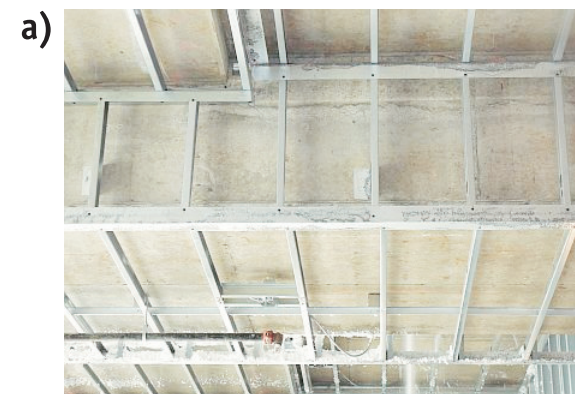


GENERAL INFORMATION



- Steel & Wood Stud Applications:**
- Cavity Walls & Suspended Ceilings
 - Exposed "Smooth" Finish

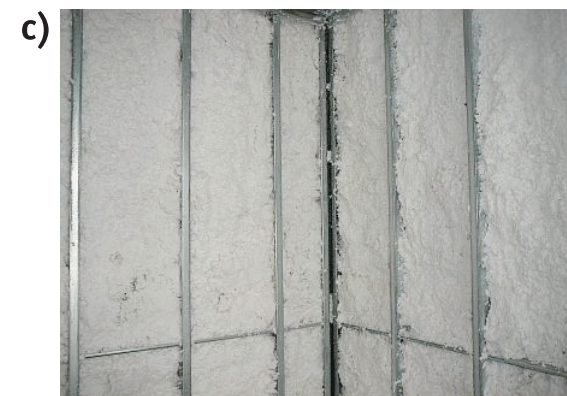
2. The following photographs illustrate various applications of **TC-417** to free standing vertical walls and suspended ceilings.



a) Wall, drop and ceiling ready for installation of **TC-417**.



b) Installation underway.



c) Note that wall fill is monolithic with no unobstructed air flow to the substrate.



d) Complexity of the framing does not adversely affect the ability to achieve a monolithic installation as illustrated by pictures d) and e).



TC-417 is an ideal product to use on any vertical or horizontal surface. In fact, the more irregular the surface and the more attachments to, and/or penetrations of the surface, the more efficient the installation becomes in terms of effective thermal performance.

In support of the foregoing statement, please note that, according to the American Society of Heating, Refrigeration, and Air-conditioning Engineers (ASHRAE) Handbook of Fundamentals, a void, or voids, totalling no more than 4% in area in wall insulation results in an **increase in heat loss of 15% within the wall.**

When in place, correctly installed **TC-417** forms a monolithic thermal barrier that eliminates voids and unwanted direct paths for air flow to and from the substrate. Thus, its stated R value per inch actually becomes the effective R value of the installation over its entire surface, and both the installer and the client can be confident in the stated result.

COVERED INSTALLATION

TC-417 may be installed in any cavity wall, soffit or suspended ceiling and covered with a suitable finish such as gypsum board. In terms of a covered installation, please note the following:

- **Cost** – The installation is competitive with any of the low density (0.5 lb/ft³) foam products;
- If installed properly it will provide and maintain a monolithic installation with no voids and no unobstructed airways to the substrate. This is not the case with some of the low density foams. They cure quickly, and the resultant rapid shrinkage results in separation from the studs and loss of a substantial part of the benefit of what should be a monolithic installation;
- **Do not** cover the installation until the moisture level within the **TC-417** has dropped to the level of the ambient humidity

WARNING

- **TC-417 cannot act as a vapour retarder and all covered installations on exterior walls and roofs in conditioned buildings require the addition of an approved vapour retarder such as 6 mil polyethylene sheeting. The vapour retarder is applied over the inside (room) surface of the TC-417 in cool to cold temperate climates and on the outside in warm temperate to hot climates.**

EXPOSED INSTALLATION

Installed **TC-417** may be left exposed in which case its surface forms the structure's final finish. Under these circumstances, please note the following:

- a) Board tamping may be required to produce a surface texture that is acceptable in terms of porosity and smoothness;
- b) In addition, the surface may need to be oversprayed with one or more coats of our **TC-417** adhesive OR our **TC-SSP** to improve durability and also to further reduce porosity.

NOTE:

- **TC-417** is a low compressive strength product and is not durable in terms of abrasion. Therefore, we **strongly recommend that any exposed product be protected from potential damage by being covered with a suitable material such as gypsum board to a minimum height of 8 ft (2.4 m) above the floor;**
- As noted above, the product **cannot** serve as a vapour retarder. Therefore, certain precautions must be observed in order to prevent unwanted condensation within the installation. Please see the information concerning condensation below.

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ThermaCoustic® INDUSTRIES INTERNATIONAL LIMITED

#108 - 20119 - 113B Avenue, Maple Ridge, BC, Canada V2X 0Z1
Telephone: 1-866-460-1474 • (604) 460-1475 • Facsimile: (604) 460-1476
info@thermacoustics.com www.thermacoustics.com

PRECAUTIONS

a) **Exposed Installation.** In all temperate climates, and in terms of a conditioned building, a very substantial percentage (at least 66.66%) of the total insulating value of any exterior wall or ceiling/roof **must be on the cold side of the vapour retarder.** In most cases, the wall or ceiling/roof acts as the vapour retarder, so that caution must be exercised in adding insulation on the warm side of the retarder.

To avoid the possibility of condensation within the newly-installed TC-417 it is necessary to determine the R value of existing insulation on the cold side (in most temperate climates the outside of wall or ceiling/roof) of the retarder. When that is determined, it is possible to add some TC-417 on the warm side of the vapour retarder. The R value added must be determined by:

- i) Climatic conditions;
- ii) Intended use of the building, in particular the level of ambient humidity expected;
- iii) Adequate ventilation and air movement;
- iv) Configuration of the ceiling/roof – is it flat, domed or peaked. Domed and peaked ceilings/roofs require additional air movement and ventilation to prevent the formation of excessively humid, dead air spaces adjacent to the roof/ceiling surface. Note: This consideration is applicable only if a suspended ceiling is to be installed below the roof.

WARNING

The “66% rule” quoted above is a **general guideline only.** In temperate climates at the **colder** end of the range, it is **most likely** that > 66% of the R value must be on the cold side of the retarder in order to avoid the possibility of condensation.

In temperate climates at the **warmer** end of the range, the situation will reverse with the cold side being the inside of the wall or ceiling/roof. However, the rule is **still valid** and the majority of the total R value will be on the inside.

If in any doubt in terms of the outside/inside ratio of insulation permissible to avoid condensation in a particular area be sure to consult a qualified professional who is familiar with the climate in the subject location.

ILLUSTRATIONS

The following diagrams and pictures illustrate some wall and suspended ceiling applications for which TC-417 is ideally suited.

1. Steel stud wall immediately adjacent to concrete. Note that when possible the wall should be located at least 1" (25 mm) inside the concrete so that **TC-417** can be sprayed between the studs/plates and the concrete to provide a thermal break. This contributes greatly to the overall effective thermal value of the installation.

Note:

The desired R value does not necessarily require completely filling the wall cavities;

Diagrams a) through d) illustrate the general concept of installing **TC-417** in steel stud cavity walls.

