TC-417-GP Thermal and Acoustic Solutions

Spray Applied Insulation

GENERAL INFORMATION

(Applicable to both Thermal and Acoustic installations)

CONDENSATION CONTROL

The following information on condensation control refers primarily to thermal installations where there is a deliberate effort to eliminate condensation in the building. However, there are some circumstances in which a thermal or acoustic installation may inadvertently **cause** condensation to form in the installed product.

This situation can occur in cold or cool temperate climates when the following circumstances are encountered:

- Freezing temperatures occur at some time during the year;
- The roof is steel or other impervious material that functions as a vapour barrier;
- The roof is pitched, rounded, or otherwise configured so that a dead air space can exist at the highest point(s);
- There is inadequate, or no, insulation on the outer surface of the roof;
- The attic space is poorly ventilated and allows dead air to collect at the high point (s) of the roof;
- The building is heated.

Under these circumstances, application of any insulation material that does **not** contain an integral vapour barrier to the underside of the roof **may** result in the dew point migrating inward into the insulation where condensation will form. **TC-417 GP does not contain an integral vapour barrier.** However, it is safe to state that:

As long as no more than 33% of the total insulation value of the roof assembly is on the warm side of the vapour barrier, no condensation will form in the insulation.

Example:

- There is rigid board insulation with an R value of 12 (RSI 2.1) on the outside (cold side) of a steel roof;
- Insulation to an R value of 6 (RSI 1.05) can be **safely** added to the underside (warm side) of the roof assembly.
- The resultant total of R18 (RSI 3.15) represents a 50% increase in the thermal resistance of the roof insulation and represents a worthwhile addition to the assembly.

The **most** important consideration in terms of condensation control in any building is the provision of proper ventilation affording adequate air changes per hour and the elimination of dead air spaces.

TC-417 GP helps control condensation under many different circumstances in both conditioned and unconditioned buildings:

- In unconditioned buildings subject to condensation forming on the inside of the walls and roof, installation of the product will eliminate the problem;
- In conditioned buildings **TC-417 GP** helps to control condensation because it forms a monolithic blanket and eliminates voids at the substrate. Unavoidable gaps between batts and/or rigid panel insulation sheets and voids at the substrate allow convection currents to develop and condensation to form.

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