48C-20R

Product Description

- 3.3-mil, white, non-PVC film with a matte finish
- For Solvent, UV, and Latex Inkjet Printing and UV Screen Printing

Product Features

- Pressure-activated adhesive for easy sliding, tacking, snap-up and repositioning
- Non-visible air release channels for fast and easy, bubble-free installations
- Removable
- Expected Performance Life (unwarranted period of time)
  - **Most General Signage:** 5 years in a vertical exposure with typical usage and graphic protection.
  - **Indoor Floor Graphics:** 1 year when used in a horizontal indoor exposure with typical usage and protected by 3M™ Scotchcal™ Luster Overlaminate 3645
  - **Indoor Floor and Carpet Graphics:** 3 months when used in a horizontal indoor exposure with typical usage and protected by 3M™ Scotchcal™ Luster Overlaminate 8509

Environmental Benefits

- Non-PVC film
- Contains no added chlorine or halogens

Recommended Types of Graphics and End Uses

- General intermediate signage for outdoor and indoor applications
- Interior and exterior building windows and dividers
- Glass and smooth walls
- Short-term indoor floor graphics (with appropriate graphic protection)
- Truck graphics on flat or simple curved areas
- Partial vehicle wraps on flat or simple curved areas

(i) IMPORTANT NOTE

Floor and carpet graphics are for use on indoor floors only. They require the use of overlaminate 3645 or 8509, which provides a slip-resistant surface.

When applying graphics to carpet, it is solely the user's responsibility to be aware of and comply with the Americans with Disabilities Act Standards for Accessible Design, which includes, but is not limited to:

302.2 Carpet. Carpet or carpet tile shall be securely attached and shall have a firm cushion, pad, or backing or no cushion or pad. Carpet or carpet tile shall have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. Pile height shall be 1/2 inch (13 mm) maximum. Exposed edges of carpet shall be fastened to floor surfaces and shall have trim on the entire length of the exposed edge.

3M

⚠️ **CAUTION**

Loose or damaged floor or carpet graphics may cause a person to slip or trip and fall. To reduce the risk of slipping or tripping on floor graphics:

- Use only 3M overlaminate 3645 or 8509 which has a slip-resistant surface.
- Properly apply graphics only on hard indoor floors or carpets with a pile as described in ADA Standards for Accessible Design, Section 302.
- Immediately remove or replace loose or damaged graphics. Do not attempt to repair or re-adhere.

Failure to heed this Caution may result in personal injury.

Recommended Compatible Products

Screen Printing Inks

- 3M™ Screen Printing UV Ink Series 9800, line color and four color

Graphic Protection

- 3M™ Envision™ Gloss Overlaminate 8048G
- 3M™ Envision™ Matte Overlaminate 8050M
- 3M™ Scotchcal™ Luster Overlaminate 3645
- 3M™ Scotchcal™ Luster Overlaminate 8509

Application Tapes

See 3M Instruction Bulletin AT-1 to determine what application tape is recommend for your film or finished graphic.

Characteristics

These are typical values for unprocessed product. Processing may change the values.

Physical Characteristics

Characteristic	Value
Material	Non-PVC polymer
Film Color	White, opaque
Thickness	**without adhesive:** 3.3 mil (0.084 mm) **with adhesive:** 4.3 mil (1.09 mm)
Adhesive	Pressure-activated (slide, tack, snap-up, reposition) with air release channels
Adhesive Color	Gray
Liner	Polyethylene-coated paper
Flammability	ASTM E84 reports: 48C-20R or go to the On-line Product Catalog at 3Mgraphics.com **All other test reports:** call 1-800-328-3908

Application Characteristics

Characteristic	Value
Finished Graphic Application Recommendation	**Surface type:** - Smooth, flat with or without rivets (expect tenting); simple curves **Substrate type:** - **Most Graphics:** Painted metal and other painted substrates, rigid plastic, glass - **Indoor Floor Graphics Only:** Most indoor floors including, tile, sealed concrete, terrazzo, ceramic and finished wood; Low pile, secured floor carpet **Application temperature:** 40° – 100°F (4.4° – 38°C) air and substrate **Application method:** Dry
Applied Shrinkage	Less than 0.015 inches (0.4 mm)
Temperature Range After Application	-58 to +194 °F (-50 to +90 °C) (not for extended periods of time at the extremes)
Graphic Removal	Removable, may require heat

Warranty Information

3M Basic Product Warranty

3M Graphics Products are warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in its applicable 3M Graphics Product Bulletin and as further set forth in the 3M Graphics Warranties Bulletin.

Limited Remedy

The limited remedy applicable to each warranty is addressed in the 3M Graphics Warranties Bulletin found at 3MGraphics.com/warranties.

Limitation of Liability

Except where prohibited by law, 3M SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO PURCHASER OR USER FOR ANY DIRECT (EXCEPT FOR THE LIMITED REMEDY PROVIDED IN THE 3M GRAPHICS WARRANTIES BULLETIN), INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LABOR, NON-3M MATERIAL CHARGES, LOSS OF PROFITS, REVENUE, BUSINESS, OPPORTUNITY, OR GOODWILL) RESULTING FROM OR IN ANY WAY RELATED TO 3M'S GRAPHICS PRODUCTS, SERVICES, or THIS BULLETIN. This limitation of liability applies regardless of the legal or equitable theory under which such losses or damages are sought.

Additional Limitations

See the 3M Graphics Warranties Bulletin at 3MGraphics.com/warranties, for terms, additional limitations of your warranty, if any, information on reduced warranties for different exposures, and limitations of liability.

Factors that Affect Graphic Performance Life

The actual performance life of a graphic is affected by:

• the combinations of graphics materials used.
• complete ink drying or curing.
• selection, condition and preparation of the substrate.
• surface texture.
• application methods.
• angle and direction of sun exposure.
• environmental conditions.
• cleaning or maintenance methods.

Graphics Manufacturing

⚠ CAUTION

Before using any equipment, always read the manufacturer's instructions for safe operation.

Inkjet Printing

Always read and follow the ink manufacturer's written instructions on usage.

Total Ink Coverage

The maximum recommended total ink coverage for this film is:

- **Sheeted film:** When used on a flat-bed inkjet printer, sheeted film may produce printing defects.
- **Ink limiting:** The recommended maximum ink limit is 250%.
- **If sheeted or stacked graphics will be stored:** If you plan to store sheeted and stacked finished graphics for an extended period of times, leave an unprinted margin (about 1/4 inch) to allow for possible shrinkage before trimming the graphic.

Completely Dry Graphics

ⓘ IMPORTANT NOTE

Incomplete drying or curing can result in graphic failure including curling, increased shrinkage and adhesion failure, which are not covered under any 3M Graphic Warranty.

See the ink's 3M Product and Instruction Bulletin for more details.

Screen Printing

Formulations and processing conditions can affect ink durability. Refer to the Product and Instruction Bulletins for your ink for limitations and proper usage.

Cutting

See 3M Instruction Bulletin 4.1 for Sheeting, Scoring and Film Cutting details.

Graphic Protection

Graphic protection may improve the appearance, performance and durability of the graphic. Click on the graphic protection options listed in Product Bulletin or see the 3M Graphics Market Product Catalog, for more information.

ⓘ IMPORTANT NOTE

During installation, scratches may occur on films without graphic protection.

Application Tapes

There are two types of application tapes. See 3M Instruction Bulletin AT-1 to determine what application tape is recommended for your film or finished graphic.

Premasking Tape

Increases stiffness during application while preventing stretching and damage. Use when little or no liner is exposed. See 3M Instruction Bulletin 4.3 for complete details.

Prespacing Tape

Holds cut and weeded letters or graphics in place during application and after removing the film liner, while preventing stretching and damage. Use when large amounts of liner are exposed. See 3M Instruction Bulletin 4.3 for complete details.

Application and Installation

In addition to other 3M Bulletins specified in this document, the following Bulletins provide details that you may need to successfully apply a graphic.

- 3M Instruction Bulletin 5.37 A Guide to Understanding and Applying Graphics to Common Smooth and Textured Wall Surfaces
- 3M Instruction Bulletin 5.5 Application, General Procedures for Interior and Exterior Dry Application

⚠ CAUTION

UV inkjet inks may crack if too much heat is used during graphic application to complex curves and deep contours as well as around rivets. When using heat during application, make sure the film surface temperature does not exceed 212° F (100° C). For best results, **always do a test application** of a printed graphic to determine how much heat can be used without damaging the image.

Pressure-activated Adhesive

The pressure activated adhesive on this film offers:

- smooth sliding into position on a substrate;
- fast finger tacking to check position; and
- easy snap-up and repositioning when you need it.

The **snap-up and reposition feature is lost**:

- when firm pressure with a squeegee or other application tool is applied.
- at application temperatures above 100° F (38° C) even if only light finger pressure was used for tacking.
- if any part of the film is removed from the original liner and reapplied to the same or another liner.
- solvent from inkjet ink has not completely dried or cured, which affects both slideability and snap-up.

Working with Air Release Channels

Air release channels are a characteristic of films with Comply™ adhesive that allow trapped air to exit through the edges of the graphic.

- The channels will be damaged and effective air removal affected if you remove and attempt to change liners or reapply the same liner.
- For the best results, always work from the center out to the edges of the graphic to allow trapped air to exit through the air release channels. If the channels are closed off by firm pressure and air is trapped, use an air release tool to aid in removing air bubbles. See 3M Instruction Bulletin 5.4 for details.

Video

Click here to see how 3M's Comply™ adhesive technology works.

Maintenance and Cleaning

Use a cleaner designed for high-quality painted surfaces. The cleaner must be wet, non-abrasive, without solvents, and have a pH value between 3 and 11 (neither strongly acidic nor strongly alkaline). See 3M Instruction Bulletin 6.5 for details.

Removal

Removal may require heat. The ease and rate of removal depends on a number of factors. See 3M Instruction Bulletin 6.5 for details.

Shelf Life, Storage and Shipping

Shelf Life

The shelf life is **never more than 2 years** from the date of manufacture on the original box.
If you process the film, the shelf life is changed to **1 year** from the processing date, but not later than the 2 year maximum from the manufacturing date.

Storage Conditions

- 90 °F (32 °C) maximum
- Out of sunlight
- Clean, dry area
- Original container
- Bring the film to print room temperature before using

Shipping Finished Graphics

Flat, or rolled printed side out on 6 inch (15 cm) or larger core. This helps prevent the liner, if used, from popping off.

Health and Safety

⚠ CAUTION

When handling any chemical products, read the manufacturer's container labels and the Safety Data Sheets (SDS) for important health, safety and environmental information. To obtain SDS sheets for 3M products go to 3M.com/SDS, or by mail or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501.

When using any equipment, always follow the manufacturer's instructions for safe operation.

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