



# 3M™ Controltac™ *Plus* Graphic Film Series 162 for screen printing

## Product Description

3M™ Controltac™ *Plus* Graphic Film Series 162 is designed for making durable, removable graphics for floors when this film is overlaminated with 3M™ Scotchcal™ Overlamine Film 3645.

### Key Features

- Controltac *Plus* graphic film series 162 when laminated with Scotchcal lustre overlamine 3645 makes a 3M graphic for interior floors.
- Outstanding resistance to dirt and other environmental factors and wear from high foot traffic.
- Positionable adhesive
- Removable without accessories or chemical strippers
- Grey pigmented adhesive for excellent hiding power (162-10 white)
- Available in white (-10) and transparent (-114) versions
- Suitable for a variety of sealed, smooth floor surfaces including waxed vinyl, sealed concrete, marble, terrazzo, ceramic, and finished wood floors.
- Wide application temperature range
- Suitable for screen printing
- Warranted for 6 months – 1 year (see Warranty section)

## Applications and Uses

Film series 162 is designed for making removable floor graphics when this film is overlaminated with overlamine 3645. The following types of graphics are warranted:

- Interior floor graphics that are screen printed using 3M inks.

## Limitations of End Uses

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

Specifically, we do not warrant this film for the following:

- Graphics that are not overlaminated
- Graphics used for purposes other than floor graphics
- Graphics applied to substrates other than those recommended
- Exterior applications

## Product Line

Please contact the 3M Sales Office for stock available and lead times.

Product Number	Colour / Pattern
162-10 / 3645	White
162-114 / 3645	Transparent

## Compatible Products

### Screen Inks

This product is designed to be screen printed with one of the following 3M Scotchcal screen printing inks:

- 3M™ Screen Printing Ink Series 1900
- 3M™ Screen Printing Ink Series 9700UV

### Overprint Clear

3M™ Controltac™ *Plus* Graphic Film Series 162 does not require an overprint clear. 3M™ Scotchcal™ Lustre Overlamine 3645 provides protection for the graphics. Refer to Product Bulletin 3645 for further information.

### Laminates

- 3M™ Scotchcal™ Lustre Overlamine 3645

### Pre-spacing / Pre-masking Tapes

Controltac *Plus* graphic film series 162 does not require a premasking or prespacing tape for application.

## Main Characteristics

Property	Description
Film Type	Calendared film
Film Opacity	White (-10) or Transparent (-114)
Adhesive type	Positionable, pressure activated
Adhesive colour	White film - grey pigmented (for excellent hiding power) Transparent film - clear
Thickness (film plus adhesive)	0.11 to 0.13 mm (4.5 to 5 mil)
Liner	94 pound, premium performance
Suitable application surface	Flat surfaces
Suitable application substrates	Waxed vinyl, sealed concrete, marble, terrazzo, ceramic, finished wood
Application temperature range*	10°C to 38°C (50° to 100°F)
Removal	Up to 12 months (see Warranty section)
Removal temperature	10°C to 38°C (50° to 100°F)

*\*For applications nearing the minimum temperature range, please contact your local technical service representative to confirm suitability of application*

## Warning

The safety and performance of these films are warranted or assured only on the surfaces listed above. Any other surface must be approved in writing by 3M Commercial Graphics Technical Service prior to application. **FOR INDOOR USE ONLY.**

## Chemical and Physical Properties

Values given are typical and are not for use in specifications. If a custom specification is desired, a request should be submitted through your sales representative. The data given below is for unprinted film

### Physical Properties

Property	Metric Units
Thickness (ISO 4593)	0.10 to 0.13mm
Tensile Strength (ISO 1184-1983)	2.3kg/cm at 23°C
Dimensional Stability (FTM 14)	0.8 mm
Temperature Range	10°C to 38°C

## Flammability

3M™ Scotchcal™ Lustre Overlamine 3645 laminated to 3M™ Controltac™ *Plus* Graphic Film Series 162 has been tested to ASTM E 648-94a, "Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source." The results show that the composite meets the requirement of the National Fire Protection Association, Class I Interior Floor Finish as defined in the NFPA 101, "Life Safety Code."

Construction	Average Critical Radiant Flux (W/cm)
Scotchcal lustre overlamine 3645/ Controltac <i>Plus</i> graphic film series 162	1.09

Also the construction meets the requirements for flammability class B1 according to German regulations 'DIN 4102.

## Warranty

Only a Scotchprint® Graphics Authorised Manufacturer or 3M™ MCS™ Qualified Manufacturer can produce 3M™ MCS™ Warranted Graphics. The warranty period is based on field experience and exposure tests. 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 combination of film and ink
- Ink formulation
- Drying methods
- Selection and preparation of the substrate
- Application methods
- Exposure conditions
- Cleaning methods

When 3M™ Controltac™ Plus Graphic Film Series 162 is laminated with 3M™ Scotchcal™ Lustre Overlamine 3645 in accordance with 3M recommended procedures, the following performance may be expected. The performance statements are based upon foot traffic experience in the field. Graphics may be damaged by pallets or heavy equipment such as fork-lifts; minor edge chipping is unavoidable. This type of damage is not covered by 3M's warranty. Performance depends upon preparation of the floor before application, the exposure conditions, the maintenance of the graphics and the condition of the floor.

**Warranted durability:** 12 months – see exception below

**Note:** for interior use only.

## Fabrication

This bulletin does not contain detailed printing, processing or application procedures for the subject products. The appropriate Instruction Bulletin(s) may be obtained by contacting your 3M sales representative or 3M Technical Service.

## Premasking/Prespacing

Film series 162 does not require a premasking or prespacing tape for application.

## Application

Refer to the Instruction Bulletin 5.26 for application and maintenance of 3M graphics for floors. Refer to Instruction Bulletin 5.19 for Lamination for 3M Graphics for Floors.

## 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).

## Shelf Life

The shelf life of the film is 2 years and should be applied within 2 years of the receipt of film if unprocessed. Processed film should be applied within 1 year of processing and within 2 years of receipt of the film.

## Related 3M Literature

Listed below is related 3M Technical Literature which may be of interest:

Subject	Product Bulletin	Instruction Bulletin
3M™ Scotchcal™ Lustre Overlamine 3645	3645	-
3M™ Screen Printing Ink Series 1900	1900	-
3M™ Screen Printing Ink Series 9700UV	9700	-
Laminating of 3M graphics for floors	-	5.19
Application and maintenance for 3M graphics for floors	-	5.26
Scoring and cutting	-	4.1

## Glossary of Terms

### Matched Component System™ or MCS™

The system pursuant to which Finished Graphics are produced by a Graphic Manufacturer using only 3M Products and components and manufactured in accordance with 3M's Product or Instruction Bulletins, 3M Specification Document and using 3M Approved Technologies.

### 3M™ Controltac™ Plus

A film with 3M™ Controltac™ Plus positionable adhesive system has million of precision-placed microscopic glass spheres embedded within its adhesive layer. These spheres help to prevent the adhesive from fully contacting the application surface until pressure is applied. This enables the graphic to be positioned, then re-positioned as many times as necessary, until it is in exactly the right place before final application.

### Removable Adhesive

Films with removable adhesive can be lifted easily from most suitable substrates and may require the application of heat to add the process.

## Health & Safety

Refer to the package label and the Material Safety Data Sheet for health, safety, and handling

information on the products referenced in this bulletin. For 3M products, if necessary, you may contact our Toxicology/Product Responsibility Department on 01344 858000.

## **Important Notice to Purchaser**

The 3M products described in this publication are covered by a 3M warranty and limitation of liability.

3M's warranty provides that if 3M finds that goods are defective in material or workmanship they will be replaced or the price refunded at 3M's option but note that 3M does not accept liability for other direct losses (except for personal injury or death) or consequential losses relating to defective products or from information supplied by 3M.

Purchasers and users of 3M products, and not 3M supplying companies, are always solely responsible for deciding on the suitability of the 3M product for their required or intended use.

## **Technical Assistance**

For help on specific questions relating to 3M Commercial Graphics Division Products, contact your local Technical Service Representative.

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3M United Kingdom PLC  
3M Centre, Cain Road, Bracknell  
Berkshire, RG12 8HT  
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[www.3m.com/uk/graphicsolutions](http://www.3m.com/uk/graphicsolutions)  
[www.scotchprint.com/uk](http://www.scotchprint.com/uk)

## **Sales Assistance**

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