



## Visgard® Premium LTF-300 Film

### Abrasion and Chemical Resistant Anti-Fog Film

#### DESCRIPTION

Anti-Fog coated polyester film with optically clear adhesive on reverse surface which is protected by a release liner. The patented anti-fog coating on the top surface prevents the formation of fog and frost in Climate Class 3 commercial freezer door applications. The anti-fog surface also has a clear masking which protects the coated surface during installation. This must be removed after installation.

#### FEATURES

- Anti-fog Performance in a Climate Class 3 Environment
- Excellent Abrasion, Scratch, Mar and Chemical Resistance
- Hydrophilic
- Anti-Fog and Water Sheeting Performance
- Wet and Dry Application Compatible

#### CARE INSTRUCTION

Treated surfaces may be cleaned with an ammonia-free glass cleaner and a sponge, tissue or paper towel. Cleaners containing alcohol may be used but the alcohol content should be <30%. Do not use cleaners which contain moisturizers, abrasives, strong acids, or caustic substances. Remove any oily contamination with a grease cutting cleaner.

#### FILM AND ADHESIVE REMOVAL

To remove film, slide a razor blade beneath one corner and lift slowly. Peeling too fast will cause adhesive to remain on the glass/plastic substrate surface. Any remaining trace of adhesive can be removed with hydrocarbon solvents (e.g. hexane, heptane, mineral spirits), PM glycol ethers or a 50 - 70% isopropyl alcohol solution in water. Plastics should be tested first for solvent sensitivity.

#### FILM PROPERTIES

PROPERTY	TYPICAL VALUES
Thickness*	2 or 4 mil
Appearance**	Clear and colorless
Visible Light Transmission	90%
Recommended Application Temperature	20 - 25°C (68 - 77°F)
Taber (Δ Haze) - 100 cycles ASTM D1044	<10%
Falling Sand (Δ Haze) ASTM D968	1.49%
Anti-fog*** Climate Class 3 Environment (25°C (77°F) / 60%R.H.)	Fog-free @ -22°C (-8°F)

\*The adhesive, release liner, and masking thickness are additional to the thickness of the base film.

\*\*The protective liner and masking are also clear and must be removed.

\*\*\*Freezer door was fully opened for 6s and closed. At -22°C (-8°F) fog/frost did not form.

#### ANTI-FOG PROPERTIES

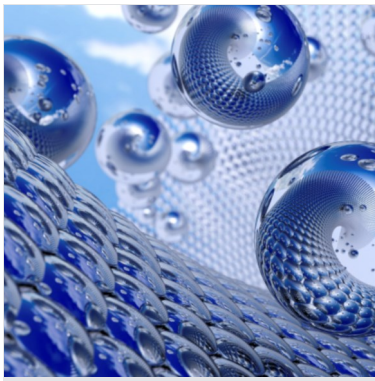
The anti-fog treatment prevents or reduces fogging under Class 3 temperature/humidity conditions, even after repeated cleanings.

Visgard Premium LTF-300 Film is hydrophilic which causes condensation to spread as a clear layer, rather than form droplets which appear as fog. Although it absorbs moisture, the coating does not dissolve in water, so it will not smudge when wet.

#### CHEMICAL RESISTANCE

Visgard Premium LTF-300 anti-fog coating can tolerate brief exposure to the following chemicals:

- Acetone
- Ammonium Hydroxide
- Diacetone Alcohol
- Ethanol
- Ethyl Acetate
- Gasoline
- Glycol Ethers/Esters
- Hexane
- Isopropanol
- Methanol
- Methyl Ethyl Ketone
- Toluene



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## CONTACT INFORMATION

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## INSTALLATION

### Pressure Sensitive Adhesive (PSA)

FSI Coating Technologies uses an optically clear adhesive recommended for use with pressure roll laminating machinery, or by professional installers familiar with the handling of adhesive films. The adhesive bonds immediately to glass and plastics. Peel strength increases slightly after 5 to 10 days. The adhesion bond strength will be reduced after extended immersion in water, but bond will re-strengthen upon drying.

### Installation with Laminating Machinery

A clean room environment is recommended when applying Visgard Premium LTF-300 Film with a pressure laminator. If a clean room is not available, dust may be removed with an ionized air gun connected to a supply of compressed air. A film lamination that is free of contamination may be easier to accomplish in two steps. First, laminate a tacky material to the substrate. Then as a second step peel the tacky material as the sheet enters the nip in such a way that the time of exposure to contaminated air is minimized.

### Installation by Hand

Where laminating machinery is not available or not practical, Visgard Premium LTF-300 Film may be installed by hand using a wet application technique. To prevent premature "grab" which will trap pockets of air or water use a wetting solution for pressure sensitive adhesives such as up to 1.0% baby shampoo in distilled water. Filter solution before use. This detergent solution allows the film to be positioned and then locked in place with light force so it will not shift when squeegee pressure is applied. Install on a clean (very important) surface which is flat or curved in one dimension only. With the dilute detergent solution, spray the surface to be treated.

Separate the release liner from the adhesive side with cellophane tape attached to front and back of a single corner. Spray the exposed adhesive side with detergent solution and put in place but without pressure. Then spray the film surface with detergent solution so the squeegee glides and apply pressure with a urethane squeegee to evacuate liquid from beneath the film. Use overlapping strokes to prevent trapping pockets of water or air. If milky blotches appear it is due to excess water remaining after installation. The water will dry and the blotches and distortion will disappear.

Please contact FSICT Technical Support for further information regarding application instructions or visit [fsicti.com](http://fsicti.com).

## WARRANTY AND LIABILITY LIMITATIONS

Information contained herein is accurate to the best of our knowledge. The properties listed herein represent typical values for Visgard Premium LTF 300 Film and are not meant as specifications. FSICT insists that users conduct their own tests for applicability and fitness for any purpose. Statements concerning use of products or formulations described herein shall not be construed as a warranty or license to infringe any patent or trademark, and no liability for infringement arising out of such use is assumed. Please refer to FSICT Standard Terms and Conditions or to your Purchase Agreement with FSICT for the warranty coverage of FSICT's product.

## PRODUCT SHIPPING AND AVAILABILITY

Typical lead-time for shipment of Visgard Premium LTF-300 Film is four (4) weeks from confirmation of a purchase order. FSI provides several shipping options. Please contact an FSI representative to determine which option best fits your needs. All orders are shipped ex works/F.O.B. Additional shipment charges including customs clearance and fees (if applicable) are the responsibility of the customer.

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