

## TECHNICAL DATA SHEET

<b>Contra Vision® Performance™ with <u>Grayliner™</u></b> <b>Universal Liner</b> <b>TWPAG20C</b>	<b>Page:</b> 1/2
	<b>Revision:</b> B
	<b>Date:</b> 18/03/2016
	<b>Replaces:</b> Revision A
	<b>Authors:</b> HBJ

### 1. Identification of the product

- 1.1 Commercial product name:** Contra Vision® Performance™
- 1.2 Product Reference number:** TWPAG20C

### 2. Description

Contra Vision® Performance™ TWPAG20C is a Translucent White perforated self-adhesive vinyl with 20% transparency and a removable, pressure-sensitive adhesive, featuring a Universal Liner with Grayliner™ technology. This film is used to create Contra Vision® BACKLITE™ see-through graphics. This allows an image to be seen on the outside of a window during the day while allowing viewing through from the inside, and during the hours of darkness allows the image to be backlit so that it can still be seen on the outside. A ghost reverse image of the print can be seen from the inside, although the mind will concentrate on the outside view and not the ghost image.

This promotional film features a part-perforated paper liner for use with UV inkjet, latex inkjet (including models with an optimizer primer), solvent and 'eco-solvent' inkjet printing and screen printing.

### 3. Use

Some countries have laws or regulations requiring minimum light passage that may limit or preclude the use of this product on vehicle windows. The user is responsible for determining and complying with all applicable standards.

Applications that require an optical clear view, such as vehicle window exteriors, should be laminated with a suitable overlaminates. Failure to apply this laminate could result in obstructed or impaired viewing when the product becomes wet.

This product is not recommended for use on glass with coatings such as anti-reflective, self-cleaning and scratch-resistance, which may be damaged during film removal. Not to be applied to fresh paint or ink, polycarbonate, rubber, plastic moldings and certain PVCs. In case of doubt, please test prior to final application.

This product is not recommended for use around a sharp (90°) angle where there is a limited area either side of the angle.

Universal Liner (also known as Additional Liner) construction eliminates the "bridging" over the perforated holes that can occur with UV curing inkjet printers and latex inkjet with an optimizer primer when using Replacement Liner construction.

After printing the ink must be thoroughly dry, including in the perforated holes in order to avoid any contamination, particularly during lamination.

Surfaces to which the material will be applied must be thoroughly cleaned from dust, grease or any contamination which could affect the adhesion of the material. Final clean with soap and water. Rinse and dry glass after cleaning. Use a dry application method. The film must not touch the rubber window molding. This minimizes the chance of the graphic absorbing water that may collect in the window edge.

If two graphic panels meet side by side on a window, carefully trim the film so that the panels meet and form a butt seam. Do not overlap the panels.

The graphics should not be washed within 24 hours of application to allow the adhesive to reach its ultimate strength.

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### 4. Typical Properties

PROPERTY	VALUE	NOTES
<b>Face film</b>	Translucent White polymeric calendered pvc	
<b>Thickness of face film</b>	180µm (7.1 mil)	±10 µm (±0.4 mil)
<b>Opacity of face film</b>	55-60% opacity, 40-45% transmission	Imperforate face film
<b>Hole pattern</b>	20% transparency 1.50mm (0.059") diameter holes 3.19mm (0.125") between hole centres	Face film, adhesive and part of liner
<b>Adhesive</b>	Transparent, solvent polyacrylate	
<b>Adhesive coating weight</b>	28g/m <sup>2</sup> (0.83 oz/yard <sup>2</sup> )	±3g/m <sup>2</sup> (±0.09 oz/yard <sup>2</sup> )
<b>Liner</b>	Perforated silicone coated paper laminated with grey-printed paper backprinted with Contra Vision® Performance™ branding.	Part-perforated Additional Liner
<b>Liner weight after perforating</b>	174g/m <sup>2</sup> (5.1 oz/yard <sup>2</sup> )	±5g/m <sup>2</sup> (±0.15 oz/yard <sup>2</sup> )
<b>Minimum application temperature</b>	+5°C (41°F)	Air and substrate
<b>Peel adhesion 24 hours</b>	4N/25mm 36oz/in	Printed film on glass, typical value
<b>Peel adhesion 1 month</b>	4N/25mm 36 oz/in	Printed film on glass, typical value
<b>Removability</b>	Minimum 6 months	Clear removability without adhesive residue at 23°C to 25°C (73°F to 77°F) and RH of 50-60%
<b>Durability</b>	3 years	Durability stated is for unprinted and untreated material correctly applied to an inert, vertical substrate subject to Mid-European weathering conditions. Some printing inks and drying or curing regimes may reduce the expected lifetime of the printed graphic. Please consult your ink manufacturer for guidance. Incorrect application methods, inadequate window cleaning and preparation and incompatible window treatments may reduce the expected lifetime of the applied material whether printed or unprinted, overlaminated or unlaminated. Mechanically sustained damage, chemical damage and UV-degradation to printed, unprinted, laminated or unlaminated material may also reduce expected durability. All perforated window films are especially vulnerable to damage along the edges and corners, which may lead to premature failure. Typical application life is up to eighteen months.
<b>Shrinkage</b>	x direction 0.05%, y direction 0.32%	
<b>Service temperature</b>	-25°C to 65°C (-13°F to 149°F)	
<b>Shelf life</b>	2 years	Under ordinary condition at temperature of 22°C (72°F) and relative humidity of 50-55%

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