3M

3M™ Controltac™ Graphic Film Series 40C

3M™ Scotchcal™ Graphic Film Series 40

Product Bulletin

Product Description

These polymeric calendered films offer great versatility making them perfect for indoor and outdoor signs and fleet graphics.   Offered with both pressure sensitive (Scotchcal) and pressure activated (Controltac) adhesives; the product variants with 3M™ Comply™ adhesive also have air release channels for fast and easy, bubble-free graphic installations.

Films IJ40-10, IJ40-10R, IJ40-114, IJ40-124R, and 40C-10, IJ40C-10R, 40C-20, 40C-20R are tested and approved for use in conjunction with the recommended overlaminate (3M™ Scotchcal™ Luster Overlaminate 3645), as base film to produce graphics for floors.

Product Line

40-10	white, opaque, glossy, permanent, with grey pressure sensitive adhesive
40-10T	white, opaque, glossy, permanent, with clear pressure sensitive adhesive
40-10R	white, opaque, glossy permanent, with grey pressure sensitive adhesive
40-20	white, opaque, matte, permanent, with grey pressure sensitive adhesive
40-20R	white, opaque, matte, with grey removable pressure sensitive adhesive
40C-10	white, opaque, glossy, permanent, with grey pressure activated Comply Adhesive
40C-10R	white, opaque, glossy, removable, with grey pressure activated Comply Adhesive
40C-20	white, opaque, matte, permanent, with grey pressure activated Comply Adhesive
40C-20R	white, opaque, matte, removable, with grey pressure activated Comply Adhesive
40-114	transparent, glossy, permanent, with clear pressure sensitive adhesive
40-124	transparent, matte, permanent, with clear pressure sensitive adhesive
40-124R	transparent, matte, removable, with clear pressure sensitive adhesive

Product Characteristics
Physical & Application

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

Material	Calendered vinyl (polymeric)
Surface finish	Gloss and matte (see product line)
Thickness (film only)	75 µm (0.075 mm)
Adhesive type	Solvent acrylic, pressure-sensitive. In addition: product variants with Comply adhesive have air release channels
Adhesive Appearance	Grey, except for transparent versions and 40-10T which have a clear adhesive (see product line)
Liner	Polyethylene coated paper
Adhesion	Permanent films: approx. 16 N/25 mm FTM 1: 180° peel, substrate: glass; cond: 24 h 23°C/50%RH Removable films: approx. 6 N/25 mm

	Application method	Wet or Dry NB: for films with Comply adhesive use dry application only
	Applied shrinkage	< 0.4 mm FTM 14
	Application temperature (air, film and substrate)	+10°C – 38°C
	Service temperature	-50°C to +90°C
	Surface type	Flat to simple curves
	Substrate type	Aluminium, glass, PMMA, PC*, ABS, paint *Might require drying with heat before use
	Graphic Removal	Removable films (those with an R suffix) can be removed without heat and/or chemicals from supported substrates. Use a removal angle of <90° for optimal results. No liability is given for ease or speed of removal of any graphic.
Storage	Shelf Life	The shelf life for unprocessed film is 2 years from the date of manufacture (i.e. the date marked on the original packaging). Process and apply within 1 year of delivery.
	Storage Conditions	Store in the original container at temperatures of +4°C to +40°C, out of sunlight, in a clean and dry area. Bring the film to room temperature before use.
Flammability		Flammability standards vary from country to country. Please contact your local representative for further information.

Durability

Unprocessed film	The following durability data are given for unprocessed film only.	
3M Performance Guarantee and 3M™ MCS™ Warranty	In addition, 3M provides a guarantee/warranty on a finished applied graphic within the framework of 3M Performance Guarantee and/or 3M™ MCS™ warranty programmes.. Visit: www.3M.co.uk/graphicsolutions for more details.	
Climatic zones	Graphic durability is largely determined by the climate and the angle of exposure. The table below shows durability for these products according to the angle of exposure and the geographical location of the application.	

Zone 1	Northern Europe, Italy (north of Rome), Russia Mediterranean area without North Africa, South
Zone 2	Africa
Zone 3	Gulf area, Africa

Exposure types

Vertical: The face of the graphic is ±10° from vertical.

Interior: Interior means an application inside a building without direct exposure to elements.

Vertical outdoor exposure	Zone 1	Zone 2	Zone 3
white	7 years	6 years	4 years
transparent	5 years	4 years	3 years
Non-Vertical outdoor exposure	Zone 1	Zone 2	Zone 3
interior	3.5 years	3 years	2 years
transparent	2.5 years	2 years	1.5 years
Interior application	Zone 1	Zone 2	Zone 3
interior	7 years	7 years	7 years

Floor graphics – durability: 6-12 months depending on level of foot traffic

Limitations of End Uses

Graphics applied to

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

- flexible substrates including 3M™ Panagraphics™ III Wide Width Flexible Substrate.
- low surface energy substrates or substrates with low surface energy coating.
- other than flat or simply curved surfaces.
- painted or unpainted wallboards, gypsum boards and wallpapers.
- stainless steel.
- surfaces that are not clean and smooth.
- surfaces with poor paint to substrate adhesion.

Graphic removal from
Graphics subjected to
Important Notice

- signs or existing graphics that must remain intact.
- petroleum vapours or spills.
- 3M Commercial Solutions products are not tested against automotive manufacturer specifications.
- Due to increasing winding-tension towards the roll core, surface impressions might occur with rolls lengths of more than 200m.

Graphics Manufacturing

Graphic protection can improve the appearance, performance and durability of printed graphics. Any printed 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 overlaminate	See instruction bulletin [3M UK Commercial Graphics Overlaminates](#) for further information about selection and use of protective overlaminates and printable clears.
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

	The maximum recommended total ink coverage for this film is 270%. Exceeding this could result in media characteristic changes, extending drying time, overlaminate lifting and/or poor graphic performance.
Adequately Dry Graphics	3M recommends a minimum drying time of 24 hours before further processing takes place, so please ensure that sufficient time is included in your conversion process to ensure that graphics are completely dry. The graphic should be dried unrolled or stood upright in a loosely wound roll. Failure to ensure that graphics are adequately dry could cause:

- Increased shrinkage
- The film to become soft and stretchy
- Curling of graphics
- The adhesive to become aggressive and/or adhesion failure

Graphic failure due to insufficient drying time is not covered by the 3M warranty.

Application

See instruction bulletin 4.3 [3M™ Application Tapes Premasking and Prespacing for Films](#) for information about selection and use of suitable application tapes for this product, please.

Refer to Instruction Bulletin 5.1 [Substrate Selection, Preparation and Substrate Specific Application Techniques](#) for substrate preparation techniques.

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 3M Films](#) for general maintenance and cleaning information.

Remarks	This bulletin provides technical information only.

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Additional Information

Visit the web site of your local subsidary at www.3M.co.uk/graphicsolutions

-        details about 3M™ MCS™ Warranty and 3M Performance Guarantee
-        additional instruction bulletins
-        An overview of the 3M Commercial Graphics range of graphic films

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.