

Paperless, schmaperless. The paperless office is a scam, a ruse, a canard. It ain't true. The laser printer and photocopier are the most ruthless tree gluttons the world has ever seen, burying offices in mounds of memos, reports, and other unread clutter. Having established this tired fact, what can we do?

One step in the right direction is using recycled paper, specifically paper that contains post-consumer waste — old magazines, newspapers, and so on — that has been de-inked and repulped into office paper. A few years ago, post-consumer recycled paper for laser printers and photocopiers was rare, expensive, and inclined to jam. These days, with Clintonistas curbing logging throughout the northwest, recycled paper in all grades and variants is abundant. But what's out there? Is it any good? And what's it cost?

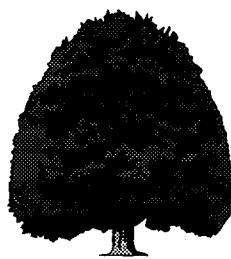
"The Green PC," its flinty eye cast over the market, decided to find out. We tested reams and reams of post-consumer recycled xerographic paper for laser printers and copiers. More important, we surveyed those in the know — photocopier giants such as Kodak and Pitney Bowes, laser printer megacorps such as Hewlett-Packard and Lexmark, the Government Printing Office (the GPO buys two percent of *all* the printing and writing paper in the U.S.), and vari-

Putting Paper To The Test

By Robert Luhn

ous state and local governments that have done large scale or long-term paper testing.

The post-consumer recycled papers examined here don't represent the entire recycled universe. But I have gathered popular offerings from most of the major vendors, in grades that can be used in laser printers, photocopiers, and plain-paper fax machines. (Although not reviewed, post-consumer writing papers used for letterhead are available and will be reviewed in a future column.)



A Swatch of Tests

At first glance, recycled copier papers look just like their virgin counterparts. The papers are smooth, unspeckled, bright, and seemingly tough. But are they tough enough to

withstand the twisting, blistering environment of a photocopier or laser printer? Can you duplex them without jamming? Do they hold onto toner for dear life?

The answer is a qualified yes. Although some papers that passed the GPO's tests failed Pitney Bowes', and vice versa, most recycled paper from major vendors cut the mustard. Both the GPO and Pitney Bowes laid down fairly strict physical specifications, from brightness (an aesthetic measure) to curl (which can cause jams),

then ran thousands of sheets of each paper through high-speed copiers. The acceptable jam rate: one jam per 5,000 sheets! The State of Wisconsin took a similar approach, running 50,000 sheets of each paper, for a staggering total of 11.8 million copies.

A number of papers passed this trio's tests. All three organizations

also point out that many papers that didn't pass will probably work fine, especially in laser printers and slower copiers. Based on interviews with everyone from Bank of America to the General Services Administration, I found that they all seem to agree.

"We've been using recycled paper for two years and the complaint level has been very low" says Barbara Belasco with the GSA. Pam Walkenbach with the Illinois Energy and Natural Resource agency tells the same story. The state ran blind tests with post-consumer paper two years ago, and 99 percent of the problems were due to copier malfunctions, not the paper. Ed Luka, who works in PG&E's internal printing division (which makes over 6.5 million impressions a month on everything from web presses to superfast copy machines), is a booster as well, adding that, "[James Rivers'] Eureka paper is the best we've tested. You can't tell it's recycled."

Dan Wehrman, procurement coordinator with the state of Wisconsin, more or less agrees, noting that recycled paper is "pretty darn good — good enough to live with." But he points out some notable problems. "Our Xerox 4050 copiers had a heck of a time with blank spots showing up", says Wehrman. The tested papers worked well on laser printers, but quality on ink-jets was shaky. "Recycled paper tends to absorb too much ink, so text and images tend to get fuzzy."

How to Buy (and Use) Recycled Paper

Recycled is recycled is recycled, right? Not necessarily. Since federal and state labeling standards are fairly lax, you may not always be getting paper with post-consumer content. Some tips on buying and using post-consumer recycled paper from the pros:

- **Check that label.** Don't fall for statements like "this paper meets EPA recycled paper guidelines for waste paper content" or contains some percentage of "recovered fiber." The fiber or waste paper could be virgin scrap (also called "pre-consumer" waste) left over from the paper mill's manufacturing process. Ask about the paper's *total* post-consumer content — that's what counts.
- **Not all the papers in a recycled line are recycled.** Some bright white and colored papers may be made with virgin pulp, so ask before you buy.
- **Look for the EcoLogo.** This symbol indicates that the paper has been certified by the Environmental Choice Board, an independent group appointed by Canada's Minister of Environment. Approved pa-

per contains a minimum of 10 percent post-consumer waste and manufacturers must comply with Canada's air and water pollution laws.

- **Make sure the paper is designed for printers and/or copiers.** Most manufacturers will recommend paper weights (usually 20 pounds or higher) and even specific brands. (In fact, some copier manufacturers sell their own recycled brands.) Ask if the paper is "laser-compatible" or "laser-guaranteed." Before you make a big purchase, test a ream or two on your machines.
- **When you're choosing a recycled writing paper, pick one with a smooth finish.** Your best bets are papers with a "wove" finish, and some linens and vellum grades. Finishes to be wary of: brocade, felt, antique, and laid.
- **Like any laser or photocopier paper, recycled paper can curl and jam if it's used in a damp climate.** So keep the paper in its wrapper until you need it. George Campbell, word processing columnist for *PC*

World, keeps his paper in a cabinet with a 40 watt bulb burning, which provides just enough heat to keep the paper dry.

- **Some vendors take into account paper curl and indicate which side of the paper to print on first.** Follow this suggestion and you'll have fewer jams.
- **Another jam fighter:** If you manually duplex on your laser printer, let the paper cool a bit before you flip it over and put it through.
- **Keep it clean.** Because of recent changes in paper production, both virgin and recycled papers may generate more paper dust than their predecessors. Clean your printer or copier according to manufacturer specs.

Resources

The recycled papers reviewed here aren't usually available directly from the mill—call the numbers listed here and ask for a local distributor:

Badger Paper Mills	800/826-0494
Boise Cascade	503/790-9722
Fox River Paper	800/543-7675
Georgia Pacific	800/727-3328
Hammerrill	800/242-2148
James River	800/854-5345
Mead	800/345-6323
Simpson	800/366-5556
Weyerhaeuser	800/523-5590

You can also get recycled laser/copier paper from these companies:

Conservatree	415/433-1000, ext. 22
Earth Care Paper	608/223-4000
Greenpeace	800/916-1616
Paper Access	800/727-3701
Paper Direct	800/272-7377

—R. Luhn

The Green PC Suite

In an attempt to capture the *personal* experience with recycled paper, I whipped up a set of tests with the help of various paper and publishing pros, and ran the papers (including a ream of virgin Xerox 4200DP) through an IBM Lexmark 4039 printer. The results confirm much of the above, and reveal some interesting sidelights.

Toner deposition:

I printed out a totally black page, to gauge how evenly toner was deposited and to observe paper curl, which can cause duplexing nightmares. All the papers were uniformly black, but curl varied widely. The best xerographic papers were Fox River's Bond Recycled and James Rivers' Eureka paper. The worst were Badger's Envirographic and Hammer's Savings DP, which curled up like sow bugs.

Fold endurance:

What happens when you take a flyer out of your laser printer, fold it up, stuff it into an envelope, mail it, and take it out? I simulated this common operation and found tiny "breaks" in every paper — where toner in the creases cracked and fell off the page. The big surprise? The virgin Xerox paper was the worst offender, along with Georgia Pacific's Xero/Bond and Hammermill's Unity DP. The best? James River's Eureka 100 paper, which has the highest (60 percent) post-consumer content of any paper tested.

Image sharpness:

I printed out a complex image that included fine lines, curves of varying thickness, and a range of gray scales. All of the papers performed admirably, with the Unity DP and Eureka 100 a little behind the pack. The best by a hair: Fox River's Bond Recycled and Hammermill's Savings DP.

Duplexing:

Here's the ultimate test of any paper. Printing on both sides of a sheet means running the paper through a tortuous path, inverting it, heating it twice, and godknowswhatelse. If a paper curls too much after the first pass, you'll get jams galore. In our tests with a 50-page duplexed document, most of the papers came through like champs. The Weyerhaeuser Recycled Premium paper was the best, lying very flat and stacking with minimal curl. The Hammermill Unity DP and Savings DP papers, however, had a curl that could break your arm; the Fox River paper jammed on one page.

Winners and Losers

My general conclusion? That most of these papers are pretty darn good — good enough for most situations.

By my estimation, the best of the xerographic bunch is James Rivers' Eureka line, with Weyerhaeuser's Recy-

clad Premium paper taking second. The Eureka 100 takes the Green PC ribbon for combining the best of both worlds: it's a bright, stiff paper that also contains a whopping 60 percent post-consumer content. It did great on the Green PC suite, gets raves from printers and corporate users, and its cousin, Eureka, gets the thumbs up from both the GPO and Pitney Bowes.

Just remember that recycled papers are constantly being reformulated in response to complaints from big buyers like the GPO. So don't write off the "losing" papers noted here — they could work fine in your office. Just be careful and test them before you buy. That's good advice for any consumer.

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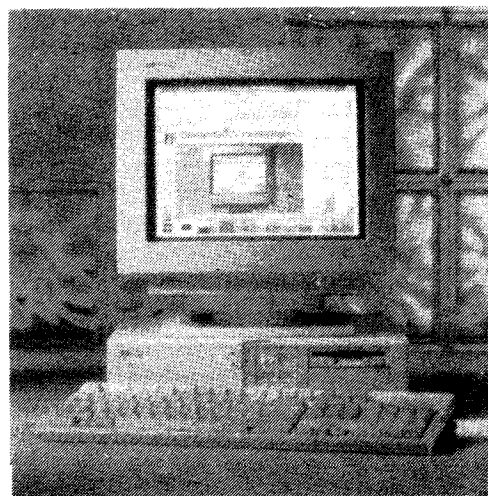
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Recycled Laser/Copier Papers Compared								
Company, Phone Paper Name	Total post- consumer recycled content by fiber	Total post- consumer content by paper weight	Is paper laser & copier guaranteed?	How is paper bleached?	EcoLogo Certified?	On GPO Qualified Products List?	Pitney Bowes Acceptable? (1)	State of Wisconsin Acceptable (2)
Badger Paper Mills, 800/826-0494 Envirographic	20%	Would not divulge	Y	Chlorine gas	N	Y	N	Y
Boise Cascade, 503/790-9722 Aspen Xerographic	12%	25%/10% (3)	Y	Sodium HypoChlorite (4)	Y (5)	N	N	Y (6)
Fox River Paper, 800/543-7675 Fox River Bond Recycled	N/A	30%	Y	Sodium HypoChlorite	Y	N		
Georgia Pacific, 800/727-3328 Recycled Xero/Bond	10%	10%	Y	Chlorine gas	N	N		Y
Hammermill, 800/242-2148 Unity DP	50%	50%	Y	not bleached	N	N		
Savings DP	10%	10%	Y	not bleached	N	Y	N	Y
James River, 800/854-5345 Eureka	35%	30%	Y	Hydrogen Peroxide	Y	Y	Y	
Eureka 100	60%	52%	Y	Hydrogen Peroxide	N	N		
Mead, 800/345-6323 Harmony Recycled Xerographic	unknown	10%	Y	Sodium HypoChlorite	N	Y		
Simpson, 800/366-5556 Emblem Xerographic	10%	10%	Y	Depends on supplier	N	Y	N	N
Weyerhaeuser, 800/523-5590 Recycled Premium Laser Copy	10%	8%	Y		N	Y	N	Y

Notes:

1) An "N" means the paper was tested and did not pass Pitney Bowes' duplex/jamming tests.

2) An "N" means paper was tested and did not perform acceptably. From a draft report; final report due late 1993.

3) 25% post-consumer content in Western papers, 10% in the East.

4) Eastern papers only.

5) EcoLogo certified sheet available by request.

6) Only for paper supplied to the Midwest.