Xerox DocuColor 40
Digital Color Production System

Materials Usage Guide

Sample cover

The Document Company
Xerox

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DocuColor 40 Materials Usage Guide

Introduction

This guide provides the information and guidelines that should be used when selecting papers or other materials to be used in a DocuColor 40 Digital Color Copier/Printer. The feeding reliability and the performance characteristics that can be expected from the DocuColor 40 when using the specified paper stocks and other selected materials are also provided. In addition, techniques related to the use of these specific materials are given.

The first section, Recommended Materials, contains a chart which lists all Xerox and Rank Xerox materials that are recommended for use in the DocuColor 40. Following this chart, a **second section, Usage Guidelines,** includes guidelines for selecting and using various materials, such as transparencies, heavy-weight paper, and the transfer paper used for T-shirts.

The third section, Applications, provides step-by-step procedures to use when running certain types of jobs.

The fourth section, About Paper, gives you information about some of the properties of paper that are important to the operation of the DocuColor 40 and the quality of the copies/prints produced.

The last section, Paper Storage, provides useful tips for the proper handling and storage of paper.

Xerox has an on-going materials testing program for the DocuColor 40. As new information, materials, or recommendations become available, they will be included in revisions to this guide. Your Xerox Sales Representative may also advise you of materials usage information when it becomes available before the next revision to this guide.

The materials with Xerox part numbers, listed in this guide, can be purchased by calling the Xerox Supply Net at 1-800-822-2200 (in USA and Canada).

For Rank Xerox, use your nearest Office Supplies Unit.

1. France: 33 13453 1212

2. U.K.: 44 192385 4774

    Ireland - 353 18 301 833

3. Germany: 49 211 990 7933

4. Northern: 468 795 1000

    Finland - 358 204 68 5402

    Sweden - 46 8 795 1000

    Norway - 47 6 698 68 03

    Denmark - 45 42 65 44 44

    Holland - 31 34 04 80 211

    Belgium - 32 2 716 68 23

5. Central Eastern: 441 628 89 0000 (Central Europe, Russia, Eurasia)

    Austria - 43 1 601 970

    Switzerland - 41 1 860 14 00

6. Southern: 39292 188764 (Spain)

    Greece - 301 93 11 0000

    Italy - 39 2 92 188 764

    Portugal - 351 1 313 1177

7. Middle East and Africa: 44 1628 89 0000 (South Asia, Middle East and Africa, Egypt, Nigeria)

Conventions

The following symbols are used in this guide to assist you in quickly locating information.

The **Key** symbol indicates information that is important to remember.
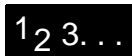
The **1, 2, 3** symbol directs you to follow specific guidelines to obtain the best performance.

The **Checked** symbol indicates that a material will provide optimum performance and is recommended for use in the DocuColor 40.

The **"IQ"** symbol identifies materials where the image quality may not equal that of centerline papers, Xerox 24 lb Image Series LX, or Rank Xerox 90 g/m^2 Colotech.

The **Xerox Document** symbol directs you to specific information regarding reliability and paper performance.

This **Book and Magnifying Glass** prompts you to look for the detailed information and usage guidelines provided for the specific material type.

A **WARNING** alerts you to an operating or maintenance procedure, practice, or condition, that, if not strictly observed, could result in injury or loss of life.
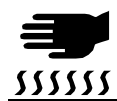
The **HOT AREA** symbol cautions you to be careful when working in areas with this symbol. These areas may be very hot and could cause personal injury.

A **CAUTION** alerts you to an operating or maintenance procedure, practice, or condition that, if not strictly observed, could result in damage to equipment, destruction of equipment, or loss of data.

Recommended Materials

DocuColor 40 was designed to provide optimum performance with Xerox 24 lb Image Series LX, and Rank Xerox 90 g/m^2 Colotech.

Other materials can be used with varying degrees of success. Some materials will run better if specific guidelines are followed.

When using materials shown with this symbol, you should expect possibly higher jam rates than when using 24 lb Image Series LX, or 90 g/m^2 Colotech paper. Some of these materials will also cause image quality problems (e.g. mottle) with certain images.

If you are uncertain of the ability of a specific material to perform well in your DocuColor 40, purchase and test a small quantity of the material to be sure image quality meets your expectations. Your Xerox Sales or Service Representative may also have helpful information on recommended materials.

For information regarding non-Xerox recommended products, contact your Xerox Sales or Service Representative. Your Representative can reference you to the Paper Advantage Series, Part Number 610P63510.

	DocuColor 40 Recommended Materials	
	Material Type	**Description and order number**
	Standard Weight Papers: 24 lb / 90 g/m^2 Xerographic/Bond	**USA and Canada:** • Xerox 24 lb Image Series LX, 8.5 x 11", 3R3874 • Xerox 24 lb Image Series LX, 11 x 17", 3R3877 • Xerox 24 lb Image Series LX, 8.5 x 14", 3R3876 **Rank Xerox:** • Colotech 90 g/m^2, A4, 3R93022 • Colotech 90 g/m^2, A3, 3R93023
	20 lb / 75 g/m^2 Xerographic/Bond	**Rank Xerox:** • Exclusive 80 g/m^2, A4, 3R90208 • Exclusive 80 g/m^2, A3, 3R90209
	28 lb / 105 g/m^2 Xerographic/Bond	**USA and Canada:** • Xerox 28 lb Color Xpressions, 8.5 x 11", 3R5468 • Xerox 28 lb Color Xpressions, 17 x 11", 3R5469

DocuColor 40 Recommended Materials		
	Material Type	**Description and order number**
Pages 11-13	**Heavy Weight Uncoated Papers:** 32 lb / 120 g/m^2 Xerographic/Bond	**USA and Canada:** • Xerox 32 lb Color Xpressions (LXC), 8.5 x 11", 3R5470 • Xerox 32 lb Color Xpressions (LXC), 17 x 11", 3R5471 • Xerox 32 lb Color Xpressions, 18 x 12", 3R5472 **Rank Xerox:** • 120 g/m^2 Colotech, A4, 3R91530 • 120 g/m^2 Colotech, A3, 3R91533
	90 lb / 163 g/m^2 Index	**USA and Canada:** • Xerox 90 lb Index, 8.5 x 11", 3R3004 • Xerox 90 lb Index, 17 x 11", 3R5102 **Rank Xerox:** • 160 g/m^2 Colotech, A4, 3R93548 • 160 g/m^2 Colotech, A3, 3R93549
Pages 14-15	**Recycled Papers:** 20 lb / 75 g/m^2 Xerographic/Bond	**USA and Canada:** • Xerox 20 lb Recycled, 8.5 x 11", 3R5130 • Xerox 20 lb Recycled, 11 x 17", 3R5133
Pages 16-17	**Hole-Punched Paper**	**USA and Canada:** • Xerox 24 lb Image Series LX, 3 hole drilled, 8.5 x 11", 3R3875

	DocuColor 40 Recommended Materials	
	Material Type	**Description and order number**
Pages 18-19	**Pressure Sensitive Labels**	**USA and Canada:** Xerox Copier/Printer Labels 8.5 x 11": • 1-up 3R4473 • 8-up 3R4472 • 24-up 3R4471 • 30-up 3R4470 • 33-up 3R4469 **Rank Xerox:** Color Copier Labels A4: • 1-up 3R93872 • 6-up 3R93873 • 8-up 3R93874 • 14-up 3R93875 • 24-up 3R93876
Pages 20-23	**Coated Papers**	**USA and Canada:** **For coated papers, see the current version of the recommended paper list in the Paper Advantage Series.** **Refer your Xerox Sales or Service Representative to the following Part Number: 610P63510** **Rank Xerox:** • 135 g/m^2 Colotech Gloss Coated paper, A4, 3R93149 • 135 g/m^2 Colotech Gloss Coated paper, A3, 3R93150
Pages 24-25	**Single-Step T-Shirt Transfer Papers**	**USA:** • Xerox Image Transfer Paper, 8.5 x 11", 3R5811 • Xerox Image Transfer Paper, 11 x 17", 3R5812 **Canada:** • Xerox Image Transfer Paper, 8.5 x 11", 3R5025 • Xerox Image Transfer Paper, 11 x 17", 3R5026 **Rank Xerox:** • Textile Transfer Paper, A4, 3R93560 • Textile Transfer Paper, A3, 3R93564

	DocuColor 40 Recommended Materials	
	Material Type	**Description and order number**
Pages 26-28	**Transparencies**	**USA and Canada:** • Xerox Good Quality Removable Stripe, 11", 3R3108 • Xerox Premium Quality Removable Stripe, 11", 3R5765 **Rank Xerox:** • Xerox Good Quality Removable Stripe, A4, 3R91331 • Xerox Premium Quality Removable Stripe, A4, 3R93179
Pages 29-30	**Docupac Folders**	**USA and Canada:** Xerox Docupac Folders • White = 3R4885 • Gray = 3R4927 • Ivory = 3R4928

Materials Not Recommended

Tests on the following materials by Xerox engineers have shown unsatisfactory results:

Material Type	Test Results
Papers less than 16 lb / 60 g/m^2 bond	Unacceptable jam rate
Papers heavier than 220 g/m^2	Unacceptable jam rate
Dry Gum Labels	Unacceptable jam rate Contaminates Fuser and Photoreceptor
Paper Backed Transparencies	Unacceptable jam rate
Envelopes	Unacceptable jam rate Fuser damage
Vellum Bristol Cover	Poor image quality

Note: There are thousands of other materials available today. Most of these have not been tested and performance is unknown. If you intend to run a material that has not been mentioned in this guide, purchase materials in **small quantities** and **test** the materials to be sure they meet your expectations. You may also ask your Xerox Sales or Service Representative for additional information regarding specific products.

Applications

	Application Type	Description and Expectations
Pages 31-33	**Two-sided Copies (Duplex)**	Two-sided (duplex) copying refers to imaging the second side of a copy already made on the DocuColor 40. Run the recommended 24 lb to 28 lb / 90 to 105 g/m^2 papers per the instructions in the Applications section of this guide. Feeding performance and image quality should be good, but may not equal the performance and quality of side one. Two-sided copying of Heavy Weight or Coated papers may result in increased jams and poor image quality.
Pages 34-35	**DocuColor 40 output inserted into other copying/printing equipment**	Color inserts are copies made on the DocuColor 40 that are then merged with copies from another copier/printer. Color copies and prints made on the DocuColor 40 with the recommended 24 lb / 90 g/m^2 paper can be used as inserts in the Xerox 5090 family of Duplicators. For optimum performance as inserts, DocuColor 40 copies/prints should be kept as flat as possible. See complete details in the Applications section of this guide.
Page 36-37	**Preprinted Inserts**	Preprinted inserts are documents made from copiers/printers, that are then merged with DocuColor 40 output. See complete details in the Applications section of this guide.
Page 38-39	**Lamination**	Lamination is the process by which DocuColor 40 output can be covered with one or more layers of clear plastic.

Usage Guidelines

The following guidelines have been developed as a result of extensive testing of the materials listed. Use these procedures to obtain the best performance from materials indicated with the Book and Magnifying Glass symbol.

Standard Weight Papers

Material Description and Expectations

Standard weight papers include those that can be run from the internal trays:

- 16-28 lb / 60-105 g/m^2 xerographic/bond papers.

- Papers within this weight range offer optimum performance when used in the DocuColor 40.

- The centerline papers used to define image quality and performance specifications are 24 lb Image Series LX, and 90 g/m^2 Colotech.

1₂ 3. . .   Steps for Success

The following steps improve paper feeding and lessen the chance of paper jams.

1 Follow the arrow direction on the ream wrapper for image side first. If not available, load paper curl side down.

2 If jams occur, manually curl the lead edge down before loading to reduce jamming.

3 When duplexing papers, select the two-sided copy feature.

Heavy Weight Uncoated Papers

Material Description and Expectations

Heavy Weight papers are those classified as greater than 28 lb / 105 g/m^2 xerographic/bond. As compared to the primary 24 lb / 90 g/m ^{2} papers, heavy weight papers offer increased stiffness and as a result, should have better reliability when run from the Bypass Tray. However, an increase in jams may be likely, due to the increased weight and stiffness. In general, the possibility of image mottle increases as the weight of the paper increases.

Two sided copying of heavy weight papers must be done through the Bypass Tray. Increased jams and degraded image quality on the second side may occur when manually copying/printing two-sided heavy weight stock.

Recommended Materials

USA and Canada:

Xerox 32 lb Color Xpressions (LXC) 8.5 x 11" = 3R5470, 17x 11" = 3R5471, 18 x 12" = 3R5472
Xerox 90 lb Index 8.5 x 11" = 3R3004, 17 x 11" = 3R5102

Rank Xerox:

Rank Xerox 120 g/m^2 Colotech A4 = 3R91530 A3 = 3R91533
Rank Xerox 160 g/m^2 Colotech A4 = 3R93548 A3 = 3R93549
   - 305 x 457mm = 3R94228
Rank Xerox 200 g/m^2 Colotech A4 = 3R93550 A3 = 3R93551
   - 305 x 457mm = 3R93981

The Xerox 17 x 11", 18 x 12", and Rank Xerox A3 160 g/m ^{2} papers are specially cut, short-grain papers.

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Steps for Success

1 Run all Heavy Weight Papers from the Paper Tray Bypass.

2 Select Heavy Weight Paper Mode.

3 Load all paper with curl down in the tray.

4 If jams occur, manually curl the lead edge down before loading to reduce jamming.

5 Pull the Transfer Drawer out carefully to clear any jammed sheet that may be present.

CAUTION: The use of paper weights greater than 220 g/m^2 is likely to result in damage to the copier/printer that will require a service call. Do not exceed the maximum recommended paper weights.

Hints, Tips and Testing Results

Extensive Xerox testing has shown the following:

When the recommended materials are run as detailed above; with the correct tray, mode, orientation and curl, feeding performance is good, but may not equal 24 lb Image Series LX and 90 g/m^2 Colotech performance.

Depending on the specific paper selection, image quality will be good; however, it may not equal that of 24 lb Image Series LX and 90 g/m^2 Colotech.

The poor formation of many heavy papers increases the likelihood of image mottle (light patches) with some images. Mottle is more likely to occur on images with uniform halftone areas. As humidity increases, mottle usually increases.

Two sided copying of heavy weight papers must be done from the Paper Tray Bypass. Paper curl created when running side one can cause a higher jam rate when trying to image side two. If this occurs, turning the paper over before imaging side one may improve curl and feeding performance of side two.

Manually curling the lead edge of the side one imaged sheets down before loading them for side two can also improve side two feeding reliability. Image quality on side two will also be reduced with certain images. Light image patches (mottle) and deletions are likely on side two.

Toner saturation on electronic originals should be limited to a total of 240% (60% for each Color). Higher toner saturation may result in poorly fused prints and possible damage to the fuser.

Recycled Papers

Material Description and Expectations

Most recycled papers are made from a combination of new pulp, waste from the paper-making process, and paper that has been returned by consumers for recycling. Because the nature of paper returned for recycling is unpredictable, recycled papers are less uniform in content and quality than papers made from entirely new fiber.

Xerox recycled papers undergo exclusive screening procedures to minimize the amount of harmful inks and plastic particles in the final product. The recommended recycled papers will run well in the DocuColor 40 but the reduced smoothness, formation, and brightness will result in degraded image quality as compared to the primary 24 lb Image Series LX and 90 g/m^2 Colotech paper.

Recommended Materials

USA and Canada:

Xerox 20 lb / 75 g/m^2 Recycled Business Paper,
8.5 x 11” = 3R5130

Xerox 20 lb / 75 g/m^2 Recycled Business Paper,
11 x 17” = 3R5133

Steps for Success

1 The recommended recycled papers should be run using the same procedures as standard paper.

2 If running a recycled paper heavier than 28 lb / 105 g/m^2 xerographic/bond use the instructions for Heavy Weight papers.

Hints, Tips and Testing Results

Xerox testing has shown the following:

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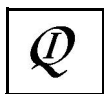
- Image quality problems are likely with some recycled papers. If you plan to use a recycled paper other than the Xerox brand, first try a small quantity to test its performance. You can also ask your Xerox Sales or Service Representative for additional information.

- The wide variation in recycled paper fibers increases the tendency for these papers to curl, which may result in jams. If an obvious curl is detected, load that paper in the bypass paper tray with the curl down for best feeding performance.

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- Two-sided copying of recycled papers may decrease image quality and reliability.

- To avoid making a marginal material worse, all recycled papers should be stored in sealed packages when not in use. Image quality on exposed papers will degrade more as humidity increases.

Hole-Punched Papers

Material Description and Expectations

Hole-punched papers have two or more holes along one edge for use in ring binders and notebooks. This paper is often referred to as predrilled paper. Most hole-punched papers that fit into the standard paper size and weight ranges for the DocuColor 40 should run reliably. The recommended papers meet the Xerox high quality standards and will provide reliable feeding and good image quality.

Hole-punched papers are not compatible with the Stacker/Stapler accessory and may cause jams. Use the Catch Tray or Sorter when using hole-punched paper.

Recommended Materials

USA and Canada:

Xerox 24 lb Image Series LX, 3 hole drilled, 8.5 x 11" = 3R3875

Steps for Success

1 Load hole-punched papers in paper trays 1, 2, or 3.

2 Load all heavy-weight, hole-punched papers (greater than 28 lb/105 g/m^2 xerographic/bond), in the Paper Tray Bypass.

3 Do not attempt to copy an image onto the area of the holes. This will cause unwanted toner on the back of the copies/prints and may lead to machine damage.

4 When copying from a hole-punched original onto hole-punched paper, the holes on the original must be masked to prevent them from printing out on the copies/prints. (See complete instructions in the Hints and Tips section below.)

Hints, Tips and Testing Results

Xerox testing has shown the following:

When copying from a hole-punched original, special actions must be taken to prevent the holes from printing out as dark spots on the copy.

Cover the holes on the original by placing a clean white sheet behind the original before copying, to prevent dark spots.

If you experience jams with hole punched papers, it may be necessary to change the feeding orientation of the paper. This will change the placement of the holes and may prevent jams caused by false jam sensing errors.

CAUTION: If an image is copied over the area of the holes, toner will transfer through the holes and onto the Transfer Belt. Toner on the edges of the holes may be transferred to the fuser resulting in image quality defects and possible machine damage.

There are a wide variety of hole configurations available. Not all variations have been tested. Frequent jams are possible with some hole configurations. Pretesting a small quantity is recommended before making a large purchase.

Pressure-Sensitive Labels

Material Description and Expectations

Pressure-sensitive label stock consists of three layers: the face sheet, the pressure-sensitive adhesive, and the backing or release sheet. There are many types of face sheets and label weights available.

To avoid feeding and image quality problems, it is very important to run labels with the correct balance of properties. The recommended Xerox copier/printer labels and Rank Xerox color copier labels have been specifically designed to give optimum performance in the DocuColor 40. They have low weight/low stiffness for improved feeding. U.S. versions have a pattern-printed adhesive (no adhesive within 1/16 inch of the edges of the sheets) to reduce fuser and photoreceptor contamination.

Recommended Materials

USA and Canada:

Xerox 1-up Copier Labels 8.5 x 11" = 3R4473
Xerox 8-up Copier Labels 8.5 x 11" = 3R4472
Xerox 24-up Copier Labels 8.5 x 11" = 3R4471
Xerox 30-up Copier Labels 8.5 x 11" = 3R4470
Xerox 33-up Copier Labels 8.5 x 11" = 3R4469

Rank Xerox:

Rank Xerox 1-up Color Copier Labels A4 = 3R93872
Rank Xerox 6-up Color Copier Labels A4 = 3R93873
Rank Xerox 8-up Color Copier Labels A4 = 3R93874
Rank Xerox 14-up Color Copier Labels A4 = 3R93875
Rank Xerox 24-up Color Copier Labels A4 = 3R93876

These Xerox Copier Labels are specifically made for use in copiers and printers. Because of the wide variety of labels available, it is impossible to predict how other types will perform.

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Steps for Success

1 Run all label materials from the Paper Tray Bypass with the face side up.

2 Select Heavy Weight Paper Mode.

3 Fan the stacks before loading for optimum feeding.

4 If a jam occurs and a damaged or folded lead edge is found, manually curl the lead edge down before loading to minimize future jamming.

Hints, Tips and Testing Results

Xerox testing has shown the following:

- When recommended materials are run as detailed above; with the correct tray, mode, and orientation, feeding performance and image quality is good, but will not equal 24 lb Image Series LX / 90 g/m^2 Colotech performance.

- Toner saturation on electronic originals should be limited to a total of 240% (60% for each Color). Higher toner saturations can result in poorly fused prints and damage to the fuser.

- In general, successful labels should have a low-weight face and backing sheet, and should have a pattern-printed adhesive.

CAUTION: Dry gum labels (those that require moistening before being applied) can cause severe machine contamination problems and should not be used.

Coated Papers

Material Description and Expectations

Coated papers have binders, adhesives and pigments applied to their surface on one or both sides. As compared to 24 lb Image Series LX and 90 g/m^2 Colotech Series papers, they provide improved image gloss, but will generally cause an increase in jams.

Single sided copying/printing of recommended coated papers should result in good image quality.

Second side copying/printing of recommended coated papers may result in poor image quality and increased jams.

Coated papers under 60 lb cover / 160 g/m^2 may exhibit intermittent deletions on the second side.

Recommended Materials

**For USA recommended coated papers, see the current version of the Paper Advantage Series.
Refer your Xerox Sales or Service Representative to the following Part Number: 610P63510.**

Steps for Success

1   Run all coated papers from the Paper Tray Bypass. Coated one side (C1S) should be loaded with the glossy side up.

2   Select Heavy Weight Paper Mode for all coated papers.

3   Load all paper with the curl down in the tray.

4   Vigorously fan the stacks before loading to reduce multisheet feeds. Multisheet feeds may result in damage to the copier/printer, requiring a service call.

5 For best image quality keep unused paper stored in a closed package or resealable bag. Do not leave paper in the Bypass Tray when not being used.

6 If a damaged or folded lead edge is found on jammed sheets, manually curl the lead edge down before loading to minimize jamming.

7 Improperly clearing paper jams can cause machine damage. Pull the Transfer Drawer out carefully to clear the jam.

CAUTION: Forcing the Transfer Drawer open may cause machine damage resulting in a service call.

CAUTION: The use of coated paper of weights greater than 80 lb / 220 g/m^2 cover is likely to result in damage to the copier/printer requiring a service call. Do not exceed the maximum recommended paper weight.

Hints, Tips and Testing Results

Xerox testing has shown the following:

- When the recommended materials are run as detailed above; with the correct tray, mode, orientation and curl, feeding performance is good, but will not equal 24 lb Image Series LX and 90 g/m^2 Colotech performance.

- Coated papers are very susceptible to humidity. Image Mottle (light patches in solid areas), or generally light image or multisheet feeds may occur if paper is left open.   To avoid this, keep packages sealed; use sheets from the center of the ream; or store unused paper in a self sealing bag. Placing desiccant in the sealed packaging will prevent the paper from absorbing excessive moisture.

- Paper curl created when running side one can cause a high jam rate with side two during two sided copying. If this occurs, turning the paper over before imaging side one may improve curl and feeding performance of side two.

  Manually curling the lead edge of side one imaged sheets down before loading them for side two, can also improve side two feeding. Image quality on side two will also be reduced with certain images. Light image patches (mottle) and deletions are likely on side two especially in large halftone areas.

- To avoid intermittent second side deletions, consider running a coated cover stock 60lb / 160 g/m^2 or above.

- Coated text papers 80lb / 120 g/m^2 can be run from Trays 2 and 3 without second side deletions. However, when running 80lb / 120 g/m^2 coated paper from Trays 2 and 3, customers may experience reduced gloss on side two, first sheets out may have higher gloss, multisheet feeds, jams and possibly poor toner adhesion.   If customers experience multisheet feeds, they will need to run 10-25 blank sheets to clean off residual toner that may be on the Fuser Roll.

- Running coated papers other than 80 lb / 120 g/m^2 from Trays 2 and 3 may result in unacceptable performance.
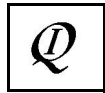
- Toner saturation on electronic originals should be limited to a total of 240% (60% for each Color). Higher toner saturation can result in poorly fused prints and damage to the fuser.

- If using a coated paper that has not been mentioned, first try a small quantity to test its performance, then consult your local Xerox Sales or Service Representative for agreement on its use.

- To improve feeding reliability with coated papers, fan papers vigorously before loading. Also, shingling the coated paper approximately 1/4" (5-7mm) is helpful. Small stacks of 10 - 15 shingled sheets of coated paper can be stacked on top of one another.

Feed Rollers

Sheets in Tray
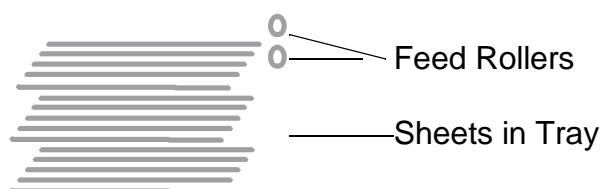
Single-Step Transfer Paper

Material Description and Expectations

Single-step transfer papers enable you to transfer full color images directly from copies or prints onto almost any fabric. A popular application is image transfer onto T- shirts. The recommended Xerox material has been tested and has been selected to provide optimum performance.   See the hints and tips section for specifics.

Recommended Materials

USA and Canada:

Xerox Single Step, 8.5 x 11" = 3R5811
Xerox Single Step, 11 x 17" = 3R5812

Rank Xerox:

Textile Transfer Paper, A4 = 3R93560
Textile Transfer Paper, A3 = 3R93564

1₂ 3. . .   Steps for Success

1 Run all Single-Step materials from the Paper Tray Bypass with the side to be imaged up.

2 Fan the stacks before loading to minimize multifeed jams.

3 Feed the Transfer Paper with the 11" / 279mm side as the lead edge.

4 Select Mirror Image setting from the Special Features so that image will be right reading after transfer to fabric.

5 Select Heavy Weight Paper Mode.

**6** Store unused material in sealed packages to avoid humidity related feeding and image quality problems.

Hints, Tips & Testing Results

Xerox testing has shown the following:

- When the recommended Xerox material is run as detailed above, feeding performance will be good, but should not be expected to equal 24 lb Image Series LX, and 90 g/m^2 Colotech performance.

- To avoid problems (jams & poor image quality) caused by both dry and humid environments, store the Xerox material in its resealable bag with desiccant pack. Other brands should also be stored in resealed packages when not in use.

- Toner saturation on electronic originals should be limited to a total of 240% (60% for each Color). Higher toner saturations can result in poorly fused prints and damage to the fuser.

- A 50/50 blend of polyester/cotton provides better image durability than shirts made of 100% cotton. Tight weave fabrics (heavy T-shirts) provide better results than loose knit fabrics (sweat shirts).

CAUTION: The following problems may occur when using transfer papers that are not recommended:

- The fuser roll may be damaged.

- The image may offset to the fuser roll.

- The paper may be too light weight and cause an unclearable jam.

- Multiple sheet feeding and frequent jams may occur.

When running non-Xerox transfer material, always pretest a small amount of material to determine image quality and feeding performance before purchasing a large quantity.

Remove sheets frequently from the output tray to prevent them from sticking together.

In low humidity environments, it may be necessary to single sheet feed, if multifeed jams occur.

Transparencies

Material Description and Expectations

Transparency stock is used primarily to create images that can be projected onto a wall or screen. Transparencies are made of polyester film that is specially coated to make dry ink (toner) readily adhere to it. The base material and coating type are both very important in the final quality of the projected image. The recommended Xerox transparencies meet the critical parameters for friction, clarity, and toner adhesion required for optimum feeding and color image quality. When run as described below, feeding performance will be good, but will not equal the reliability of 24 lb Image Series LX and 90 g/m^2 Colotech paper.

Recommended Materials

USA and Canada:

Xerox Removable Stripe, Good Quality 8.5 x 11" = 3R3108
Xerox Removable Stripe, Premium Quality 8.5 x 11" = 3R5765

Rank Xerox:

Xerox Removable Stripe, Good Quality A4 = 3R91331
Xerox Removable Stripe, Premium Quality A4 = 3R93179

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<u>Steps for Success</u>

1 Do not run Stripeless transparencies (those without a lead edge white stripe), or Paper-Backed transparencies in the DocuColor 40. These will cause frequent jams and possible machine damage.

2 Remove all paper from the Paper Tray Bypass before loading transparencies.

3 Load all transparencies in the Paper Tray Bypass with the white stripe at the leading edge.

4 All transparencies MUST be loaded with the removable or painted stripe side (dull side) DOWN in the tray. Immediate jams and machine damage are likely to occur if incorrectly loaded.

5 Fan the stacks before loading for optimum feeding performance.

6 From the Paper Tray Bypass screen, select Paper/Transparency Mode for all 11" / 279mm White Stripe Transparencies.

Hints, Tips and Testing Results

Xerox testing has shown the following:

- The Xerox Premium Transparencies, U.S./Canada 3R5765, and Rank Xerox 3R93179, provide brighter/cleaner colors than the standard transparencies.

- Be careful when handling transparencies. Dry ink (toner) cannot penetrate into the surface of the transparency. Therefore, any damage to the surface of the transparency will affect the quality of the image.

- A light, oily residue may be present on the transparency after copying. This residue will eventually disappear, but it may be removed by gently wiping the surface with a cloth or tissue.

- Transparencies should be run in Interleaf Mode or batches of no more than 25 at a time. This is to help clean the oil (that would normally absorb into paper) from the fuser and pressure rolls. During a long run of transparencies not in Interleaf Mode, feed 5 sheets of blank paper through the copier/printer after each run of 25 transparencies. Place a blank sheet on the document glass and use the Black Mode for the paper copies.

- If the transparencies stick together or multifeed jams occur, remove them from the Paper Tray Bypass and fan them vigorously.

- The recommended Xerox Transparencies are specifically made for use in color copiers/printers. Because of the wide variety of transparencies available, it is impossible to predict how other types will perform.

- If a jam occurs while using transparencies, look carefully to locate the jammed transparency and remove it before proceeding. If the jammed transparency cannot be located or removed, the Xerox Service Representative should be called.

- When running non-Xerox transparencies, always pretest a small amount of material to determine image quality and feeding performance before purchasing a large quantity.

CAUTION: If you cannot find or clear a jammed transparency, do not run another transparency or paper copy. Copier/Printer damage will occur if another sheet is run while a transparency is jammed in the fuser area (out of operator view).

CAUTION: Do not attempt to remove a transparency that is firmly jammed in the fuser. Only a Xerox Service Representative should attempt to remove this type of transparency jam.

Xerox Docupac Folders

Material Description and Expectations

Xerox Docupac Folders are designed for anyone who needs a small quantity of customized folders quickly. This two sheet system consists of a front that can be custom imaged on the DocuColor 40, then manually attached to the back pocket portion of the folder.

The finished folders measure 8 3/4" x 11 3/4" and can hold up to 25 sheets of 20 lb / 75 g/m^2 xerographic/bond paper. A pocket is also included to display a business card. Docupac folders are available in White, Gray, or Ivory and are made from 90 lb Index Stock.

Feeding and image quality performance will be similar to standard 8.5 x 11" 90 lb Index paper, however, it will not match the image quality of 24 lb Image Series LX.

Recommended Materials

USA and Canada:

Xerox Docupac Folders (90 lb index)

White = 3R4885   Gray = 3R4927   Ivory = 3R4928

Steps for Success

1 Docupac Folders must be run from the Paper Tray Bypass.

2 Load them short edge feed (9.5" / 241mm side lead edge) with the score mark along the outboard side of the tray (the side closest to the front of the machine).

3 Select Heavy Weight Paper Mode.

4 Enter the size input: X = 297mm; Y = 241mm.

5 In the added features, select Copy Position and set it to Auto Center.

6 Place the original on the platen in landscape position with the top of the original facing toward the left side of the machine.

Hints, Tips and Testing Results

Xerox testing has shown the following:

- These 90 lb Index Docupac Folders are specially made to be short grain. When run as detailed above, feeding performance should be good and will be similar to standard 8.5 x 11" / 216 x279mm / 90 lb Index, but will not equal 24 lb Image Series LX or 90 g/m^2 Colotech feeding performance.

- Image quality will be good, but may experience the same shortfalls (mottle, deletions, etc.) that most heavy-weight papers display. When running gray or ivory colored Docupacs, true color reproduction will not be possible due to the base color of the stock. See the Heavy-Weight Paper section in this guide for more details.

- Two-sided copying/printing with Xerox Docupac Folders is not recommended. More frequent jams and image quality defects will be encountered.

- If jams occur, manually curling the lead edge down will help to reduce jamming.

Do not confuse these Xerox Docupac Folders with the heavier Xerox Docupac Laser Folders. Xerox Docupac Laser Folders are made from 65 lb recycled paper stock. These may cause poor image quality.

Applications

The sections that follow provide specific techniques which should be used for certain types of jobs in order to assure optimum feeding performance and image quality.

Two-Sided Copies (Duplex)

Application Description and Expectations

Two-sided (duplex) copying refers to imaging on the second side of a copy already made on the DocuColor 40 copier/printer. When using the recommended 24 to 28 lb / 90 to 105 g/m^2 xerographic/ bond papers, feeding performance and image quality will be good, but may not equal the performance and quality of side one.

Recommended Materials

USA and Canada:

Xerox 24 lb Image Series LX, 8.5 x 11" = 3R3874
Xerox 24 lb Image Series LX, 11 x 17" = 3R3877
Xerox 28 lb Color Xpressions, 8.5 x 11" = 3R5468
Xerox 28 lb Color Xpressions, 17 x 11" = 3R5469

Rank Xerox:

Rank Xerox 90 g/m^2 Colotech, A4 = 3R93022
Rank Xerox 90 g/m^2 Colotech, A3 = 3R93023
Rank Xerox 100 g/m^2 Colotech, A4 = 3R91290
Rank Xerox 100 g/m^2 Colotech, A3 = 3R91291

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Steps for Success for Automatic Two-Sided Copying

1 Automatic Two-sided copying is possible from Trays 1, 2, and 3.

2 Automatic Two-sided copying must be done with paper weights between 16-28 lb / 60-105 g/m^2.

3 Select the Two-sided copying feature.

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Steps for Success for Manual Two-Sided Copying

1 Manual two-sided copying is possible from the Paper Tray Bypass on stocks greater than 28 lb / 105 g/m^2. However, two-sided copying of stocks less than 60 lb cover / 160 g/m^2, may have intermittent second side deletions.

2 Select the Heavy Weight Paper Mode. Failure to select Heavy Weight Paper mode will result in poor fusing and toner flaking off the paper.

3 Run the side with the least image area first.

4 For side two, load the side one imaged copies/prints into the Paper Tray Bypass with the imaged side down.

5 Run side two within 15-20 minutes of running side one.

6 If side two cannot be imaged within the recommended 15-20 minutes, the copies/prints should remain as flat as possible and be stored in plastic containers with lids or sealed plastic bags.

Hints, Tips and testing Results

Xerox testing has shown the following:

- All color copiers/printers experience a higher jam rate when performing duplex copying. Paper jams can be caused by the curl created when running the side one image.

- Increased jams from the Paper Tray Bypass result from the contamination of feed rolls with fuser oil, when running a large number of two sided copies. This contamination may require more frequent cleaning of the rollers. To help reduce this contamination problem, and improve feeding reliability, mix one-sided copying jobs with two-sided copying jobs when possible. During large two sided jobs, periodically run five blank sheets from the Paper Tray Bypass in the Black Mode to help keep the feed rolls clean.

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- Image quality on side two will usually be equal to the side one image, but is more likely to have image mottle/light area problems caused by slight waviness in the paper and variable toner transfer. Both of these factors are greatly influenced by paper quality.

- To avoid intermittent side two deletions, consider running a coated cover stock 60 lb / 160 g/m^2 or above.

- Coated text papers 80 lb / 120 g/m^2 can be run from Trays 2 and 3 without second side deletions. However, when running 80 lb / 120 g/m^2 coated paper from Trays 2 and 3, customers may experience reduced gloss on side two, first sheets out may have higher gloss, multisheet feeds, jams and possibly poor toner adhesion. If you experience multisheet feeds, you will need to run 10-25 blank sheets to clean off residual toner that may be on the Fuser Roll.

  Running any coated papers other than 80 lb / 120 g/m^2 from Trays 2 and 3 may result in unacceptable performance.

DocuColor 40 Output Inserts

Application Description and Expectations

DocuColor 40 Output Inserts refers to the merging of color copies being printed on other copying/printing equipment such as the Xerox 5090 family of Duplicators.

If you want to use DocuColor 40 color copies in another model Xerox copier/printer, inform your Xerox Service Representative and try a few copies to determine the results before running a job.

Recommended Materials

USA and Canada:

Xerox 24 lb Image Series LX, 8.5 x 11" = 3R3874
Xerox 24 lb Image Series LX, 11 x 17" = 3R3877

Rank Xerox:

Rank Xerox 90 g/m^2 Colotech, A4 = 3R93022
Rank Xerox 90 g/m^2 Colotech, A3 = 3R93023

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Steps for Success

1   For optimum performance as inserts, DocuColor 40 copies/prints should be as flat as possible. To help reduce the amount of curl, try to use images with a moderate amount of total area coverage (20% or less), or light colored background to minimize the amount of dry ink toner on the copy/print. Copies with dark images and a high area coverage require large amounts of toner and can result in copy curl toward the image side. White, or very light image coverage, increases the curl away from the image side.

2   When storing the color copies, keep the stacks horizontal at all times. Stacking or placing weights on the copies can help reduce curl. Do not allow copies to shift or slide during handling to avoid damage to the edges of the paper.

Hints, Tips and Testing Results

Xerox testing has shown the following:

- The control of humidity is a critical factor in the performance of color inserts. A temperature and humidity controlled environment is more likely to provide the proper combination of temperature and humidity. Place copies/prints in plastic containers with lids or sealed plastic bags. Placing desiccant in the containers or bags will prevent the paper from absorbing excessive moisture.

- The brightness of the recommended papers for DocuColor 40 may be different than from those papers used in the 5090 family of Duplicators. This may cause appearance changes in the mixed document. You may want to consider using the same paper that meets your image quality requirements in both machines.

CAUTION: Do not use DocuColor 40 color copies in the Xerox 5100 Copier/Printer/Duplicator. The copies are incompatible with the 5100 fuser.

- There are many copying/printing devices in the marketplace. DocuColor 40 prints may not be compatible with all products due to specific requirements. Other products may have high fuser temperatures or longer fuser dwell times that may cause toner flaking problems. Test small amounts to ensure compatibility.

Preprinted Papers

Material Description and Expectations

This category encompasses a wide variety of materials. Offset printed letterhead papers and xerographic prints, within the recommended paper weight range, may feed reliably in the DocuColor 40. Copies produced on laser, ink jet, or dot matrix printers, carbonless paper, raised/engraved copies, and preprinted forms, using various inks (with and without MICR), have not been tested and should be considered in the not recommended category.

Pretesting with small quantities to determine copy quality and feeding performance is recommended.

Recommended Materials

Offset printed letterhead and xerographic prints from 16 lb / 60 g/m^2 xerographic/bond to 110 lb Index / 220 g/m^2.

Steps for Success

1 Ensure paper is within the specified paper weight range of the DocuColor 40.

2 For best feeding performance, run all preprinted sheets from the Paper Tray Bypass. If paper is heavier than 28 lb / 105 g/m^2 xerographic/bond, run it in the Heavy Weight Paper Mode.

3 Allow preprinted sheets to dry completely before loading them into the copier/printer.

4 he preprinted ink should have a low conductivity and will have to withstand the high fuser temperature of the DocuColor 40 (180° C / 356° F).

5 Keep the preprinted sheets free from curl. Ensure that sheets are flat or have a slight lead edge downward curl when loaded into the Paper Tray Bypass.

6 To minimize jams, store preprinted sheets carefully. Avoid damaging the edges or corners of the paper and protect preprinted sheets from humid conditions that will lead to image quality problems.

Hints, Tips and Testing Results

Xerox testing has shown the following:

Some inks from preprinted materials may cause deletions, offsetting or contamination. Select a surface-drying, laser-compatible ink designed for reproduction on color copier/printers. An offset printer representative may be able to specify an ink with similar characteristics.

Two-sided copying/printing onto preprinted materials is not recommended. In many cases, deletions will occur if you attempt to copy an image onto an area on side two that is directly opposite a preprinted area on side one. The preprinted area can disrupt the transfer of toner onto side two, causing a deleted area. This can be due to the conductivity of the ink itself or because the ink on side one caused a slight ripple in the paper.

Imaging onto preprinted areas of a preprinted form will cause poor fusing or toner flake off.

Always pretest a small amount of material to determine image quality and feeding performance before purchasing a large quantity.

Lamination

Application Description and Expectations

Lamination is commonly used for book covers, menus, cards, check lists, ID cards, and pamphlets. DocuColor 40 output can be successfully laminated. However, there are several key factors essential to the process in order to produce acceptable finished products. Two factors in particular include correct temperature at the point of lamination, and choosing the correct laminate material.

Hints, Tips and Testing Results

Xerox testing has shown the following:

Many laminate materials have been tested. Testing with the HiTac laminate from GBC and the Aggressive Adhesive from D&K have shown favorable results.

The temperature at the paper laminate interface should reach approximately 250° F (121°C). Paper temperature thermometers can be used to measure the highest temperature reached during the lamination process.

There are primarily two different lamination processes: Roll and Shoe. In each system, the heat application is in different places.

In the Roll process, the heat is applied very close to the paper laminate interface, therefore, there is less heat loss when the laminate merges with the paper.

The Shoe process applies the heat farther away from the paper laminate interface than the Roll system. This means there is more heat loss between the laminate interface and paper. With the Shoe system, it is important to maintain proper heat temperature throughout the entire process.
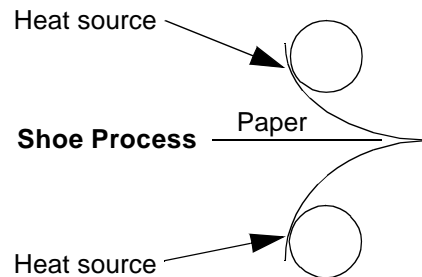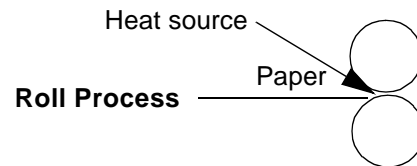
About Paper

Paper is physically and chemically complex. For a paper to perform properly in a DocuColor 40, its properties must be within specified limits. Some of these limits can be determined, but others cannot be obtained easily. Therefore, you must rely on the paper supplier to deliver paper, or other material, that meets the specifications outlined in this guide and the *Xerox DocuColor 40 Digital Color Copier/Printer Operator Manual.*

CAUTION: It is important that you understand the relationship between the properties of materials used in the copier/printer and reliable performance of the copier/printer. Using materials that do not meet the specified requirements may result in increased paper jams, poor print quality, excessive service calls, and possible damage to the copier/printer.

The quality and condition of the paper being used for copying will affect the performance of the DocuColor 40 and the quality of the output copy.

Xerographic paper is designed to withstand the heat and pressure of the xerographic process. To meet these special requirements, manufacturers of xerographic paper impose strict controls for curl, friction, and electrical properties. Because paper that is designed for an offset press is not as rigidly controlled for these three properties, its performance on xerographic equipment is highly variable.

Xerox paper is designed and manufactured for premier performance in a multitude of environmental extremes.

Excellent performance will be obtained by using Xerox 24 lb Image Series LX paper, (8.5 x 11 inch = 3R3874 or 11 x 17 inch = 3R3877), or Rank 90 g/m^2 Xerox Colotech paper (A4 = 3R93022 or A3 = 3R93023). These papers have high brightness, a smooth surface, and a very uniform paper fiber distribution (formation).

Many papers designed for use in laser printers have some or all of these recommended properties.

Poor formation, or a rough surface, significantly degrades copy quality. High brightness of the paper influences the appearance of the colors on the copy.

Paper Weight

g/m^2 Paper weight is generally expressed as grams per square meter (g/m^2), a measure that makes it easy to compare any two pieces of paper, even if the papers are of different types.

Basis weight Paper weight is also expressed in terms of *basis weight*, which is the weight of 500 sheets of paper of a particular size. Because each type of paper (xerographic/bond, offset, cover, index, etc.) is expressed in terms of a different basis size, a 20 lb xerographic/ bond paper and a 20 lb offset paper are not the same weight in g/m^2.

M value The weight of some materials is described by the M value printed on the package (i.e. 21.64M). The M value is the weight in pounds of 1,000 sheets of the size of the paper in the package. To convert the M value to g/m^2 for 8.5 x 11" paper, multiply the M value by 7.527. To convert the M value to g/m^2 for 11 x 17" paper, multiply the M value by 3.763.

Pt. value Pt (point) value refers to the sheet thickness in mils (thousandths of an inch). For example, 10 pt. = 0.010", or 7 pt. = 0.007" thick paper. You cannot directly convert point value to paper weight or stiffness.

Equivalent Weights of Recommended Paper Chart

Use the chart below to find the equivalent weight of a particular paper stock.

Business Papers	Offset Papers	Covers	Tag	Index	Bristol	Coated Board	G/M²
Xerographic Writing Bond	Coated Uncoated Opaque Book Text	Coated Uncoated Opaque				(Sold by caliper not weight - weights are approximates)	
17x22"	**25x38"**	**20x26"**	**24x36"**	**25.5x30.5"**	**22.5x28.5"**	***Point Scale (1pt = .001)**	
16							**60**
18	**45**						**67**
20	**50**						**75**
	55						**80**
24	**60**						**90**
28	**70**						**105**
32	**80**						**120**
					57		**125**
36	**90**	**50**					**135**
			90				**146**
					67		**147**
40	**100**					**6PT**	**150**
	105						**155**
	110	**60**	**100**	**90**			**160**
		65			**80**		**175**
	120					**8PT**	**180**
		70					**190**
			125	**110**			**200**
							210
		80					**215**
					100	**10PT**	**220**

Table 1: Equivalent Paper Weights

*Weights measured in pts. are an estimate and will vary from manufacturer to manufacturer.

Paper Weight Performance

Reliable feeding can be expected from the DocuColor 40 paper trays with most xerographic/bond papers between 16 lb / 60 g/m^2 and 28 lb / 105 g/m^2.

Reliable feeding can be expected from the Paper Tray Bypass with most xerographic/bond papers between 16 lb / 60 g/m^2 and 110 lb Index / 220 g/m^2 .

Feed source and paper size **European Markets**	Feed source and paper size **North and South American Markets**	**Paper Weight**		
		16 to 24 lb bond / 60 to 90 g/m^2	**28 lb bond / 105 g/m^2**	**>28 lb bond / 105 g/m^2** (Max. of 220 g/m^2)
Tray 1: **8.5 x 13" SEF**** **8.5 x 11" LEF** **A4 LEF** **B4 SEF**	**Tray 1:** **8.5 x 13" SEF** **8.5 x 11" LEF** **A4 LEF** **8.5 x 14" SEF**	**E***	**G**	**NR**
Trays 2 and 3: **Minimum:** **A4** **Maximum:** **11 x 17" (A3) SEF**	**Trays 2 and 3** **Minimum:** **8 x 10" bond** **(203 x 254mm)** **Maximum:** **11 x 17" (A3) SEF**	**E***	**E**	**NR**
Bypass Tray **(feeding edge):** **A6 (105mm)** **A5 (148mm)** **B5 (182mm)** **A4 (210mm)** **B4 (257mm)** **11" (279.4mm)** **A3 (297mm)**	**Bypass Tray** **(feeding edge):** **3.5" (88.9mm)** **A5 (148mm)** **B5 (182mm)** **8" (203.2mm)** **8.5" (215.9mm)** **B4 (257mm)** **11" (279.4mm)** **A3 (297mm)**	**E***	**E**	**G to E**

Table 2: Paper Performance

E = Excellent (Reliable feeds may be expected.)

G = Good (Special handling may be required and less reliable feeds may be expected.)

NR = Not Recommended (Copy quality degradation and more frequent jams may occur.)

* Feeding reliability of 16 lb / 60 g/m^2 Bond will vary, depending on the stiffness of the paper.

** SEF = Short Edge Feed

Grade

Paper grade refers to the brightness of a sheet of paper. Brightness is a measure of the amount of light a sheet reflects. The more light it reflects, the higher the brightness and the grade.

Paper with high brightness enhances the contrast between the paper and the image and enables faithful color reproduction.

The Xerox 24 lb Image Series LX (8.5 x 11 inch = 3R3874 or 11 x 17 inch = 3R3877) and Rank Xerox 90 g/m^2 Colotech A4 = 3R93022 or A3 = 3R93023) papers have high brightness and provide excellent image quality.

Brightness should not be confused with *whiteness*, which is the shade of the paper rather than the amount of light it reflects. For example some papers will have a yellow/white shade while others may have a blue/white shade.

Moisture Content

Moisture content directly affects reliability and copy quality.

Too much moisture can cause excessive paper curl, paper jams, and copy quality problems. Moisture levels that are too low can cause static problems and excessive paper curl which can also result in paper jams.

Moisture content should be uniform within the ream. The ream should not be allowed to lose or absorb moisture during storage. Moisture-proof ream wrappers are essential to maintaining the correct moisture level. Xerox papers have a polyethylene laminate ream wrapper that resists the migration of moisture into and out of the package.

A moisture level range of 4.5% to 5.5% is recommended for paper used in a DocuColor 40. Check with your paper supplier to find out what range of moisture content is in their paper.

Curl

Excessive curl may cause paper jams. The selection of a low-curl paper with proper moisture content will make a significant difference in the performance of your copier/printer.

Xerox papers are manufactured with built-in curl control and work well when loaded into the paper trays in the correct curl direction.

Offset papers not designed for xerographic end use tend to have a higher moisture content and may result in paper curl.

Determining curl using ream wrapper arrows

Xerox papers are packaged with an arrow printed on one end of the ream wrapper. The arrow points to the side to be imaged first.

- Load the paper into Paper Trays 1, 2, and 3 with the side to be imaged facing down.

- Load the paper into the Paper Tray Bypass with the side to be imaged facing up.

If more detailed information about loading paper is required, refer to Chapter 3 of the *Xerox DocuColor 40 Digital Color Copier/Printer Operator Manual*.

Determining curl without ream wrapper arrows
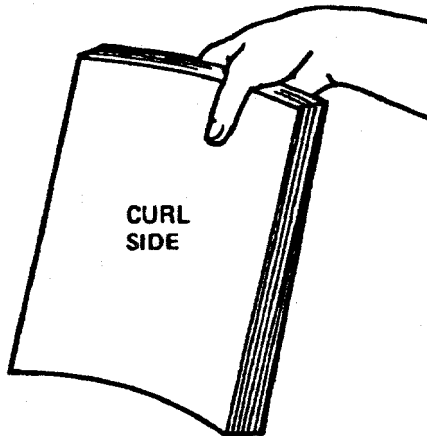
If the wrapper on a ream of paper is not marked with an arrow showing the image side of the paper, you can determine the curl side by holding a one-half inch stack of paper by one of the short edges.

Let the paper hang with the long edge parallel to your body. Either the lower edge or the two side edges will curl slightly toward the center. Observe which way the edge or edges curl. This is the curl side.

CURL SIDE

Paper handling and copy curl performance vary with room temperature, humidity, paper quality, and the image area on the copies. All of these variables interact, and, in some situations, the operator must experiment to determine which paper loading method provides the best performance.

Paper feeding hints   If persistent paper feeding problems occur, one of the following hints may help:

- Turn the paper over and make the copies again. This technique can be used for both the paper trays and the Paper Tray Bypass. If feeding performance is improved, continue to load the paper in this manner.

- Open a fresh ream of paper. Load the fresh paper and run the job again. If the paper jams cease, discard the paper that was causing the jams.

- Occasionally, the top sheets of a newly opened ream will curl the opposite of the remaining sheets in the ream, indicating that the paper is adjusting to the humidity level in the room. To obtain consistent curl for all sheets in the ream, allow the opened ream to remain in the room until all the sheets have acclimated to the environmental conditions.

- Change the paper feed orientation. For example, if feeding long edge first (LEF), try feeding short edge first (SEF).

- When using coated paper, fan the paper stock vigorously before loading. Refer to the coated paper section earlier in this guide.
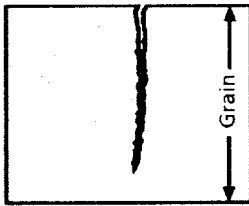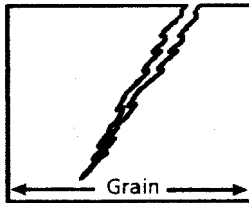
Grain
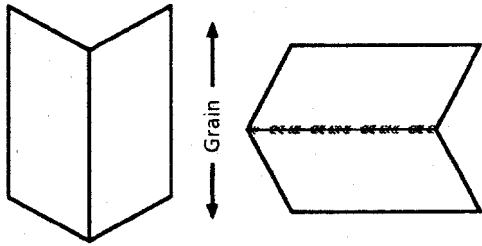
The grain of a paper is the direction in which most of the fibers lie. During the paper-making process, the majority of the paper fibers align parallel with one another. Depending on how the paper is cut to its finished size, it will be either grain-long (the grain is parallel to the longer dimension of the paper), or grain-short (the grain is parallel to the shorter dimension of the paper).

One method used to determine the grain is to fold a sheet of paper lengthwise, then make a crosswise fold. Compare the two folds. Paper folds smoothly with the grain. Cross-grain folds tend to be rough and cracked.

Another method you can use to determine the grain direction of a sheet of paper is to tear the sheet widthwise. Paper always tears straighter with the grain.

Grain-short

Grain-long

Stiffness

Stiffness refers to the rigidity, or bending resistance, of paper. Thicker papers are usually stiffer. Papers are normally stiffer in the grain-short direction.

In general, paper that is less than 16 lb / 60 g/m^2 is more likely to bunch up or wrinkle in the copier/printer, causing jams and misfeeds.

Tray 1 performance is more dependent on stiffness as opposed to Tray 2 and 3. This is due to the "S" bend in the paper path. If you experience paper feed jams from Tray 1, try running the paper from Tray 2 or Tray 3 for improved reliability.

Smoothness

The smoothness of paper has a significant impact on copy quality. If paper is too rough, copy quality degrades; with increasing roughness, expect a loss of copy quality in solids and halftones (grainy colors). Extremely rough paper does not properly accept fused toner, which rubs or flakes off.

Mottle (light patches in solid color areas) will occur on rough papers and on papers with poor or uneven formation. Paper smoothness and formation generally become worse as the paper weight increases.

Since surface irregularities may not be filled in with dry ink (toner), the image on rough papers may appear lighter. A higher density setting (use the Lighter/Darker setting) is required to achieve a density level equivalent to that on smoother papers.

Xerographic papers are generally smoother than offset papers and most bond papers. The Xerox Image Series LX, Color Xpressions, and Rank Xerox Colotech papers are smoother than the average xerographic papers.

The Xerox 24 lb Image Series LX and Rank Xerox 90 g/m^2 Colotech papers provide excellent image quality.

Paper Storage

Paper is normally shipped in fiberboard cartons. The number of reams in a carton depends on the size of the paper. If a large quantity of paper has been ordered, the cartons are stacked on wooden pallets.

Mishandled cartons (for example, dropped, thrown, or struck with a fork lift), may result in damaged paper, some of which may not be immediately obvious. The use of damaged paper increases the frequency of paper jams and other feeding problems.

Do not store the cartons directly on the floor; this increases the possibility of moisture absorption. Store the cartons on pallets, shelves, or in cabinets in an area protected from extremes of temperature and humidity.

Do not open the sealed reams of paper until the paper is to be loaded into the copier/printer. Leave the paper in the original ream wrapper, and leave the reams in the shipping carton. The ream wrapper contains an inner lining which protects the paper from moisture. Removing the ream wrapper eliminates the protective barrier, exposing the paper to moisture fluctuations which can result in excessive curl and other undesirable effects.

Paper from an unopened ream will usually provide excellent performance.

When paper from an opened ream will not be used for a period of time, such as overnight, the ream wrapper should be resealed with tape. For best results, loose paper should be stored in a resealable plastic bag. Placing desiccant in the plastic bags will prevent the paper from absorbing excessive moisture.

Do not store paper in the Paper Tray Bypass. Load only enough paper in the Paper Tray Bypass for the job being run.

If using paper from a ream that has been left open, take the sheets from the center of the ream.

Stacking

If the cartons or individual reams are to be stacked, they should be placed carefully on top of one another to avoid crushing the edges or causing any other damage.

The cartons should be stacked no more than five cartons high. Pallets may be stacked three high.

Temperature and Humidity

The temperature of the room where paper is stored can have a significant effect on how that paper performs in the DocuColor 40.

The control of humidity is one of the most important precautions that can be taken to assure proper paper handling in the DocuColor 40.

Paper should be stored within the following conditions:

Air conditioned   Most environments with air conditioning systems provide the proper combination of temperature and humidity for good paper performance.

Non-air conditioned   Use the following guidelines for storing paper in non-air conditioned environments:

- Minimum: 50° F (10° C) at 15% relative humidity

- Maximum: 81° F (27.2° C) at 85% relative humidity.

Conditioning Paper

If the paper is moved from a storage area to a location with a different temperature and humidity, the paper should be conditioned to the new location before it is used.

All materials used in the DocuColor 40 must be conditioned to the temperature/humidity of the room containing the copier/printer for optimum performance.

Paper Put paper in the same room as the copier/printer the night before it is used in the copier/printer.

Transparencies Leave transparencies in the same room as the copier/printer for 24 hours before they are used in the copier/printer.

Label stock Condition label stock for 72 hours in the copier/printer area before it is used in the copier/printer.

Coated paper Condition coated paper for 48 hours in the copier/printer area before it is used in the copier/printer.

The conditioning of materials can be accelerated by separating the cartons or reams of paper (or boxes of transparencies or labels) from each other. *Do not unseal the reams of paper until you are ready to load them into the machine.*