

3.1.1.5.

Thermal Characteristics of Building Assemblies

(See Note A-3.1.1.5.)

1) The thermal characteristics of *building envelope* materials shall be determined in accordance with the applicable product standards listed in the NBC or, in the absence of such standards or where such standards do not address the determination of thermal characteristics, in accordance with

- a) ASTM C 177, "Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus," or
- b) ASTM C 518, "Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus."

2) Calculations and tests performed in accordance with Sentence (1) shall be carried out at an average temperature of $24\pm 2^{\circ}\text{C}$ and under a temperature difference of $22\pm 2^{\circ}\text{C}$.

3) Except as provided in Sentence (4), the *overall thermal transmittance* of *fenestration* and doors shall be determined for the reference sizes listed in accordance with

- a) CSA A440.2/A440.3, "Fenestration Energy Performance/User Guide to CSA A440.2-14, Fenestration Energy Performance," or
- b) NFRC 100, "Determining Fenestration Product U-factors."

3.1.1.6.

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4) The *overall thermal transmittance* of *fenestration* and doors that are not within the scope of the standards listed in Sentence (3) shall be determined from

- a) calculations carried out using the procedures described in the "ASHRAE Handbook – Fundamentals," or
- b) laboratory tests performed in accordance with ASTM C 1363, "Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus," using an indoor air temperature of $21\pm 1^{\circ}\text{C}$ and an outdoor air temperature of $-18\pm 1^{\circ}\text{C}$ measured at the mid-height of the *fenestration* or door.

5) The thermal characteristics of *building assemblies other than fenestration* and doors shall be determined from

- a) calculations carried out in accordance with Article 3.1.1.7., or
- b) laboratory tests performed in accordance with ASTM C 1363, "Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus," using an indoor air temperature of $21\pm 1^{\circ}\text{C}$ and an outdoor air temperature of $-18\pm 1^{\circ}\text{C}$.