



Panagraphics™ III Wide Width Flexible Substrate

For Piezo Ink Jet Printing and Electronically Cut Graphics

Description

3M™ Panagraphics™ III Wide Width Flexible Substrate is a translucent media with a smooth front surface and a semi-gloss finish. Digitally image this substrate and attach it to a variety of extrusions, or decorate with cut or screen printed film before or after attaching it to a frame or extrusion. It is a cost-effective choice for seamless, wide width backlit signs used in medium to long-term installations.

Recommended Types of Graphics and End Uses

Panagraphics substrate is intended for making durable, flexible signs when used with the listed Compatible Products in the following applications.

- Indoor and outdoor, day and night graphics for backlit signs

Limitations of End Uses

We do not recommend this substrate for the following:

- Removing existing graphics and reusing

Compatible Products

Films for Decorating

- 3M™ Scotchcal™ Opaque Film Series 50
- 3M™ Scotchcal™ Translucent Film Series 3630

Piezo Ink Jet Printers and Inks for Direct Printing

- VUTEK UltraVu™ 3000/3300 and 5000/5300 Printers
 - 3M™ Piezo Ink Jet Ink Series 1500
- 3M™ Printer 2500UV
 - 3M™ Piezo Ink Jet Ink Series 2600UV

Overlaminates

- 3M™ Scotchcal™ Luster Overlamine 8519
- 3M™ Scotchcal™ Matte Overlamine 8520
- 3M™ Scotchcal™ High Gloss Overlamine 3640GPS
- 3M™ Scotchcal™ Matte Overlamine 3642GPS

Characteristics

These are typical values for undecorated Panagraphics III substrate. Contact your 3M representative for a custom specification.

| Characteristic | Value |
|--|---|
| Substrate | Polyester scrim embedded in a white-pigmented vinyl |
| Thickness | 0.020 inch ± 0.002 (0.05 cm ± 0.005) |
| Roll sizes | 10 feet 6 inches x 164 feet (320 cm x 50 m.) <i>Contact your sales representative for additional widths</i> |
| Service temperature range | -22°F to +158°F (-30° to +70°C) |
| Light transmission | 21% +/- 2% |
| Tensile strength <i>typical</i> | |
| Tear weft | 85 pounds/inch (15 kg/cm) |
| Tear warp | 75 pounds/inch (13.4 kg/cm) |
| Tensile weft | 150 pounds/inch (26.6 kg/cm) |
| Tensile warp | 150 pounds/inch (26.6 kg/cm) |
| Weight | 19 ounces/ sq. yd. (650 gr/m ²) |
| Gloss- <i>typical</i> (using 60° gloss meter) | 30 |
| Whiteness index (reflective) | W.I. (E313) = 100 minimum |
| Approval Standards | NFPA 701.1 & NFPA 701.2 U.L. 48 – Standard for Electrical Signs: Recognized Component ASTM E84, Class 1 |

Warranty Information

Graphic Performance Life

Finished graphics constructed with the 3M graphics products as indicated in the Durability table and according to the applicable 3M Product and Instruction Bulletins, are covered by the 3M™ MCS™ Warranty.

Factors that Influence Performance Life

- Use of compatible products
- Decorating method and application
- Proper selection and preparation of the substrate
- Mounting methods
- Angle and direction of exposure
- Environmental conditions
- Cleaning methods

Exposure Definition



face of graphic

Vertical Exposure

The face of the graphic is $\pm 10^\circ$ from vertical.

Warranty

The following is made in lieu of all other express or implied warranties, including any implied warranty of **merchantability** or fitness for a particular purpose or implied warranty arising out of a course of dealing, custom or usage of trade: all 3M products are warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in this Product Bulletin. 3M will replace or refund the price of any 3M materials that do not meet this warranty within the specified time periods. These remedies are exclusive. **In no case shall 3M be liable for any direct, indirect, or consequential damages, including any labor or non-3M materials charges.**

See the Graphics Market Center Warranty Brochure, which gives the terms, additional limitations of the warranty, if any, and limitations of liability.

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Additional Warranty Limitations

3M does not warrant the following for Panagraphics III substrate.

- Graphic failure due to design requirements that exceed the stated specifications
- Film or ink cracking due to the substrate flexing in cold temperatures
- Ripping, tearing, or damage due to the effects of inadequate cabinet construction, weather, environment or a force majeure
- Graphics used in a non-vertical exposure

Durability

| Panagraphics III substrate with the decorating method and materials shown | | | Warranted Durability | |
|---|--|----------------------|------------------------|---------------------------|
| Decorating Method | 3M Materials | Graphic Protection | U.S. Vertical Exposure | D.S.W.* Vertical Exposure |
| Unprinted cut graphics applied to substrate | Unprinted film series 50 | None 8519 8520 | 3 years | 2 years |
| | Unprinted film series 3630 | None | 5 years | 4 years |
| Screen printed film applied to substrate | Film series 3630 printed with ink series 1900 | 1920DR | 5 years | 4 years |
| | Film series 3630 printed with UV ink series 9800 | 9720UV 9800CL | 5 years | 4 years |
| Piezo ink jet printing directly on substrate | UltraVu printers and ink series 1500 Printer 2500UV and ink series 2600UV | 8519 8520 | 4 years | 3 years |
| | UltraVu printers and ink series 1500 Printer 2500UV and ink series 2600UV | 3640GPS 3642GPS | 5 years | 4 years |
| | UltraVu printers and ink series 1500 Printer 2500UV and ink series 2600UV | None | 3 years | 2 years |

*The warranty for D.S.W. refers to graphics exposed to solar energy more than half of the time in Arizona, New Mexico and the desert areas of California, Nevada, Utah and Texas. A detailed map is available upon request.

Making Graphics with Film Series 50 or 3630

Before applying to Panagraphics III substrate, film series 50 can be imaged with thermal mass transfer and/or electronically cut, and film series 3630 can be screen printed and/or electronically cut. Apply the film to the substrate using the wet application method or dry hand/roll lamination for front lit or backlit (internally illuminated) graphics.

No more than two layers of film may be applied to the substrate.

The minimum recommended decorating temperature is 60°F (15°C). Also see **Tensioning and Attachment Guidelines**.

Follow Instruction Bulletin 5.30 for details on preparing the substrate and wet application techniques. The procedures for Panagraphics III substrate are the same as for Panagraphics II substrate.

Printing with Piezo Ink Jet Printers

For the best results, follow the printing guidelines and procedures in Instruction Bulletins for the ink series you are using.

Be sure the operator reads and follows “Understanding Printing with Solvent-Based Piezo Ink Jet Inks,” which is in the ink’s Instruction Bulletin. An operator who understands pre-press operations and the relationship between film characteristics, printer setup, total ink coverage and drying time can produce graphics that achieve the performance expectations of the film and the customer. The operator should also work with the graphic designer and/or color conversion operator so there is a common understanding of print and media parameters.

Total Ink Coverage

The ink coverage required for your graphic will be determined by whether the Panagraphics III substrate will be used for a banner or backlit graphic. Backlit images will require greater density, which may be achieved by using the printer’s double strike input mode. When using this mode, you have exceeded the maximum total ink coverage when you can no longer obtain color consistency throughout the graphic and/or the graphic cannot be adequately dried after printing.

Drying

Caution

Always build enough time into your process to ensure adequate drying of the graphic. Poorly dried graphics can cause difficulty when applying graphic protection or rolling the graphic.

Fabrication

Graphic Protection

To maximize the performance of your sign, 3M recommends using one of the approved graphic protection options specified in this Product Bulletin to provide additional resistance to abrasion or wear due to frequent cleaning.

Planning for a Seam

Plan your sign face so that the seam is at least 46 cm (18 inches) away from any attachment hardware that is perpendicular (at right angles) to the seam. See Figure 1.

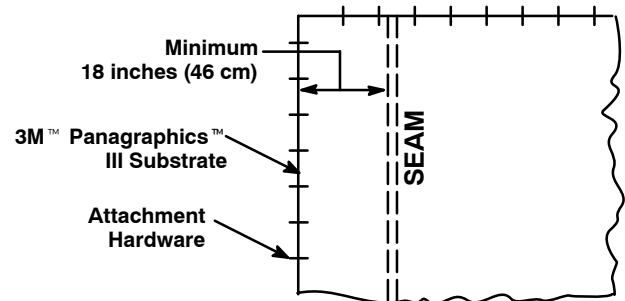


Figure 1.

Tensioning and Attachment Guidelines

Attaching and Tensioning

- 3M recommends attaching and tensioning this substrate in a cabinet at a temperature equal to or more than 45°F (7°C), whether the work is being done in a fabricator’s shop or in the field.
- Any existing attachment system used currently should be tested prior to actual application.

Cold Temperature Field Installation

- Artificially warm the decorated substrate to at least 45°F (7°C) before attaching or tensioning the sign face in a cabinet or frame.
- Do not stress the decorated substrate by folding, crimping, creasing, or forming it around corners. In cooler temperatures, the films applied to the substrate become less flexible and may crack if handled roughly.
- Check and re-tension large sign faces as needed when the temperature warms to more than 60°F (15°F). A large sign face is one that is more than 275 square feet (25 m²) and has a height that exceeds 11 feet (3.3 m) or a width that exceeds 25 feet (7.5 m).

Shipping

Rolling a Finished Sign Face for Shipping

Follow these guidelines if the graphics already have been applied to the substrate.

Selecting a Core Size

- For a graphic with a single film layer, use a core that is at least 3 inches (7.6 cm) in diameter.
- For a graphic with multiple film layers, use a core that is at least 6 inches (15 cm) in diameter.

Rolling the Graphic

- Roll the graphic with the graphics facing out to help prevent damage.
- Do not use masking tape, which may stain the substrate, to secure the roll.

Cleaning

Use only mild detergent and water for cleaning. Clean the finished graphic annually. Clean the graphic more often in unusually dirty environments.

Shelf Life and Storage

This substrate may be stored for up to 12 months undecorated and up to an additional six months decorated under the following conditions:

- Away from direct sunlight
- In a cool, dry environment
- Lined with a waxed paper slip-sheeting

Health and Safety



Caution

When handling any chemical products, read the manufacturers' container labels and the Material Safety Data Sheets (MSDS) for important health, safety and environmental information.

To obtain MSDS sheets for 3M products:

- By fax, call 1-800-364-0768 in the US and Canada or 1-650-556-8417 for all other locations.
- Electronically, visit us at <http://www.3m.com/msds>.
- 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 manufacturers' instructions for safe operation.

Flammability

Panagraphics III substrate when printed with 3M inks and without any graphic protection, passes NFPA 701 Test 1 and Test 2, "Standard Methods of Fire Tests for Flame-Resistant Textiles and Films." Substrate with graphic protection was not tested.

3M Flexible Substrates

The user is responsible for determining and complying with all applicable building codes that affect the use of materials in interior and exterior awning, banner and sign face applications, including flammability standards. For information on flammability requirements, contact your local building code officials. For information on the results of flammability testing on 3M flexible substrates, including the product covered in this bulletin from 3M Commercial Graphics Division, call 1-800-328-3908.

Attention:

Authorized Graphics Manufacturers

Visit our password-protected website for exclusive product information, profiles and services. Certain restrictions apply.

1. Go to www.scotchprint.com.
2. Select a country.
3. Click *Login* on upper left side of screen.
4. Click Register.
5. Enter authorization code: **CGD_SGN**.
6. Complete the information and submit.
An e-mail will be sent when your authorization is completed.

3M Related Literature

Before starting any job, be sure you have the most current Product and Instruction Bulletins.

The information in 3M Product and Instruction Bulletins is subject to change. Current Bulletins, as well as a list of all Bulletins updated within the last three months, are available at www.scotchprint.com or through our Fax-on-Demand system. Any warranty, if offered, is based on information in the appropriate Bulletin(s) that was current at the time you purchased the 3M products. The following Product and/or Instruction Bulletins provide the information and processes you need to properly make the graphics described in this Bulletin.

Fax-on-Demand phone numbers:
 United States or Canada: 1-800-364-0768
 International: 1-651-732-6506

| Subject | Bulletin No. | FOD No. |
|---|---------------|---------|
| Product Bulletins | | |
| 3M™ Scotchcal™ Graphic Film Series 50 | 50 | 3037 |
| 3M™ Scotchcal™ Translucent Graphic Film Series 3630 | 3630 | 3009 |
| 3M™ Piezo Ink Jet Ink Series 1500 | 1500 | 4578 |
| 3M™ Piezo Ink Jet Ink Series 2600UV | 2600UV | 4594 |
| 3M™ Scotchcal™ Overlamine 8519 and 8520 | 8519/8520 | 4524 |
| 3M™ Scotchcal™ Overlamine 3640GPS and 3642GPS | 3640/ 3642 | 3011 |

| Subject | Bulletin No. | FOD No. |
|---|--------------|---------|
| Instruction Bulletins | | |
| Printing with piezo ink jet series 1500 | 4.45 | 6545 |
| Printing with piezo ink jet ink 2600UV | 4.50 | 6550 |
| Scoring and cutting | 4.1 | 6501 |
| Application, substrate selection, preparation and substrate-specific application techniques | 5.1 | 7001 |
| Application, general procedures for interior and exterior dry applications | 5.5 | 7005 |
| Application of 3M pressure sensitive films to Panagraphics substrate | 5.30 | 7030 |
| Application and attachment of graphics | 5.21 | 7021 |
| Storage, handling, maintenance, removal | 6.5 | 8505 |
| Cleaning and repairing decorated awnings and sign facings | 6.1 | 8501 |
| Warranties | | |
| Worldwide 3M Graphics Center Warranty Brochure | | 9503 |

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