



Controltac™ Plus Removable Graphic Film with Comply™ Adhesive 6645C

Description

Advantages

- Suitable for PIJ solvent printing
- Suitable for screen printing
- Suitable for electrostatic imaging
- Stays flexible even in cold weather
- Removes in one piece from most substrates in above freezing environments
- Comply™ adhesive for easier, high quality installations
- Easy to temporarily position during application
- Excellent hiding power

Product Line

6645C white matte film, with removable adhesive

Characteristics

This information is subject to change. These values are typical for unprinted film and are not intended for use in specifications. Be sure this is the most current Product Bulletin. See **3M Related Literature** at the end of this bulletin.

Characteristic	Description
Film	100 micron (0.10 mm), white matte non-vinyl (PE/PP)
Thickness (film and adhesive)	110-140 micron (0.11-0.14 mm)
Adhesive type and colour	Pressure activated with micro Comply air release channels, positionable; grey layer beneath for improved opacity

Characteristic	Description
Liner	Polyethylene coated paper
Application surface	Smooth, flat without rivets; simple curves
Application substrates	FRP, glass, rigid plastic, metal; interior enamel paint: gloss or semi-gloss
Application temperature range*	4° to 38°C (air, film and substrate)
Removal	Removable within the warranted durability of the product
Service temperature range	-40° to +93°C
Tensile strength (min)	22.5N @23°C
Applied shrinkage	127 – 254 micron 0.127 to 0.254mm
Adhesion (etched aluminium)	16 N/Inch
Shelf life	2 years after receipt from 3M (dry conditions, Temp. < 38°C)

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

Fire Testing Results

3M™ Controltac™ Plus Removable Graphic Film with Comply™ Adhesive 6645C printed and clear coated with 3M™ Screen Print Gloss Clear 1920

1. BS 476 Part 7 Class 1
2. ISO 5660 Part 1MARHE 47.56
3. BS 6853 1999

Annex D8.4 Ao(on)= 1.975

Ao(off): 2.455

4. BS6853: 1999 Annex B.2 R=0.185

The results show that the product, as tested, satisfies the requirements for category Ia, Ib and II as given in Table 2 of BS 6853:1999

Effective Performance Life

When manufactured, applied and maintained in accordance with 3M recommended procedures, graphics produced on 3M™ Controltac™ Plus Removable Graphic Film with Comply™ Adhesive 6645C and protected with selected 3M™ Controltac™ Overlaminates a warranty founded on 3M™ MCS™ will be given by 3M. Performance statements are based upon representative experience obtained from testing throughout Europe. Actual performance will be determined by substrate selection and preparation, maintenance of the marking and exposure conditions.

Warranted Durability

Zone 1 = Northern & Central Europe
 Zone 2 = Mediterranean Europe
 Zone 3 = Middle East and Northern Africa

Film	Ink Series	Protective Clears	Rail/Fleet			Exterior Sign 1st Surface			Interior		
			1	2	3	1	2	3	1	2	3
Zones			1	2	3	1	2	3	1	2	3
6645C	8700/8800	1920	2	2	1½	3	2	1½	5	5	5
6645C	1900	1920	2	2	1½	3	2	1½	5	5	5
6645C	1500 4600 6000 6800	1920	2	2	1½	3	2	1½	5	5	5

Note: 3M always recommend surface protection with this product.

When to Use an Overprint Clear or Overlaminates

An overprint clear or overlaminates provides protection to a graphic as well as changing gloss.

3M recommends to use in any case an overprint clear or overlaminates to protect printed graphics.

NB: Fire test results for graphics protected with 3M™ Screen Print Gloss Clear 1920

Limitations of End Uses

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

- Graphics applied to:
 - Corrugated or highly-irregular surfaces or sharply raised areas such as huck bolts.
 - Substrates that do not have a clean, smooth surface or have poor paint-to-substrate adhesion.
 - Stainless steel. Flexible substrates.
 - Compound contours.
 - Exterior horizontal applications.
- Graphic removal from:
 - Existing graphics that must remain intact.
 - Any vinyl film, including reflective film
- Graphics subjected to gasoline vapours or spills
- Wet application method

Important: This film can be more heat sensitive than vinyl film. Do not subject it to excessive heat during

graphic fabrication or application, which may cause the graphic to shrink or curl.

Ink Drying

Immediately after printing with solvent ink, the ink feels dry to the touch but actually remains soft in the top layer of the film for several hours. During this time, pressure to the printed surface can mar it. If an overlaminates film or UV-cured clear is not being applied immediately after printing, we recommend rolling the film and allowing it to dry for at least 8 hours before applying a solvent clear coat, cutting, trimming, mounting or applying the graphic.

Do not exceed the recommended total ink coverage for this film. Too high a total physical ink amount on the film results in media characteristic changes, inadequate drying, overlaminates lifting, and/or poor graphic performance.

Total Ink Coverage	Printer
270%	UltraVu 2360/3360 UltraVu 150
300%	UltraVu 3000/3300 and 5000/5300
300%	Arizona 180 Printer

Note: This recommendations are for users of RIP software which is not from 3M. For users of 3M Graphic Maker Software we recommend to set the ink limit to 150% in the print menu.

Cutting

This film is suitable for cutting shapes larger than 20cm but not for numbers or text.

- Guillotine
- Hand Cut
- Cold Steel Rule Die
- Electronic

Application Tapes

Overlaminates or Overprint Clear	Prespace Tape	Premask Tape
Printed (no clear)	SCPS-2	SCPS-100
8908/09	none	SCPS-100
8519/20 40-114 1920DR	SCPS-2	SCPS-100
9720UV	SCPM-44X	SCPM-44X

See Instruction Bulletin 4.3 for details.

Removal

3M™ Controltac™ Plus Removable Graphic Film with Comply™ Adhesive 6645C can be removed within the warranted period.

Related Literature

Listed below is related 3M technical literature that may be of interest. Contact your local 3M sales or technical representative to order these bulletins.

Subject	Bulletin No.
Product Bulletins	
Scotchprint® Exterior Toner Series 8700/8800	8700
3M™ Screen Printing Ink Series 1900 and 3M™ Screen Print Gloss Clear 1920	1900
3M™ Piezo Ink Jet Ink Series 1500	1500
3M™ Piezo Ink Jet Ink Series 4600	4600
3M™ Piezo Ink Jet Ink Series 6000	6000
3M™ Piezo Ink Jet Ink Series 6800	6800
Instruction Bulletins	
Design of markings	2.1
Scoring and cutting	4.1
Using 3M application tapes; premasking and prespacing for films	4.3
Printing with series 1500	4.45
Screen printing with ink series 1900	3.11
Printing with series 4600	4.43
Printing with series 6000	4.39

Printing with series 6800	4.40
Printing with series 8700/8800	4.12
Application, substrate selection, preparation and substrate-specific application techniques	5.1
Application, special applications and vehicles	5.4
Storage, handling, maintenance, removal	6.5
Other Documents	
3M™ MCS™ Warranty	

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.

3M™ Comply™ Adhesive

With its remarkable 'bubble and wrinkle free' application feature, 3M™ Comply™ Adhesive is the next step in speeding and easing graphic application. The adhesive layer has been developed to contain uniquely-configured channels which allow air to escape during application.

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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