

INSTALLATION, MAINTENANCE & REMOVAL INSTRUCTIONS

The goal for good installation is for the graphic to have 100% contact on the intended surface. When properly compressed to the surface, the material will take on the texture of the surface, appearing as a painted image.

INSTALLATION NOTES:

- Optimal application temperature: 50° F / 10° C or higher.
- No heat source is needed to install or remove. AlumiGraphics is a foil-based, pliable material that does not need heat to conform, bond or remove from any surface.
- The adhesive on the back of the graphics needs to bond directly to the surface so it must be thoroughly dry and swept clean of dirt and debris to achieve a good bond. Usually sweeping is sufficient, but if the surface is oily or has a layer of grime, it may need to be power washed with a commercial degreaser.
- AlumiGraphics must be firmly compressed to the surface, especially all of the edges, to prevent moisture from getting underneath. This is best achieved by using a hard rubber roller such as a 'J Roller' instead of a squeegee. The roller is better at evenly compressing the material to texture of the surface and sealing the edges without friction, plus it is faster than a squeegee. Exception; when applied on smooth surfaces, a felt edge squeegee can be used with AlumiGraphics Smooth.
- The foil based material has no memory; it easily conforms and holds the shape to the applied surface.
- The foil based material is not affected by changes in temperatures or moisture and will not shrink. Installing edge to edge is recommended for AlumiGraphics Grip but AlumiGraphics Smooth can be overlapped.
- The foil-based material does not shrink so seams will not open up and it can be printed edge to edge providing better material yield plus saving time and money.
- Surfaces with VOC coatings / paints may need to be cleaned with a mixture of 50/50 to 70/30 percent isopropyl alcohol (IPA) + water, then wipe with a clean cloth. In some cases, a second cleaning is helpful.
- AlumiGraphics typically does not leave residue, lift paint or damage treated surfaces when the material is removed. However because the quality of materials, method of installation and conditions can vary, we recommend testing by applying a swatch of material direct to the desired surface to determine suitability.

There are some situations which are beyond control such as the condition, structural and material composition of a surface; therefore no guarantee for successful application or removal on all surfaces can be made. Testing samples on the actual surface is highly recommended. The user is responsible for determining the product's suitability, including adhesion and if needed, removal characteristics.

STANDARD INSTALLATION INSTRUCTIONS:

- 1. Lay printed side down on a flat surface then peel back the release liner from the foil surface.
- 2. Place adhesive side down flat on the selected location.
- 3. Smooth by hand from the center to outer edge, be sure all edges lay flat.
- 4. Firmly compress the material for 100% contact to the surface with a roller, making sure all edges are sealed.
- 5. To remove bubbles; puncture material with a pin prick to create an air release, compress with roller.





LARGE SCALE GRAPHICS:

- AlumiGraphics Grip should be tiled edge to edge, no overlapping. The foil-based substrate prevents the material from shrinking and seams will not open up.
- AlumiGraphics Smooth can be overlapped.
- Strategically align the seams along blank or busy areas where alignment is less critical, such as between letters to make installation easier and faster.
- Peel back approximately 6" of the release liner from the top edge, line it up in place and smooth by hand. If necessary, the material can be lifted and repositioned into place when it is only hand pressed (do not attempt to reposition the material after it has been rolled and compressed to the surface). Next have 1-2 persons reach behind the material and pull the release liner slowly, gently and steadily straight down while 1 person on the top surface of the material smooths it by hand with circular motions from the center to the outside edge (similar to a butterfly swim stroke). Continue this process all the way down or across the material until the section is completed. Next, take a hard rubber roller to firmly compress and smoothen the material to the surface. Use pin prick to puncture the material to create an air release for air bubbles. AlumiGraphics can be installed at over 250 square feet per hour.

BRICK WALLS & TILE FLOORS WITH GROUT LINES:

- Since there are many variations in the type and size of bricks, tiles, the size and depth of the grout lines; each
 installation on brick or block surfaces may require a slightly different method. AlumiGraphics is designed to
 adhere to hard, rigid surfaces so the goal of each installation where there are grout lines or gaps is to make
 sure the material is applied primarily to the hard, rigid surfaces. Remember that deep gaps, sand, and broken
 up concrete do not provide a surface that the adhesive can bond strongly to. Do not span material between
 surfaces such as bricks; on walkways, it can be punctured or torn such as by the heels on women's shoes and
 on walls these gaps can allow moisture to get behind the graphics and break down the acrylic adhesive.
- The material does not stretch much so when installing on brick, the best method is to peel back the release liner and lay on the intended surface, press the material in the grout areas then press or roll the material on the flat surface areas.
- If the grout lines or gaps are deep, do not attempt to put the material all the way into the gap. Span the material across the gap, slice it in the middle, then press the edges against the sides of the gap. This would be like wrapping the bricks.
- Another technique for walls is to make sure the outside edges of the graphic are completely compressed and sealed and then use a roller to compress all of the flat surface areas on the bricks/blocks throughout the middle of the graphic.

HIGH ENERGY SURFACES

AlumiGraphics should be applied for high surface energy applications with caution. The adhesive is formulated to adhere to outdoor low surface energy surfaces like sidewalks, asphalt, stucco and brick. By nature, any surface categorized as a high energy surface (metal, glass, hard-coated / sealed concrete, high gloss tile, etc.) will bond very quickly, very aggressively and somewhat permanent. Surfaces with color stains, acrylic sealers and paint may intensify the bond on these surfaces. It is highly recommended to apply a test swatch on the intended surface to determine suitability.

- When applying to high energy surfaces, the material should not be repositioned during installation. Graphics on these surfaces, especially large graphics, should be installed by two people to ensure that the material is applied perfectly smooth and flat on the first attempt to avoid wrinkling.
- Removal from high energy surfaces may leave adhesive residue and could require additional clean-up.

CLEANING:

- Power washing with nozzle 36 inches from graphics, do not spray edges.
- Cleaning with a hose, broom and Dawn dish soap (let stand to dissolve adhesive).
- If residue remains, it can be removed by;
 - Applying a degreaser such as Simple Green.
 - Nail polish remover and wire bristle brush.
 - Allow it to wear away with pedestrian traffic and weather.

REMOVAL:

Removal does not require heat. Generally easy to remove on wall and pedestrian walkway applications; extreme rough surfaces and/or vehicular traffic may increase the difficulty in removal.

- 1. Simply peel off at an angle less than 45 degrees for best result; typically leaves no residue.
- 2. Dispose with aluminum recycling.

LIFE EXPECTANCY:

The life expectancies provided for AlumiGraphics are conservative and determined by inks fading and not the life of the material. The foil-based material maintains integrity and will not deteriorate, break down, shrink or crack over time like vinyl. Periods are based on material printed with solvent inks, installed direct to a rigid surfaces (concrete, brick, etc..), placed outdoors in locations exposed to the elements. Periods are increased with the use of latex inks and best with UV cured inks. Achieving maximum life expectancy depends on a number of items beginning with using a printer profile downloaded from AlumiGraphics.com, using quality name brand inks and following the instructions for Production and Installation.

- AlumiGraphics Grip printed and applied on outdoor walkway surfaces exposed to the elements and heavy
 pedestrian traffic is 1 year with all types of inks. Harsh conditions and /or extreme traffic may wear down the
 slip resistance and require the graphics to the replaced earlier for safety precautions. Indoor applications and
 locations with lighter pedestrian traffic can exceed life expectancy.
- AlumiGraphics Smooth printed and applied on outdoor vertical surfaces exposed to the elements is 2 years for graphics printed with solvent & eco-solvent inks; latex and UV curable inks will hold up longer. Indoor applications, if produced and installed properly, can easily last much longer.
- To extend the life and color of graphics, use a water based liquid laminate applied by a hand spray bottle. A single coating is fine and works on both AlumiGraphics Smooth and AlumiGraphics Grip.
- Thin cast film laminates on AlumiGraphics Smooth have been used for additional UV protection on walls with little or non-complex texture.
- On locations where the edge of the graphics can be 'picked' or 'pealed' by pedestrians or in harsh environments; a caulk or edge sealer can be applied after installation for protection.

Cautionary note: Film laminates and heavier coatings of liquid laminate placed on AlumiGraphics Grip can potentially reduce the slip resistant quality and safety rating.

PERFORMANCE CHALLENGES

The following can independently or combined, prevent the graphics from adhering properly. Avoid placing graphics on the following areas:

A. Locations with loose or caked dirt, gravel, oily residues, flaking paint or other foreign substances that will interfere with proper bonding.

B. Locations that are frequently wet or submerged such as near irrigation or watering systems.

C. Surfaces with oil or gas residue. This type of surface must be thoroughly cleaned such as by power washing or scrubbing with a broom and soapy water, a degreaser or in many cases simply with a mixture of 50/50 to 70/30 percent isopropyl alcohol (IPA) + water. Afterwards, rinse well and allow to dry before installing the graphics.

D. Cracked, broken or porous sections of concrete or asphalt where moisture can seep through the surface after rain or snow and get behind the graphics.

E. On recently painted surfaces. Allow a minimum of (10) days for the paint to off-gas and cure.

F. On freshly poured concrete or asphalt that is off-gassing. Curing times vary depending upon ingredients, quality, and environment. Concrete may take 30 days or more to properly cure; asphalt may take several months to one year. Moderate temperatures can require more time for surface to cure.

F. EIFS (exterior insulation and finish systems) or synthetic stucco walls constructed with rigid foam, expanded polystyrene or extruded polystyrene foam and coated with a layer of concrete. Although structures constructed with this material may be weather resistant, it is also vapor permeable so it is not compatible with applied graphics because the foam core is porous and will allow air and moisture to permeate through the material that can become trapped behind the graphics resulting in air pockets, lifting and eventually delaminating. The only solution is to completely seal the intended surface with a waterproof concrete sealer and allow it to completely dry and cure (off-gas) before applying test swatches or graphics.

G. Concrete, brick and other rigid materials that is porous, allowing water vapor to permeate or be transmitted from within and become trapped between the exterior and the adhesive backing of the material. If this occurs, the graphics

may be susceptible to lifting. If a graphic is applied on this type of exterior surface, freeze/thaw cycles can accelerate moisture transmission and allow moisture to be trapped between the graphic and the surface. For situations like this a concrete sealer may be needed to create an effective moisture barrier to allow the graphics to bond successfully.

H. Concrete with efflorescence, a powdery white material that forms on the surface. This is not common but is caused by calcium hydroxide that is naturally found in concrete after it sets. As water dries out of the concrete it carries with it some of this calcium hydroxide, which then reacts with carbon dioxide in the air to become calcium carbonate. When this powdery substance gets on the adhesive, the graphics may not adhere properly to the concrete. Usually a concrete sealer applied to the intended surface will resolve the condition and allow the graphics to bond successfully.

I. Locations where there is 'turning' vehicle traffic. AlumiGraphics Grip is designed to withstand heavy pedestrian traffic but can also hold up to 'rolling' vehicle traffic. This means that vehicles can drive over the graphics however, if tires can stop and turn/grind on the graphics; the tire shear can potentially damage the graphics.

DETECTING ADHESIVE FAILURE

Product failure or failure of the adhesive will almost always occur within hours up to days from the time of installation. This is a clear sign that either the material is imperfect, or the surface is not compatible for adhesion. Alternatively, if the material bonds to a surface and remains on for a reasonable period of time then falls off or comes up, something occurs that causes it to happen. Some examples of this include;

- The surface the graphic is applied is a porous material, allowing moisture to permeating through it.
- Improper installation (i.e., the edges were not properly compressed to the surface).
- A corner/section of a graphic gets pealed back by elements or tampering, allowing moisture to get behind it.

RESIDUE & SURFACE DAMAGE

The AlumiGraphics adhesive is specially formulated to bond to a broad range of surfaces including concrete, asphalt, brick, stucco, tile, cinder block, terrazzo, and more; resisting cold flow and ooze. It typically does not leave residue or cause damage when the material is removed however because of varying qualities of materials, methods of installation and conditions, applying a swatch to a section of the desired surface by to determine suitability is highly recommended.

- Residue is not a common occurrence but can happen when the surface is high energy (very smooth), polished, sealed, painted, recently poured / still curing concrete, or contains additives for aesthetic or composition purposes. It is also important to note that some concrete may contain different additives in some regions that can potentially cause the adhesive to leave residue.
- Smooth sealed concrete is not usually a problem for either adhesive residue or damage, as long as the sealer is properly applied and cured.
- On smooth, stained concrete the adhesive can possibly lift areas of the stain causing a ghosted appearance, although usually there is not an issue with adhesive residue.
- Smooth stained & sealed is not usually a problem for either adhesive residue or damage, as long as the sealer is properly applied and cured.

If residue does occur it can be removed in a variety of methods;

- Power washing.
- Cleaning with a hose, broom or wire bristle brush and Dawn dish soap (let stand to dissolve adhesive).
- Simply allowing it to wear away with pedestrian traffic and weather.
- By using an agent such as Simple Green, Goo Gone, Formula 409, nail polish remover, acetone, vinegar or CRC Adhesive Remover. Standard process: spray/pour onto residue, allow to set for a minimum of 5 minutes, then scrap/wipe off/power wash off.
- Sometimes 'shadowing' occurs (when embedded dirt is removed) leaving the area where the graphics were installed cleaner than the surrounding areas and is sometimes misidentified for residue.

For more information, specifications, certifications and recommendations for production, installation, and removal; view or download the AlumiGraphics Product Guide at <u>www.AlumiGraphics.com</u>.







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