

Subject to the limitations and conditions stated in this report, test results and assessments provided by the proponent show that "OPTIMA Wall Insulation System" complies with CCMC's Technical Guide for Blown Mineral Fibre Insulation System with Netting for Walls, MasterFormat number 07215.4, dated 06-05-03, and provides a level of performance equivalent to that required in:

- NBC 1995, Article 9.25.2.2.

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Ruling No. 07-21-179 13272 -R) authorizing the use of this product in Ontario, subject to the terms and conditions contained in the Ruling, was made by the Minister of Municipal Affairs and Housing on 7 November, 2007 pursuant to s.29 of the Building Code Act, 1992 (see Ruling for terms and conditions). This Ruling is subject to periodic revisions and updates.

Canada Mortgage and Housing Corporation permits the use of this product in construction financed or insured under the National Housing Act.

3. Description

“OPTIMA Wall Insulation System” is manufactured on the job site. It uses an OPTIMA spunbound polypropylene nonwoven fabric produced by a nonwoven manufacturer and printed with the OPTIMA name. The OPTIMA fabric is affixed (stapled or glued) to the face of framing members. The OPTIMA insulation is pneumatically installed behind the fabric using a mineral fibre blowing machine and blowing hose. (See Figure 1.)

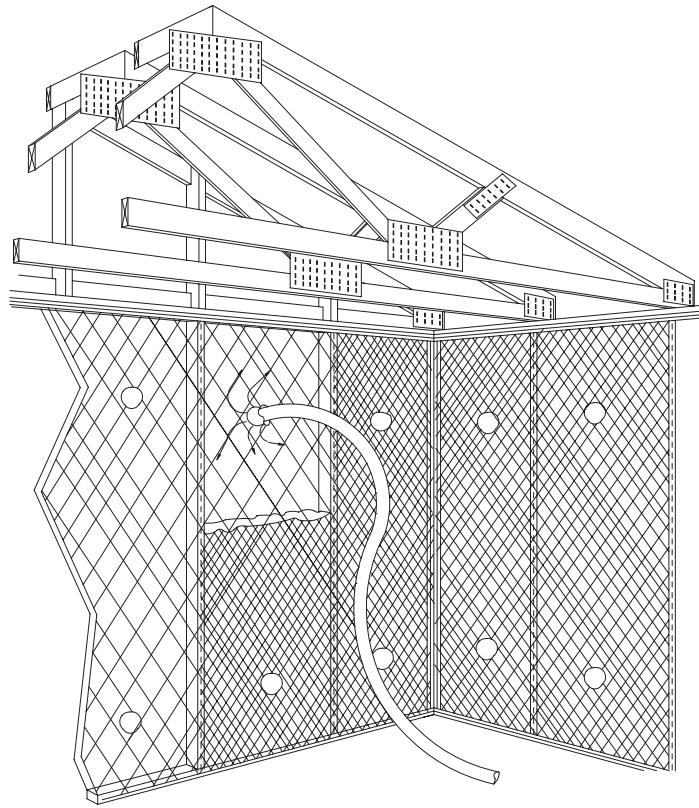


Figure 1. “OPTIMA Wall Insulation System”

This Evaluation Report covers use of the “OPTIMA Wall Insulation System” in wood-frame construction using either 38-mm x 89-mm studs placed 400 mm on centre (o.c.), 38-mm x 140-mm studs placed 400 mm o.c., or 38-mm x 140-mm studs placed 600 mm o.c. The applied design density of the product shall be 28.8 kg/m³. The thermal insulation used is Certaineed’s OPTIMA Loose Fill Fiber Glass Insulation, which is compliant with CAN/ULC-

S702. The insulation is applied using a blowing machine that places the insulation in the wall cavity behind the attached netting. The interior and exterior walls should be finished in accordance with Code requirements.

4. Usage and Limitations

The installation must be in accordance with the manufacturer’s installation instructions and this

report. The design thermal resistance for the glass fibre insulation is 26.7 m²·K/W. Table 1 indicates the coverage for installation in both 38-mm x 89-mm and 38-mm x 140-mm cavities.

Certainteed recommends that installers always follow “The OPTIMA Insulation System Installation Instruction Manual.” They also have a training video in their “Right Way” series.

While there are many pneumatic insulation machines available today, Certainteed only recommends the following seven models: Ark-Seal Big Blower and Big Blower Deluxe, Meyer 1300 Series and Meyer 1400 Series, Universal Volu-matic IV and Universal Volu-matic II, and Universal Volu-matic III.

Table 1. Coverage Chart for “OPTIMA Wall Insulation System”

RSI (m ² ·K/W)	Cavity Depth (mm) for 2.353-m Cavity Height	Applied Density (kg/m ³)	Number of Cavities Filled per 12.7-kg Bag
2.48	89 (at 400 mm o.c.)	26.7	5.7
3.74	140 (at 400 mm o.c.)	26.7	3.6
3.74	140 (at 600 mm o.c.)	26.7	2.4

The thermal insulation product shall be delivered to the building site in unopened packages. The netting shall bulge less than 13 mm beyond the stud to indicate a conforming installation that provides the necessary product density.

The insulation shall be kept at least 75 mm away (or as required in building regulations or safety codes) from heat-emitting devices. There should be a minimum 50-mm clearance from the

sidewalls of Type A chimneys (see ULC standard CAN4-604, “Factory-Built Type A Chimneys”) or from Type B and Type L vents (see CAN/CSA-B149.1, “Natural Gas and Propane Installation Code”).

5. Performance

Testing was undertaken at a laboratory recognized by CCMC. The test results are summarized in Table 2.

Table 2. Test Results for “OPTIMA Wall Insulation System”

Test	Requirement	Result
<u>Bulge (mm)</u>		
38-mm x 89-mm studs at 400 mm o.c.	13	Passed
38-mm x 140-mm studs at 400 mm o.c.	13	Passed
38-mm x 140-mm studs at 600 mm o.c.	13	Passed
<u>Design density (kg/m³)</u>		
38-mm x 89-mm studs at 400 mm o.c.	> 25 or proponent’s design density	Passed
38-mm x 140-mm studs at 400 mm o.c.	> 25 or proponent’s design density	Passed
38-mm x 140-mm studs at 600 mm o.c.	> 25 or proponent’s design density	Passed
<u>Density deviation from each stud space (%)</u>		
38-mm x 89-mm studs at 400 mm o.c.	± 10% of design density	Passed
38-mm x 140-mm studs at 400 mm o.c.	± 10% of design density	Passed
38-mm x 140-mm studs at 600 mm o.c.	± 10% of design density	Passed
<u>Thermal resistance at 150 mm (m²·K/W)</u>		
38-mm x 89-mm studs at 400 mm o.c.	> 3.6	Passed
38-mm x 140-mm studs at 400 mm o.c.	> 3.6	Passed
38-mm x 140-mm studs at 600 mm o.c.	> 3.6	Passed

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Readers are advised to confirm that this report has not been withdrawn or superseded by a later issue by referring to <http://irc.nrc.gc.ca/ccmc>, or contacting the Canadian Construction Materials Centre, Institute for Research in Construction, National Research Council of Canada, Montreal Road, Ottawa, Ontario, K1A 0R6; Telephone (613) 993-6189, Fax (613) 952-0268.