

# KODAK Reverse Print Backlit Film VS / 5 mil

## GENERAL DESCRIPTION

For durable, indoor stationary signage and trade-show displays.

- Translucent, 5.0 mil polyester view-through base for excellent durability
- For durable, backlit displays in high-traffic locations
- Optimized for thermal dye applications
- Reverse print provides built-in image protection

## COMPATIBILITY

When used with the following printers and inks, KODAK Reverse Print Backlit Film VS / 5 mil is recommended for all applications. Recommendations will provide optimal output when using printing paths commonly associated with each printer. These settings are intended as starting points—other combinations of settings may also provide good results. See "Printing Notes" for more information. "Yes" in the Laminate Recommendation column indicates that this media is likely to have good adhesion with laminates in that class.

For compatibility information for all KODAK Wide-Format Inkjet Media, refer to the Inkjet Media Compatibility Chart at [www.encad.com](http://www.encad.com).

Manufacturer	Model	Ink Compatibility		Laminate Recommendation (See Finishing Section)			
		Ink	Print Driver Media Setting	Heat Activated Thermal 210-240°F (99-116°C)	Heat Activated Low Temperature 185-195°F (85-91°C)	Heat Assisted 185-195°F (85-91°C)	Pressure Sensitive Ambient to 120°F (49°C)
HEWLETT-PACKARD DesignJet	800	Dye	See Printing Notes	No	No	Yes	Yes
HEWLETT-PACKARD DesignJet	1050C/1055CM	Dye	See Printing Notes	No	No	Yes	Yes
HEWLETT-PACKARD DesignJet	2000, 2500, 2800, 3000, 3500, 3800 CP	Dye	See Printing Notes	No	No	Yes*	Yes
HEWLETT-PACKARD DesignJet	5000 Series	Dye	See Printing Notes	No	No	Yes	Yes
ENCAD NovaJet	ProE/500/600/700/800 Series	GS+, GX	See Printing Notes	Yes	Yes	Yes	Yes
ENCAD NovaJet	850	GS+, GX	See Printing Notes	Yes	Yes	Yes	Yes
ENCAD NovaJet	1000i	Qi Dye	See Printing Notes; Printer Heater Setting: 10	No	No	Yes	Yes
COLORSPAN Displaymaker	Hi-Res 8, Esprit/Series XII	EC	See Printing Notes	Yes	Yes	Yes	Yes

\* Laminates with vinyl film type work best.

## PRINTING NOTES

The Print driver media settings recommended in the Compatibility section are intended to provide usable results with available media profiles found in the printer manufacturer's provided drivers and RIPs. These recommendations will provide proper ink laydowns with no pooling or bleeding, and color which will be acceptable for many applications. It is suggested that tests be run using these recommendations and color corrections be made to meet user expectations.

In cases where no recommendation is made, choose the media setting closest to the KODAK Wide-Format Inkjet Media you are using. For example, if you are printing on New KODAK Premium Photographic Glossy Paper / 180g, choose a setting in your driver or RIP which is intended for another glossy photo paper. This should give you a print which requires little or no adjustment to get usable results.

KODAK Reverse Print Backlit Film VS / 5 mil will provide excellent image quality and density with thermal dye-based inks; however, dry-time will be longer than other KODAK Reverse Print Backlit Films, especially in environments with humidities of 45% or higher. Be sure to test this media for adequate drying when using your printer's take-up spool. We recommend this media for stationary backlit applications only. If your print needs require you to use a take-up spool, we would recommend you use KODAK Reverse Print Backlit Film / 5 mil or 6 mil for their faster drying characteristics.

## RIPs and Profiles for Encad and Other Printers

For more exacting color, several third party RIPs (Raster Image Processors) are available with profiles supporting Kodak media for Encad, Kodak and other printers. For more information visit Encad's website at <http://www.encad.com/Support/RIP-Support/index.asp>

Following is a list of software companies that provide RIPs for the Encad product line. To obtain profiles that are not available for download directly from Encad, as well as complete product descriptions and support, please visit the RIP company's website.

Encad	<a href="http://www.encad.com/Support/RIP-Support/index.asp">www.encad.com/Support/RIP-Support/index.asp</a>
Colorgate Photo RIP	<a href="http://www.colorgate.com/home_e/products_e.html">www.colorgate.com/home_e/products_e.html</a>
Best GmbH	<a href="http://www.bestcolor.com/bcint/index.htm">www.bestcolor.com/bcint/index.htm</a>
Scanvec Amiable	<a href="http://www.scanvecamiable.com">www.scanvecamiable.com</a>
Onyx Graphics	<a href="http://www.onyxgfx.com">www.onyxgfx.com</a>
AIT International	<a href="http://www.applied-image.com/Shiraz-RIP.htm">www.applied-image.com/Shiraz-RIP.htm</a>
Image Technologies	<a href="http://www.imagetechdev.com">www.imagetechdev.com</a>
Global Graphics	<a href="http://www.globalgraphics.com">www.globalgraphics.com</a>
Colorburst Systems	<a href="http://www.compatsys.com">www.compatsys.com</a>
Wasatch Computer Technology, Inc.	<a href="http://www.wasatchinc.com">www.wasatchinc.com</a>
CADlink Technology	<a href="http://www.cadlink.com">www.cadlink.com</a>
JET RIP	<a href="http://www.jangeun.co.kr">www.jangeun.co.kr</a>

## Custom Profiles

While the above printing recommendations and available profiles from Encad will provide adequate results for many wide-format inkjet applications, there are applications, such as inkjet proofing, which demand more exacting color requirements. It is suggested that for these applications, custom profiles be built for given ink/media/printer combinations. Many color management and profile building software applications are available which allow the user to manage color to meet their needs. Also, many RIPs will provide color profiling options which allow the user to control the color of their output. Please contact your dealer or Encad technical support for help determining the best solution for your application.

## Viewing and Taking Density Readings

Images printed on a reverse print backlit material should be printed with the mirror image mode turned on in your RIP software so that they appear in their proper orientation when displayed. This is true for viewing the media and when taking measurements for building a profile.

When creating profiles for media that is viewed by transmissive light, use transmission measurement devices. Transmission measurement devices, especially those which are strip readers, often need to be calibrated several times before they are ready to take density readings.

If a transmission measurement device is not available, acceptable profiles can be created with a reflective device by placing the media printed side down on white paper (a piece of inkjet paper will work) when making measurements. Results may be slightly lighter and less saturated than when a true transmission device is used, but it will provide you with a good starting point and, if necessary, you can adjust the brightness and colors with your RIP or image manipulation software.

## Hewlett-Packard Printers

Some backlit medias may not work properly with the media sensors on printer take-up spools, such as those supplied with the HP Designjet 5000 and 5500. When this happens, tape a cut piece of the same media over both the front and back media take-up sensors. This will provide enough density for the take-up spool to work correctly. Be sure to remove these pieces when using other types of media or the take-up spool will not operate correctly.

In low humidity environments many types of film based media will show static marks when printed on HP Designjet 5000 series printers. These marks, which appear as low density ink blotches aligned with the bottom rubber rollers, are noticeable in areas which are intended to be white and are next to high density areas, such as large black text. The marks are not present within image areas. To help reduce or eliminate these static marks, try one or all of the following suggestions:

- Print at slower speeds. This will cause less static buildup and make the marks less noticeable.
- Add a 1% or higher fill color for CMYK in white areas; the exact amount to be determined by testing in your working environment. It has been demonstrated in a 30% RH environment that filling white areas with a 1% dot for all 4 channels, C, M, Y, and K, will virtually remove the marks. The resulting light gray in white areas is not objectionable, especially when prints are trimmed so that no unprinted media is visible as a reference. The fill color can be added in the application that the file was created in or within your RIP software. In ONYX Postershop, simply use the "Replace Color" tool, select white, and add 1% to all 4 colors.



### Caution

When using film based medias on printers in very low humidity conditions, 30% or lower, static charges may be enough to damage your printer. It is not recommended that you print in these conditions. Be sure to follow your printer manufacturers guidelines for operating conditions, which are especially critical when using film based medias.

## Hewlett-Packard 800/1xxx Series Printers

These printers use a combination of cyan, magenta, and yellow dye based inks with a pigment based black ink. This pigmented black ink is not compatible with this media and media choices on the control panel which use it should not be selected when printing. "High-Gloss Photo" is one such media setting which uses only the CMY dye inks with no pigmented K. For other possible choices, consult your HP printer users manual or make print tests using each media setting until you find one which produces acceptable results.

## HANDLING

All inkjet media must be handled with care before and after printing to prevent damage to the ink receiving layer and printed images. Use the following guidelines, your experience, and common sense for the proper care of your media.

- Store unused media in its original packaging, using the core-plugs and plastic sleeves.
- Allow media to acclimate to your environmental conditions for at least 24 hours before use.
- Kodak Inkjet media is rolled printable side out. Avoid touching the printable side by handling by the edges of the roll.
- Wear cotton gloves when handling media to avoid scratches, abrasions and fingerprints from moisture and oils on your hands.
- Do not allow the media to come into contact with moisture. Moisture will damage many types of inkjet medias before and after printing.
- Avoid handling, trimming, laminating or other finishing until prints are completely dry. Dry times will vary based on media type, ink type and environmental conditions.
- Do not fold, bend or crease media or damage may occur to the ink receiving layer.
- Do not allow the surface of the media to come into contact with itself or another inkjet media.
- Use media only in recommended operating conditions—see "Physical Characteristics" section.

## Curl

Most types of roll-based inkjet media will exhibit some amount of curl, either toward the base side or toward the print side. This will vary based on media type and environmental conditions. Some media will curl more in low humidity environments and others in high humidity environments. Also, media may curl more towards the core or end of the roll due to "roll memory."

Although curl is mainly an issue when printing, it can also have an impact on laminating and other finishing procedures. Follow these guidelines, and use your experience and common sense to avoid issues caused by curl.

### When printing:

- Advance media several inches past the print platen before starting a print job.
- Add weights or clips to the leading edge of the media.
- Attach media to the printer's take-up spool before starting printing.
- Adjust vacuum settings accordingly on printers equipped with variable media vacuum settings.
- Adjust heater and dryer settings on equipped printers to obtain optimum conditions to ensure flat media. See printer owners' manual for their recommendations.

### During finishing:

- Reverse wind media, when completely dry, to counteract roll memory.
- Do not allow media to remain rolled for extended periods of time.
- Rough cut prints and lay them flat before laminating.

## FINISHING

Detailed information and tips can be found in Kodak publication E-2600, *Laminating, Mounting, and Finishing KODAK Wide-Format Inkjet Media*.

## Lamination

Refer to "Laminate Compatibility" in the Compatibility section for specific printer/ink/laminate/recommendations.

### Lamination Definitions

<b>Heat Activated Thermal, 210-240°F (99-116°C)*</b>	Polyester laminates applied with hot roll laminators at 210-240°F.
<b>Heat Activated Low Temperature, 185-195°F (85-91°C)*</b>	Polyester laminates applied with hot roll laminators at 185-195°F.
<b>Heat Assisted, 185-195°F (85-91°C)</b>	Polyester or vinyl laminates with pressure sensitive adhesives; specially formulated for inkjet prints, and applied with hot roll laminators at 185-195°F.
<b>Pressure Sensitive, Ambient to 120°F (49°C)</b>	Polyester or vinyl laminates with pressure sensitive adhesives on a release liner, applied at ambient conditions or at low temperature, 100-120°F.

\* For both Heat Activated Thermal and Low Temperature, use a laminate with a total thickness (polyester and adhesive) of 3 mils or less on the face side. Thicker laminates may be applied to the back of the print for increased total thickness.

For best results, use inkjet-specific laminate products and follow the laminate manufacturer's instructions. It is important that your print be dry before laminating. Lamination performance varies as a function of materials, technique, and environmental conditions. For increased durability, choose a laminate with UV protection. For additional protection from moisture, encapsulate the image leaving a 1/4" or greater edge border. For increased rigidity or for larger displays, laminate the front and back with equally thick material.

Please note that there have been instances where the laminate and print interact in a way that limits the life of the print.

For a rigid, durable backlit display, adhere the print side (semi-gloss side) of this media to extruded acrylic with an optically clear mounting adhesive. No lamination is necessary on the glossy polyester side of this material. In view boxes that have extruded acrylic sheets in them already, mounting is not necessary. Simply drop the laminated image between the sheets of acrylic. If desired, a thicker laminate, such as 5 mil or greater, will offer increased rigidity for these applications.

For more information, see KODAK Publication PPI-856, *Application Guidelines*, at [www.encad.com/media/index.html](http://www.encad.com/media/index.html).

## PERFORMANCE GUARANTEE

Encad will guarantee prints from compatible systems against noticeable fading, cracking, yellowing, and bleeding when the print is viewed from its intended viewing distance.

The Indoor Performance Guarantee durations will vary based on the media/printer/ink system. The stated durations assume the media is displayed indoors under fluorescent light (average intensity 450-lux, 12 hours/day), and/or with indirect sunlight exposure (at least 6 feet from a window, with no direct sunlight). Plexiglass™, Lexan™, or a similar sheet must protect prints, and lightbox illumination is expected to not exceed 5000-lux fluorescent. The guarantee covers both laminated or unlaminated prints as noted in the table below. The unlaminated guarantee assumes the media will be displayed in a typical office environment and will not be exposed to a high level of pollutants (above a typical ozone level for an office environment).

Terms, conditions and additional information about the Performance Guarantee can be found at [www.encad.com](http://www.encad.com).

Manufacturer	Model	Ink	Durability
HEWLETT-PACKARD DesignJet	5000 Series	6 Color Dye	15 months laminated
	2000/3000 Series	4 Color Dye	15 months laminated
ENCAD NovaJet	800/700/600/500 Series	4/8 Color GS+	3 months laminated
		4/8 Color GX	18 months laminated
	1000i	Qi Dye	18 months laminated

### Additional Durability Information

The following table can be used as a guide for printers and inks not included in the Performance Guarantee.

#### Durability Guidelines for Printers Not Included in Performance Guarantee

If Using	Expect Durability Similar To:
Colorspan EC Dye	Encad GX

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## ORDERING INFORMATION

### KODAK Reverse Print Backlit Film / 5 mil

Roll Length	Roll Width / Order No.			
	36 in. (91.4 cm)	42 in. (106.7 cm)	50 in. (127 cm)	60 in. (152.4 cm)
100 ft (30.5 m)	220073-00	NA	220075-00	220076-00
16.4 ft (5 m) (sample)	220077-00	NA	NA	NA

NA = Not available

## PHYSICAL CHARACTERISTICS

Physical Characteristics	Value	Test Method Reference
Caliper	5 mil (127 $\mu$ m)	ISO 534
Opacity	60	Tappi T 524
CIE Whiteness	>80	Tappi T 524
Weight	155 g/sm	ISO 536
60-degree Gloss	25 print side (matte) >85 backside (glossy)	ISO 7668
L*(D65/10 uvi/BBW)	96	Tappi T 524
Brightness	89	Tappi T 524
Operating Conditions	59-86°F (15-30°C), 20-70% RH (non-condensing)	
Recommended Storage Conditions	68°F (20°C), 50% RH	

If you have questions or need assistance, visit Encad's website at [www.encad.com](http://www.encad.com), or in the U.S. contact Encad Technical Support at 1-877-362-2387.

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