



# Technical Bulletin

**Note:** The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

## 3M™ Thinsulate™ Window Film Climate Control 75 Frequently Asked Questions – Customers

### 1. What is Low E and how does it work?

Low E is short for Low Emissivity. Products that have Low E properties, such as Thinsulate™ Window Film, are designed to help reflect radiant heat, rather than allowing the glass to absorb it.

### 2. How is the film different from other solar control films?

Solar control films focus on the solar energy spectrum and are primarily designed to help keep the sun's energy from entering a building. In order to be effective, the glass needs to be exposed to sunlight. The effectiveness of a film in helping to prevent solar energy from entering a building is measured by its Solar Heat Gain Coefficient (SHGC).

While Thinsulate™ Window Film has properties that allow it to reduce the solar energy entering a building, the film is also designed to help prevent the transfer of radiant heat from one side of the glass to the other. Radiant heat is based solely on the temperature difference between the outside of the glass and the inside of the glass. Therefore, the Low E properties of Thinsulate™ Window Film helps keep warm air inside during the winter months, and keep the warm air outside during summer months.

Thinsulate™ Window Film helps reduce the amount of solar energy entering the building (SHGC) AND it helps provide additional insulation to reduce the transfer of radiant energy from one side of the glass to the other (U Value).

### 3. U value vs. Emissivity

Emissivity is the ability of a material to emit or absorb radiant heat. U value is a function of emissivity and is a measure of the heat transfer through a window. U value is the parameter used by the window industry to report the thermal effectiveness of a window.

3M does not publish emissivity because by itself, it is not a relevant metric to determine the effectiveness of your window. Some manufacturers will publish emissivity and make claims based on that number. However, emissivity is only one of the variables that are used to calculate the U value of a window. U value is defined as the heat transfer coefficient of a material. It represents the amount of heat that passes through a square foot (or meter) of glass in one hour for every 1 degree F (or K) temperature difference between the interior and exterior environments.

3M publishes the U value rather than emissivity to be consistent with the window industry. The lower the U value, the better insulation the window, or window film will provide.

#### **4. What is Thinsulate?**

3M™ Thinsulate™ Brand is a well-known 3M brand that stands for comfort, warmth, and quality. The Thinsulate™ brand has been in existence for almost 50 years. Many of the products under the Thinsulate™ brand are key warming/insulation components in jackets, hats, gloves, shoes, and bedding. And now Thinsulate™ Window Film products include low-e window films.

#### **5. How do I care for the film?**

The Thinsulate™ Window Film should be cared for in accordance with the warranty document you received from your installing dealer. In general, you should wait a minimum of 30 days after installation before you clean your windows. At that time, you can clean your windows using commercially available window cleaning products with a clean window cleaning squeegee, or by gently wiping with a clean, soft cotton cloth, or non-abrasive paper towel.

Never use abrasive cleaners or brushes to clean any window film.

#### **6. How much additional insulation does Thinsulate™ Window Film provide?**

Much like a chain is only as strong as its weakest link, a home or building is only insulated as well as its windows. A single pane window loses 20 times as much heat as the same area in an adjacent well-insulated wall. This leads to nearly 30% of all energy used to heat and cool homes going out the window. Thinsulate™ Window Film helps improve the insulation value of a typical single-pane window close to that of a double-pane, and of a double pane close to that of a triple-pane.

#### **7. Why Thinsulate™ Window Film vs. new windows?**

Thinsulate™ Window Films can be applied to your existing windows, increasing the performance of a single pane window nearly to that of a double pane and a double pane nearly to a triple pane. They achieve this at a fraction of the cost, disruption and time required to replace your existing windows. In addition, there is no need to discard your existing windows into a landfill!

#### **8. Will this product interfere with my cell phone signals?**

Cell phone signal strength within a building is dependent upon the construction of the interior and exterior (envelope) of the building. While the Thinsulate™ Window Film product does generate some electromagnetic interference (EMI) we don't expect that it will interfere with cell phone signals except when there is already a weak signal, and other building components are preventing the transmission of the signal.

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