



Scotchcal™

Translucent Graphic Film IJ3630-20, RG3630-20 and FN3630-20

For Piezo Ink Jet Printing Only

Description

3M™ Scotchcal™ Translucent Graphic Film IJ3630-20, 3M™ Scotchcal™ Translucent Graphic Film RG3630-20 and 3M™ Scotchcal™ Translucent Graphic Film FN3630-20 are 2 mil films designed for piezo ink jet printing. The films, which have a synthetic layflat liner that does not split if wet, can be used for making both flat and thermoformed, medium-term, backlit graphics that have uniform color in both reflected and transmitted light.

Recommended Types of Applications and End Uses

When constructed and used as described in this bulletin, these types of graphics and end uses may be warranted by the 3M™ MCS™ Warranty. Please read the entire bulletin for details. A Performance Guarantee is also offered for film IJ3630-20; see page 4 for details.

- For indoor or outdoor use on internally-illuminated vertical sign faces
- For thermoforming with rigid plastic surfaces under well-controlled conditions as described in Instruction Bulletin 5.16

Limitations of Uses

We do not normally warrant other applications, but please contact us to discuss your needs or let us suggest other 3M products.

Unsuitable Applications for This Film

- Fleet graphics
- Graphic constructions with more than two layers of film, including the overlaminates
- Graphics applied to:
 - surfaces with rivets or corrugations.
 - non-3M flexible substrates.
 - substrates with coatings such as silicone.
- Graphics made for automotive Original Equipment Manufacturers (OEM); contact 3M Automotive Division at 1-800-328-1684 for alternatives.

Compatible Products for 3M™ MCS™ Warranted Graphics

Inks and Printers for Film IJ3630-20

This film is forward wound on a 3-inch unnotched core.

- 3M™ Piezo Ink Jet Ink Series 1500
 - VUTEk UltraVu™ 150 Printer
 - VUTEk UltraVu™ 2360/3360 Printers
 - VUTEk UltraVu™ 3300/5300 Printers
- 3M™ Piezo Ink Jet Ink Series 2600UV
 - 3M™ Printer 2500UV
- 3M™ Piezo Ink Jet Ink Series 6000
 - Océ Arizona 30s Printer

Order films for the Scitex printer on a forward wound 6-inch unnotched core.

- 3M™ Piezo Ink Jet Ink Series 4600
 - Scitex PressJet-W™ Digital Press

Inks and Printers for Film RG3630-20

This film is reverse wound on a 3-inch, 4-notch core.

- 3M™ Piezo Ink Jet Ink Series 6800*
 - Océ Arizona 180 Printer
 - Océ Arizona 90 Printer

*May use Océ Piezo Ink Jet Ink Series 1700 for non-warranted finished graphics.

Inks and Printers for Film FN3630-20

This film is forward wound on a 3-inch, 4-notch core.

- 3M™ Piezo Ink Jet Ink Series 5500
 - Océ Arizona 600 Printer

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

Graphic Protection Options

- 3M™ Scotchcal™ Luster Overlamine 8519
- 3M™ Scotchcal™ Matte Overlamine 8520
- 3M™ Scotchcal™ Luster Overlamine 8908
- 3M™ Scotchcal™ Matte Overlamine 8909
- 3M™ Screen Print Screen Print Clear 1920DR
- 3M™ Screen Print Screen Print Clear 9720UV

Light Control Films

- 3M™ Diffuser Films 3635-30
- 3M™ Diffuser Films 3635-70

Flexible Substrates

- 3M™ Panaflex™ Awning and Sign Facing 945GPS

Other Products

- 3M™ Premasking Tape SCPM-3
- 3M™ Premasking Tape SCPM-44X
- 3M™ Prespacing Tape SCPS-2
- 3M™ Prespacing Tape SCPS-53X

Characteristics

All values given are typical for unprocessed film unless noted otherwise and are not for use in specifications. Processing film may change certain values. If you have questions about your construction, contact the Technical Service helpline at 1-800-328-3908.

Physical Characteristics

Characteristic	Description
Film	Vinyl
Colors	White, translucent
Thickness	Without adhesive: 2 mils (0.05 mm) With adhesive: 3 to 4 mils (0.08 to 0.1 mm)
Adhesive type	Pressure sensitive
Adhesive color	Clear
Liner	Polyethylene-coated paper
Tensile strength <i>minimum</i>	5 pounds/inch at 73°F (0.9 kg/cm at 23°C)
Roll sizes	54 inches x 50 yards (137 cm x 45 m)
Adhesion 24 hours after application	Acrylic and uncoated, clear polycarbonate: 4 pounds/inch (0.7 kg/cm)

Characteristic	Description
Chemical resistance	Resists mild alkalis, mild acids, and salt Excellent resistance to water <i>(this does not include immersion)</i>
Flammability	Call 1-800-328-3908 for information

Application Characteristics

Characteristic	Description
Finished graphic application recommendation	Surface type: Flat, without rivets Substrate type: Panaflex awning and sign facing 945GPS Rigid substrates such as flat acrylic, polycarbonate*, copolyester sign sheet, glass Application temperature: 60°F (16°C) <i>minimum air and substrate</i>
Applied film shrinkage	0.015 inch (0.4 mm)
Finished graphic exposure temperature	-50° to +170°F (-45° to +77°C)
Graphic removal	Permanent

* Films IJ3630-20, RG3630-20 and FN3630-20 typically adhere to solar-grade polycarbonate substrate. However, some lots of this substrate may inhibit the adhesion of the film. Contact 3M Commercial Graphics Technical Service if you are having difficulty with this combination. See Instruction Bulletin 5.7 for additional information.

Polycarbonate substrates may require drying by baking before use because outgassing of moisture from the polycarbonate may cause the film to bubble. Refer to the manufacturers' instructions.

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.

Note: For the full product names of the 3M products listed on this page, please see pages 1 and 2.

Warranty Information

Graphic Performance Life

The actual performance depends on the:

- Correct combination of film, ink and graphic protection (if required)
- Adequate ink drying
- Selection and preparation of the substrate
- Surface texture
- Application methods
- Angle and direction of sun exposure
- Environmental conditions
- Cleaning or maintenance methods

3M™ MCS™ Warranted Graphic Constructions

The warranty given in the Product Bulletin that is current at the time you purchased the film is the one that 3M will honor.

The warranties in this table are for graphics exposed in the U.S. in a vertical orientation. See **Warranty Notes** for how to determine other warranty combinations.

Warranted Durability			
Film IJ3630-20, RG3630-20 or FN3630-20 plus...		U.S. Vertical Exposure (in years)	
Ink Series	Graphic Protection	Outdoor Signs	Indoor Signs
1500 2600UV	None	3	3
4600 5500 6000 6800	8519 8520 1920DR 9720UV	4	8
1500 4600 5500 6000 6800	8908 8909	1	3

Warranty Details

Graphic Exposure Definition



face of graphic

Vertical Exposure

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

How to Determine U.S. Desert Southwest Warranties

All other outdoor warranties are based on a percentage of the vertical U.S. warranties given in the Warranted Durability Table. The calculation for determining these warranties is given below. A “construction” is the base film, inks and clear or overlaminate (if required). The examples are based on a vertical U.S. warranty of 4 years.

- **Warranty for U.S. Desert Southwest Exposure**

For 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.

- **Vertical U.S. Desert Southwest**

70% (0.7) of the U.S. vertical warranty for your construction

Example: $0.7 \times 4 \text{ years} = 2.8 \text{ years}$

Application Outside the U.S.

Contact the 3M organization for that country.

Graphics Made with Components Not Sold or Recommended by 3M

The user is solely responsible for the graphic appearance, performance and durability when this film is used with any other manufacturers’ inks, graphic protection and/or application tapes. See the 3M Performance Guarantee for other options.

Clears

Clears 1920DR and 9720UV should be applied by screen printing.

Overlaminates

Overlaminates must be cold roll applied.

Application to Glass

3M accepts no liability for glass breakage when using this film on window graphics. See Instruction Bulletin 5.1 for details.

Note: For the full product names of the 3M products listed on this page, please see pages 1 and 2.

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: Films IJ3630-20, RG3630-20 and FN3630-20 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. See the worldwide 3M™ MCS™ Warranty (www.Scotchprint.com or Fax-on-Demand), 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 materials charges.

3M Performance Guarantee

The 3M Performance Guarantee covers only product performance of 3M films and the required 3M graphic protection product when used with the printers and OEM inks listed in this table for the types of graphics, construction methods and application techniques specified in the base film's 3M Product Bulletin and related Instruction Bulletins. This is not a finished graphics warranty. The sole remedy is the replacement cost of 3M films and graphic protection product used in the construction for the durability term. See the Performance Guarantee details at www.Scotchprint.com.

Performance Guarantee		
Film 3630-20 with graphic protection 8519, 8520, 1920DR or 9720UV		U.S. Vertical Exposure
Printer	Ink Series	Outdoor Signs Indoor Signs
Mimaki JV 3 Series	MS, SS, S2	2 years
Mutoh Falcon II Outdoor	Eco-Solvent Plus™	
Oce CS6060	Oce IJC610	
Roland SOLJET Pro II Ex Series	Roland Eco-SOL	
Seiko ColorPainter™ 64S	EG-Outdoor	
Scitex Vision TURBOjet	TJ100 Supreme	

Total Ink Coverage for Performance Guarantee Constructions

We recommend a maximum total ink coverage of 270%. Make sure that the ink lay down is within the limits of what the drier can handle to prevent ink smearing.

Printer Support Information

Ink

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

Total Ink Coverage

Do not exceed the recommended total ink coverage for this film. Too high a total physical ink amount on the film results in media characteristic changes, inadequate drying, overlamine lifting, and/or poor graphic performance. Refer to the Instruction Bulletin for the 3M ink system being used for the recommended total ink coverages.


Backlit Signs Require Special Consideration

Clear and translucent films tend to be more sensitive to shrinkage due to high total ink coverage. Film that is not sufficiently dried prior to creating an overlap may shrink and result in a light leak. Rather than increasing the total ink coverage to increase the density of the backlit image, we recommend printing two layers of film at lower ink levels. Refer to Instruction Bulletin 4.26 for details and construction options.


Color Profiles

Many color profiles are available on our website at www.Scotchprint.com.

Drying

 Caution
Always build enough time into your process to ensure adequate drying of the graphic. Poorly dried film may become soft and stretchy, and the adhesive may become too aggressive. This can cause difficulty when applying an overlaminate, rolling the graphic, and applying the film. See the ink's Instruction Bulletin for more details.

Cutting

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

For the inside corners of cut out letters and symbols, and the pointed end of stripes, cut the largest radius consistent with an acceptable appearance. This technique helps avoid stress cracking due to age, and lifting of pointed ends during maintenance.

For individual pieces, use one of these cutting methods.

- Hand cut
- Die cut
- Kiss cut
- Electronic cutter


For multiple pieces, use one of these cutting methods.

- Guillotine
- Die cut

Note: For the full product names of the 3M products listed on this page, please see pages 1 and 2.

Thermoforming

Refer to Instruction Bulletin 5.16 for detailed information.

 Caution
Films IJ3630-20, RG3630-20 and FN3630-20 emits vapors during the thermoforming process. Be sure to read and follow the information contained in the Material Safety Data Sheet (MSDS), the box label, and the Instruction Bulletin 5.16 before thermoforming.

Application Tapes

The type of application tape to use depends on the type of graphic produced and the ink and graphic protection that was applied last. See Instruction Bulletin 4.3 for details.

Ink Series	Graphic Protection	Prespacing Tape	Premasking Tape
1500 4600 5500 6000 6800	8908 8909	None	SCPM-3
	None 8519 8520 1920DR	SCPS-2	SCPM-3
All inks	9720UV	SCPS-53X	SCPM-44X
2600UV	1920DR 8519 8520	SCPS-2	SCPM-3
	None	SCPS-53X	SCPM-44X

Fabrication

Refer to the **3M Related Literature** section for a list of the Product and Instruction Bulletins that may be needed to make a graphic.

Application

For application by hand, the detergent and water application method is recommended. Dry application by hand may leave some dark streaks or bubbles that could be visible in transmitted light.

For roll application, the dry method is acceptable.

Maintenance and Cleaning


Use a mild cleaner such as the kind used for high-quality painted surfaces. The cleaner must be wet, non-abrasive, without strong solvents, and have a pH value between 3 and 11 (neither strongly acidic nor strongly alkaline). See Instruction Bulletin 6.5.

Shelf Life, Storage and Shipping

Activity	Recommendation
Shelf life	Total shelf life: 2 years Up to 2 years unprocessed, OR process within 1 year and apply within 1 year of processing
Storage conditions	<ul style="list-style-type: none"> • 100°F (38°C) maximum • Out of sunlight • Clean dry area • Original container
Shipping finished graphics	Flat, or rolled printed side out on 5 inch (13 cm) or larger core; processed film may block if wound too tightly

See Instruction Bulletin 6.5 for details.

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: <ul style="list-style-type: none"> • 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.

**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.

Related 3M Literature

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

The information in 3M 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 bulletin that was current at the time you purchased the 3M products. The following 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™ Piezo Ink Jet Ink Series 1500	1500	4578
3M™ Piezo Ink Jet Ink Series 2600UV	2600UV	4594
3M™ Piezo Ink Jet Ink Series 4600	4600	4582
3M™ Piezo Ink Jet Ink Series 5500	5500	4592
3M™ Piezo Ink Jet Ink Series 6000	6000	4560
3M™ Piezo Ink Jet Ink Series 6800	6800	4574
3M™ Screen Printing Ink Series 1900	1900	2501
3M™ Screen Printing Ink Series 9700UV	9700	2507
3M™ Light Control Film Series 3635	3635	3010
3M™ Scotchcal™ Overlamine 8519 and 8520	8519/ 8520	4524
3M™ Scotchcal™ Luster Overlamine 8908	8908	3554
3M™ Scotchcal™ Matte Overlamine 8909	8909	3565
3M™ Panaflex™ Awning and Sign Facing 945 GPS	945GPS	4006

Subject	Bulletin No.	FOD No.
Instruction Bulletins		
Printing with piezo ink series 1500	4.45	6545
Printing with piezo ink series 2600UV	4.50	6550
Printing with piezo ink series 4600	4.43	6543
Printing with piezo ink series 5500	4.47	6547
Printing with piezo ink series 6000	4.39	6539
Printing with piezo ink series 6800	4.40	6540
Screen printing with ink series 1900	3.11	6011
Screen printing with ink series 9700UV	3.4	6004
Cold roll lamination	4.22	6522
Scoring and cutting	4.1	6501
Using 3M application tapes; premasking and prespacing for films	4.3	6503
Making backlit signs with piezo printed films	4.26	6526
Application, substrate selection, preparation and substrate-specific application techniques	5.1	7001
Application, special applications and vehicles	5.4	7004
Application, general procedures for indoor and outdoor dry applications	5.5	7005
Storage, handling, maintenance, removal	6.5	8505
Wet application method	5.7	7007
Application and attachment of graphics	5.21	7021
Thermoforming	5.16	7016
Warranties		
Worldwide 3M™ MCS™ Warranty		9503

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Pressjet-W is a trademark of Scitex Corporation Ltd.
ColorPainter is a trademark of Seiko I Infotech Inc.
Mutoh is a registered trademark of Mutoh America, Inc.
Roland and SOLJET are trademarks of Roland DGA Company
All other trademarks are the property of their respective owners.*

Bulletin Change Summary

For our Performance Guarantee program, we are continually testing popular piezo ink jet printers and inks with our graphic films to identify those that meet our standards and ensure satisfactory results for your applications. Please refer to the 3M Performance Guarantee table on page 4 to determine the most current approved printers and inks for this film.



Graphics Market Center

3M Center, Building 220-12E-04
PO Box 33220
St. Paul, MN 55144-3220 USA
General Info. 1-800-374-6772
Technical Info. 1-800-328-3908
Fax 1-651-736-4233

Fax-on-Demand 1-800-364-0768 US/Canada or 1-651-732-6506 International
Fax-on-Demand document: 4527
www.scotchprint.com

3M Canada

P.O. Box 5757
London, Ontario
Canada N6A 4T1
1-800-265-1840
Fax 519-452-6245

3M México, S.A. de C.V.

Av. Santa Fe No. 55
Col. Santa Fe, Del. Alvaro Obregón
México, D.F. 01210
52-55-52-70-04-00
Fax 52-55-52-70-22-77

3M Puerto Rico, Inc.

Puerto Rico Industrial Park
P.O. Box 100
Carolina, PR 00986-0100
787-620-3000
Fax 787-750-3035