

Top 5 Paper Myths Exposed



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Why Paper Myths Matter To You

There just never was enough time and I was happy to believe the first plausible explanation I could get. You know what I'm talking about. Hurrying from one deadline to the next, there is no time to wonder if the information you receive about a specific paper is for real.

It makes life a whole lot easier if you believe that the first person you ask will give you the right information. Tick the subject off your list and move on to the next deadline.

It didn't occur to me—well, it did, but I didn't want to think about it—that some people I spoke to, even though they had worked in the industry for quite some time, still repeated old paper myths as many had before. Their answers to my questions were simply to:

- a) make me feel better
- b) repeat what they had heard or
- c) make their lives easier.

For more than five years now, I have focused my attention on paper and paper related issues that have awakened my inner Sherlock Holmes.

Introduction

I no longer believe the first myth presented to me, but check at least three sources. If those three fall in line, I'm satisfied ... mostly. If not, I move the number of sources up to five or seven—as much information and digging as needed to make sense of the subject at hand.

In the course of my search, several mill and merchant representatives have repeatedly told me that I am about to open yet another “can of worms” and I am beginning to see that as a compliment. Why should you care?

The more you know about paper, the more you can enhance your design or save money on a project. The more you know, the more creative your solutions will become.

The more you know, the easier and therefore faster you can make your paper decisions. And as we all know in today's world, every minute counts.

So, sit back and enjoy the demystification of five paper myths. I am sure there are many more out there. If you come across a new one or one that has bothered you for awhile, I would appreciate it if you would contact me at: sabine@paperspecs.com.

I will get my Sherlock Holmes cap out and investigate yet another pesky paper myth.

Warm regards,



Sabine Lenz
Palo Alto, California



“One Shade Grown Mexico decaf grande.”

“Two double-shot Caffè Americanos soy.”

Sound like gibberish to you? Just spend five minutes at any Starbucks counter in the world and these orders will be among the less mystifying ones you will hear.

consistency is the key

No matter how confusing the orders may sound to your ears, the person behind the counter knows exactly what the customer has ordered. Someone at Starbucks sat down and defined their system and in every store around the world, this definition is consistently fulfilled every minute of every hour of every day.

if only your life could be so easy ...

The American Forest & Paper Association tried to bring some consistency into the paper world more than 15 years ago with a brightness defining system. Names like “Grade No. 1” and “Grade No. 2” were born and precisely defined based on their brightness levels, which ultimately also reflected the paper’s pricing in the market place.

is brightness really binding?

In today’s business world, 15 years is a long time. With ever-increasing brightness levels in the paper industry, the AF&PA, as well as other companies, have tried to update and redefine these general grade rules by including brightness and opacity in their measurements.

As per the revised standards, a No. 1 sheet today has to have a brightness level of 91 and greater, and a No. 2 sheet has a brightness level from 87.0 to 90.9. So, how come we see No. 3 sheets with brightness levels of over 90 these days? Well, none of the proposed standards

are binding. They are mere “suggestions,” which means any mill can decide for themselves if they want to adhere to the standards ... or not, adding to the myth when they do.

do mills conform to “standards?”

Always being critical of any new myths, I looked for some clarification. Speaking to five VPs from some of the top 10 paper mills in the U.S., here is what it comes down to:

- Brightness and opacity are, by far, not the only concerns when grading a sheet. Grading is based on brightness, opacity, formation, runnability ... and marketing.
- A good quality, brighter sheet is a more expensive sheet to make. Fillers and chemicals, such as fluorescent dyes and optical brighteners, are needed to create paper’s brighter appearance. They help give the paper a blue-white shade, but also take a toll on the paper’s stability and runnability on press. This is what you pay for when it comes to a premium or No. 1 sheet: the assurance that the mill has made a special effort to bring you great brightness, perfect formation and runnability.

how do you know which grade is right for you?

Once you consider a sheet, ask your supplier for a printed sample of this paper one grade below and compare. Why is a printed sample so important? Only a printed sheet, preferably with ink coverage similar to the one you are planning to select, will show you exactly how the paper has performed on press, its consistency, show-through and formation.

Look at one grade below your first choice, as mills are known to constantly upgrade the quality of their papers. Even though a sheet could pass for a No. 1 grade, if the mill already has a No. 1 sheet on the market, they will sell the new sheet below its actual value to complete their offerings ... adding to the myth.

Marketing is everything—and you can reap the benefits.



While visiting a relative recently, I offered to pick up a few things from the store. Sugar was first on her list, so I asked her if she wanted NutraSweet, Splenda or Raw, knowing she was counting calories. “Either one,” she said, “they’re all the same.”

After I educated her on sweeteners in the 21st century and the myth that all “sweet” tasted the same, I was inspired to take a closer look at another “well worn” paper myth that has developed more recently—the brightness myth.

Brightness, whiteness and shade are three very independent paper properties, even though they are often mistakenly used interchangeably—adding to the aura of myth. A paper has all three of these properties, like the four seasons or in our case, three seasons. One does not exist without the other.

In North America, we are used to seeing a value of brightness on everything from copy paper to commercial printing sheets. But more recently, you might have spotted the odd whiteness reference, as well. As different countries have established norms based on their preferences, Europe and the rest of the world have put more emphasis on whiteness, rather than brightness.

International Paper was the first paper company to emphasize whiteness in the U.S. market and several mills have already followed suit. The systems used to measure brightness and whiteness are very different and it would have been helpful if they correlated, but no such luck.

brightness

Brightness is often referred to as the reflection of light off a paper’s surface. Unfortunately, this is only partially correct. What is actually measured is the reflection of light across a wavelength of blue light.

When looking at your TV or computer monitor, you know that images are rendered in RGB (red, green and blue) to make up the incredible color range your eyes can comprehend. To measure brightness, just a fraction of this spectrum is used (only the blue light), ignoring two-thirds of the colors available to you. So, two paper samples with identical brightness can look very different to your eye after all.

Both the International Organization for Standardization (ISO) and Technical Association of the Pulp and Paper Industry (TAPPI) have established industry standards for measuring brightness. And, as if you didn't know it already, those two are not interchangeable.

TAPPI's GE standard, mostly used in North America, is based on a scale of 0-100. The higher the brightness value, the more light is reflected by the sheet of paper. Therefore, a paper with a 98 brightness reflects more light than one with a 92 brightness. The ISO figures do not have direct correlation, but on average run around two points higher than the GE measurements. Globally, brightness is no longer a primary measure for paper. It has been replaced by CIE whiteness, which is more relevant, as it measures the paper much more like your eye perceives it.

whiteness

Whiteness is the reflection of light off a paper's surface—across the full visible spectrum or using the monitor example again, utilizing R, G and B. The CIE standard, developed by the French-based International Commission of Illumination, references the relative degree of whiteness (of near-white materials under outdoor lighting conditions). There would be room for a new whiteness myth right here, but we won't even let it get this far. A perfect reflecting, non-fluorescent white material has a CIE of 100. The key word here is “nonfluorescent.” Many papers today have added Optical Brightening Agents, which boost their CIE values way beyond the 100 mark. So whiteness levels of CIE 146 indicate a sheet that contains OBA and most likely a blue-white shade.

shade

More often than not, the general public likes to make fun of us design-minded people when we get picky about which shade of white to use. After all, there is white, white and white. Shade refers to the actual white color of a paper, with general differentiations of blue-white, balanced white and warm white (sometimes also referred to as blue-white, true white and cream white).

Most of the white papers available today have a blue-white shade. They make the paper appear brighter and therefore, whiter. This shade gives more contrast to the printed image and makes it “pop” off the page, so to speak.

But as you already expected, not all whites should be used for every project. When it comes to full-color printing, the shade of white you print on can directly impact the correct look and feel of your image.

Since a blue-white shade absorbs the warmer colors and reflects more blues and cooler tones, printing sensitive colors, such as skin tones on a blue-white sheet, can easily make your healthy-looking people look gray and discolored.

A balanced or neutral white shade of paper reflects the total color spectrum equally, while a warm white absorbs the blues and cooler colors. Both shades are easier on the eyes when it comes to extended viewing. Just look at the text-heavy books on your shelves and notice they are all printed on softer whites.

So as you can see, every white paper has a brightness, a whiteness and its own shade. And they all are very important and very independent from each other.



**“A 5,000 pound minimum order and six week delivery time.”
Mike could not believe what he was hearing.**

He finally had found the perfect paper for his small but classy project—with the help of the PaperSpecs interactive paper guide—and his printer told him it was a mill item, implying that the paper was only available on a making basis from the mill directly.

“I still think Benefit Vertical is the perfect paper for the job. But what am I supposed to do with 5,000 pounds of it and my deadline is in 2 weeks.” So Mike did what he had to do to get rid of his frustration. He sent me an e-mail. “If there’s anyway you can mark that a paper is a mill item in your interactive paper guide, that would really help.”

a typical case of “mill item myth”

If ever there is some difficulty or inconvenience in getting a paper, the “mill item myth” is the perfect excuse. And more often than not, it works. Slightly intimidated, we listen and follow our paper specialist’s recommendation for another stock out there. It’s not quite what we wanted, but at least it is readily available. Don’t get me wrong, a lot of printers and merchants try hard to get the paper you want, but there are always some out there ...

Well, if you know me a bit by now, you know that statements like the above bring out the Sherlock Holmes in me and of course, this one was too good to let it go. So I spoke to my contact at the mill in question, who was slightly unnerved. No, why would I think it would take six weeks to get the paper and why 5,000 pounds?

The minimum order, as it turned out, is one carton (around 100 pounds) and the paper was sitting ready to be shipped at the mill's warehouse (3-5 days delivery max).

And if one carton is still too much, there are companies that specialize in selling broken cartons, like Glodan.com or ThePaperMillStore.com. Even some of the mills offer small quantities of quality papers online.

so let us clarify the myth

First of all, not every paper merchant carries every paper. How could they? The average merchant covers 25 mills max. And understandably, and especially in today's economy, they only stock papers they know they can sell fairly easily. So if you are looking for a more unusual color or finish, they might have to get it from the mill directly (remember: 3-5 days).

Be aware: A mill order for one merchant might be readily available on the floor of another.

Of course you should get the perfect paper for your project. So if your printer or regular merchant does not have easy access to the paper, contact the mill directly. They are in the business of selling paper and are more than happy to tell you where you can get a specific sheet.



As you're walking down Broadway in Manhattan, you can see them from the corner of your eye. In broad daylight, there are street hawkers selling you Rolex watches.

They look like Rolex watches. They feel like them. Gosh, they even keep time. But you and I know, that they aren't Rolex watches. They're just cheap impersonations.

You should feel the same way about some recycled papers. The ones that shout from the cover of their swatchbook: "Hey, I am recycled!" And you really, truly want to believe you are making a good environmental choice. but are you? Or are you clouded in yet another myth?

is just recycled good enough?

This is not the time to assume anything. Does the swatchbook clearly mention the quantity of recycled content? And even more important, how much post-consumer waste does it include? With paper, as with the fake Rolex watches, be critical and look at what is inside the offering. Many mills spell it right out for you. This paper contains 30% PCW. Hmmm?

Everyone loves acronyms. In the paper industry we differentiate between:

Virgin Fiber—The purest pulp there is—containing no recycled fiber.

Pre-Consumer Waste—This fiber (or paper for that matter) has never seen an end user (you and me). It usually contains leftovers and cutoffs from the mill's production that, right away, get recycled for a new paper batch.

Post-Consumer Waste (PCW)—This is fiber made from the paper you so carefully place in your recycling bin every week.

Total Recycled Fiber (TRF)—The complete amount of recycled fiber, pre- or post-consumer that is used to make this paper.



be specific when spec'ing a paper

It might sound as good as it gets if a mill claims their paper is 100% recycled—if the recycling is only done within the mill's walls (PreConsumer Waste)...

Just by looking at the definitions above, any paper with PCW sounds like the more environmentally friendly choice. And you are right. The more PCW the better.

Alternatively, select a 100/30 (or 100TRF/30PCW) sheet, which tells you exactly how much of each has been used to create this paper. In this case, the paper is made of 100% recycled fiber content, of which 30% is post-consumer waste.

what to look out for

The Environmental Protection Agency (EPA) has set forth guidelines for government agencies that buy paper. I don't want to speculate how many of the agencies follow these guidelines, but they are a good starting point if you have not spec'ed recycled paper before.

Their recommendation is based on a minimum of

- 10% PCW for coated papers and
- 30% PCW for uncoated papers.

A lot of mills fulfill this minimum requirement and some strive to give you an even more environmentally friendly paper, with ever increasing PCW. To save you from having to do the legwork, the PaperSpecs interactive paper guide tells you exactly how much recycled content is in a sheet.

Do something good for the environment today. Lift the fog surrounding the recycled myth and spec' a paper that meets or exceeds the EPA guidelines. Every bit helps.



There they are again, the odd, three-letter acronyms. I find them scattered throughout copy or under the waterfall of a swatchbook. They show up everywhere ... PCF, TCF, ECF, PCF, TCF, ECF.

Enough confusion. I'll just call the mill's customer service department. They'll know.

"You want to know whether ... what?" My question obviously startles the friendly lady. She covers the phone and I can hear her call around the room. "Does someone know about ... ? Anyone?"

don't be deterred

Now, it's time to bring out your inner Sherlock Holmes. You definitely want to know what you are spec'ing and you should not be deterred, even if your spec rep or printer doesn't know right away.

For years, the trend in the paper industry has been towards whiter and brighter papers. The original AF&PA grade chart (the one that used to determine No. 1, No. 2, etc., grades) ended with a brightness of 87.9, but now, papers with 95-98 brightness are common.

To achieve these wonderful brightness levels, pulp mills used to use chlorine gas. But the chlorine molecules combined with organic molecules in the wood fibers created cancer-causing dioxins in the environment.

The good news is that virtually all North American mills have converted to "elemental chlorine-free" processes. The ECF process uses chlorine derivatives, primarily chlorine dioxide, instead of elemental chlorine gas.

three mystifying chlorines

There are three terms commonly used in the papermaking process for bleaching paper:

Elemental Chlorine-Free indicates virgin or recycled fiber that is bleached with chlorine dioxide or other chlorine compounds. This process significantly reduces hazardous dioxins, but does not completely eliminate them.

Processed Chlorine-Free indicates that the recycled and virgin fiber in the sheet are unbleached or bleached with nonchlorine compounds. PCF papers are not considered totally chlorine-free because we cannot vouch for how the recycled fibers were bleached originally.

Totally Chlorine-Free means that 100 percent virgin fiber (including virgin tree-free fiber) is unbleached or bleached with nonchlorine compounds. It may also include wood or alternative fibers, such as kenaf. The term TCF cannot be used on recycled paper because the content of the original paper is unknown.

The paper industry changes faster than ever before. New and updated lines are coming into the market at rapid speed from all over the world. So, don't be shy about asking questions.

don't assume anything

Bring out the Sherlock Holmes in you and make sure you know which "CF" you are spec'ing. If a paper is not tagged PCF, TCF or ECF, chances are it was bleached with elemental chlorine gas and is not a good choice.

Watch out Sherlock, we have come across the occasional mill that claims to "operate chlorine-free," which I am sure they do, but their products were not because they buy their pulp "ready made" and not even ECF.



In the PaperSpecs paper guide, we make every effort to mark each of the more than 4,200 papers we list with its appropriate chlorine code.

If you are not a member of PaperSpecs, ask your mill rep or call the mill's sample department. They'd love to hear all your questions, and if they don't know the answers off-hand, they'll be happy to find out for you.

so what should you spec?

From an environmental point of view, PCF papers are the preferable choice because they are bleached with nonchlorine compounds and contain recycled fiber, while TCF refers to the same bleaching process, but only applies to 100% virgin papers.



Remember life before Google? You had to spend hours trying to find the right information. It drove you crazy until Google came along and solved your search problems in an instant.

What if you could get your paper information in less than five seconds?

- Which mill offers a light blue, laid finish sheet?
- Is the paper suitable for laser printing?
- Is the 105 lb. Text suitable for business reply cards?

stop going through dozens of swatchbooks

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About the Author



Sabine Lenz is the founder of PaperSpecs, the first interactive paper guide specifically designed for paper specifiers. For more than 15 years, she has been a graphic designer in Germany, Australia and the U.S.

Sabine worked on design projects ranging from corporate identities to major roadshows and product launches. From start-ups to Fortune 500 companies, her list of clients included Oracle, Sun Microsystems, Deutsche Bank, IBM and KPMG.

Seeing designers struggle worldwide to stay current with new papers and paper trends inspired Sabine to create PaperSpecs, an independent, comprehensive and interactive paper guide and publish the weekly e-newsletter “PaperTalks.” She is also a speaker on paper issues and educational topics related to the paper industry.

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