



# 3M™ Scotchcal™ General Purpose Graphic Film Series 50, SP50 & SP50R

## Product Bulletin

### Description

3M™ Scotchcal™ General Purpose Film Series 50 are opaque, stabilised, calendered vinyl films offering an affordable solution for a wide range of signing and marking applications which do not require extended exterior performance life. The typical uses are exterior/interior markings requiring a medium term durability such as vehicle markings, signs, window and display graphics. These films are intended for applications to flat surfaces without rivets.

### Limitations of End Uses

The following uses and applications are specifically NOT warranted.

- Application to corrugated surfaces
- Application to compound curved surfaces (A compound curve is one in which the film is stretched in two directions over a sharp angle.)
- Exposure to petroleum products or solvents
- Graphics for automotive Original Equipment Manufacturers (OEM): 3M Commercial Graphics Division products are not tested against automotive manufacturers' specifications.

### Compatible Products

- Selected 3M Premasking and Prespacing Tapes
- 3M™ Screen Printing Ink Series 1900
- 3M™ Screen Printing Ink Series 9700UV

### Product Line

#### Product Line Colours

Screen Printable films			
Number/Colour		Number/Colour	
Permanent Adhesive		Removable Adhesive	
SP50-10 White		SP50R-10 White	
SP50-11 Transparent		SP50R-Transparent	
Self-Coloured films			
Number/Colour		Number/Colour	
50-11	Transparent	50-792	Aqua
50-24	Lemon Yellow	50-795	Dark Aqua
50-25	Bright Yellow	50-79	Teal
50-265	Yellow	50-81	Soft Blue
50-275	Sunflower	50-83	Pastel Blue
50-28	Apricot	50-834	Sky Blue
50-32	Orange	50-84	Azure Blue
50-34	Bright Orange	50-862	Vivid Blue
50-42	Bright Red	50-87	Brilliant Blue
50-445	Light Red	50-88	Sapphire Blue
50-465	Tomato Red	50-884	Marine Blue
50-473	Cardinal Red	50-90	Deep Navy Blue
50-48	Red	50-905	Insigna Blue
50-485	Dark Red	50-917	Dark Sahara
50-486	Deep Red	50-918	Med. Brown
50-49	Burgundy	50-92	Brown
50-475	Medium Red	50-914	Beige
50-62	Light Magenta	50-912	Fawn
50-63	Magenta	50-91	Ivory
50-64	Pink	50-10	White
50-66	Purple	50-100	Matt White
50-65	Lavender	50-93	Grey White
50-72	Light Green	50-94	Light Grey
50-73	Grass Green	50-96	Grey
50-74	Green	50-97	Nimbus Grey
50-76	Med. Green	50-12	Black
50-77	Leaf Green	50-120	Matt Black
50-78	Dark Green	50-58	Aluminum
50-745	Bright Green	50-54	Gold
50-82	Light Blue	50-585	Anthracite

## Characteristics

Property	Description
Thickness of film only	0.75mm +/- 10 % variation
Thickness of film and adhesive (ISO 4593)	0.09 – 0.1 mm
<b>Adhesive</b> Series 50 Series SP50	Permanent, pressure sensitive
<b>Adhesive</b> SP50R	Removable, pressure sensitive
<b>Adhesive colour</b>	Clear
<b>Liner</b> Series 50 Series SP50 and SP50R	Kraft paper / 137 g/m <sup>2</sup> One-sided PE coated Kraft paper/ 147 g/m <sup>2</sup>
Application substrate	Automotive paints, glass, acrylic, aluminum, painted steel
Minimum application temperature (air, film, substrate)*	> 8 °C

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

*Note:* The ISO number refers to standards of the International Standards Organisation.

## Effective Performance Life

The effective performance life for 3M™ Scotchcal™ General Purpose Film Series 50 is based on field experience and exposure tests conducted throughout Europe. When the graphics are processed and used according to 3M recommendations, they should have the performance life shown in the charts below. The actual performance depends on the:

- Selection and preparation of the substrate
- Application methods
- Exposure conditions
- Cleaning methods

### Vertical Exposure

**Zone 1:** Northern and Central Europe

**Zone 2:** Mediterranean Europe

**Zone 3:** Northern Africa and Middle East

Unprinted	Zone 1	Zone 2	Zone 3
<b>Black/white</b>			
Durability	7 years	5 years	4 years
3M™ MCS™ Warranty	5 years	4 years	3 years
<b>Colours</b>			
Durability	5 years	4 years	3 years
3M™ MCS™ Warranty	5 years	4 years	3 years
<b>Metallic</b>			
Durability	4 years	3 years	2 years
3M™ MCS™ Warranty	3 years	2 years	2 years
<b>SP 50 and SP 50R printed with ink series 1900 and 9700</b>			
3M™ MCS™ Warranty	3 years	2 years	1 years

## Cutting

CAUTION
When using any equipment, always follow the manufacturers' instructions for safe operation.

Based on the differences in electronically controlled cutting equipment and font characteristics, users should determine their own cutting and weeding capability.

These factors can affect cutting quality and ability:

- **Sharpness of the knife blade.** Dull blades create a serrated look to the cut edge of the film.
- **Weight on the knife blade.** The ideal weight slightly scores the liner. Too little weight does not cut completely through the film and the adhesive. Excessive weight cuts the liner. It also causes the blade to drag, accelerating wear and eventually creating a serrated cut edge on the film.

## Premasking and Prespacing

The 3M Prespacing or Prespacing Tape you use depends on the type of graphic produced and the overprint clear system. For graphics that have large amounts of exposed liner, use a prespacing application tape. If there is very little exposed liner, use a premasking application tape.

	Prespacing Tape	Premasking Tape
<b>Unprinted</b>	SCPS-100	SCPM-19
<b>Printed</b>		
Series 1900 inks	SCPS-100	SCPM-19
Series 9700 inks	SCPS-2	SCPS-100

## Application

*Note:* Use the dry application method when possible.

1. Follow the dry application methods in Instruction Bulletin 5.5, Release C-EU, Effective April 2000 or later.
2. Be sure that the film is applied at temperatures > 8°C.

## Maintenance and Cleaning

If pressure washing is used, do not wash at a distance less than 30 cm and point the nozzle perpendicular to the body of the vehicle. Do not wash with a pressure higher than 80 bar.

The products referred on this page are;

- 3M™ Screen Printing Ink Series 1900
- 3M™ Screen Printing Ink Series 9700UV
- 3M™ Prespace Tape SCPS-2
- 3M™ Prespace Tape SCPS-100
- 3M™ Premask Tape SCPM-19

## Removal

After removing 3M™ Scotchcal™ General Purpose Film Graphic Series 50 there may be adhesive left on the surface. To remove the adhesive, use 3M™ Controltac™ Remover System R231 Adhesive Remover.

## Shelf Life, Shipping and Storage

Follow these guidelines to store and ship this film and the processed graphics.

- The combined shelf life as processed and unprocessed film cannot exceed 2 years from the date you receive the film. However, the film must be used within one year of processing even if the combined shelf life is less than 2 years.
- Store the film in a clean, dry area out of the direct sunlight and at less than 35°C.
- Ship the finished graphic lying flat or roll it. To roll the graphic, wrap it film-side out onto a core that is 127 mm or larger in diameter. These methods prevent the liner from wrinkling or popping off.

## Product Data

These values are typical and are not intended for use in specifications. You may submit a request for a custom specification to your 3M sales representative.

### Physical Properties

Property	Metric Units
Dimensional stability (FTM 14)	< 0.5 mm
Temperature range after application	-40 to +80°C
Tensile strength, minimum (DIN EN ISO 527)	md >18 N/mm <sup>2</sup> cd > 18 N/mm <sup>2</sup>
Thickness of film and adhesive (ISO 4593)	0.09 - 0.1 mm

### Chemical Resistance

- Resists mild acids, alkalis and salts.
- Excellent water resistance.

### Adhesion (FTM1)

Substrate	Metric Units N/25 mm
Series 50 and SP50 Stainless steel	> 18
Series S50R Stainless steel	>8

**Note:** The ISO number refers to standards of the International Standards Organization.

FTM (Finat Test Method) refers to test methods listed by FINAT, the Association of European Tape Manufacturers.

## 3M 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.
<b>Instruction Bulletins</b>	
Design of markings	2.1
Premasking and prespacing	4.3
Surface preparation	5.1, 5.2
Application	5.5
Storage, maintenance, removal	6.5
<b>Warranties</b>	
Worldwide 3M™ MCS™ Warranty of products	

## 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.

### Permanent Adhesive

Films with a permanent adhesive can be difficult to remove and will often require heat and/or chemicals for effective removal.

### 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.

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