
KRYSTAL KOLOURS™ Processing and Installation Guide

1. Introduction

The purpose of this guide is to ensure that users of KRYSTAL KOLOURS™ glass are able to process, install and clean this unique product correctly so that it meets the end user's requirements in full.

KRYSTAL KOLOURS™ is a decorative glass that requires careful handling. **If you are processing KRYSTAL KOLOURS™ for the first time, we recommend that you read this guide in its entirety. Any questions regarding the processing, installation or cleaning of this product should be directed to Lenoir Mirror Company by Phone (800) 438-8204; Fax (888) 835-1080 or send an email to sales@lenoirmirror.com.**

KRYSTAL KOLOURS™ glass is designed for indoor use only.

Care should be taken when handling and processing the glass, in order to avoid damaging the coating of paint. Therefore we strongly recommend that **any substance coming into contact with the paint on the glass during the processing stage be pre-approved prior to its use.**

For additional information on **processing, installing and cleaning**, please contact Lenoir Mirror Company.

2. Packaging

After production, special attention is paid to the packaging of KRYSTAL KOLOURS™ glass in order to preserve product quality. Standard stock sizes are packed in wooden cases. Specific cut sizes are packed in wooden boxes or on wooden L-bucks.

Whether the material is packed in cases or on L-bucks, the following systems and safeguards ensure that the KRYSTAL KOLOURS™ glass is correctly packaged:

- The painted side of the glass is packed facing the back of the case or L-buck.
- Protective material is included in the cases and on the floor of the L-buck. This material helps to support and cushion the product, and should be retained with the original packaging after cases are opened.
- The sheets of glass are separated by felt tabs applied to the face surface of each sheet. These tabs should be retained until individual sheets are used.
- The perimeter of the glass is protected by corrugated and foam material; this material should be retained with the original packaging as well.

The exact contents of each case or L-buck are indicated on the label affixed to the edge of the pack or packaging.

3. Unloading

KRYSTAL KOLOURS™ glass packs should be inspected immediately upon arrival. Lenoir Mirror Company will not accept any claims regarding defects occurring after delivery, or during handling, processing and installation of the final product if the KRYSTAL KOLOURS™ processing recommendations defined in this guide have not been carefully observed.

The following conditions must be observed during the unloading process:

- Cases or L-bucks must be positioned on perfectly level ground.
- In order to protect product quality, appropriate unloading devices or equipment must be used in the unloading process. Cases or L-bucks must be handled in a perfectly balanced fashion.
- All protective packaging should be left intact.

To safeguard both product quality and the safety of your employees, please also observe these conditions during the unloading process:

- Grabs, slings, lifting beams and other hoisting equipment must comply with prevailing regulations and be approved by the relevant authorities.
- Ensure the safety of personnel at all times. Keep all unnecessary personnel out of the unloading and handling area. Employees should wear appropriate personal protective gear at all times.
- Personnel involved in unloading cases or L-bucks of KRYSTAL KOLOURS™ or any glass product must have received the required training to perform these operations.

4. Storage Before Handling

Proper, responsible storage of cases or L-bucks of KRYSTAL KOLOURS™ significantly reduces the risk of chemical or mechanical damage to the glass.

As a general rule, KRYSTAL KOLOURS™ glass should be stored in a dry, well-ventilated area in order to avoid major fluctuations in temperature and humidity that may cause condensation on the glass. Such variations generally occur near loading and unloading areas. No water must be allowed to come in contact with the sheets of glass, and they should never be stored outdoors.

KRYSTAL KOLOURS™ glass should always be stored away from sources of heat, as well as corrosive materials or agents such as organic solvent vapors, chemicals, acids or fuel.

Wooden cases must be stored and moved in a vertical condition. KRYSTAL KOLOURS™ glass should never be stored horizontally.

There are a number of other storage and handling considerations that help to protect and preserve the high quality of KRYSTAL KOLOURS™ products:

- Suction-pad lifting beams and other hoisting equipment must comply with prevailing regulations and be approved by the relevant authorities.
- Personnel must check that the suction pads are adhering correctly before any further manipulation occurs.
- Ensure the safety of personnel at all times. Keep all unnecessary personnel out of the handling area. Employees should wear appropriate personal protective gear at all times.
- Personnel involved in handling KRYSTAL KOLOURS™ or any glass product must have received the required training to perform these operations.

5. Opening Packs and Handling

The same conditions for storing KRYSTAL KOLOURS™ packs prior to opening should also be observed once the packs have been opened.

It is important to bear in mind a number of additional points when opening packages and handling sheets of KRYSTAL KOLOURS™:

- Care should be taken to ensure that the ambient air is not polluted by any corrosive elements such as chlorine or sulfur. Sources of such elements include machinery fitted with thermal engines, battery-charging points, road salt on the ground and other sources of contamination in unloading or handling environments.
- KRYSTAL KOLOURS™ sheets must be moved using a suction-pad lifting beam or an automatic unstacking machine.
- If KRYSTAL KOLOURS™ glass is handled by placing suction pads on the painted surface, the suction pads must be kept clean.
- Individual sheets of KRYSTAL KOLOURS™ should be removed from the wooden cases by opening and removing the entire side of the case. Do not slide sheets from the end of the case. Cases should be positioned at a 5° tilt and properly braced to protect both material and personnel.
- Individual sheets of KRYSTAL KOLOURS™ may be lifted from wooden L-bucks after all wrapping and corrugated packaging are removed.
- Material left in cases or on L-bucks must be braced in order to prevent forward shifting and movement. Retain felt tabs on the “face” surface of the glass until it is installed.

In order to preserve the high quality of KRYSTAL KOLOURS™ products, glass handlers should always avoid direct contact between the glass and any hard materials.

6. Fabrication and Processing

This section addresses a number of conditions and precautions that must be carefully observed when fabricating and processing KRYSTAL KOLOURS™ glass.

KRYSTAL KOLOURS™ can be fabricated in any way that a piece of regular annealed glass can be shaped. Shaping quality depends on clean and precise cutting.

6.1 Cutting

KRYSTAL KOLOURS™ products can be cut in order to meet a range of application needs. The following specific precautions must be taken when cutting KRYSTAL KOLOURS™ glass:

- Cutting and transfer tables must be covered with felt and cleaned frequently, in order to avoid scratches caused by small glass splinters that may damage protective paint coating.
- KRYSTAL KOLOURS™ glass should be cut with the painted side face down on the cutting table surface.
- Maintain minimal pressure on the cutting tool to avoid splinters.
- During cutting, personnel should use minimal quantities of neutral cutting oils.
- Use neutral cutting oils only.

6.2 Polishing and Grinding the Edges

KRYSTAL KOLOURS™ glass can be polished and edge-ground in order to meet special application needs. During polishing and grinding operations, it is important to observe these guidelines:

- Adjust the speed of the edging machine according to the number of grinding wheels fitted to it, as well as the thickness of the glass.
- If using shaped spherical grinding wheels, personnel should avoid overly angular shapes. It is advisable to use one type of grinding wheel per thickness of glass.
- If grinding a flat joint with edges, personnel should avoid edges with an angle greater than 145°.
- The quality of grinding on the painted side of KRYSTAL KOLOURS™ glass must be smooth and free of glass shards.
- Use non-abrasive coolant oils (with a neutral pH) only to prevent damage to the paint coatings.

6.3 Washing Processed Products

Once processed, KRYSTAL KOLOURS™ glass can be safely washed by following these guidelines:

- Processed products should be washed immediately in clean, deionized water, with a pH of 7 (± 1). No hard particles (such as calcium or other materials) or acidic/detergent agents should be present in the water used for washing and rinsing, as they may damage the paint. Drying operations should be undertaken carefully, in order to protect the paint coating.
- The cooling water circuit should be cleaned regularly in order to remove any glass particles.

6.4 Packaging Processed Products

Care should be taken when packaging processed products made with KRYSTAL KOLOURS™ glass. The following conditions should be observed at all times:

- Glass sheets should be positioned vertically in appropriate protective packaging material, taking care to avoid scratches caused by stacking (see above, section 4, “Storage Before Handling”).
- Sheets should be separated with paper, cardboard spacers or felt tabs.
- When shrink-wrapping KRYSTAL KOLOURS™ processed products, perforated plastic may be used if the glass is to be stored in a dry area for a normal length of time.

7. Insulating Glass Units and Exterior Glazing

KRYSTAL KOLOURS™ shall not be used in exterior glazing applications, even with the painted side facing the inside of the building. KRYSTAL KOLOURS™ glass is designed for indoor use only.

8. Lamination

KRYSTAL KOLOURS™ cannot be laminated with PVB (polyvinyl butyral) interlayers. However, for special applications, KRYSTAL KOLOURS™ is available in a safety version which includes a safety backing film. It is recommended to apply the safety backing film after all fabrication of the glass including cutting.

9. Installation

Installation of KRYSTAL KOLOURS™ glass should only be undertaken by experienced professionals with appropriate training. Installation techniques for KRYSTAL KOLOURS™ are similar to those utilized in the installation of other flat glass and mirror products. The primary structural component of KRYSTAL KOLOURS™ is flat glass.

As with all coated glass products, care must be taken to avoid contact with any hard materials that can cause chips, scratches, other surface damage or glass breakage.

Before fitting KRYSTAL KOLOURS™ to a wall surface, the state of the wall should be checked for potential problems.

Do not mount KRYSTAL KOLOURS™ on a wall where evidence of moisture or chemical exposure exists. The installation area should be well-ventilated and free of high moisture levels or harsh chemicals.

Any uneven surfaces on the wall should be smoothed out prior to glass installation.

In addition, installation professionals should thoroughly check the paint coating on each KRYSTAL KOLOURS™ lite, in order to be certain that the coating has not been damaged due to any improper storage, handling or processing prior to installation.

KRYSTAL KOLOURS™ may be attached to a wall surface by either adhesive or mechanical means. Mechanical structures, such as framing systems, are the most secure.

If any hardware is used in direct contact with KRYSTAL KOLOURS™ glass, installers should make certain that the glass is properly cushioned, avoiding direct contact with any hard materials or rough surfaces.

When using screws to mount KRYSTAL KOLOURS™, felt washers or plastic sleeves are useful in minimizing direct contact with the glass.

When using adhesives—either mastics or tape—to attach KRYSTAL KOLOURS™ to a wall, installation technicians should observe the following precautions:

- Review and observe any and all recommendations for use provided by the adhesive manufacturer.
- Do not use adhesives containing acetic acid, methylene chloride, toluene or acetone. Consult the list of ingredients in the specific adhesive for verification. Use of adhesives with these chemicals will void any warranty by Lenoir Mirror Company.
- Thoroughly check the weight-bearing capacity of the adhesive. For reference, a ¼" (6 mm) lite of KRYSTAL KOLOURS™ weighs 3.25 pounds per square foot.

Lenoir Mirror Company does not manufacture adhesive products and cannot guarantee their effect on KRYSTAL KOLOURS™. If in doubt about the effectiveness or negative effects of any adhesive product, consult the adhesive manufacturer or have independent testing conducted before beginning installation of KRYSTAL KOLOURS™.

After installation, KRYSTAL KOLOURS™ glass should be cleaned properly to display the full beauty of the color of the back-painted glass.

The safest cleaning method is using clean, warm water, applied with a soft cloth.

Acid or alkali cleaning solutions should never be used on KRYSTAL KOLOURS™. Cleaning solutions with a heavy ammonia base should also be avoided.

Any cleaning solutions used on KRYSTAL KOLOURS™ should be applied directly to the soft cleaning cloth, then wiped on the surface of the glass. Cleaning solutions should never be applied directly to the glass, or allowed to puddle along its bottom edge.

It is the responsibility of the installation team to make sure to provide the ultimate end user with proper directions for the ongoing care and cleaning of the KRYSTAL KOLOURS™ installation.

For additional information on processing, installation and cleaning, please contact Lenoir Mirror Company by Phone (800) 438-8204; Fax (888) 835-1080 or send an email to sales@lenoirmirror.com.