GENERAL FORMULATIONS

GF WALL APPLICATION GUIDE

INTRODUCTION

Pressure-sensitive vinyl films for wall graphics are designed to perform reliably when paired with a properly prepared wall surface. Paint chemistry, texture, environment, and installation technique all contribute to successful outcomes. This guide outlines the requirements and best practices for installing removable GF wall graphic media on smooth and lightly textured interior substrates.

GENERAL FORMULATIONS WALL PRODUCTS

GF WallMark® series encompasses a line of flexible vinyl-based products designed for interior wall graphic applications. GF 226 WallMark® is a 6.0 mil matte white vinyl film with either a microsphere removable (GF 226) or High-Tack Removable (GF 226HTR) adhesive system. GF 227 is our WallMark® Lite, a 3.4 mil matte white version of the classic 226 product with microsphere beaded adhesive*. GF 229 WallMark® Canvas has a matte embossed surface that simulates a canvas fabric texture and appearance. GF 229 is a 6.0 mil available in both the standard microsphere removable adhesive and GF 229HTR High-Tack Removable (HTR) option. Also available in 6.0 mil with the HTR adhesive system is GF 262HTR WallMark® Sand. This family of matte white vinyl wall films are designed for ease of application and removability.

General Formulations also offers fabric based wall graphic media, GF 234 GraphiTex™. This material is great for applications where a textile is required or desired, whether for performance, presentation, or application. GF 234 GraphiTex™ is a 7.0 mil matte white woven polyester with a noticeable fabric texture and a repositionable, removable wall adhesive that provides excellent performance on smooth wall surfaces. GF 234 GraphiTex™ is well-suited for applications where ease of handling is important. Please note that fabric finish and color can vary slightly from lot to lot and it is recommened that you not mix multiple lots on a single wall installation.

In addition to the indoor wall graphics solutions, GF offers a line of RoughMark® vinyl products for adhering to those hard-to-stick-to surfaces like brick and block walls, stucco and wood, and works both indoors and outdoors. This range includes GF 285 RoughMark® and GF 287 RoughMark® Clear conformable calendered vinyl, and the new GF 885AE RoughMark® Cast for extra conformability and durability. Refer to the RoughMark® Installation Guide for more information and tips on process for textured wall applications.

GF 290 ChalkMark™ is also great for walls where a black chalkboard surface can be used in conjunction with Liquid Chalk Markers.

**Both GF 226 and GF 227 are also available in our Narrow Format Digital (NFD) line which utilizies a special topcoating for use with HP Indigo and Toner based Production Digital Print Devices. Similar products are also available for screen or offset printing processes.*

SURFACE REQUIREMENTS

A properly prepared wall is essential for graphic adhesion and long-term performance. Wall conditions vary widely and understanding surface type improves product selection and installation results. GF recognizes the following common interior surface categories:

- **Smooth:** Light roller texture, eggshell or semi-gloss paint, primed drywall with minimal visible texture.
- **Moderate Smooth / Orange Peel:** Visible stipple pattern common in residential repainting and commercial spaces; reduced adhesive contact requires higher tack or conformable films.
- **Textured:** Stucco, knock-down, decorative plaster, block, brick, CMU, or other high-profile textures requiring films that contour with heat and pressure.

GF defines a smooth surface as one where texture does not significantly interrupt adhesive wet-out. A moderate smooth or orange peel finish shows stippling that reduces adhesive contact and may require increased pressure, heat, or higher-tack adhesives. Deep or high-profile textures require RoughMark® products and specialized tools.

SURFACE TYPE	GF PRODUCTS	ADHESIVE TYPE	INSTALLATION
Smooth / Eggshell / Semi-Gloss	226 WallMark® 227 WallMark® Lite 229 & 229HTR Canvas 234 GraphiTex™ 262HTR WallMark® Sand 290 ChalkMark™	Removable, High-Tack Removable or Microsphere	Ideal for most installs; ensure primer was used and paint is fully cured. Test patches required for washable/scrubbable paints.
Moderate Smooth / Orange Peel	226HTR WallMark® 227 WallMark® Lite 229HTR WallMark® Canvas 262HTR WallMark® Sand 285 & 287 RoughMark® 290 ChalkMark™ 885AE RoughMark® Cast	High-Tack Removable or Conformable	Increased pressure required to wet-out adhesive; foam roller recommended for final contact.
Textured (Stucco, Block, Brick)	285 RoughMark® 287 RoughMark® Clear 885AE RoughMark® Cast* **with matching laminate*	High-Tack Removable	Requires heat and foam roller; work in small passes to ensure full contact. Adhesive primer optional for deep textures.

SURFACE PREPARATION

Successful installation depends on a clean, dry, fully cured, and structurally sound wall surface.

1. Inspect the wall. Check for loose paint, cracking, texture, moisture, or contamination.

**Drywall seams, patches, and spot repairs must be primed, painted and fully cured before installation. Hidden moisture in the wall can negatively impact adhesion and can compromise the integrity of the wall during repositioning and removal.*

2. Clean the wall. Use an isopropyl/water mixture with a lint-free microfiber cloth (recommended 50/50 up to 99%, but do not saturate the wall or scrub with IPA).

**Do NOT use household cleaners, soaps, degreasers, or ammonia-based products, as they leave residues that inhibit adhesive wet-out.*

3. Repair any defects. Fill holes, sand high spots, and ensure the substrate is smooth and structurally intact.

4. Prime the surface. Use a commercial bonding/hiding/sealing primer; paint-and-primer-in-one products are not substitutes for separate primer and paint applications.

5. Paint and cure. Follow paint manufacturer curing instructions.

**Adequate airflow and ventilation are essential. Moisture-rich or stagnant environments slow paint cure and increase the risk of adhesive interference due to extended offgassing.*

6. Patch test. If you are unsure of the surface characteristics of the wall, it is recommended to perform a patch test before full installation.

PATCH TEST PROTOCOL

Before full installation, test a 4" × 4" sample for:

1. Initial tack. Material should provide slight to moderate grip and have consistent surface contact.

2. 15-min check. Check for any edge lift and confirm the bond has increased from initial tack.

3. 24-hour check. There should be no sign of edge lift, surface contact is in tact, and bond secure.

4. Removal test. Evaluate surface/paint stability and check for adhesive residue.

If the test patch fails any stage, do not proceed until the wall is corrected or the proper material is identified.

Do **NOT** apply graphics when:

- Paint has not met manufacturer's minimum cure time
- Wall has washable/scrubbable paint without a successful test patch
- Drywall patches or seams are unprimed or uncured
- Wall contains high moisture (>15%)
- Installation area has high humidity and/or poor airflow conditions
- Household cleaners or silicone residues are present
- Paint is peeling, chalking, or structurally unstable

PAINT APPLICATION AND CURE

With new drywall, a coat of a bonding/hiding/sealing primer followed by two coats of a semi-gloss or satin finish paint is recommended as the ideal base for removable wall graphics. Failure to prime the surface before painting may result in paint failure when graphics are repositioned or removed.

The type of paint roller cover used will create texture on the wall that could limit adhesive contact or lead to inadequate paint bond if the texture is too deep. GF recommends use of a 3/8" – 1/2" nap roller for smooth drywall surfaces. Brick and block surfaces may require a thicker nap roller depending on the contours and cavities needed to be filled, and those textured surfaces will require a conformable film with a more aggressive adhesive for proper adhesion.

When the wall surface is a new construction or a fresh repaint, curing (outgassing) of the paint is critical for a successful wall graphic application. Curing is a necessary chemical bonding process where the paint transforms from a free-flowing liquid to a hard and durable, cross-linked surface. Without proper curing, paint remains soft and prone to peeling and failure, even if it feels dry to the touch. Curing requires the temperature to be maintained between 50°F and 85°F (10°C - 30°C) for most latex paints, as well as good air circulation/flow and time. Follow the paint manufacturer's recommendation on minimum recoat and cure time of the paint (a good guideline is to check how long until the painted surface can be washed). If no recommendation is given, a minimum of four weeks to cure is recommended before wall graphic application. This same standard should be followed after a fresh repaint. Additional cure time may be needed for dark colors or if the paint has a medium or deep tint base.

PAINT CURE TIME

Based on practical field application in climate-controlled spaces with relative humidity maintained between 30–50%, paint cured between 14 and 30 days may still achieve successful installation and long-term adhesion in many cases. Every additional day of cure beyond 14 days reduces the risk of failure. Paint cured less than 14 days carries significantly elevated risk, and the risk increases incrementally with each day below that threshold.

The following chart summarizes the risk profile at each stage of the cure timeline:

CURE TIME	RISK LEVEL	WHAT TO EXPECT
30 days or more	Low Risk	Excellent conditions for best adhesion. Paint is fully cured; adhesive bonds cleanly to the surface with minimal risk of paint pull during installation or removal.
14 to 30 days	Moderate Risk	Decreased conditions for optimal adhesion, but installation may still be successful. The adhesive may bond more aggressively to under-cured paint than the paint bonds to the wall; pulling is possible, especially during post-installation repositioning or removal.

48 hours to 14 days	High Risk	Under-cured paint is chemically still off-gassing. The adhesive bond may be compromised during installation and during the cure window after installation, leading to edge lifting or bubble formation even if installation initially appears successful. Extreme caution is advised.
Less than 48 hours	Failure Likely	Paint is wet or semi-cured. The adhesive will not achieve a meaningful bond and/or will pull the paint coating completely. Installation is not recommended under any circumstances.

TECHNICAL INFORMATION ON PAINT

Low or Zero VOC paints can prove sometimes to inhibit wall graphic adhesion. General Formulations Product Development Laboratory has tested several Zero/Low VOC paints and the results were successful. Our testing strictly followed the manufacturer's paint cure recommendations, and most colors tested were light to medium in color depth.

General Formulations tests a variety of paints, but it is an installer's duty to test for specific types. Some paints have surface-active ingredients to inhibit the accumulation of dirt and dust and can disrupt adhesion. All wall surfaces should be tested thoroughly before application of a graphic to identify potential surface issue or material compatibility concerns. If the paint type is unknown or condition of wall is rough, test the bond of the wall graphic in an inconspicuous area. The bond will be satisfactory if there is no edge lift or delamination after 72 hours. Higher-tack adhesives or surface primers (e.g., Viponds) may be required to optimize adhesion.

Refer to the Patch Test Protocol for proper procedure.

Testing has been conducted on the following paint types in a controlled lab setting:

MANUFACTURER	NAME	FINISH	VOC DESCRIPTION	VOC LEVEL	ADDITIONAL
Gildden	High Endurance	Flat	No VOC	0 g/L	Paint + Primer
Gildden	High Endurance	Semi-Gloss	No VOC	0 g/L	Paint + Primer
Valspar	Signature	Flat	n/a	<50 g/L	High Hiding Paint + Primer, "Scuff Shield"
Valspar	Signature	Semi-Gloss	n/a	<50 g/L	High Hiding Paint + Primer, "Scuff Shield"
Behr	Premium Plus	Flat	Zero VOC	<50 g/L	Paint + Primer, Anti-Microbial
Behr	Premium Plus	Semi-Gloss	Zero VOC	<5 g/L	Paint + Primer, Anti-Microbial
Gildden	High Endurance	Flat	No VOC	0 g/L	Paint + Primer
Glidden	High Endurance	Semi-Gloss	No VOC	0 g/L	Paint + Primer
Valspar	Signature	Flat	n/a	<50 g/L	High Hiding Paint + Primer, "Scuff Shield"
Valspar	Signature	Semi-Gloss	n/a	<50 g/L	High Hiding Paint + Primer, "Scuff Shield"
Behr	Premium Plus	Flat	Zero VOC	<50 g/L	Paint + Primer, Anti-Microbial
Behr	Premium Plus	Semi-Gloss	Zero VOC	<5 g/L	Paint + Primer, Anti-Microbial
Benjamin Moore	Regal Select	Flat	Zero VOC	0 g/L	Paint + Primer
Benjamin Moore	Regal Select	Semi-Gloss	Zero VOC	0 g/L	Paint + Primer
Sherwin Williams	ProMar 200	Flat	Zero VOC	<50 g/L	Anti-Microbial
Sherwin Williams	ProMar 200	Semi-Gloss	Zero VOC	<50 g/L	Anti-Microbial
Pittsburgh	Grand Distinction	Flat	Low VOC	0 g/L	Paint + Primer, Anti-Microbial
Pittsburgh	Grand Distinction	Eggshell	Low VOC	0 g/L	Paint + Primer, Anti-Microbial
Pittsburgh	Grand Distinction	Satin	Low VOC	0 g/L	Paint + Primer, Anti-Microbial
Pittsburgh	Grand Distinction	Semi-Gloss	Low VOC	0 g/L	Paint + Primer, Anti-Microbial

PRINTING

GF wall graphic media is certified for use with solvent, eco-solvent, UV curable and latex digital printers. General Formulations has profiles for select printers when printing GF 226 and 226HTR, 227, 229 and 229HTR, 234, 262HTR, 285, 287, and 885AE. If your printer is not on the profile listing, contact General Formulations Technical Service department at (800) 253-3664 for assistance.

It is critical that the ink be cured properly before installation. Uncured ink can induce premature edge lift and delamination of the wall graphic. Issues can and will occur if the wrong profile is used and/or if too much ink is laid down.

Screen and offset printing inks, especially UV curable, must be correctly cured for optimal wall graphic performance. It is important to know the ink manufacturers cure recommendations and test your process to make sure your inks are fully dry before application or installation. If using conventional offset inks, the wall graphics media most likely will have to be top coated to provide complete ink drying/curing. Always test ink compatibility with the specific wall graphic media before production.

GRAPHIC APPLICATION

Install graphics using standard PSA techniques:

- Light squeegee pressure to set the film.
- Firm, overlapping strokes to remove air and seat adhesive.
- Avoid stretching the film during application.

When overlapping panels with textured materials, be sure there is sufficient surface area for the adhesive to bond. For the microsphere adhesive on GF 229 WallMark® Canvas, 2-3 inches of overlap is required. For all other WallMark®, ChalkMark™, GraphiTex™ or RoughMark® materials, a one-inch overlap is sufficient. All overlaps with textured films can benefit from light heat and pressure to assist the adhesive bond.

Note that certain inks may require additional time to offgas after printing, and heavy saturation of dark solvent inks has been known to cause problems in some installations. For those jobs, it is recommended to either butt panels together or lightly clean the overlap area with isopropyl and water prior to overlap installation to remove any contamination and improve the surface energy of the contact area.

Many factors including installation, wall and environmental conditions contribute to vinyl shrinkage, so GF cannot guarantee that butted panels will stay perfectly aligned over time. WallMark® HTR (smooth and textured) installed using a butt joint should expect minimal shrink, but an overlapping joint will always be the best way to ensure there are no gaps between panels. GF RoughMark® products require heat and pressure to achieve full contact on textured substrates.

For RoughMark® installation on textured surfaces:

- Pre-plan layout to avoid panel edges landing on mortar joints or recesses.
- Set the graphic lightly with hand pressure or a felt squeegee before applying heat.
- Use a heat gun* to soften vinyl and adhesive.
- Immediately following the heat, use a foam roller to press the warmed graphic into the substrate in overlapping passes.
- Reheat edges as needed to ensure full conformity.

**Film and surface temperature should reach 190–210°F to break the vinyl film's memory and reduce the tendency for the film to shrink and pull away from the textured surface. The heat gun setting may need to be higher than this to achieve that objective, but be careful as too much heat can inadequately heat the base substrate while also risking overheating the film.*

CLEANING & MAINTENANCE

GF wall graphic media is designed with long-term installations in mind, and the films and fabrics have excellent durability in their unprinted form. Once printed, different ink types will have varying degrees of washability, but whether printed with latex, solvent or UV inks, cleaning can be done using a damp microfiber cloth, paper towel, or non-abrasive sponge with water.

Do not soak, scrub, or use abrasives or harsh cleaners as they may cause the inks to fade or the graphic to fail. Avoid household cleaners, ammonia-based products, abrasive pads, or solvent cleaners, as these can damage the film or degrade adhesive. It is also recommended to test your cleaning solution and cloth combination in an inconspicuous area to confirm there is no negative impact on your installed graphic.

REMOVAL

- Remove graphics slowly, top to bottom at a 180° angle.
- If the film seems to resist peeling, soften the film with a heat gun to relax the adhesive and reduce paint-lift risk.

When removing GF wall films and fabrics, start at the top and pull down slowly at a 180° degree angle (against itself). This is the best way to break the bond the adhesive has with the paint. Pulling at multiple angles and directions may cause loose paint to come off with the graphic. Preparation at the beginning of the installation can ensure optimal results once the product is removed. GF WallMark®, ChalkMark™, GraphiTex™ and RoughMark® films should leave little or no adhesive residue on a sound, cleaned and cured surface. However, due to the variables involved in wall graphic installations, GF cannot guarantee the clean removal of any wall graphic material.

SUMMARY

Successful application of wall graphics is dependent on a variety of the factors mentioned above. General Formulations wall graphic media is formulated for optimal printing and the adhesives are formulated for optimal bonding to a wide variety of wall substrates. Proper wall preparation is needed to ensure successful application. Correct ink drying or curing with an approved profile is critical to the long-term useful life of a wall graphic. Finally, application of the decal requires all the air to be removed between the graphic and wall without stretching the graphic.

Following these preparation and application steps will result in a successful wall graphic application. If there are any questions concerning your specific wall graphic application, contact General Formulations Technical Service department at (800) 253-3664 for assistance.

**GF Wall Application Guide focuses on removable wall graphic media, which is designed for long-term applications while offering the added benefits of repositionability and easy removal. For installations that require a permanent solution, General Formulations also offers a wide range of films with permanent adhesives. Contact your local sales representative to learn more about our calendared and cast permanent pressure-sensitive solutions.*

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