

Section 5.3. Heat Transfer

(See Note A-5.3.)

5.3.1. Thermal Resistance of Assemblies

5.3.1.1. Required Resistance to Heat Transfer

(See Note A-5.3.1.1.)

1) Except as provided in Sentence (2), where a *building* component or assembly will be subjected to an intended temperature differential, the component or assembly shall include materials to resist heat transfer or a means to dissipate transferred heat in accordance with the remainder of this Subsection.

2) The installation of materials to resist heat transfer in accordance with the remainder of this Subsection is not required where it can be shown that uncontrolled heat transfer will not adversely affect any of

- a) the health or safety of *building* users,
- b) the intended use of the *building*, or
- c) the operation of *building* services.

5.3.1.2. Properties to Resist Heat Transfer or Dissipate Heat

(See Note A-5.3.1.2.)

1) Taking into account the conditions on either side of the environmental separator, materials and components installed to provide the required resistance to heat transfer or the means implemented to dissipate heat shall provide sufficient resistance or dissipation,

- a) to minimize surface condensation on the warm side of the component or assembly,
- b) in conjunction with other materials and components in the assembly, to minimize condensation within the component or assembly,
- c) in conjunction with systems installed for space conditioning, to meet the interior design thermal conditions for the intended *occupancy*, and
- d) to minimize ice damming on sloped roofs.

(See Note A-5.3.1.2.(1).)

5.3.1.3. Location and Installation of Materials Providing Thermal Resistance

1) Where a material required by Article 5.3.1.1. is intersected by a *building* assembly, penetrated by a high conductance component or interrupted by expansion, control or construction joints, and where condensation is likely to occur at these intersections, penetrations or interruptions, sufficient thermal resistance shall be provided so as to minimize condensation at these locations.

2) Materials providing required thermal resistance shall have sufficient inherent resistance to airflow or be positioned in the assembly so as to prevent convective airflow through and around the material.

(See Note A-5.3.1.3.(2).)