



# Controltac™ Plus Graphic Film

## Series IJ162 and Film RG162-10

For Piezo Ink Jet Printing Only

### Description

3M™ Controltac™ Plus Graphic Film Series IJ162 and film RG162-10, designed for piezo ink jet printing, are 4-mil slideable and repositionable films with excellent hiding power. They are designed for producing premium, removable, indoor floor graphics and meet certain NFPA requirements.

### Recommended Types of Graphics and End Uses

These end uses are recommended for this film and may be covered by the 3M™ MCS™ Warranty and/or the 3M Performance Guarantee. Certain restrictions may apply; please read the entire bulletin for details.

- Graphics on most indoor hard surface flooring

### Limitations of End Uses

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

### Unsuitable End Uses for This Film

- Application to playing surfaces such as gymnasium floors
- Graphics that are not protected with overlamine 3645
- Graphics used for purposes other than for indoor floors
- Graphics applied to substrates other than those recommended
- Graphics made of individually laminated cut numbers, letters and characters
- Loose or broken flooring material

### Caution

Any floor surface, including those with floor graphics, that is wet due to rain, snow, or other contaminants may become slippery. To avoid personal injury due to slipping:

- Place the floor graphic far enough away from entryways that they stay dry.
- Use doormats to reduce moisture at entryways.
- Clean up water, spills, or other contaminants immediately.

### Compatible Products

Refer to the durability tables for 3M MCS warranty and the 3M Performance Guarantee (page 3) for the proper combination of printers, inks, films and graphic protection.

#### For Film Series IJ162

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

- 3M™ Piezo Ink Jet Ink Series 2200UV
  - VUTEk PressVu® UV 200/600 printer
- 3M™ Piezo Ink Jet Ink Series 2600UV or
- 3M™ Piezo Ink Jet Ink Series 2500UV
  - 3M™ Printer 2500UV
- 3M™ Piezo Ink Jet Ink Series 2700UV
  - Durst Rho 160R Printer
- 3M™ Piezo Ink Jet Ink Series 1500
  - VUTEk UltraVu™ 150 Printer
  - VUTEk UltraVu™ 2360/3360 Printers
  - VUTEk UltraVu™ 3300/5300 Printers
  - VUTEk UltraVu™ 3000/5000 Printers
- 3M™ Piezo Ink Jet Ink Series 6000
  - Océ Arizona 30s Printer
- 3M™ Piezo Ink Jet Ink Series 4600
  - HP Scitex Pressjet-W™ Printer\*
- 3M™ Piezo Ink Jet Ink Series 4800
  - HP Scitex TJ8300 Series Digital Press\*

\*Order films for the Scitex printers on a forward wound 6-inch unnotched core.

#### For Film RG162-10

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

### Graphic Protection

- 3M™ Scotchcal™ Luster Overlamine 3645

 **Warning**

The safety and performance of film/overlaminates series IJ162/3645 or RG162-10/3645 when used as a floor graphic is warranted or assured only on the substrates listed in **Characteristics**. Any other surface must be approved in writing by 3M Commercial Graphics Technical Service prior to application.

FLOOR GRAPHICS FOR INDOOR USE ONLY.

## 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
Film color	<b>IJ162-10, RG162-10:</b> white, opaque <b>IJ162-114:</b> clear
Gloss	Matte
Thickness <i>nominal</i>	<b>Without adhesive:</b> 4 mil (0.10 mm) <b>With adhesive:</b> 4.5-5 mil (0.11-0.13 mm)
Adhesive	Pressure activated, positionable
Adhesive color	<b>IJ162-10, RG162-10:</b> gray pigmented adhesive <b>IJ162-114:</b> clear adhesive
Liner	Polyethylene-coated paper
Chemical resistance	Resists mild alkalis, mild acids, and salt Excellent resistance to water <i>(this does not include immersion)</i>

Characteristic	Description
Flammability	<p><b>Building Indoor Wall/Ceiling Applications</b></p> <p>Film series IJ162 or film RG162-10 with overlamine 3645 meets the requirements of the National Fire Protection Association Class AI as defined in NFPA 101 "Life Safety Code" Test Method.</p> <p>Test Method: ASTM E84 Flame Spread Index = 0 Smoke Developed Index = 85</p> <p><b>Building Indoor Floors/Walkways</b></p> <p>Film series IJ162 or film RG162-10 with overlamine 3645 meets the requirements of Class A1 Interior Floor Finish, as defined in NFPA 101, Life Safety Code, tested to E648. Overlamine 3645 meets the specified requirements of UL410 - Standard for Slip Resistance of Floor Surface Materials.</p>

### Application Characteristics

Characteristic	Description
Finished graphic application recommendation	<p><b>Surface type:</b> Flat, without rivets</p> <p><b>Substrate type:</b> Most indoor floors, including sealed concrete, marble, terrazzo, ceramic, finished wood</p> <p><b>Application temperature:</b> 40° to 100°F (4° to 38°C)</p> <p><b>Application method:</b> Dry</p>
Applied shrinkage	0.032 inch (0.8 mm)
Temperature range after application	-10° to +200°F (-34° to +93°C)
Graphic removal	Removable without heat or chemicals, with little or no residue

## Warranty Information

See the 3M Graphics Center Warranty Brochure for the complete warranty and remedy details. The warranty given in the Product Bulletin that is current at the time you purchased the film is the one that 3M will honor.

### 3M™ MCS™ Warranty

for Finished Graphics

#### 3M MCS Warranty Finished Graphic Constructions and Durability

Ink Series	1500	4600	4800	6000
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Graphic Type/Exposure: Indoor Floors  
(in years)

Graphic Protection	Film IJ162-10			
3645	1	1	1	1
Graphic Protection	Film IJ162-114			
3645	1	1	—	—

Film IJ162-10					Film RG 162-10
Ink Series	2200UV	2500UV	2600UV	2700UV	6800
3645	1	1	1	1	1

### 3M Performance Guarantee

for Product Performance Only

#### 3M Performance Guarantee Graphic Constructions and Durability

Graphics constructed as described in the table below are eligible for the 3M Performance Guarantee warranty. This is not a finished graphics warranty; it covers product performance **only** for the 3M specified products when imaged with the printers and OEM inks listed in the most current version of **Product Bulletin PG Matrix**. That bulletin may also list certain restrictions for using this film.

U.S. Vertical Exposure (in years)			
Film	Graphic Protection	Indoor Floors	Inks and Printers
IJ162-10	3645	1	See Product Bulletin PG Matrix

## Other Warranties

#### Labor Reimbursement Remedy for Removable and Changeable Films

If the film cannot be successfully removed with little or no adhesive residue, 3M will reimburse a portion of extra removal costs.

Removal does not require heat or chemicals. The ease and rate of removal depends on a number of factors. See Instruction Bulletin 6.5 for details.

Also see *Unsuitable End Uses for This Film* on page 1.

Orientation	Remedy
Indoor floors	1 year

## Warranty Notes

### Graphic Performance Life

The performance statements are based upon foot traffic experience in the field. The actual performance life of a graphic depends on all of the following.

- Use of 3M recommended products and printers.
- Correct combination of film, ink and graphic protection.
- Adequate ink drying.
- Selection and preparation of the floor.
- Condition and texture of the floor.
- Exposure conditions.
- Graphic maintenance.
- Damage due to pallets or heavy equipment such as fork-lifts over the graphics; minor edge chipping is unavoidable. Such damage is not warranted.

### Graphic Protection

Overlaminates 3645 is required for warranted graphics and must be cold roll applied.

### Warranty Terms for 3M Piezo Ink Jet Systems for Floor Graphics

3M warrants that 3M Piezo Ink Jet Systems for Floor Graphics that are constructed using only the recommended 3M overlaminate, graphic film and 3M piezo ink jet ink series, and produced and installed in accordance with 3M's written instructions, will for the warranted durability period have the following expected performance: maintain original brightness, color, and image quality, excepting ordinary and expected wear and tear, and adhere to 3M-recommended floor surfaces and be removable without damage to the surface.

## Warranty and Limited Liability

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.

## Printer Support Information

### Ink

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

### Total Ink Coverage for 3M MCS Warranty Constructions

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 ink system being used for the recommended total ink coverages.

Ink Series	Maximum Total Ink Coverage	Ink Series	Maximum Total Ink Coverage
1500	270%	2200UV	300%
4600	350%	2500UV	300%
4800	270%	2600UV	300%
6000	380%	2700UV	300%
6800	300%		

### Total Ink Coverage for 3M 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.

### Color Profiles

Many color profiles are available on our website at [www.Scotchprint.com](http://www.Scotchprint.com).

## Drying

### Caution

Inadequate drying can result in graphic failure including curling, increased shrinkage and adhesion failure, which are not covered under warranty.

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 overlamine, rolling the graphic, and applying the film. See the ink's Instruction Bulletin for more details.

## Cutting

We recommend cutting radiuses on any sharp corners after lamination. This helps prevent premature lifting of the graphic after application.

The following are common cutting methods for this film. See Instruction Bulletin 4.1 for details.

- Bandsawing
- Hot kiss cutting
- Drum-type electronic cutting
- Flat-bed electronic cutting
- Guillotine
- Hand cut
- Cold and hot steel-rule die cutting

## Application

Install the film using the dry application method.

Refer to Instruction Bulletin 5.26 for application information, and the **3M Related Literature** section, located at the end of this bulletin, for a list of other Instruction Bulletins that may be needed to apply or install this film.

### Adhesive

These films have a pressure-activated adhesive which allows the film to be positioned, slid into place and repositioned easily when only light finger pressure is used. Applying firm pressure, such as with a squeegee, bonds the adhesive to the substrate, and by design, destroys the positionability feature.

The adhesive characteristics may be reduced under these conditions:

- The film has been removed, even partially, from the original liner and reapplied to the same liner or another liner.
- When applied at higher than 100°F (38°C), the film loses its positionability feature even if only light hand pressure is applied.

### Application Tape

This film does not require a premasking or prespacing tape for application.

## Maintenance and Cleaning

Refer to Instruction Bulletin 6.5 for general maintenance and cleaning information. For additional information for floor graphics, refer to the Instruction Bulletin 5.26. See **3M Related Literature** for information on ordering this bulletin.

## Removal


See Instruction Bulletin 5.26.

## Shelf Life, Storage and Shipping

Activity	Recommendation
Shelf life	<b>Total shelf life: 2 years</b> Up to 2 years unprocessed, <i>OR</i> process within 1 year <i>and</i> apply within 1 year of processing
Storage conditions	<ul style="list-style-type: none"> <li>• 100°F (38°C) maximum</li> <li>• Out of sunlight</li> <li>• Clean, dry area</li> <li>• Original container</li> <li>• Bring the film to print room temperature before using</li> </ul>
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

 <b>Caution</b>
<p>When handling any chemical products, read the manufacturers' container labels and the Material Safety Data Sheets (MSDS) for important health, safety and environmental information.</p> <p>To obtain MSDS sheets for 3M products:</p> <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> <p>When using any equipment, always follow the manufacturers' instructions for safe operation.</p>

### 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](http://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](http://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.
<b>Product Bulletins</b>		
3M™ Piezo Ink Jet Ink Series 2200UV	2200UV	4597
3M™ Piezo Ink Jet Ink Series 2500UV	2500UV	4575
3M™ Piezo Ink Jet Ink Series 2600UV	2600UV	4594
3M™ Piezo Ink Jet Ink Series 2700UV	2700UV	4598
3M™ Piezo Ink Jet Ink Series 1500	1500	4578
3M™ Piezo Ink Jet Ink Series 4600	4600	4582
3M™ Piezo Ink Jet Ink Series 4800	4800	4602
3M™ Piezo Ink Jet Ink Series 6000	6000	4560
3M™ Piezo Ink Jet Ink Series 6800	6800	4574
3M™ Scotchcal™ Luster Overlaminate 3645	3645	1508

Subject	Bulletin No.	FOD No.
<b>Instruction Bulletins</b>		
Design of graphic	2.1	5501
Printing with piezo ink series 2200UV	4.52	6552
Printing with piezo ink series 2500UV	4.41	6541
Printing with piezo ink series 2600UV	4.50	6550
Printing with piezo ink series 2700UV	4.53	6553
Printing with piezo ink series 1500	4.45	6545
Printing with piezo ink series 4600	4.43	6543
Printing with piezo ink series 4800	4.51	6551
Printing with piezo ink series 6000	4.39	6539
Printing with piezo ink series 6800	4.40	6540
Cold roll lamination	4.22	6522
Laminating graphics for floors	5.19	7019
Scoring and cutting	4.1	6501
Applying/maintaining graphics for floors	5.26	7026
Storage, handling, maintenance, removal	6.5	8505
<b>Warranties</b>		
3M Graphics Market Center Warranty Brochure		9503

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 Pressjet-W is a trademark of Scitex.  
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### Bulletin Change Summary

**Changes to the 3M Performance Guarantee program**—Because we are continually testing and approving more platforms, the specific 3M-qualified printers and OEM inks are now listed only the Product Bulletin PG Matrix. To obtain this bulletin from the web, go to [www.scotchprint.com](http://www.scotchprint.com), select Technical Bulletins, select Product Bulletins, select Piezo Ink Jet Films, select Films for other printers. The bulletin PG Matrix appears at the top of the page.

**Other New Products.** Added ink series 4800, 2200UV and 2700UV.

**Other changes.** The bulletin has been updated to better show the differences between the 3M MCS Warranty and 3M Performance Guarantee durabilities.



Regional Phone Numbers:  
 North East: 1-800-257-8226  
 South East: 1-800-537-4606  
 Great Lakes: 1-800-733-9942

Midwest: 1-800-736-7636  
 West: 1-800-252-7767  
 Mexico: 011-525-55-576-6667  
[www.sourceoneonline.com](http://www.sourceoneonline.com)