

## Controltac™ Graphic Film

Series 180; IJ180-10

## Controltac™ Graphic Film with Comply™ adhesive

Series 180C; IJ180C-10

## Controltac™ Graphic Film with Comply™v2 adhesive

Series 180Cv2

## Controltac™ Graphic Film with Comply™v3 adhesive

IJ180Cv3-10

### Product Bulletin

**Product Description** These cast films offer great versatility making them perfect for indoor and outdoor signs and fleet graphics. Controltac™ technology is a mechanical feature out of millions of glass spheres on top of the adhesive surface. This minimizes the initial contact area of the adhesive and allows the applicator to reposition the graphic during application. This effects easier installation of large formats in a wide temperature range. Product variants with Comply™ adhesive also have air release channels for fast and easy, bubble-free graphic installations.

Product Line	inkjet printing	CT IJ180-10	white, opaque, glossy, permanent adhesive
		CT IJ180C-10	white, opaque, glossy, permanent adhesive with Comply™
		CT IJ180Cv3-10	white, opaque, glossy, permanent adhesive with Comply™v3
	screen printing	CT180-X	X = color code, opaque, glossy, permanent adhesive Wide selection out of large color range. Special colors available on
		CT180C-X	X = color code, opaque, glossy, permanent adhesive with Comply™
		CT180Cv2-X	X = color code, opaque, glossy, permanent adhesive with Comply™v2

**Product Characteristics** These are typical values for unprocessed product. Contact your 3M representative for a custom specification.

Physical & Application	Material	cast vinyl
	Surface finish	glossy
	Thickness (film)	50µm (0,05mm)
	Adhesive type	solvent acrylic; pressure-sensitive, repositionable
	Liner	double-sided Polyethylene coated paper
	Adhesion	18 N/25mm
	Application method	dry only!
	Applied shrinkage	< 0,4 mm
	Application temperature	+4°C
		FTM 1: 180° peel, substrate: glass; cond: 24h 23°C/50%RH
		FTM 14
		minimum (air and substrate)

Service temperature	-60°C to +107°C
Surface type	flat to curved, incl. rivets and corrugations
Substrate type	aluminum, glass, PMMA, PC*, ABS, paint PC*: Polycarbonates might require drying with heat before use
Graphic removal	Fair to remove with heat and/or chemicals from supported substrates No liability is given for ease or speed of removal of any graphic. Pay attention to adequate air and substrate temperature.
<b>Durability</b>	Unprocessed film The vertical outdoor durability of these films is 10 years. This statement is given for unprocessed white film. Coloured, metallic and transparent versions will have a lower durability.  Since graphic durability is largely determined by the climate, the durability stated is based on average middle European exposure conditions. It might vary according to the geographical location of the application. For further information refer to the section additional information at the end of this bulletin.
Shelf life	2 years from the date on the original box Up to 2 years unprocessed, or process within 1 year and apply within 1 year of processing
Storage conditions !	4°C to 40°C, out of sunlight, original container in clean and dry area.

**Flammability** Flammability standards are different from country to country. Ask your local 3M contact for details, please.

## Limitations of End Uses

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

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|---------------------------------------|--|
| Graphic applied to                    | <ul style="list-style-type: none"> <li>- other than flat or moderate curved/corrugated surfaces</li> <li>- painted or unpainted wallboards, gypsum boards and wallpapers.</li> <li>- stainless steel.</li> <li>- surfaces not clean and more than moderate textured</li> <li>- surfaces with poor paint to substrate adhesion</li> </ul> |
| Graphic removal from                  | <ul style="list-style-type: none"> <li>- signs or existing graphics that must remain intact</li> </ul>   |
| Graphic subjected to Important Notice | <ul style="list-style-type: none"> <li>- gasoline vapors or spills.</li> <li>- 3M Commercial Graphics Division products are not tested against automotive manufacturer specifications!</li> <li>- Non vertical applications will have a significant decrease in durability!</li> </ul>   |

## Graphics Manufacturing

Graphic protection can improve the appearance, performance and durability of your graphic. Any graphic exposed to abrasive conditions (including vehicles), harsh cleaners or chemicals must include graphic protection in order to be warranted.

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|---|---|
| When to use an overprint clear or overlaminates | See instruction bulletin GPO 'graphic protection options' for further information about selection and use of protective overlaminates and printable clears. |
| Shipping finished graphics                      | Flat, or rolled film side out on 130mm (5inch) or larger core. These methods help to prevent the liner from wrinkling or popping off the                    |

## Converting Information Ink Jet Printing

A too high total physical ink amount on the film results in media characteristic changes, inadequate drying, overlamine lifting, and/or poor graphic performance. The maximum recommended total ink coverage for this film is 270%. Do not exceed the recommended total ink coverage for the ink series used on this film.

### Adequately Dry Graphics

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 become soft and stretchy, and the adhesive may become too aggressive. 3M recommends at least a minimum drying time of 24h before further processing of freshly printed graphics. Best is to dry graphic unrolled or at least as an loose wound roll standing upright.

## Converting Information Screen Printing

Formulations and processing conditions can affect ink durability. Refer to the Product and Instruction Bulletins for your ink for limitations and proper usage. Graphic protection can improve the appearance, performance and durability of your graphic. A clear coat also prevents chalking on unprinted films. Whether you apply screen print clears with traditional screening methods or roller coating, use equipment designed to handle high viscosity materials and make sure the coating is evenly applied to the specifications in the clear's Instruction Bulletin.

### Abrasion and Loss of Gloss

Abrasion damage and loss of gloss are not covered by any 3M warranty. This is considered normal wear and tear.

## Application

See product bulletin ATR 'application tape recommendations' for information about selection and use of suitable application tapes for this product, please

## 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.) Refer to Instruction Bulletin 6.5 'storage, handling, maintenance and removal of films and sheetings', for general maintenance and cleaning information.

## Remarks

This bulletin provides technical information only.

### Important notice

All questions of warranty and liability relating to this product are governed by the terms and conditions of the sale, subject, where applicable, to the prevailing law.

Before using, the user must determine the suitability of the product for its required or intended use, and the user assumes all risk and liability whatsoever in connection therewith.

### Additional Information

Visit the web site of your local subsidiary at [www.3m.eu/graphicsolutions](http://www.3m.eu/graphicsolutions) for getting more:

- details about 3M™ MCS™ Warranty and 3M™ Performance Guarantee.
- additional instruction bulletins
- a complete product overview about materials 3M is offering

3M Europe S.A./N.V.  
Hermeslaan 7  
1831 Diegem, Belgium

Responsible for this technical bulletin  
3M Deutschland GmbH | Display&Graphics Laboratory  
Carl-Schurz-Str. 1 | 41453 Neuss, Germany

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