

Application on Substrates with Recesses and Removal

3M™ Envision™ Print Wrap Film 480Cv3

Instruction Bulletin

Recommended Types of Graphics and End Uses



3M™ Envision™ Print Wrap Film 480Cv3 is an extremely flexible film, specially designed for the application of large format graphics onto substrates with contours and 3D corrugations.

3M™ Envision™ Print Wrap Film 480Cv3 is suitable for digital Latex and UV inks as well as screenprint solvent and UV inks.

Digital printing with any kind of solvent inks is limited. Please contact 3M for details.

Processing

PIJ Printing

Proper ink drying is very important to minimize the risk of film lifting in recesses.

Screen Printing

3M™ Envision™ Print Wrap Film 480Cv3 can be screen printed with Scotchcal™ Screen Printing Ink Series 1900. Screen mesh recommended is a 90T.

Conveyor Drying: Dry 1900 Series inks for a minimum of 30 seconds at 60 – 70 °C.

It is recommended to allow a minimum of 24 hours after clear coating before applying application tape to the printed graphics.

Application of Overlamine Films or Protective Clears

Graphics imaged on 3M™ Envision™ Print Wrap Film 480Cv3 with ink jet printers can be laminated with specially developed 3M™ Envision™ Gloss Wrap Overlamine 8548G film or clear coated with Scotchcal™ Overprint Clear 1920DR.

Screen printed graphics can be clear coated with Scotchcal™ Overprint Clear 1920DR or laminated with 3M™ Envision™ Gloss Wrap Overlamine 8548G.

3M™ Envision™ Gloss Wrap Overlamine 8548G film and Scotchcal™ Overprint Clear 1920DR provide the required flexibility for applications on substrates with contours and 3D corrugations.

During the lamination process the unwind tension of the 3M™ Envision™ Gloss Wrap Overlamine 8548G must be controlled in order to avoid overstretch.

The bond of 3M™ Envision™ Gloss Wrap Overlamine 8548G to printed 3M™ Envision™ Print Wrap Film 480Cv3 is reinforced by maintaining a dwell time of minimum 24 hours at 23 °C after lamination before application of the graphics.

Exception: Unprocessed, i.e. non-printed film does not require an overlamine or clear coat.

Note: Product durability and warranty can only be achieved by protecting the image with 3M™ Envision™ Gloss Wrap Overlamine 8548G or Scotchcal™ Overprint Clear 1920DR.

Application Tape

The use of Application Tape is not required on laminated graphics. However, depending on environmental conditions (high temperature) it may be an advantage for a trouble free application.

The use of Application Tape is recommended for clear coated samples.

For large format graphics Scotchcal™ Application Tape SCPM-19 and Scotchcal™ Application Tape SCPM-44X can be used. SCPS-100 is suitable for pre-spaced graphics or logos.

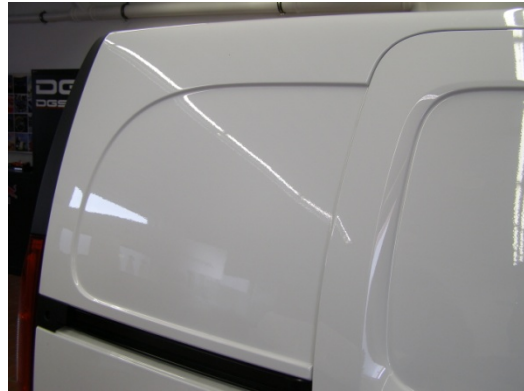
Application

3M™ Envision™ Print Wrap Film 480Cv3 is not intended for wet applications. Residual water will cause lifting in the recesses after application.

There are basically two different types of recesses:



U-Shape Recess



Single Recess

The following describes how to apply 3M™ Envision™ Print Wrap Film onto both u-shape and single recess.

Cleaning

Clean the substrate thoroughly with 3M™ Surface Preparation System as grease and oil prevent the film from adhering properly. Use lint-free paper towels. After cleaning make sure that the substrate is completely dry.



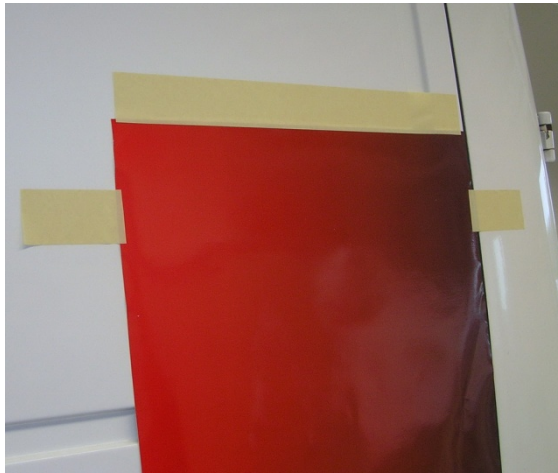
Note: Do not use isopropyl alcohol as this can affect the lifting resistance of the film in the recessed area. Other solvents than 3M™ Surface Preparation System may affect the expected lifting resistance performance of the film, too.

Alternatively, instead of manual application, specially developed hand-rollers can be used for the application of the film into recessed areas. The hand-rollers allow the film to be applied with uniform, continuous pressure and little friction

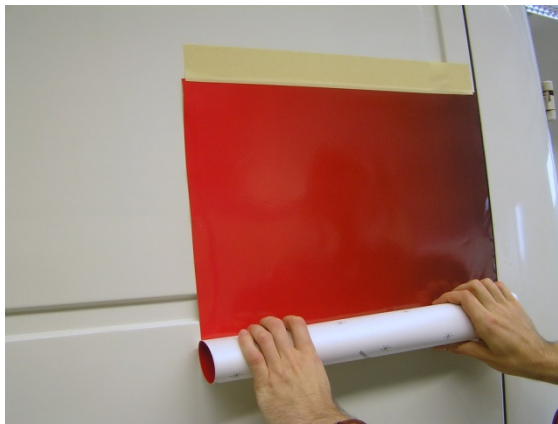


Application to U-Shape Recesses

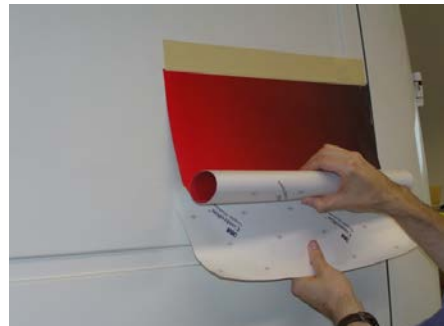
Position the panel onto the substrate and fix the panel with masking tape at the sides and then on the top.



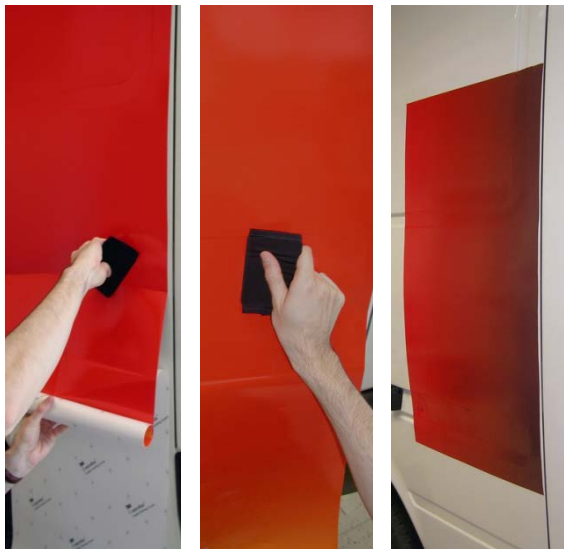
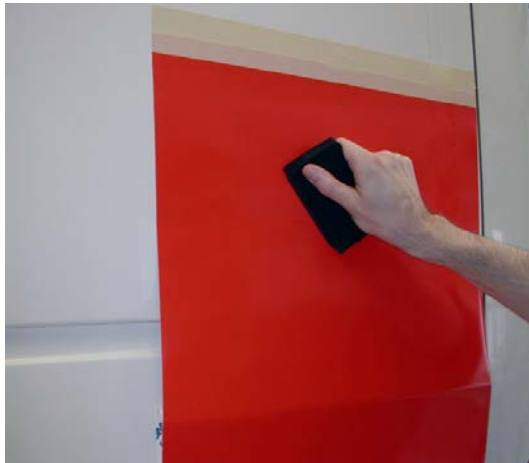
Remove the masking tapes from the sides. Roll the panel up to the top.



Remove the liner carefully from the film.



Start the application on the flat part of the substrate and bridge the film over the recessed areas and deep corrugations. We recommend to use the PA-1 Gold Squeegee to apply the film to the substrate. Avoid air entrapment between the film and the substrate. Use a low friction sleeve if the graphic does not use application tape. For 3M™ Envision™ Print Wrap Film 480Cv3 a thin cotton sleeve should be used.

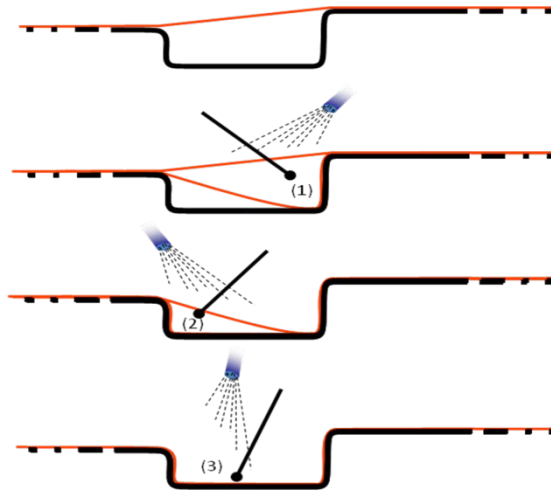


In case application tape is used, remove the application tape.

Apply the film manually or with appropriate tools on the recessed areas. When applying manually, wear cotton gloves to lower the friction between finger and film. Heat the film around the recess area with a hair dryer or professional heat-gun to a temperature of approximately 30 °C to 50 °C. **Do not overheat the film.** Only moderate heat is required to achieve conformability.



Start application in recess in the deepest point first (1). Then continue at the opposite point of the recess (2). Last close the middle part of the recess (3).



(1) Deepest point first:



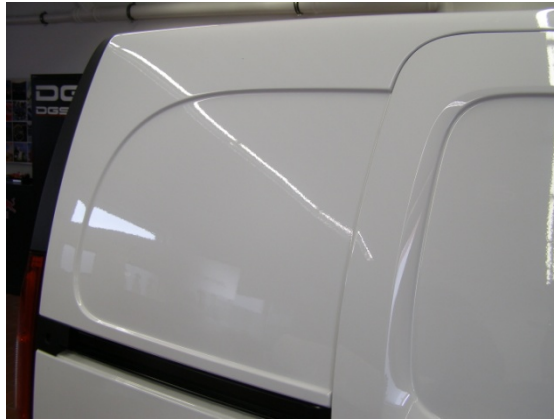
(2) Opposite site:



(3) Center:



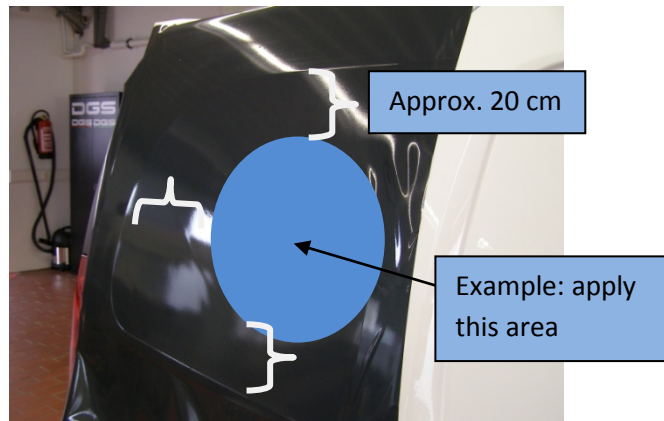
Applications to Single Recesses



Position the film and apply it from the top.



In case of applying the graphic within the recess area, do not apply closer than 20 cm to the recess. To minimize the risk of lifting, it is essential, to have sufficient amount of material left.



Heat the film around the recess area with a hair dryer or professional heat-gun to a temperature of approximately 50 °C. **Do not overheat the film.** Only moderate heat is required to achieve conformability. Overheating can cause the film to wrinkle or discolour. Apply heat to areas of film 20 cm beyond the recess area will reduce the tension of the film being applied in the recess area.



Apply the film into the recess either with your thumb or with the 3M™ VCAT-2 Application Roller.



After applying the recess area, apply the remaining non-applied area within the recess.
Due to the 3M™ Comply™ technology, trapped air can easily be removed without causing air bubbles.



Finished application



Multi Panel Multi panel graphics should be applied with an overlap from 3 mm to 10 mm.



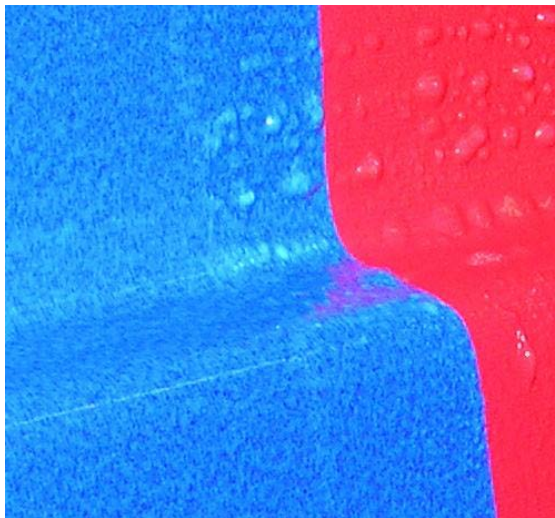
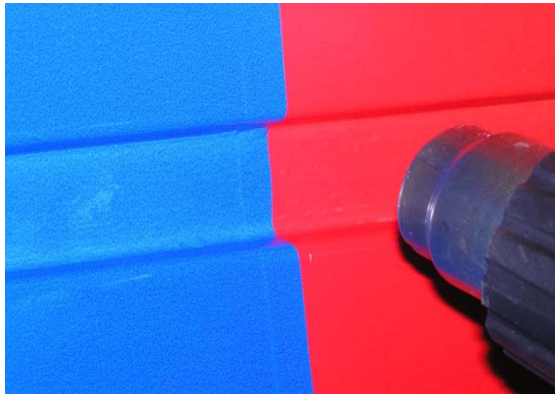
Post-Heating Ensure that no air bubbles are left trapped between the substrate and the film by re-heating the film in the recessed areas and corrugations with a hot air gun. By doing this, overlooked air bubbles can be detected. Air bubbles between the film and the substrate must be removed with the air release tool.



After checking air bubbles, the applied area should be heated to a temperature of at least 100 °C to 120 °C. Re-roll immediately the film with the small hand-roller in the recessed areas and corrugations. This softens the adhesive, closes remaining air channels and ensures good final adhesion.



Important: In order to avoid lifting at the overlaps of the panels, post-heating of the overlaps with the hot-air gun up to 120 °C is necessary to avoid lifting failures.



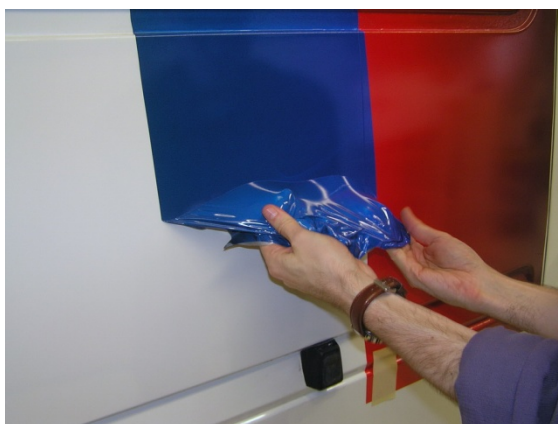
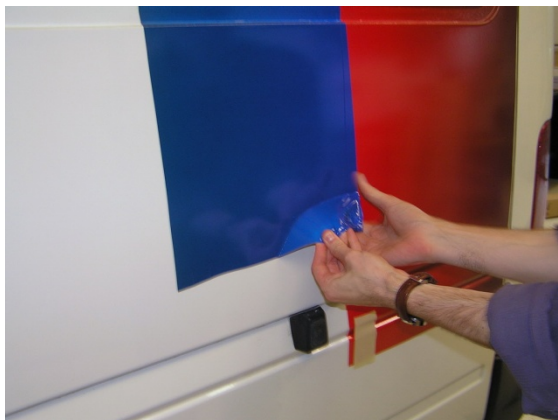
CAUTION: Re-heating of the film and repressing the film into the corrugations is a quality control to assure a proper application without air bubbles.

Omitting this can lead to lifting failures!

Removal

Applied graphics can be removed with heat or chemicals.

Heat the film up with a hot-air gun at a temperature of approximately 60 °C. Lift a corner from the film and pull the film from the substrate at a low pull-off angle. When scoring the film into 10 – 30 cm wide parts removal can be made easier. Be careful not to damage the substrate.



Remarks	This bulletin provides technical information only.
Important Notice	<p>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.</p> <p>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.</p>
Additional Information	<p>Visit the web site http://www.3Mgraphics.com for getting more:</p> <ul style="list-style-type: none"> - details about 3M™ MCS™ Warranty and 3M™ Performance Guarantee - additional instruction bulletins - a complete product overview about materials 3M is offering.



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