



Controltac™ Graphic Film

IJ162-10, IJ162-114 and RG162-10

For Piezo Inkjet Printing Only

Product Description

This 4-mil, slideable and repositionable film designed for making short-term, easily removable, indoor floor graphics that meet certain NFPA requirements. The film available in opaque white, which has excellent hiding power, outstanding resistance to dirt and other environmental factors and wear from high foot traffic when protected by the recommended overlamine. Use for piezo inkjet printed.

Recommended Types of Graphics 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 or the 3M Performance Guarantee. Please read the entire Bulletin for details.

- Graphics on most indoor hard surface flooring

Limitations of End Uses

3M specifically does not recommend or warrant the following uses, but please contact us to discuss your needs or recommend other products.

- Graphics that are not protected by the recommended overlamine
- Application to loose, broken or unsound flooring material
- Application to playing surfaces such as gymnasium floors
- 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
- Damage due to pallets or heavy equipment such as fork-lifts over the graphics; minor edge chipping is unavoidable. Such damage is not warranted.



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.



WARNING

The safety and performance of 3M-recommended film/overlamine when used as a floor graphic is recommended or warranted 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 ARE FOR INDOOR USE ONLY.

Compatible Products

3M Graphic Materials

This Bulletin provides details about the base film and construction options and warranty. Additional specific information about compatible products can be found in the Product and Instruction Bulletins listed in **3M Related Literature** at the end of this bulletin.

Piezo Inkjet Printers and Inks

Ink Series

- 3M™ Piezo Inkjet Ink Series 2200UV
- 3M™ Piezo Inkjet Ink Series 2600UVv2
- 3M™ Piezo Inkjet Ink Series 2700UV
- 3M™ Piezo Inkjet Ink Series 2800UV

- 3M™ Piezo Inkjet Ink Series 5400UV
- Mimaki LF-200 Ink Series *manufactured by 3M*
- 3M™ Piezo Inkjet Ink Series 1500v2

- 3M™ Piezo Inkjet Ink Series 4400
- 3M™ Piezo Inkjet Ink Series 4600
- 3M™ Piezo Inkjet Ink Series 4800
- 3M™ Piezo Inkjet Ink Series 4800
- 3M™ Piezo Inkjet Ink Series 6800

Printer

- EFI™ VUTEK® PV 200 Printer
- 3M™ Printer 2500UV
- Durst Rho 160R and 351R Printers
- EFI™ VUTEK® QS2000/QS3200 Printers
- HP Designjet 788 Printer
- Mimaki UJV-160 Printer
- EFI™ VUTEK® 150, 2360/3360, 3300/5300 and 3000/5000 Printers
- HP XLJet 1200 and 1500 Printers
- HP Scitex Pressjet-W™ Printer
- HP Scitex TJ8300 Series Digital Press
- Gandi Jeti 3312, 3324, 5024
- Océ Arizona 180 and 90 Printers

Graphic Protection

- 3M™ Scotchcal™ Luster Overlamine 3645
- 3M™ Scotchcal™ High Gloss Overlamine 3648 (*for non-warranted solutions only*)

Characteristics

These are typical values for unprocessed product; processing may change the values. Contact your 3M representative for a custom specification.

Physical Characteristics

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

Application Characteristics

Characteristic	Value
Finished graphic application recommendation	<p>Surface type: Flat, without rivets</p> <p>Substrate type: Most indoor floors, including sealed concrete, marble, terrazzo, ceramic, finished wood</p> <p>Application temperature: 50° to 100°F (4° to 38°C)</p> <p>Application method: 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

3M offers you three different levels of warranty coverage, depending on how you choose to use the product.

- When used with 3M's qualified piezo inkjet inks, specified printers and recommended overlamine, your finished graphic may be covered by the 3M™ MCS™ Warranty.
- When used with specified OEM printers and inks and the recommended 3M overlamine, the 3M materials may be covered by the 3M Performance Guarantee.
- When used with your choice of any other OEM printers and inks, the 3M materials are covered by the 3M Basic Product Warranty.

The warranty given in the Product Bulletin that is current at the time you purchased the film is the one that 3M will honor. Also see, *Warranty Stipulations*, on page 4.

Warranty Coverage Overview

Both the warranty coverage and the durability for each graphic are based on the user(s) reading and following all applicable and current 3M Product and Instruction Bulletins. 3M will honor the Warranted Durability stated in the Warranted Durability Table in the base film or substrate Product Bulletin that is current when the film was purchased. Warranted durabilities may be reduced and stipulations may apply for certain constructions and applications, as covered in this Bulletin.

Performance Expectations for Floor Graphics

When constructed as indicated in the following table and in accordance with 3M's written instructions, floor graphics 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.

3M™ MCS™ Warranty Warranted Durability Table for Finished Graphics When Using 3M Premium Piezo Inkjet Inks and Specified Printers

Solvent Ink Series	UV Ink Series	Film	Graphic Protection	Indoor Durability in years
1500v2 4400 4600 4800 6200 6800	2200UV 2600UVv2 2700UV 2800UV 5400UV LF-200	162-10	3645	1
1500v2 4400 4600 6200		162-114		

3M Performance Guarantee
Coverage for Recommended
Graphic Constructions and
Durability for 3M Materials

Graphics constructed as described in the table below are eligible for the 3M Performance Guarantee when exposed in a vertical exposure in the United States. This warranty covers the performance of only the recommended 3M products used in the graphic construction when imaged with the printers and OEM inks listed in the most current version of Performance Guarantee Printer and Ink Matrix at www.3Mgraphics.com. That Matrix may also list certain restrictions for using the film covered in this Bulletin. 3M will honor the warranty given in the version of this Bulletin that was current at the time you purchased the film.

Film	Graphic Protection	Warranty	Inks and Printers
IJ162-10	3645	1	See the Performance Guarantee Printer and Ink Matrix at www.3Mgraphics.com

3M Basic Product Warranty

Coverage When This Film
Is Used with Non-qualified
Digital Printers and Inks

Film series IJ162 may be suitable for printing with most non-qualified (by 3M) digital printers and ink systems. To provide slip resistance, the printed graphic must have overlamine 3645 or 3648 applied. The 3M materials are covered by the 3M Basic Product Warranty and are only guaranteed to be free of physical and manufacturing defects.

See the 3M Graphics Market Center Warranty Brochure for the complete warranty and remedy details. There is no warranty for the following.

- printability
- visual appearance
- fitness for use
- immovability
- durability

Expected Performance Life

Film IJ162/Overlamine 3645: 12 months may be expected with typical usage.

Film IJ162/Overlamine 3648: 3 months may be expected with typical usage.

3M Product and Instruction Bulletins provide practical recommendations for using this product in a way that maximizes performance, but using other 3M products or procedures with this film does not change the terms of the warranty.

General Warranty Stipulations

These stipulations apply to both the 3M™ MCS™ Warranty and 3M Performance Guarantee unless otherwise noted. Specific provisions of these stipulations are covered in the *3M Graphics Market Center Warranty Brochure* at 3Mgraphics.com.

Application to Glass

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

Application Outside the U.S.

Contact the 3M organization for that country.

**Graphics Made with
Components Not Sold or
Recommended by 3M**

The 3M Performance Guarantee covers selected 3M branded graphics products when used with qualified printers and inks. See the *3M Performance Guarantee Printer and Ink Matrix* at www.3Mgraphics.com.

**Factors that Affect Graphic
Performance Life**

The actual performance life of a graphic is affected by all of the following.

- Correct combination of 3M-recommended graphics products
- Adequate ink drying and/or UV curing
- Selection and preparation of the floor
- Condition and texture of floor
- Application methods
- Exposure and environmental conditions
- Cleaning or maintenance methods
- Damage from excessive abuse

**Printer and Printer
Accessory 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 federal, state or local regulations or any applicable safety standards. Such determination is the responsibility of the printer owner.

Printer Support Information

Ink

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

Total Ink Coverage

The maximum recommended total ink coverage for this film is:

270% when printed with all approved 3M piezo solvent inks.

280% when printed with all approved 3M UV inks.

250% when printed on the Mimaki JV5 Series printer with HS ink series (Performance Guarantee) or with printers and inks not qualified by 3M.

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 additional details about total ink coverage.

Graphics Manufacturing

Important Note!

Adequately Dry Graphics

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

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

Cutting

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

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

Application and Installation

Install the film using the dry application method. See Instruction Bulletin 5.19.

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

Adhesive

This film has a pressure-activated adhesive that allows the film to slide easily on the substrate, be positioned with light finger pressure, and repositioned if it is not in the right place. However, by design so that a good adhesive bond is established, the positionability feature is lost when firm pressure with a squeegee or other application tool is applied, at application temperatures above 100°F (38°C) even if only light finger pressure was used for tacking, and if any part of the film is removed from the original liner and reapplied to the same or another liner.

Solvent from piezo inkjet ink that has not completely dried also affects slideability and positionability.

Always work from the center out to the edges of the graphic to minimize trapped air. Use an air release tool to aid in removing air bubbles. See Instruction Bulletin 5.4 for details.

Application Tape

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

Maintenance and Cleaning

Use a cleaner designed 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.)

Removal

The film is removable without heat or chemicals within the warranted durability period. See Instruction Bulletin 5.19. Removal is not warranted when graphics are made with printers and inks not qualified by 3M.

Shelf Life, Storage and Shipping

Shelf Life

Total shelf life: 3 years from the date of manufacture on the original box
Up to 3 years unprocessed, **OR** process within 2 years **and** apply within
1 year of processing

Storage Conditions

- 40° to 100°F (4° to 38°C)
- Out of sunlight
- Clean dry area
- Original container
- Bring the film to print room temperature before using

Shipping Finished Graphics

Flat, or rolled printed side out on 5 inch (13 cm) or larger core. This helps prevent the application tape, if used, from popping off.

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 are available at 3Mgraphics.com. The following applicable Bulletins provide information and processes you need to properly make the graphics described in this Bulletin. Additional Bulletins may be needed as indicated in the 3M Related Literature section of other 3M components you use.

Bulletin types: PB = Product Bulletin; PB-IB = Product & Instruction Bulletin; IB = Instruction Bulletin

Subject	Type	Bulletin No.
3M™ Piezo Inkjet Ink Series 1500v2	PB-IB	1500
3M™ Piezo Inkjet Ink Series 4400	PB-IB	4400
3M™ Piezo Inkjet Ink Series 4600	PB-IB	4600
3M™ Piezo Inkjet Ink Series 4800	PB-IB	4800
3M™ Piezo Inkjet Ink Series 6800	PB-IB	6800
3M™ Piezo Inkjet Ink Series 6200	PB-IB	6200
3M™ Piezo Inkjet Ink Series 2200UV	PB-IB	2200UV
3M™ Piezo Inkjet Ink Series 2600UVv2	PB-IB	2600UVv2
3M™ Piezo Inkjet Ink Series 2700UV	PB-IB	2700UV
3M™ Piezo Inkjet Ink Series 2800UV	PB-IB	2800UV
3M™ Piezo Inkjet Ink Series 5400UV	PB-IB	5400UV
Mimaki Ink Series LF-200 <i>manufactured by 3M</i>	PB-IB	LF200
3M Graphic Protection Products <i>overview of all graphic protection products and specific information on most overlaminates</i> - Cold roll lamination	PB	GP-1
	IB	4.22
Scoring and cutting	IB	4.1
Floor graphics	IB	5.19
Storage, handling, maintenance, removal	IB	6.5
3M Graphics Center Warranty Brochure	go to www.3Mgraphics.com , Warranties	

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Bulletin Change Summary

Added ink series 6200 as a compatible product. This Bulletin has been updated to a new format. Instruction Bulletin 5.26 has been combined with Instruction Bulletin 5.19 for ease of use. The Shelf Life has been increased to 3 years total (up to 2 years processed, and applied within 1 year of processing).



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