

Project Name:

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Skylight Owner's & Maintenance Manual

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Care of Material During Installation

It is important, to the extent possible, to coordinate material shipments with the installation schedule. If properly organized this will minimize the time that any of the materials will be lying about the job site and thus minimize the time they will be subject to possible damage. There are a number of precautions, however, that should be followed and which can minimize the risk no matter what stage of construction the parts are installed.

Handling

Special attention should be given the parts as they are brought from storage to the installation area. Using the following precautions will help protect the assemblies and finish from damage during installation.

1. Workmen should lift and handle the products carefully to avoid racking, twisting, straining, and distortion. Temporary storage sites, prior to final installation, should be carefully selected to avoid unforeseen damage from work practices or contamination by adjacent materials.
2. Foremen, installers, and workman of all trades should be instructed in the proper handling of products. Careless use of tools, or indiscriminate climbing, standing, or walking on parts not designed for such purposes can severely damage the parts; in no case should the product be used to support scaffolding, boards, walkways, or ladders.
3. Care must be taken to avoid leaning tools or heavy objects on or against the products. Rags, refuse, chemicals, mortar, or material common in other building trades should be kept away from the finished components. A check of the materials should be made at the end of each day's work and any accumulation of such materials should be removed carefully to avoid the possibility of permanent damage to the products.

Compatibility with Other Materials

Today's architectural styles incorporate many different materials, making the possible contact between dissimilar materials a vital consideration. Usually such contact has been considered prior to the construction and proper precautions have been planned. If any questions arise regarding the compatibility of other materials used in conjunction with the work, answers can be obtained from the manufacturer of the products being used.

Summary

Fabrication assemblies and components used for architectural purposes are finished products and highly susceptible and relatively easy to damage from improper handling, storage, physical contact with other objects, and contamination from many of the chemicals and materials used in everyday building construction practices. It is vital that all concerned with the overall project be advised of this situation to ensure that the materials go through the entire installation phase without damage that could affect structural characteristics, performance, or appearance.

After the product is installed, be sure that adequate protection is provided and precautions taken to avoid damage from other trades that will follow. If damage or defects are found in the material prior to installation be sure to notify the necessary parties to avoid erecting material that may be rejected later.

Whenever protective coating such as tape, strippable coatings, grease, etc. are used be sure to consult the supplier or manufacturer to obtain the necessary information on how they should be removed and the length of time they should be left on. It is good installation practice to inspect complete work on a daily section-by-section basis with the general job superintendent, putting in writing which work has been jointly inspected and the general conditions noted. List in this report any and all specific existing conditions of the installed work that pertain to its quality and state that the responsibility for protecting the work from this point on will be that of the general

job superintendent and/or contractor. Such periodic inspections, confirmed in writing, place future responsibility for protection on the general contractor, and any damage that occurs after the inspection can then be readily identified and clearly defined as caused by “others”.

General Considerations

After the product is installed, protection generally falls under the jurisdiction of the general contractor. Because the most severe damage to the materials will frequently occur during this phase of construction, it is vital that the general contractor be made aware of the work's vulnerability and that he bears full responsibility for its protection.

If protective tapes, strippable coatings, and greases are used, they should be kept in place until all adjacent and overhead construction is completed. In many instances, additional protection against mechanical damage can be provided by using temporary wood frames around the exposed parts where traffic damage could be extensive. Such frames should be carefully constructed to ensure that protruding nails, wires, staples, or other sharp objects will not cause damage.

Avoid using green or treated wood for protection, as well as any cardboard or paper products that might cause corrosive damage if they get wet. Various types of plastic film, papers, or cloth are available commercially for temporary protection of in-place material. In all cases, follow the manufacturers' recommendations for their proper usage.

Protection Against Adjacent Construction Operation

The major source of damage to in-place architecture components usually comes from the splashing, splattering, and/or run-down from adjacent or overhead masonry work. Acids used for cleaning operations also pose a serious problem and it is good practice to avoid these hazards

completely. Any mortar, plaster, concrete, fire proofing, sprays, paints, or other wet preparations that inadvertently splash upon the product must be immediately wiped clean before they dry and washed liberally with water.

If strong cleaners are used, they should be confined to the area being cleaned. When muriatic acids or other such solutions are used to clean brickwork and masonry, they must be used carefully to avoid splashing the product. Preparations that are strong enough to dissolve mortar spots on brick will obviously damage any metal surface, therefore immediately clean with water.

Summary

It is essential that the product be protected after the installation is complete and prior to the building's final acceptance. Such protection is unusually the general contractor's responsibility. Most damage to the product will occur during this time.

Installed work is considered a "finished product" when the other building components are generally in a rough or unfinished state. Materials, therefore, must be efficiently protected and shielded since it is often impossible to satisfactorily repair damage materials in the field. Even when possible, reworking is costly and lacks the quality of the original work. Likewise, replacement is time consuming and expensive.

The assemblies must not be used for ladders, scaffolding, or supports for walkways, temporary walkways, etc. Observation, common sense, and informing other trades will go a long way toward eliminating damage and problems with the installed work. This procedure should be carried out in an organized and predetermined manner.

Maintenance of Plastic and Fiberglass

Installation

Plastic expands and contracts about three to six times as much as wood or metal for a given temperature change. Allowances should be made for this difference if the installation is to be exposed to a wide range of temperatures. In installing **Plexiglas**, do not subject **Plexiglas II UVA** and **Plexiglas G** to stress over 1500 psi at room temperature. If elevated temperature service conditions are anticipated, these design limits should be reduced to 750 psi at 160 degrees F for **Plexiglas II UVA** and **Plexiglas G**.

Simple channel and clamp installation are preferable. If bolts must be used, the holes should be drilled sufficiently oversized to allow for expansion of the part, and nuts should be backed off a half turn after tightening. Countersunk flat head bolts must not be used. Plastic should be mounted between rubber, cork, or other gaskets to make the installation waterproof, to reduce vibrations, and help distribute possible stress conditions.

Handling of Sheets

Care must be taken not to excessively bend plastic during handling to avoid surface stress cracking.

Cleaning and Polishing

To clean plastic and fiberglass, wash with plenty of soap and water using the bare hand to feel and dislodge any caked dirt or mud. A soft cloth, sponge or chamois may be used but only as a means of carrying water to the plastic. Dry with a clean damp chamois. Rubbing a dirty surface with a dry cloth will scratch the material. In addition, rubbing builds up an electrostatic charge on the plastic so that it attracts dust particles from the air. Wiping with a damp chamois will remove this charge as well as the dust and is therefore recommended.

Hand Polishing

If, after washing, the surface shows a number of minor scratches, it is possible to remove or reduce most of them by hand polishing. The cleaners can be best applied by means of a small pad, soft flannel, or soft grit-free cloth. Excessive rubbing at one spot should be avoided. Several applications may be necessary, but most minor scratches can be reduced and the clarity improved within a relatively short time.

Buffing

Scratches too deep to be removed by the hand application of cleaners are often readily removed by buffing. Best results are obtained with cotton buffing wheels. There are a number of standard commercial buffing compounds satisfactory for use with plastic. These usually consist of a very fine alumina or similar "abrasive" in combination with wax, or grease binders and polishing tallow. Both are available in the form of bars or tubes for convenience in applying to the buffing wheel. Such compounds are sometimes referred to as coloring compounds.

If the buffing wheels have been used before, remove any hardened tallow by running them against a sharp metal edge. Start the buffing wheel spinning and touch the stick of tallow to the wheel. Bring a bar of buffing compound in contact with the edge of the wheel for a few seconds. Apply the edge of the spinning wheel to the plastic surface very lightly. Keep it moving over the surface and put only light pressure in the buff. Excessive pressure may heat and soften the plastic. Buff along and across any scratch and continue buffing until scratches have been removed. Finally, remove the buffing compound from the plastic with a clean buff and a coat of wax.

If the scratches are too deep to be removed by buffing alone, it is sometimes necessary to use sandpaper. Sanding should not be used unless some type of mechanical buffing equipment is available, since hand polishing is not sufficiently effective to restore luster to a sanded surface. Since sanding or excessive buffing may introduce objectionable optical distortion, it may be better to leave in deep scratches.

Sanding

Where sanding must be done, the finest grade sandpaper that will remove the scratch or other defects (no coarser than grade 320) is used first. The paper is wrapped around a hard felt or rubber block and the area rubbed lightly using water or soap & water as a lubricant. Abrasive paper should be of the waterproof type. Sand in a free circular motion, using light pressure over the area of the scratch. An area having a diameter of two or three times the length of the defect should be sanded in order to minimize the local optical distortion; initial sanding should be followed by similar treatment using progressively finer grades of sandpaper. Where a large amount of polishing is undertaken, ashing compounds may be used with power buffing equipment in place of hand sanding.

A well designed and built skylight will provide many years of useful service with nothing more than periodic cleaning. Periodic cleaning will help maintain the optical performance and extend the life of the glazing. Clean plastic and glass glazed skylights with mild dish soap and water only and a soft cloth or sponge. Take care not to use any material with abrasives or stiff bristles, as mentioned that could scratch the glazing. NEVER use chemicals of any type. Most cleaning chemicals will attack the plastic and cause immediate and irreversible damage. This is not covered by the skylight manufacturer's warranty.