

3M Transportation Safety Division

User Guide 3M[™] Reflective Sheeting and HP Latex 360/365 Printers

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1 Description

The following 3M Reflective Sheetings are compatible with HP Latex 360/365 printers when used in combination with HP 831 Latex inks:

- 3M[™] High Intensity Prismatic Reflective Sheeting Series 3930
- 3M[™] High Intensity Prismatic Reflective Sheeting Series 3930UDS
- 3M[™] Diamond Grade[™] VIP Reflective Sheeting Series 3990
- 3M[™] Diamond Grade[™] DG³ Reflective Sheeting Series 4000
- 3M[™] Diamond Grade[™] DG³ Reflective Sheeting Series 4000UDS
- 3M[™] Diamond Grade[™] Fluorescent Work Zone Sheeting Series 3924S,
- 3M™ Diamond Grade™ Fluorescent Work Zone Sheeting Series 3924SUDS
- 3M[™] Advanced Flexible Engineer Grade Reflective Sheeting Series 7300
- 3M™ Engineer Grade Prismatic Reflective Sheeting Series 3430

Series 4000, 4000UDS, 3990, 3930 and 3930UDS are all backed by the 3M[™] MCS[™] Warranty and 3M[™] MCS[™] Warranty for Traffic when the printing guidelines in this document are followed and 3M[™] ElectroCut[™] Film 1170C Clear or 3M[™] Premium Protective Overlay Film Series 1160i is applied over the finished graphics. See Section 12.1 of this document and the separately available warranty matrices for more information on the 3M[™] MCS[™] Warranties.

Series 7300 and 3430 are compatible with HP Latex 360/365 printers in combination with 3M[™] ElectroCut[™] Film 1170C Clear Overlaminate or 3M[™] Premium Protective Overlay Film Series 1160i and HP 831 Latex Inks. However, this combination is not covered by the 3M[™] MCS[™] Warranty or 3M[™] MCS[™] Warranty for Traffic.

Signs printed for temporary traffic use, such as those printed on Series 3924S or 3924SUDS, are not covered as part of the 3M™ MCS™ Warranty. Such signs do not require overlaminates.

Colors that meet ASTM D4956 requirements for daytime color, nighttime color, luminance factor, and retroreflectivity are referred to herein as traffic colors ("Traffic Colors").

Non-ASTM defined colors, also known as custom colors ("Custom Colors") or custom color graphics, may be printed on any of the above-mentioned sheetings and, except when signs are produced on Series 3924S, 3430, or 7300 sheetings or without an overlay film, are backed by the 3M[™] MCS[™] Warranty.

2 Specifications

Sign constructions discussed in this document conform to the performance requirements described in Table 1.

Sheeting	Printed Colors	Characteristic	Specification
Series 3930, 3930UDS	Traffic BLUE Traffic GREEN Traffic RED Traffic BROWN	Daytime color	ASTM D4956 Table 11
(white)		Nighttime Color	ASTM D4956 Table 13
		Luminance Factor	ASTM D4956 Table 2
		Coefficients of Retroreflection (R_A)	70% of ASTM D4956 Table 5 (Type IV)
Series 3990 (white)	Traffic BLUE	Daytime color	ASTM D4956 Table 11
	Traffic GREEN Traffic RED	Nighttime Color	ASTM D4956 Table 13
	Traffic BROWN Traffic PURPLE	Luminance Factor	ASTM D4956 Table 2
		Coefficients of Retroreflection $({\rm R}_{\rm A})$	70% of ASTM D4956 Table 9 (Type IX)
Series 4000, 4000UDS	Traffic BLUE Traffic GREEN Traffic RED Traffic BROWN Traffic PURPLE	Daytime color	ASTM D4956 Table 11
(white)		Nighttime Color	ASTM D4956 Table 13
		Luminance Factor	ASTM D4956 Table 2
		Coefficients of Retroreflection (R_A)	70% of ASTM D4956 Table 10 (Type XI)
Series 3930, 3930UDS Series 3924S, 3924SUDS Series 3990 Series 4000, 4000UDS	Traffic BLACK	Opaque	

Table 1. Summary of Color and Retroreflectivity Specifications of the Sheetings

Sheeting	Printed Colors	Characteristic	Specification
Series 3930, 3930UDS ^a Series 3990 ^b Series 4000, 4000UDS ^c	Custom Colors	s No ASTM-defined applications	
Series 3430 ^d Series 7300°	No warranties of colo	r or durability provided on Engineer Gr	ade sheeting

b. 3M Series 3990 includes: 3990 (white), 3991 (yellow), 3992 (red), 3995 (blue), 3997 (green), 3981 (fluorescent yellow), 3983 (fluorescent yellow) green) 3M Series 4000, 4000UDS includes: 4090, 4090UDS (white), 4091, 4091 UDS (yellow), 4092 (red), 4095 (blue), 4097 (green), 4099 (brown), 4081, 4081 UDS (fluorescent yellow), 4083, 4083UDS (fluorescent yellow green), 4084, 4084UDS (fluorescent orange)

d. 3M Series 3430 includes: 3430 (white), 3431 (yellow), 3432 (red), 3435 (blue), 3437 (green), 3439 (brown)

e. 3M Series 7300 includes 7310 (white), 7311 (yellow), 7314 (orange)

Printing Guidelines 3

3.1 Selecting, Storing, Preparing, and Using 3M Retroreflective Sheeting

Do not use damaged rolls of sheeting; doing so can result in head strikes and printer damage. Condition sheeting, ink, and overlaminate by keeping them the same environment as the printer for at least 24 hours before printing. Operate printer under ambient conditions conforming to the parameters presented in Table 2.

Table 2. Use Printer in a Climate-Controlled Room under the Following Conditions

Relative humidity range for best print quality	40-60%
Temperature range for best print quality	68–77 °F

3.2 About Traffic Colors

Differences in color appearance, which are affected by the sheeting, e-cut film, and screen and digital printing processes used, are normal and expected. Although prints made using different combinations of these materials and processes may appear visually different, when prepared per 3M requirements, each satisfies the traffic color requirements indicated in Table 1 and qualifies for full 3M™ MCS™ Warranty coverage.

Each material and process have a specific range of colors they can produce. The available color range depends on both the material characteristics and the color pigments used. Different inks and films also have different translucencies, which impact retroreflectivity differently. Each traffic color has a daytime color, nighttime color, and retroreflectivity specification, and a visual color match does not guarantee that a sign construction will meet all specification requirements.

Visual differences are most noticeable when differently produces signs are displayed on the same signpost, or otherwise in close proximity, and under similar lighting conditions. Process-dependent and materials-dependent color variations are, and have always been, well known and unavoidable sign construction challenges. If such differences are objectionable, signs to be mounted in close proximity and under similar lighting conditions must be made from the same materials, using the same processes.

3.3 3M[™] MCS[™] Warranty for Traffic and Printer Conditions

As stated in Section 3.2, when the guidelines presented in this document are followed, durable signs are produced, and the user is entitled to the benefits of the 3M™ MCS™ Warranty for Traffic. However, altering any of several operating conditions voids the 3M™ MCS™ Warranty for Traffic. These warranty-voiding actions are discussed presently before details of how to operate an HP Latex 360/365 printer under warranty conditions are discussed.

Note: Review Table 3 and Table 4 before making (or allowing any third party to make) any changes to printer conditions.

3M has designed Traffic Colors to be printed on 3M™ Reflective Sheeting using a HP Latex 360/365 printer and FlexiPRINT & Cut Authorized 3M™ Traffic Edition Software for use in the production of traffic signs that meet the color, retroreflectivity, and weathering durability regulations of various regions around the world. The HP 360/365 printer is a complex machine with many variables that are often adjusted by end users when producing commercial graphics and other non-regulated images. It is imperative that many of the changes frequently used in the production of non-regulated commercial graphics NOT be employed when printing regulated traffic signs. Modify print conditions only by following the recommendations presented in Table 3 and Table 4 below. Unless written guidance has been provided by a 3M representative, signs produced using settings not conforming to these tables will not carry the 3M[™] MCS[™] Warranty for Traffic.

HP Printer Media/Substrate Settings	Editing Constraints	Current Setting
Curing Temperature (°F)	May adjust within a range of 210–230 °F Must perform drying test described below ^a and adjust inter-pass delay accordingly ^b	225
Inter-pass Delay (ms)	Increase if temperature drops ^b	200
Air Flow Pressure (mm H₂O)	May adjust according to HP recommendations	180
Vacuum (mm H₂O)	May lower Too low will result in more frequent head strikes	20

a. Drying Test: Print a file with traffic color blocks using the new settings. The file can be similar to that described in Section 4.5. Subject the unlaminated sample to typical room conditions for at least 6 hours or leave overnight. If any of the ink appears to re-wet or looks oily on the surface, drying conditions are insufficient.

b. Adjust according to HP standard recommendations, which account for the interdependence of curing temperature and inter-pass delay; traffic sheeting type should not affect either setting.

 Table 4.
 Prohibited Setting Changes

HP Printer Media/Substrate Settings	Editing Constraints	Current Setting
Printer Ink Limit (%)	Change prohibited	150
Number of Passes	Change prohibited	12
Optimizer (%)	Change prohibited	4
Efficiency Mode	Change prohibited	Off
OMAS (On/Off)	Change prohibited	Off

4 Initial Setup

The following steps will help ensure accurate printing of Traffic Colors using a HP Latex 360/365 printer:

- 1. Install FlexiPRINT & Cut Authorized 3M™ Traffic Edition Software
- 2. Verify that the printer's firmware is current and update if necessary
- 3. Install media files from HP Substrate Library
- 4. Perform color calibration
- 5. Print and mail color checker file

4.1 Install FlexiPRINT & Cut Authorized 3M[™] Traffic Edition Software

SAi Production Manager, FlexiPRINT & Cut Authorized 3M[™] Traffic Edition Software Edition 21 or higher, comes preinstalled with presets for HP Latex printers. These presets include color formulations that properly match Traffic Signage standards on 3M sheeting.

To install:

- a. Locate the activation voucher provided by SAi.
- b. Create an account at <u>www.saicloud.com</u> and activate the license.
- c. Follow the link to the SAi software download page.
- d. Download and install the software (SAi Production Manager, FlexiPRINT & Cut Authorized 3M[™] Traffic Edition Software Edition 21 or higher).
- e. Upon launching software for first time, input printer model number and IP address, when prompted.

More detailed information available at: <u>https://youtu.be/izQ5SxtuiR8</u> (note that the activation code is provided by SAi, rather than with the Latex 360/365 printer as shown in the video).

Once the RIP software, Flexi Production Manager, detects the newly installed media presets, it will request to synchronize. Synchronization completes in a few minutes, then the printer and RIP software are ready to print.

4.2 Verify Latest Firmware

On the printer's front panel, navigate to the firmware update page: **Printer > Firmware Update > Check updates.** Figure 1 illustrates how to navigate to the firmware update screen.



Figure 1. Screen navigation to view latest firmware.

4.3 Install Media Files on Printer

Press the **Substrate Library** button on the main printer menu, then Select the **Online search** option and filter the results by Brand (**3M Commercial Graphics**), as shown in Figure 2.

🔺 LC large cartridge has expired 📃 🏶	Substrate library
	★ FAVORITES
	Q CNLINE SEARCH Brand V Type V Classification V Application V
	SELF-ADHESIVE 3M Commercial Grephics Divi
	ARPLEN IDPE Reinforced Banner
SUBSTRATE SUBSTRATE LIBRARY PRINTING JOB	TEXTILE (TO) ATP Adhesive Systems AG
	Advantage Sign & Graphic Sol Janner
	PVC BANNER (14) Ahlstrom
	PP & PE FILM & Aiprint it Scrim Banner 💽
	BANNER (9) Alpha3
	PET FILM (5) Aogy
	Arlon
	PAPER (32) Aurora Specialty Textiles Group
INKS CONNECTIVITY PRINTER USER'S GUIDE SETTINGS	Aver y Dennison er Film 🗸
0.0	El Film

Figure 2. Screen navigation to online library of media files: Substrate Library > Online Search

Once the media file has been located, click on the download symbol () on the right. Media file download and installation will then occur without further user input. Repeat for each required media file.

Table 5 indicates what media file is needed for each compatible sheeting product and use combination.

Table 5. Media File Names by Sheeting Product and Use

			Use	
Substrate	Media File Name	Information Signs (Process Colors)	Temporary Traffic Signs (Traffic BLACK only)	Warning, Regulatory, and Guide Signs (Traffic Colors)
3M 3430 Series	3M 3430 Traffic Colors v3	\checkmark	\checkmark	
3M 3924S	3M 3924 Preset for Black only images		\checkmark	
3M 3930 Series	3M 3930 Traffic Colors v3_1	\checkmark	\checkmark	\checkmark
3M 3990 Series	3M 3990 Traffic Colors v3	\checkmark	~	\checkmark
3M 4000 Series	3M 4000 Traffic Colors v3_1	\checkmark	\checkmark	\checkmark
3M 7300 Series	3M 7300 Traffic Colors v3	\checkmark	~	

4.4 Perform Color Calibration

The printer's color calibration status can be checked from the printer's front panel, as shown in Figure 3, at any time by clicking on **Substrate**.



Figure 3. Color calibration status screen.

The printer's internal calibration equipment requires non-reflective material. 3M™Controltac™ Graphic Film IJ180 self-adhesive vinyl is required for 3M Traffic Color calibration. To perform calibration:

- a. Load a roll of 3M™Controltac™ Graphic Film IJ180 self-adhesive vinyl onto printer.
- b. On the printer's front panel, select the reflective sheeting to be calibrated.
- c. See Figure 4 for screen navigation to perform color calibration. Click: Settings > Image Quality Maintenance > Color Calibration > Calibrate.



Figure 4. Screen navigation to perform color calibration.

d. Once calibration process has finished, load reflective sheeting print medium onto printer.

4.5 Print and Mail Color Checker File

Note: This section does not pertain to black-only temporary traffic signs.

Open FlexiPRINT & Cut Authorized 3M[™] Traffic Edition Software and draw a 4-inch x 4-inch square for each traffic color in a pattern that fits the of the width of the media being used. Next, use the **Fill/Stroke Editor** to fill each square with a 3M Traffic Color, as shown to the right, in Figure 5.

Laminate the print 3M[™] ElectroCut[™] Film 1170C Clear or 3M[™] Premium Protective Overlay Film Series 1160i, as described in Section 7, and label the back of it with the following:

- a. Date printed
- b. Printer model #
- c. Name of sign shop
- d. Email address

Send the color checker print as a strip or cut into squares to:

3M Center Building 235-3W-52 Attn: HP Printer Support St. Paul, MN 55144 IMPORTANT: refer to section 5 before printing color checker to ensure correct settings are used.

Figure 5. Location of 3M Traffic Colors (left) and example of color check sample square array (right).

Fill/Stroke Editor

-

Traffic GREEN

Traffic PURPLE

Traffic BLACK

Traffic BROWN

Name Traffic RED

1 1

Solid fill

Black

8

•

7

5 Printing

When printing for traffic applications, follow these software and physical procedures to ensure expected output and long-term functionality of your HP printer solution. This section presents specific instructions for printing on 3M reflective sheeting.



Because of the weight of 3M[™] Reflective Sheeting, it is recommended that the main feed and take up reels be used in the second position from the right, as shown in Figure 6.

Because of its rigidity, printing on 3M[™] Reflective Sheeting requires the use of edge holders. Figure 7 illustrates edge holder location.





Figure 8. Leading edge of sheeting resting beyond metal curing platform prior to printing.

Load 3M sheeting so that the leading edge lies beyond the metal curing platform, as shown in Figure 8. Failure to feed the leading edge past the metal curing platform can result in significant buildup of adhesive residue, which in turn can lead to a variety of significant printing issues.

The take up reel should be used for all print jobs. It increases tension, which helps to hold the rigid sheeting against the platens, ensuring consistent print quality and helping to prevent head strikes.

When asked, select the correct media file from the **Substrate Library** menu. The media files for 3M reflective sheetings are found in the **Self-Adhesive Vinyl** media folder (Figure 9).



Figure 9. Select appropriate media file from Self-Adhesive Vinyl folder of the Substrate Library.



After selecting the media file, press the **Substrate** button on the front panel and verify that the color calibration line reads "OK," indicating it is still current. If it reads "Recommended" or "Obsolete," follow procedure described in Section 4. **Color calibration is required for finished signs to be covered by the 3M[™] MCS[™] Warranty for Traffic.** Figure 10 indicates the location of the color calibration status screen.

Figure 10. Color calibration status screen.

With the design file open in FlexiPRINT & Cut Authorized 3M[™] Traffic Edition Software, use the **Fill/Stroke Editor** to fill areas of the sign with the appropriate 3M Traffic Colors. This includes replacing any black areas with Traffic BLACK (Figure 11).

Once the image has the correct coloring, save the file and open it in the Flexi Production Manager RIP software. To do so, select **Add Job** (Figure 12) and navigate to the file to bring it into the hold queue. Next, double click on the job in the queue to open the **Default Job Properties** dialogue box (Figure 13).



Figure 12. Adding a job in Production Manager.



Figure 11. Using Fill/Stroke editor in FlexiSIGN to color with Traffic Colors.array (right).

Next, verify that the value displayed in the drop-down menu at the top of the dialogue box labeled **Preset:** matches the media loaded into the printer (e.g., ensure the 3930 preset is selected if the printer is loaded with 3M 3930 High Intensity Prismatic sheeting). After making any required changes (print size, number of copies, etc.), click on the third tab from the left to view the color handling properties. Here, verify that **Use color correction** is selected, and all the other drop-down menus are populated as shown in Figure 13. Also, verify that the box labeled **Use color mapping** is checked.

ult Job Propertie	s
set 3M Traffic	HP365 3930 Series ASTM v2
Color correction	
Use color corre	ection 🔹
Output profile:	3M 3930 Traffic Colors_12p_CMYKcm_150.icc ▼
Media:	3M 3930 Traffic Colors
Print mode:	Default
Resolution:	300x300
Color mode:	CMYK(8bits) Choke
Dither:	<u>E</u> dit
Smooth grad	dients
	<u>A</u> dvanced
Simulation:	None
🔽 Use color ma	pping <u>C</u> olor Mapping
Ignore overpr	rint Anti-aliasing

Figure 13. Verifying color print job properties before printing

Next, click on the **Media Management** tab, the fourth tab from the left, and verify that the settings match the **Printer Profile** settings shown in Figure 14.

Default Job Properties ×					
Preset: 3M Traffic I	HP365 4000 Series ASTN	1 v3			
2 🔂 👪		1			
Media Managemer	nt		✓ Read	Media Automatically	
Category:	Self-Adhesive Vinyl		~	Media management	
Media:	3M 4000 Traffic Colors v	/3	~	Download ICC	
Print Mode:	12p_CMYKem_150		~	Read Media from Printer	
Passes 12 Direc	ction bidir Ink Density 150 Resolution 600x600		e OFF	Get optimal results	
Mechanical Param	eters				
	Temperature unit:	Fahrenheit	\sim		
	Curing temperature:	225 🌲	۴F		
	Input tension:	10 ≑	N/m		
	Advance factor:		mm/m		
	Vacuum:				
Auto	Off ~				
Inter-pass delay offset:		0 +	ms		
	Printing airflow pressure:	180 🗘	mm H2O	100	

Figure 14. Verifying print job output properties before printing

Once all settings have been confirmed, the job can be sent directly to print or held in the RIP queue like any other print job. Verifying the settings is an important step in making sure that each job prints accurately on the selected 3M sheeting material.

5.1 Alternative Printing Workflow

Some sign libraries are organized such that the "RIP and Print" feature of FlexiPRINT & Cut Authorized 3M[™] Traffic Edition Software presents a more convenient workflow. The RIP and Print feature is conveniently accessed with a single click, as shown in Figure 15.



Figure 15. Location of the RIP and Print button, which can also be accessed using the Ctrl + H keyboard shortcut.

Clicking on the **RIP and Print** button opens a dialogue box similar to the Job Properties dialogue box found in the Production Manager. Choose **Hold in list** on the first tab of the Rip and Print dialogue box, as showing in Figure 16, prevent the accidental selection of an incorrect preset or other setting. The print file must be processed through the Production Manager RIP to properly convert Traffic Colors.

Note: A warning box may appear indicating a settings mismatch between RIP and Print and Production Manager. If this warning appears, click **Use PM Settings**.



Figure 16. Location of Hold in list setting.

Once the Hold in list processing option has been selected, open Production Manager and verify that all settings are correct, as described in Section 4.5.

Click Send to print.

6 Basic Troubleshooting

If issues arise during printing, the following strategies should be used to obtain assistance.

For issues with the inks, printing on non-3M media, or other general printer performance issues, please work with HP and your HP reseller Latex support teams to find satisfactory solutions.

If issues occur when printing on 3M traffic sheeting, load a roll of non-traffic material (paper, generic vinyl, etc.) and print file using the appropriate media file for the non-traffic sheeting material. If the problem persists on the non-traffic material, then work with the HP and HP reseller support teams. HP Latex Support can be reached at 1-800-204-6344.

If the problem appears only when printing on 3M traffic sheeting, please call HP Latex Support at 1-800-204-6344 and start a case. After starting a case with HP, call 3M Support at 1-800-553-1380 (option 4) and provide your HP case number along with details relevant to the printing issue.

7 Application of Overlaminate

Printed images must be dry before being overlaminated with print 3M[™] ElectroCut[™] Film 1170C Clear or 3M[™] Premium Protective Overlay Film Series 1160i. See Table 3 footnote for details. Lamination should be performed using a laminator that meets the following criteria:

- 1. Roll to roll, manual squeeze roll, or flat-bed laminator.
- 2. Between 48 and 65 inches wide.
- 3. Equipped with a pneumatically controlled nip (preferred but not required).
- 4. Equipped with rubber covered nip rolls capable of a minimum nip pressure of 7 pounds per lineal inch.
- 5. Equipped with rolls with Shore A durometer of 60 or higher (preferred but not required).
- 6. Follow the laminator manufacturer's instructions.

Note: If trapped air is observed between ink and overlaminate, consider increasing pressure and/or temperature and/ or lowering lamination speed.

8 Durability

The durability of 3M reflective sheeting will depend upon substrate selection and preparation, compliance with recommended application procedures, geographic area, exposure conditions, and maintenance practices.

Maximum durability can be expected in applications subject to vertical exposure on stationary objects when processed and applied to aluminum prepared according to the 3M recommendations provided in <u>3M Information Folder 1.7</u>. The user must determine the suitability of any nonmetallic sign backing for its intended use. Applications to unprimed, excessively rough or non-weather-resistant surfaces, or exposure to severe or unusual conditions can shorten the performance lifetimes of such applications. Signs in mountainous areas that are covered by snow for prolonged periods may also have reduced durability. Atmospheric conditions in certain geographic areas may result in reduced durability.

9 Storage of Completed Signs

Completed signs must be protected with 3M[™] Slipsheeting, per <u>3M Information Folder 1.11</u>, and stored on edge. Placing the glossy side of the 3M Slipsheeting against the sign face. Double-faced signs must have the glossy side of Slipsheeting against each face of the sign. Unmounted processed faces must be stored flat and interleaved with 3M Slipsheeting, glossy side against the sign face. Maximum stack height is five inches.

Avoid banding, crating, or stacking signs. Package for shipment in accordance with commercially accepted standards to prevent movement and chafing. Store sign packages indoors on edges.

10 Environmental, Health, and Safety

CAUTION: When handling any chemical products, read the manufacturers' container labels and the Safety Data Sheets (SDS) for important health, safety, and environmental information. To obtain SDS sheets for 3M products, go to <u>3M.com/SDS</u> or in case of an urgent need, call 1-800-364-3577. HP SDSs for inks can be found at the <u>HP</u> <u>website</u>. For 3M product questions or issues, contact the 3M helpline 1-800-553-1380 (option 4).

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

11 Disclaimer

With the exception of 3M branded products, 3M does not represent that any printer or printer accessory recommended in 3M literature will meet customer requirements, any applicable safety standards, or any federal, state, or local regulations. Such determination is the responsibility of the printer owner. For a buyer's convenience, 3M may provide engineering or technical information, recommendations, certifications, and other information or materials relating to other company's products ("Other Information"), but 3M does not warrant Other Information, including but not limited to, its accuracy or completeness.

12 Warranty Information

12.1 Limited Warranty

For warranty information, please refer to the <u>3M™ Sign Warranty Bulletin</u>, <u>3M™ MCS™ Warranty Matrix for HP Latex</u> <u>360/365 Printers</u>, and the <u>3M MCS Warranty for Traffic Matrix for HP Latex</u> <u>360/365 Printers</u>.

12.2 Limitations of Liability

EXCEPT WHERE PROHIBITED BY LAW, 3M WILL NOT BE LIABLE FOR ANY LOSS OR DAMAGE ARISING FROM THE 3M PRODUCT, WHETHER DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL, REGARDLESS OF THE LEGAL THEORY ASSERTED, INCLUDING WARRANTY, CONTRACT, NEGLIGENCE, OR STRICT LIABILITY.

13 Other Product Information

Always confirm that you have the most current version of the applicable product bulletin, information folder, or other product information from 3M's Website at <u>http://www.3M.com/roadsafety</u>.

14 Literature Reference

<u>3M IF 1.7</u>	Sign Base Surface Preparation		
<u>3M IF 1.11</u>	Sign Maintenance Management		
<u>3M PB 1170</u>	3M™ ElectroCut™ Film Series 1170		
<u>3M PB 1160i</u>	3M™ Premium Protective Overlay Film 1160i		
<u>3M PB 3430</u>	3M™ Engineer Grade Prismatic Reflective Sheeting Series 3430 with Pressure Sensitive Adhesive		
<u>3M PB 3924S</u>	3M™ Fluorescent Orange Prismatic Work Zone Sheeting Series 3924S Sheeting with Pressure Sensitive Adhesive		
<u>3M PB 3924SUDS</u>	3M™ Fluorescent Orange Prismatic Work Zone Sheeting Series 3924SUDS Sheeting with Pressure Sensitive Adhesive		
<u>3M PB 3930</u>	3M™ High Intensity Prismatic Sheeting Series 3930		
<u>3M PB 3930UDS</u>	3M™ High Intensity Prismatic Sheeting Series 3930UDS		
<u>3M PB 3990</u>	3M™ Diamond Grade™ VIP Reflective Sheeting Visual Impact Performance Series 3990		
<u>3M PB 4000</u>	3M™ Diamond Grade™ DG3 Reflective Sheeting Series 4000		
<u>3M PB 4000UDS</u>	3M™ Diamond Grade™ DG3 Reflective Sheeting Series 4000UDS		
<u>3M PB 7300</u>	3M™ Advanced Flexible Engineer Grade Reflective Sheeting Series 7300		
<u>3M PB Slipsheeting</u>	3M™ Slipsheeting		
<u>3M™ Sign Warranty Bulletin</u>			
<u>3M™ MCS™ Warranty Matrix for HP Latex 360/365 Printers</u>			
<u>3M™ MCS™ Warranty for Traffic Matrix for HP Latex 360/365 Printers</u>			

ASTM Test Methods are available from ASTM International, West Conshohocken, PA.

For Information or Assistance Call: 1-800-553-1380

In Canada Call: 1-800-3M HELPS (1-800-364-3577)

Internet:

http://www.3M.com/roadsafety

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Important Notice

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Transportation Safety Division

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