

Appendix C P A P E R S P E C I F I C A T I O N S

Appendix C C O N T E N T S

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About paper

The page printer is designed to print on high-quality copier bond paper (the kind used in ordinary dry copier machines), but it can accept a variety of other types of paper as well within the limits specified below.

Note. Kyocera assume no liability for problems that occur when paper not satisfying these requirements is used with the printer.

Selection of the right paper is important. The wrong paper can result in jams, misfeeds, curl, poor print quality, and paper waste, and in extreme cases can damage the printer. The guidelines given below will increase the productivity of your office by ensuring efficient, trouble-free printing and reducing wear on the printer.

Paper availability

Most types of paper are compatible with a variety of machines. Paper intended for xerographic copiers and small offset duplicators can also be used with the printer.

There are three general grades of paper: economy, standard, and premium. The most significant difference between grades is the ease with which they pass through the printer. This is affected by the smoothness, size, and moisture content of the paper, and the way in which the paper is cut. The higher the grade of paper you use, the less risk there will be of paper jam and other problems, and the higher the level of quality your printed output will reflect.

Differences between paper from different suppliers can also affect the printer's performance. A high-quality printer cannot produce high-quality results when the wrong paper is used. Low-priced paper is not economical in the long run if it causes printing problems.

Paper in each grade is available in a range of basis weights (defined later). The traditional standard weights are 16, 20, and 24 pounds.

The following table summarizes the basic paper specifications. Details are given on the following pages.

PAPER AVAILABILITY

Item	Specification
Weight	60 to 90 g/m ² (16 to 24 lb./ream)
Thickness	0.086 to 0.110 (3.4 to 4.3 mils)
Dimensional accuracy	±0.7 mm (±0.0276 inches)
Squareness of corners	90±0.2°
Moisture content	4 to 6 %
Direction of grain	Long grain
Pulp content	80 % or more

Selecting the right paper

Printing with the page page printer is a process involving LED light, electrostatic discharge, toner, and heat. In addition, as the paper passes through the printer it undergoes considerable sliding, bending, and twisting motions. A high-quality printing paper matching the printer's requirements withstands all these stresses, enabling the printer to turn out clean, crisp printed copy consistently.

Remember that all paper is *not* the same. Some of the factors to consider when selecting paper for the printer are as follows:

Condition of the paper

Avoid using paper that is bent at the edges, curled, dirty, torn, or contaminated with lint, clay, or paper shreds.

Use of paper in these conditions can lead to illegible printing, misfeeding, and paper jams, and can shorten the life of the printer. In particular, avoid using paper with a surface coating or other surface treatment. The paper should have as smooth and even a surface as possible.

Composition

Do not use paper that has been coated or surface-treated and contains plastic or carbon. The heat of fusing can cause such paper to give off harmful fumes.

Bond paper should contain at least 80% pulp. Not more than 20% of the total paper content should consist of cotton or other fibers.

Paper size

The printer accepts the paper sizes listed below for automatic feed. The dimensional tolerances are ± 0.7 mm (± 0.0276 inches) for the length and width. The angle at the corners must be $90 \pm 0.2^\circ$.

PAPER SIZES

Size	Specification
Letter	8.5 × 11 inches
Legal	8.5 × 14 inches
JIS A4	21 × 29.7 cm
JIS B5	18.2 × 25.7 cm
JIS A5	14.8 × 21 cm

Other sizes of paper can be fed manually using the multi purpose tray. The minimum size of manually fed paper is 8 × 14.8 cm (3.1 × 5.8 inches), fed lengthwise. The maximum size is 21.6 × 35.6 cm (8.5 × 14 inches).

The printer recognizes paper sizes as commanded by the front panel **MODE SELECT**, but regards all manually fed paper as having the Legal size.

SMOOTHNESS

The paper should have a smooth, uncoated surface.

Paper with a rough or sandy surface can cause voids in the printed output. Paper that is too smooth, however, can cause multiple feeding and fogging problems. (Fogging is a gray background effect.)

BASIS WEIGHT

Basis weight is the weight of a standard quantity of paper. In the traditional system the standard quantity is a ream consisting of 500 sheets measuring 17 × 22 inches each. In the metric system the standard quantity is 1 square meter.

Paper that is too light or too heavy can cause misfeeding, jams, multiple feeds, print defects, poor toner fusing, blurring, and other print quality problems. The proper weight is: 60 to 90 g/m² (16 to 24 lb./ream).

THICKNESS (CALIPER)

Thick paper is referred to as high-caliper paper and thin paper as low-caliper paper. The paper used with the printer should be neither extremely thick nor extremely thin. If you are having problems with paper jams, multiple feeds, and faint printing, the paper may be too thin. If you are having problems with paper jams and blurred printing the paper may be too thick. The proper thickness is: 0.086 to 0.110 mm (3.4 to 4.3 mils).

MOISTURE CONTENT

Moisture content is defined as the percent ratio of moisture to the dry mass of the paper. Moisture can affect the paper's appearance, feedability, curl, electrostatic properties, and toner fusing characteristics.

The moisture content of the paper varies with the relative humidity in the room. When the relative humidity is high and the paper absorbs moisture, the paper edges expand, becoming wavy in appearance. When the relative humidity is low and the paper loses moisture, the edges shrink and tighten, and print contrast may suffer.

Wavy or tight edges can cause misfeeding and alignment anomalies. The moisture content of the paper should be: 4% to 6%.

To ensure the proper moisture content it is important to store the paper in a controlled environment. Some tips on moisture control are:

- ☐ Store paper in a cool, dry location.
- ☐ Keep the paper in its wrapping as long as possible. Rewrap paper that is not in use.
- ☐ Store paper in its original carton. Place a pallet etc. under the carton to separate it from the floor.
- ☐ After removing paper from storage, let it stand in the same room as the printer for 48 hours before use.
- ☐ Avoid leaving paper where it is exposed to heat, sunlight, or damp.

PAPER GRAIN

When paper is manufactured, it is cut into sheets with the grain running parallel to the length (long grain) or parallel to the width (short grain). Short grain paper can cause feeding problems in the printer. All paper used in the printer should be long grain. Direction of grain should be long .

Other paper properties

POROSITY

Refers to the density of the paper structure; that is, to how openly or compactly the fibers are bonded.

STIFFNESS

Limp paper can buckle inside the printer, while paper that is too stiff may bind. Either way the result is a paper jam.

CURL

Most paper has a natural tendency to curl in one direction. The paper should be loaded so that the natural curl is downward, to counteract the upward curl imparted by the printer. Printed sheets will then come out flat. Most paper also has a top and bottom surface. Loading instructions are usually given on the paper package.

ELECTROSTATIC PROPERTIES

During the printing process the paper is electrostatically charged to attract the toner. The paper must be able to release this charge so that printed sheets do not cling together in the output tray.

WHITENESS

The contrast of the printed page depends on the whiteness of the paper. Whiter paper provides a sharper, brighter appearance.

QUALITY CONTROL

Uneven sheet size, corners that are not square, ragged edges, welded (uncut) sheets, and crushed edges and corners can cause the printer to malfunction in various ways. A quality paper supplier should take considerable care to ensure that these problems do not occur.

PACKAGING

Paper should be packed in a sturdy carton to protect it from damage during transport. Quality paper obtained from a reputable supplier is usually properly packaged.

Special paper

The following types of special paper can be used:

- ☐ Recycled paper
- ☐ Overhead projection (OHP) film
- ☐ Adhesive-backed label paper
- ☐ Envelopes
- ☐ Colored paper
- ☐ Preprinted paper

Use paper that is sold specifically for use with copiers or page printers (heat-fusing type). OHP film, label paper, and envelopes should not be placed in the cassette; they must be fed manually 1 and stacked face up.

Since the composition and quality of special paper vary considerably, special paper is more likely than white bond paper to give trouble during printing. No liability will be assumed if moisture etc. given off in printing on special paper causes harm to the machine or operator.

Note. Before purchasing any type of special paper, test a sample on the printer and check that printing quality is satisfactory.

Specifications for each type of special paper are given below.

RECYCLED PAPER

Select recycled paper that meets the same specifications as the white bond paper except whiteness.

OVERHEAD PROJECTION (OHP) FILM

OHP film must be able to withstand the heat of fusing during the printing process. It should satisfy the conditions provided below.

OHP SPECIFICATIONS

Item	Specifications
Tolerance of heat	Must tolerate at least 190° C (374° F)
Thickness	0.100 to 0.110 mm (3.9 to 4.3 mils)
Dimensional accuracy	± 0.7 mm (± 0.0276 in)
Squareness of corners	$90 \pm 0.2^\circ$

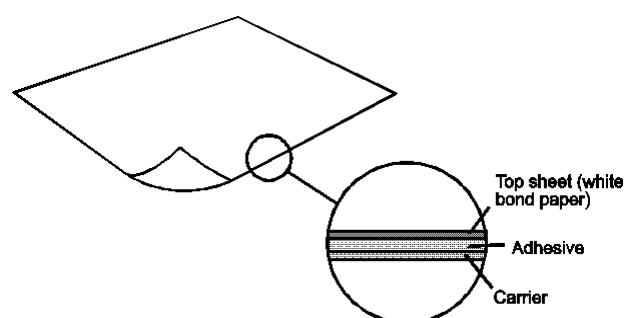
To avoid trouble, OHP film must be delivered face-down.

If OHP film jams frequently, pull the top of the sheet very gently as it leaves the printer.

Adhesive-backed labels

The basic rule for printing on adhesive labels is that the adhesive must never come into contact with any part of the printer. Adhesive paper sticking to the drum or rollers will damage the printer.

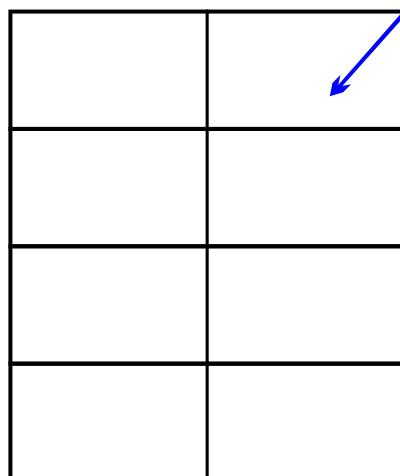
Label paper must be manually fed.



Label paper has a structure consisting of three layers, as shown in the figure below. The top sheet is printed on. The adhesive layer consists of pressure-sensitive adhesives. The carrier sheet (also called the linear or backing sheet) holds the labels until use. Due to the complexity of its composition, adhesive-backed label paper is particularly likely to give trouble in printing.

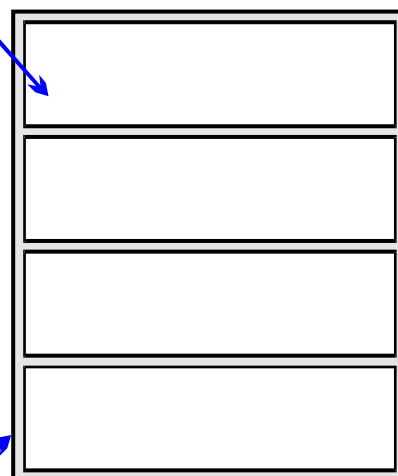
LABEL ARRANGEMENT

Acceptable



Top sheets

Unacceptable



Carrier sheets

Envelopes

Many envelopes have a diagonal grain orientation. (See **PAPER GRAIN** on page C-7.) This orientation is more likely to wrinkle and crease on its way through the printer. Before purchasing envelopes for use with the printer, test a sample to verify the envelope's suitability.

Do not use envelopes having an encapsulated liquid adhesive.

Avoid long printing runs consisting of envelopes only. Extensive envelope printing can cause premature printer wear.

To avoid jam due to curled envelopes, do not leave more than approximately 10 printed envelopes stacked in the face-up paper tray during multiple printing the envelopes.

COLORED PAPER

Colored paper should satisfy the same conditions as white bond paper. In addition, the pigments used in the paper must be able to withstand the heat of fusing during the printing process (up to 190° C or 374° F).

PREPRINTED PAPER

Preprinted paper should have a bond paper base. The preprinted ink must be able to withstand the heat of fusing during the printing process, and must not be affected by silicone oil.

Do not use paper with any kind of surface treatment, such as the type of paper commonly used for calendars.