

# 3M™ Scotchcal™ Graphic Film Series IJ20

## Product Bulletin

### Product Description

These monomeric calendered films offer great versatility, making them perfect for short term indoor and outdoor signs and fleet graphics. IJ20-114 is intended for use as a printable base and an overlamine

#### Product Line

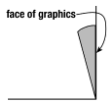
Inkjet printing	Product Line	Description
	IJ20-10R	white, opaque, gloss, with a removable, grey adhesive
	IJ20-10TR	white, opaque, gloss, with a removable, clear adhesive
	IJ20-20R	white, opaque, matt, with a removable grey adhesive
	IJ20-114R	transparent, gloss, with a removable clear adhesive.
	IJ20-124R	transparent, matt, with a removable clear adhesive.

### Product Characteristics

#### Physical & Application

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

Material	calendered vinyl (monomeric)	
Surface finish	white and transparent films: glossy and matt (see product line above)	
Thickness (film)	80 µm (0.08 mm)	
Adhesive type	waterbased acrylic: pressure-sensitive	
Adhesive appearance	<ul style="list-style-type: none"> <li>grey, except for transparent versions</li> <li>some white films are available with a clear adhesive (indicated with letter 'T'). See product line above.</li> </ul>	
Liner	Kraft paper	
Adhesion	approx. 5N/25 mm	FTM 1: 180° peel, substrate: glass; cond: 24 h 23°C/50%RH
Application method	dry only	
Applied shrinkage	< 0.5 mm FTM 14	
Application temperature	+10°C minimum (air and substrate)	
Service temperature	-50°C to +90°C	
Surface type	flat	
Substrate type	aluminium, glass, PMMA, PC*, ABS, paint	
	PC*, PETG*: Might require drying with heat before use	

	Graphic removal	Removable without heat and/or chemicals from supported substrates, within the warranty period. Adhesive residue levels may vary from substrate to substrate. It is important that removal takes place at a minimum ambient temperature of 10°C minimum (air and substrate) and that the correct angle of removal is used i.e. pull the film back on itself, see technical bulletin 6.5 <a href="#">Storage, Handling, Maintenance and Removal of 3M Films</a>		
		No liability is given for ease or speed of removal of any graphic.		
Storage	Shelf life	2 years from the date on the original packaging. Up to 2 years unprocessed, or processed within 1 year and apply within 1 year of processing.		
	Storage conditions!	Store rolls horizontally in the original container at temperatures of +4°C to +40°C, out of sunlight, in a clean and dry area. Do not stack boxes over size units high. Bring the film to room temperature before use. Always roll film with the face film on the outside.		
Flammability	Flammability standards are different from country to country. Contact your local subsidiary for details.			
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: <a href="http://www.3M.co.uk/graphicsolutions">www.3M.co.uk/graphicsolutions</a> 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	
	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.
		Interior:	Interior means an application inside a building without direct exposure to elements.	
	Vertical outdoor exposure	Zone 1	Zone 2	Zone 3
	white	2 years	18 months	12 months
	transparent	2 years	18 months	12 months
	Interior application	Zone 1	Zone 2	Zone 3
	interior	2 years	2 years	2 years

## 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 incl. 3M™ Panagraphics™ III Flexible Substrate
- low surface energy substrates or substrates with low surface energy coating.
- other than flat 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.
- signs or existing graphics that must remain intact.
- Fuel, acid and hazardous chemicals vapours or spills.
- 3M Commercial Graphics Division products are not tested against automotive manufacturer specifications
- Wet application method is not recommended for this film.
- Surface impressions may occur on jumbo rolls of 200m+, where winding tension increases towards the core of the roll.

Graphic removal from Graphics subjected to

Important Notice

## Graphics Manufacturing

When to use an overprint clear or overlaminate

Shipping finished graphics

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.

See instruction bulletin [Graphic Protection Options](#) for further information about selection and use of protective overlaminates and printable clears.

Flat, or rolled film side out on 150 mm (6 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

Adequately Dry Graphics

A too high total physical ink amount on the film results in media characteristic changes, result in media characteristic changes, inadequate drying, overlaminate lifting, and/or poor graphic performance. The maximum recommended total ink coverage for this film is 270%.

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
- Cause the laminate to silver
- May cause loss of adhesion of laminate

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

## Converting Information

Screen Printing

Formulations and processing conditions can affect ink durability. Refer to the 3M Product and Instruction bulletins for your ink, for limitations and proper usage. Graphic protection can improve the appearance performance and durability of your graphic.

Use equipment designed to handle high viscosity materials and make sure the coating is evenly applied to the specifications given in the clear coat Instruction Bulletin. Abrasion damage and lose of gloss are not covered by any 3M warranty. This is considered normal wear and tear.

## 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.

## Important Safety Remark Application to Glass

The application of coloured or printed film onto glass can lead to glass breakage through thermal expansion of the glass. The local conditions must be examined for the danger of glass breakage by uneven heat absorption through sun exposure. Type of glass (insulation glass, float glass, LSG, toughened safety glass, semi-tempered glass, etc) glass dimensions, joint condition, flexibility of the sealant, quality of the edge finishing, geographical orientation and partial shadow during sun exposure are the determining factors.

Light colour designs and application on the outside of the window are to be preferred. A free non-applied frame of 4mm around the entire window front can help to dissipate the absorbed warmth. According to common knowledge, a thermal crack can occur at temperature differences of approximately 130°C (toughened safety glass), approximately 40°C (float glass) or approximately 110°C (semi-tempered glass).

The coldest place is usually under the framework in the embedded joined window part, the warmest place is typically on the darkest place in the format. Because of the above mentioned factors, glass breakage cannot be fully predicted, therefore 3M does not accept liability for glass breakage when using this film for window graphics.

## 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.3M.co.uk/graphicsolutions](http://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.

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