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Version #4 (0616)  
Approved by J. S.

## Product



## Product Description

RoughRAP RR100 is a 2.0-mil soft white **gloss, highly conformable, cast PVC** film optimized ink jet printing. The product is coated on one side with a high tack, permanent, opaque, acrylic pressure sensitive adhesive and supplied with a 90# polycoated 2-side release liner for excellent lay-flat.

**RR100** is specifically designed for direct application onto moderately textured exterior and interior brick walls for an astonishing visual effect! Use of an overlaminate will extend the life of the graphic and allow for easier handling during install and de-install.

## Physical Properties

Property	Typical Values	Test Method
<b>Quick Tack lb. /in<sup>2</sup> (N/25mm)</b> Stainless Steel	1.5 - 2.0 (5.2 - 8.7)	FTM - 9
<b>Peel Adhesion lb./in. (N/25 mm)</b> 180° on Stainless Steel - 20 min. - 24 hr.	1.9 - 2.9 (8.3 - 12.7) 3.2 - 4.2 (14 - 18)	FTM - 1
<b>Dimensional Stability, inches (mm)</b> 48 hours @ 158°F	max 0.5	FTM - 14 10" x 10" Sample Bonded to aluminum
<b>Temperature Range</b> Minimum Application: End Use:	50°F (+10°C) -4°F to 160°F (-20°C to 70°C)	
<b>Surface Burning Characteristics</b> <b>(Meets ANSI, NFPA, and IFC as class A)</b> Flame Spread Smoke Density	15 35	ASTM E84-01 or ANSI/NFPA 255 or IFC 8-1

## Durability

The *outdoor* durability of the printed graphic is 18 months. The *indoor* durability of the printed graphic is up to 5 years when installed correctly as indicated below.

The use of Permacolor LF3648 gloss or LF3638 matte highly conformable RAYZor overlaminating films will extend the life of your graphic. Color fading is mainly dependent upon the quality of the inks (see the ink manufacturers' technical data sheets).

## Shelf Life

2 years from D.O.M. when stored at 60/77°F (15/25°C) and 50% relative humidity in the original package.

## Approved Print Materials

<b>Screen Printing:</b>		<b>HP Indigo</b>	<input type="checkbox"/>
UV Cured	<input checked="" type="checkbox"/>	<b>Off-set</b>	<input type="checkbox"/>
Solvent	<input type="checkbox"/>	<b>Off-set UV</b>	<input type="checkbox"/>
<b>Digital:</b> UV Inkjet	<input checked="" type="checkbox"/>	<b>Thermal Transfer</b>	<input type="checkbox"/>
Eco-solvent	<input checked="" type="checkbox"/>	<b>Flexographic *</b>	<input type="checkbox"/>
True solvent	<input checked="" type="checkbox"/>	<b>Laser</b>	<input type="checkbox"/>
Latex	<input checked="" type="checkbox"/>	<b>Jetrion</b>	<input type="checkbox"/>

\* **Flexographic Printing** requires a topcoat. WVG000113 and WVF010516 have been approved by ACTEGA Coatings and Sealants ([www.altana.com](http://www.altana.com)) as in-line coat-able ink primers.

**Note: UV inks may crack when stretched too much and may not be appropriate for rough, conformable applications.**

To achieve the best possible print quality, please make sure that the correct ICC profiles or printer settings are used. Profiles can be obtained from our Distributors or can be downloaded from [www.mactac.com](http://www.mactac.com). Printer and heater settings and ICC profiles can also be downloaded from some O.E.M. or software manufacturer's websites.

The ICC profiles are provided solely as a customer service resource. Print environments, the individual nature of printing systems, inks and software can significantly affect output. It is the customer's responsibility to determine the suitability of any profile for use in their specific print environment.

## Limitations

Due to the wide variability of exterior wall surfaces, sealants and paints, no guarantees for successful applications to, or removal from, painted or rough wall surfaces are made by Mactac. It is the users' responsibility to determine the products suitability for the intended wall. If the wall is heavily textured, meaning extreme high and low points, like sometimes seen with stucco, no product will work well as there will not be enough surface contact for good adhesion.

1. **The user is responsible for determining the product's suitability, including adhesion and if needed, removal characteristics when used in applications other than listed specifically in this Performance Guide.**
2. **If there are any questions about applications, please contact your Mactac sales representative to discuss your requirements for recommendations.**

3. **If this is a printed Performance Guide it is an uncontrolled document. Please check the Mactac website for the latest, most up-to-date version**

## Recommendations

Always test your combination of RR100 products, inks and laminating films prior to commercial use.

- 1) **Printing Conditions:** Print in conditioned pressroom at  $\pm 73^{\circ}\text{F}$  ( $23^{\circ}\text{C}$ ) and 50% RH. The maximum allowable ink saturation is 270%.
- 2) **Printing with UV inks** both inkjet and Screen, will significantly reduce the stretch ability of this film and may result in cracking or lifting out of the deeper wall recesses and is not a warranty failure.
- 3) **Drying Requirements:** Solvent, Eco-solvent and Mild-solvent inkjet prints require 24 - 48 hr. drying time - open to the air. Inks do not dry when printed media is rolled up. The prints must be dry prior to lamination.
- 4) **Laminating Conditions:** This product, when inkjet printed, does not require a laminating film, however, it is recommended. If the printed graphic is likely to be exposed to corrosive liquids, smoke, and fumes, used in a highly polluted area or there is a likelihood of scratching, it is highly recommended to laminate with **Permacolor® RAYzor™ LF3600** series cast PVC, or **HORIZon™ XL1000** series polyurethane (high performance) overlaminating films. Laminate through a professional cold roll laminator at 3 - 5 ft. /min. Please be aware that adding an overlaminate will moderately reduce the graphics conformability to complex surfaces.
- 5) **Transportation Conditions:** To allow for easy transportation, WW100 series can be rolled up, with the image out, with a minimum diameter of 6 inches (15cm). When the image is not protected by an overlaminate, make sure the print is completely dry and protected in a plastic bag. During transportation or storage, avoid exposing them to extreme temperature and humidity changes.

## Application

(Reference TA2102 for additional details)

- 1) The application surface **MUST** be dry prior to application. Do not install after a rainstorm! The bricks will take a minimum of 24 hours to dry in warm weather.
- 2) ***Always test a 10" x 10" section of your graphic first to insure good adhesion.*** Test in areas showing the greatest extremes to be encountered to best understand what is to be expected.
- 3) In most cases dusting the wall with a still brush is sufficient prior to application. In some cases there may be some oils, dirt or salt which has bled to the surface that will inhibit adhesion. In these cases, the wall must first be washed with a tri-sodium phosphate/ water solution (follow the dilution instructions on the bottle). Allow at least 48 hours for the wall to dry prior to application. Moisture left in the wall may result in pre-mature failure of the graphic if the wall is not completely dry prior to application.
- 4) If the wall has been painted follow the "painted surface cleaning instruction in Mactac TA2032 Surface Preparation guide. Where walls are painted with "Scrub-able" paints (typically silicone containing paints) the application is not warranted.
- 5) Use the 'hinge method' to line up the graphic and to install by removing small sections of the liner at a time and applying flat areas first onto the rough wall with a soft squeegee.
- 6) Heat up the film in small sections from left to right with a heat gun set to a minimum of  $850^{\circ}\text{F}$  ( $450^{\circ}\text{C}$ ) then immediately firmly press the heated film down into the rough texture of the brick wall with a

semi-rigid roller. Use of a hand held IR thermometer is required to insure the proper temperatures are achieved.

- 7) If needed, remove all air pockets by poking with a pin (do not use a knife) and re-heating and pressing the air out with a soft cloth or the roller.
- 8) There may be areas with significant variability in surface texture, typically changes greater than 1/8 inch may result in some spots that lift or cannot be fully applied. This is to be expected. In most cases this will not negatively detract from the intended message when viewed from the intended viewing distance of 15 ft. or more, nor will it reduce the expected life of the graphic.
- 9) After the application is complete and all air pockets removed, heat up to 220°F (104°C) one more time to relax and re-set the films memory. Pay close attention to where the graphic is seamed (overlapped) and allow more time for the heat to penetrate all the way through. Pay special attention to edges as these are often overlooked and a common failure point.
- 10) Graphics applied to the expansion joints and edges that extend into mortar joints must be trimmed out of the graphics.
- 11) Plan to return the next day to give special attention to areas that did not see enough heat or pressure and as a result may have lifted.
- 12) Expect anywhere from 10 – 20% (more depending on the roughness of the wall) of the graphic not to have fully adhered to the rough wall. This is normal and does not detract from the intended message and is not a reason for a claim.
- 13) Removal - To remove, re-heat small sections of the graphic to approximately 150°F (65°C) and pull off the wall at 180°. Continue working in small areas until completely removed. Some adhesive might be left behind, remove this with Isopropyl alcohol or an adhesive remover. Test a small area first with your remover of choice to insure it does not damage the wall.
- 14) Unsound substrates, poor paint anchorage, textured wallpaper or texture-finished wallboard may be damaged during graphic removal.

- *Values given are typical for unprocessed product and are not for use as specifications. Processing may change the values.*

**IMPORTANT NOTICE:** The information given and the recommendations made herein are based on our research and are believed to be accurate, but no guarantee of their accuracy or completeness is made. In every case, user shall determine before using any product in full scale production, or in any way, whether such product is suitable for user's intended use for their particular purpose under their own operating conditions. User assumes all risk and liability whatsoever in connection with their use of any product. The products discussed herein are sold without any warranty as to merchantability or fitness for a particular purpose, or any other warranty, express or implied. No representative of ours has any authority to waive or change the foregoing provisions, and no statement or recommendation not contained herein shall have any force of effect unless in an agreement signed by the officers of seller and manufacturer. Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent without authority from the owner of the patent. The following is made in lieu of all warranties, express or implied: Seller's and manufacturer's only obligation shall be to replace or credit such quantity of the product proved to be defective at its discretion.

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