

# LoE-i89<sup>®</sup> Coated Glass

Cardinal LoE-i89<sup>®</sup> is a durable sputtered TCO (Transparent Conductive Oxide) coating that can be used on the room side glass surface (surface #4 of a dual pane insulating glass (IG) unit or surface #6 of a triple pane IG).

LoE-i89 improves the U-Factor of the window by reflecting heat back into the room. In addition, this reflected heat will improve comfort in the area around the window by making occupants feel warmer. The LoE-i89 coating is made with Indium Tin Oxide (ITO) applied by a patented process.

LoE-i89 has the following attributes:

- An emissivity of 0.149.
- Sufficient durability so that it can be used on the room side glass surface.
- Haze and surface roughness 4 times lower than pyrolytic TCO coatings.
- Compatibility with many glazing sealants / tapes, Cardinal Preserve Film, and labels used in the window industry. (Contact your manufacture of glazing materials for compatibility and adhesion testing.)

Other considerations for the LoE-i89 coating:

- Since LoE-i89 reflects interior heat back into the room, the room side pane of glass will be colder than the same glass construction that does not include LoE-i89. During winter conditions there is a potential of having a higher probability of room side glass condensation. This is very dependent on the outdoor ambient temperature, indoor room temperature, and the percent relative humidity in the room.
- Standard cleaning solutions, such as a soap solution with clean water, or standard commercial cleaning products (like Windex<sup>®</sup>) can be used to clean LoE-i89.
- Many rust removal products contain hydrofluoric acid (HF). HF containing materials will attack glass and the LoE-i89 coating causing permanent damage. These materials should

not be used to clean LoE-i89. Even the vapors from HF can cause permanent damage.

- Abrasive cleaning products including cerium oxide, Soft Scrub<sup>®</sup>, and Bar Keepers Friend<sup>®</sup> should not be used on LoE-i89. In addition, scratch removal should not be attempted with LoE-i89. Buffing with these products may cause changes in the appearance of the coating.
- As with standard non-coated glass products, razor blades or other sharp instruments should not be used when cleaning LoE-i89. If a squeegee is used it should not have any metal edges exposed as the metal edges could scratch the coating or glass.
- If furniture polish or similar materials are used on the wood components of the window. Care should be taken to avoid overspray onto the coated glass. If overspray does occur, the glass must be cleaned immediately.

Thermal performance with the LoE-i89 can be found in TSB IG05 Performance Data Comparisons. Contact Cardinal's Technical Service department for recommendations on heat treating of LoE<sup>®</sup> products in triple pane applications.

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