



## 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	Screen printing	CT180-X	X = color code, opaque, glossy, permanent adhesive. Wide selection out of large color range. Special colors available on request.
		CT180C-X	X = color code, opaque, glossy, permanent adhesive with Comply™. Wide selection out of large color range. Special colors available on request.
		CT180Cv2-X	X = color code, opaque, glossy, permanent adhesive with Comply™v2. Wide selection out of large color range. Special colors available on request.
	Inkjet printing	CT IJ180-10	white, opaque, glossy, permanent adhesive (grey).
		CT IJ180C-10	white, opaque, glossy, permanent adhesive (grey) with Comply™.
		CT IJ180Cv3-10	white, opaque, glossy, permanent adhesive (grey) with Comply™v3.

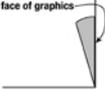
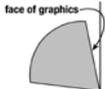
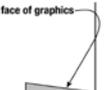
**Product Characteristics** These are typical values for unprocessed products.  
Contact your 3M representative for a custom specification.

Physical & Application	Material	cast vinyl
	Surface finish	glossy
	Thickness (film)	50 µm (0.05 mm)
	Adhesive type	solvent acrylic; pressure-sensitive, repositionable In addition: product variants with Comply™ adhesive have air release channels
	Adhesive appearance	grey, except for few light colors, metallic and transparent versions
	Liner	double-sided Polyethylene coated paper

Adhesion	18 N/25 mm	FTM 1: 180° peel, substrate: glass; cond: 24 h 23°C/50%RH
Application method	wet or dry	
Applied shrinkage	< 0.1 mm	FTM 14
Application temperature	+4°C	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>Storage</b>	Shelf life	2 years from the date on the original box Up to 2 years unprocessed, or processed 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.

## Durability

Unprocessed film	The following durability data are given for unprocessed film only!	
3M Performance Guarantee and MCS™	In addition, 3M provides a guarantee/warranty on a finished applied graphic within the framework of 3M Performance Guarantee and/or 3M MCS™ warranty programs. Visit <a href="http://www.3mgraphics.com">www.3mgraphics.com</a> for getting more details about 3M's comprehensive graphic solutions.	
Climatic zones	Graphic durability is largely determined by the climate and the angle of exposure. Find below a table showing the durability of a product according to the angle of exposure and the geographical location of the application. Zone 1 Northern Europe, Italy (north of Rome), Russia Zone 2 Mediterranean area without North Africa, South Africa Zone 3 Gulf area, Africa	
Exposure types	Vertical:	 The face of the graphic is ±10° from vertical.
	Non - vertical:	 The face of the graphic is greater than 10° from vertical and greater than 5° from horizontal. This includes non-vertical surfaces of vehicle wraps or fleet truck and trailer graphics.
	Horizontal:	 The face of the graphic is ±5° from horizontal.
	Interior:	Interior means an application inside a building without direct exposure to elements.

Vertical outdoor exposure	Zone 1	Zone 2	Zone 3
white/black colors	10 years	8 years	6 years
transparent	10 years	8 years	6 years
metallics	8 years	7 years	6 years
	5 years	4 years	3 years

<b>Non-vertical outdoor exposure</b>	<b>Zone 1</b>	<b>Zone 2</b>	<b>Zone 3</b>
white/black	5 years	4 years	3 years
colors	5 years	4 years	3 years
transparent	4 years	3.5 years	3 years
metallics	2.5 years	4 years	1.5 years
<b>Horizontal outdoor exposure</b>	<b>Zone 1</b>	<b>Zone 2</b>	<b>Zone 3</b>
white/black	5 years	4 years	3 years
colors	5 years	4 years	3 years
The following films are suitable for horizontal applications:	white -10, black -12, tomato red -13, bright orange -14, bright yellow -15, sunflower -25, cardinal red -53, light orange -54		
<b>Interior application</b>	<b>Zone 1</b>	<b>Zone 2</b>	<b>Zone 3</b>
interior	12 years	12 years	12 years

## 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.

Graphics applied to

- flexible substrates incl. Panaflex™ and Panagraphics™.
- low surface energy substrates or substrates with low surface energy coating.
- other than flat or moderate curved/corrugated surfaces.
- painted or unpainted wallboards, gypsum boards and wallpapers.
- stainless steel.
- surfaces not clean and more than moderate textured.
- surfaces with poor paint to substrate adhesion.

Graphic removal from

- signs or existing graphics that must remain intact.

Graphics subjected to

- gasoline vapors or spills.

Important Notice

- 3M Commercial Graphics Division products are not tested against automotive manufacturer specifications!
- To avoid color variations all pieces of applied film of one colored area should be processed out of one lot of material.
- The color appearance of metallic film is dependent on the viewing angle to the product! Therefore the job design should be done that all parts of metallic film are applied the same orientation.

## 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.

When to use an overprint clear or overlamine

See instruction bulletin GPO 'graphic protection options' for further information about selection and use of protective overlaminates and printable clears.

[> Product Bulletin Graphic Protection Options <](#)

Shipping finished graphics

Flat, or rolled film side out on 130 mm (5 inch) or larger core. These methods help to prevent the liner from wrinkling or application tape, if used, from popping off.

## Converting Information Inkjet 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%.

Adequately Dry Graphics

Inadequate drying can result in graphic failure including curling, increased shrinkage and adhesion failure, which are not covered under warranty. Build enough time into your process to ensure adequate drying of the graphic.

Poorly dried film becomes soft and stretchy, and the adhesive becomes too aggressive. 3M recommends at least a minimum drying time of 24 hrs before further processing. Dry the graphic unrolled or at least as a loose wound roll standing upright.

## **Converting Information**

### **Screen Printing**

#### **Abrasion and Loss of Gloss**

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. Use equipment designed to handle high viscosity materials and make sure the coating is evenly applied to the specifications given in the clear's Instruction Bulletin.

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.

[> Product Bulletin Application Tape Recommendations <](#)

Refer to Instruction Bulletin 5.1 'select and prepare substrates for graphic application', for general application information.

[>Instruction Bulletin 5.1 'select and prepare substrates for graphic 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).

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

[>Instruction Bulletin 6.5 'Storage, Handling, Maintenance and Removal of Films and Sheetings'<](#)

## **Remarks**

#### **Important notice**

This bulletin provides technical information only.

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.3mgraphics.com](http://www.3mgraphics.com) for getting more:

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

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