



# Panaflex™ Awning and Sign Facing 945GPS

## For Decorating with Pigmented Translucent Film

### Description

3M™ Panaflex™ Awning and Sign Facing 945GPS is flexible material with built-in dirt resistance on its smooth, semi-gloss surface. The polyester scrim embedded between white-pigmented vinyl creates a durable substrate for creating attractive signs and awnings.

### Applications and Uses

Panaflex awning and sign facing 945GPS is intended for making durable signs or awnings when used with the listed Compatible Products in the following applications. These types of applications are warranted by the 3M™ MCS™ Warranty.

- Functions as a substrate for creating attractive day and night graphics for use in many types of signs and awnings
- Attach to a variety of frameworks
- Decorate before or after attaching to the framework

### Limitations of End Uses

- Decorate only the front surface of this substrate.
- For the best looking signs and awnings, do not remove and then reuse the Panaflex material. Redecorating and reusing the substrate is not recommended or warranted by 3M.

### Compatible Products

- 3M™ Scotchcal™ Translucent Graphic Film Series 3630
- 3M™ Scotchcal™ Translucent Graphic Film Series 3632GPS
- 3M™ Scotchcal™ High Gloss Overlamine 3640GPS
- 3M™ Scotchcal™ Matte Overlamine 3642GPS
- 3M™ Scotchcal™ Translucent Graphic Film Series 230

Note: When using multiple film layers, refer to Instruction Bulletin 5.7 for layering requirements.

### Characteristics

This information is subject to change. Be sure this is the most current Product Bulletin. See 3M Related Literature at the end of this bulletin.

Characteristic	Description
Film	21 mil (nominal) polyester scrim embedded in a white pigmented, cast vinyl; smooth front surface, semi-gloss appearance
GPS	Dirt-resistant front and back; however, backside is not warranted for decoration
Fabrication temperature range	60°F (15°C) or higher
Temperature for attaching to hardware and tensioning	45°F (7°C) or higher
Maximum finished graphic size	625 square feet (58 square meters) per single face (warranted)
<b>Roll sizes</b>	
Width	- Seam free: 80 inches (2.03 m) - With seams: 84 inches to 40 feet in 6 inch increments (2.1 m to 12.2 m in 15 cm increments) <b>Note:</b> See more information on splices and seams on page 2.
Maximum length	depends on handling characteristics
Maximum roll size	1500 square feet (139 m <sup>2</sup> )

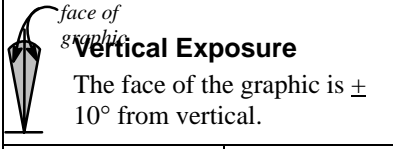
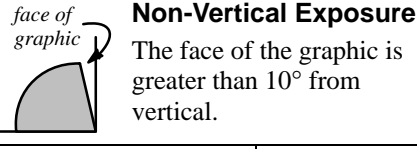
Note: For the full product names of the 3M products listed on this page, please see page 1.

## Effective Performance Life

The effective performance life is based on field experience and exposure tests conducted throughout the United States. When the graphics are processed and used according to the 3M recommendations, they should have the performance life shown in the table below. The actual performance depends on the:

- Correct use of Compatible Products
- Proper selection and preparation of the substrate
- Application methods
- Angle and direction of exposure
- Size of finished sign face (maximum of 625 square feet [58 square meters] per single face)
- Environmental conditions
- Cleaning and maintenance methods

## Warranted Durability

Awning and Sign Facing 945GPS decorated with:				
	U.S. <sup>1</sup> years	Desert S.W. <sup>2</sup> years	U.S. <sup>1</sup> years	Desert S.W. <sup>2</sup> years
Series 3630 and 230 unprinted	6	5	0	0
Series 3632GPS, unprinted	9	6	6	4
Series 3630 and 230 overlaminated with 3640GPS or 3642GPS	9	6	6	4

<sup>1</sup> For warranty periods outside the United States, contact the 3M sales organization for that country.

<sup>2</sup> The U.S. Desert Southwest includes Arizona, New Mexico, and the desert areas of California, Nevada, Utah, and Texas. A detailed map is available by request.

## Seams and Splices

### Splices

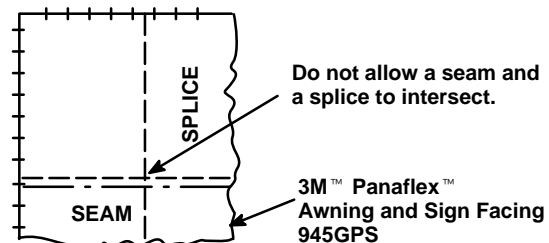
Panaflex awning and sign facing 945GPS that is 80 inches (203 cm) wide or less may contain a low-visibility splice. A patented process for this splice allows 3M to offer a continuous roll of Panaflex awning and sign facing that is fully usable. The low-visibility splice is barely noticeable in a backlit graphic. Each roll includes a map that indicates the location of any splices. Refer to the roll map to determine the suitability and limitations of this material for your intended purpose.

### Seams

A roll or a custom sign blank that is wider than 80 inches (203 cm) is fabricated using a 3M or warranted seaming contractor manufactured, standard overlap seam.

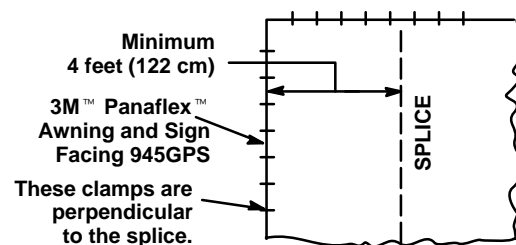
### Planning For a Splice or a Seam

If the Panaflex awning and sign facing 945GPS has a splice or a seam, follow the simple precautions illustrated in Figures 1 to 3 when planning your sign face. These precautions help protect the splice or seam from damaging stress in high wind conditions.



**Figure 1. Unacceptable Intersection of a Seam and a Splice**

Position any splice at least 4 feet (122 cm) away from any mounting clamp or material support that is perpendicular (at right angles) to the splice. See Figure 2.



**Figure 2. Splice Placement**

*Continued on the next page.*

Note: For the full product names of the 3M products listed on this page, please see page 1.

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Plan your sign face so the seam is at least 18 inches (46 cm) away from any attachment hardware that is perpendicular (at right angles) to the seam. See Figure 3.

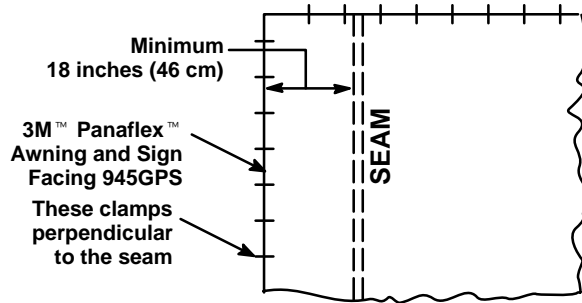


Figure 3. Seam Placement

## Fabrication, Tensioning, and Attachment Guidelines

### Fabrication

Refer to Instruction Bulletin 5.9 for detailed instructions on the application of 3M™ Scotchcal™ Graphic Film to 3M™ Panaflex™ Awning and Sign Facing 945GPS. All surfaces must be considered contaminated and must be cleaned prior to application of film. Keep in mind that the recommended decorating temperature is 60°F (15°C).

### Attaching and Tensioning

- For specific tensioning instructions, refer to Product Bulletin 6.3. Also follow these precautions regarding attaching and tensioning temperatures. Failure to follow these precautions may result in cracking, especially when tensioning a sign face, and it will void the warranty.
- 3M recommends attaching and tensioning decorated Panaflex awning and sign facing 945GPS in a cabinet or awning frame 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.

### Cold Temperature Field Installation

- Artificially warm the decorated substrate to at least 45°F (7°C)<sup>1</sup> and maintain the temperature before attaching or tensioning the sign face or awning in a cabinet or frame. The method used to artificially warm a work environment in the field is the responsibility of the graphic manufacturer/installer.

<sup>1</sup> Exception: A minimum 55°F (13°C) temperature is recommended for attachment and tensioning hardware systems that require the decorated sign facing to be wrapped over an edge and tensioned using a hammer and screwdriver combination.

- 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 retension large sign faces as needed when the temperature warms to more than 60°F (15°C). A large sign face is one that is more than 275 square feet (25 m<sup>2</sup>) 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.

- 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.
- 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

Clean the finished graphic annually to maximize the dirt-resistant properties of Panaflex awning and sign facing 945GPS. Clean the graphic more often in unusually dirty environments. Refer to Instruction Bulletin 6.1 for the cleaning recommendations.

## Repair

A Panaflex sign face that is punctured or damaged by sharp objects can be repaired using a kit available from 3M. The appearance of the repaired area depends on the extent of the damage. However, due to the strength and integrity of Panaflex awning and sign facing 945GPS, a tear or a puncture does not expand. Refer to Instruction Bulletin 6.1 for more details.


## Shelf Life and Storage

An awning or sign facing that is decorated as recommended, or undecorated, may be stored for up to three years with the following conditions.

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

Note: For the full product names of the 3M products listed on this page, please see page 1.

## Health and Safety

 <b>Caution</b>
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:
<ul style="list-style-type: none"> <li>• By fax, call 1-800-364-0768 in the US and Canada or 1-650-556-8417 for all other locations.</li> <li>• Electronically, visit us at <a href="http://www.3M.com/MSDS">http://www.3M.com/MSDS</a>.</li> <li>• By mail, or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501.</li> </ul>
When using any equipment, always follow the manufacturers' instructions for safe operation.

### 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.

## Physical Properties

These are typical values for undecorated awning and sign facing 945GPS. Contact your 3M representative for a custom specification.

Property	Value
Service temperature range	-50° to +170°F (-45° to +77°C)
Light transmission (opacity)	26% ± 2%
Strength (minimum)	
Tear weft	85 pounds/inch (15 kg/cm)
Tear warp	113 pounds/inch (20 kg/cm)
Tensile weft	150 pounds/inch (26.6 kg/cm)
Tensile warp	150 pounds/inch (26.6 kg/cm)

Property	Value
Seam strength (minimum)	50 pounds/inch (9 kg/cm)
Thickness	0.021 inch ± 0.002 (0.05 cm ± 0.005)
Weight	19.52 ounces/square yard (670 gr/m <sup>2</sup> )
Applied shrinkage	0.31 inch shrinkage maximum per 12 inches (0.26 cm shrinkage maximum per 1 m)
Flammability	ASTM -E-84, Class 1
Gloss (using 60° gloss meter)	17.5 ± 10
Whiteness index (reflective)	W.I. (E313) = 110 ± 10
Color (reflective)	CIELAB L* = 90 a* = +7.0; b* = -11.5
U.L. recognition	U.L. 48 - recognized for sign accessories  U.L. 94HB - component recognized plastic

## Warranty and Limited Remedy

*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: 3M™ Panaflex™ Awning and Sign Facing 945GPS is 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. See the worldwide 3M™ MCS™ Warranty bulletin, which gives the terms and limitations of the warranty.*

**These remedies are exclusive. In no case shall 3M be liable for any direct, indirect or consequential damages, including any labor or non-3M material charges.**

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## 3M Related Literature

**Before starting any job, be sure you have the most recent product and instruction bulletins.**

Listed below is related 3M technical literature that may be of interest. You may view and print these Bulletins from our Web site at [www.scotchprint.com](http://www.scotchprint.com), or order them via our Fax-on-Demand (FOD) system. Call one of these phone numbers to order the desired bulletins, and specify the FOD document number provided in the chart.

United States or Canada: 1-800-364-0768  
International: 1-651-732-6506

Subject	Bulletin No.	FOD No.
<b>Product Bulletins</b>		
3M™ Scotchcal™ Translucent Graphic Film Series 230	230	3002
3M™ Scotchcal™ Translucent Graphic Film Series 3630	3630	3009
3M™ Scotchcal™ Translucent Film Series 3632GPS	3632	3023
3M™ Scotchcal™ Overlamine 3640GPS and 3642GPS	3640/ 3642	3011
<b>Instruction Bulletins</b>		
Camera-ready art requirements, screen printed sign faces	2.2	5502
Changeable copyboard backgrounds, sign faces	2.3	5503
Application, wet method for translucent screen printed, thermal mass transfer and cut graphics	5.7	7007
Cleaning and repairing decorated awnings and sign facings	6.1	8501
Using 3M™ Wedge Clamp System	6.3	8503

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### Bulletin Change Summary

This bulletin has been updated for improved organization. The Effective Performance Life explanation has also been updated. The non-vertical U.S. warranty for film 3630 or 230 with overlamine 3640GPS or 3642GPS has been increased from 5 years to 6 years.



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