

# A Comprehensive Guide

Helping Users Better Understand Uncoated Paper

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# PAPER 101

from NEENAH PAPER

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## types of paper

### WRITING PAPER

A lightweight paper used most often for letterhead and other correspondence. Most common weights are 20lb., 24lb., and 28lb., and the paper is often watermarked. A watermark can be an image, logo or type (perhaps the paper name) embedded in the paper during the papermaking process. It is usually lighter in tone than the paper.

**Typically in 20lb., 24lb., 28lb. and 32lb.**

### COVER PAPER

Durable, heavier weight papers utilized for brochure covers, annual report covers, business cards, and much more.

**Typically in 60lb., 65lb., 80lb., 100lb., 110lb., 120lb., 130lb., and 165lb. cover.**

### BOND PAPER

A strong, durable writing paper, consisting of wood fiber, cotton fiber, or both; it is most commonly used for letterhead, stationery, business forms, etc.

**Typically in 20lb. and 24lb.**

### PARCHMENT PAPER

Originally made from animal skins, the parchment paper we now use is an imitation of this material. It is characterized by a soft mottled look, available in a variety of pale and pastel hues. It is often used for certificates, invitations and announcements.

**Typically in 24lb. and 65lb.**

### CARD STOCK

A type of cover paper, similar to vellum bristol.

**Typically found in 65lb., but also in weights up to 110lb.**

### INDEX PAPER

A stiff paper with a smooth finish offering high bulk but low weight. The 90lb. index is commonly used by small businesses for postcard mailings because it meets postal requirements.

**Typically in 90lb., 110lb. and 140lb.**

### TAG PAPER

A heavy utility grade of paper commonly used for clothing and accessories hangtags as well as event tickets. Tag paper must be strong and durable, yet deliver a strong performance on press.

**Typically in 100lb., 125lb. and 150lb.**

### VELLUM BRISTOL

A fine quality card stock with a toothy surface that makes it relatively absorbent and fast drying. This paper is available in multiple colors, and is commonly used by small businesses for postcard mailings because it meets postal requirements. It is also frequently used for greeting cards, posters and covers.

**Typically in 57lb., 67lb. and 80lb. bristol.**

### BRIGHT COLORED PAPERS

This is a paper that attracts attention, and it is certainly less expensive than printing a full bleed background on white paper. It is most commonly available in 24lb. writing and 65lb. cover. Typical business end use applications include flyers, announcements, newsletters, direct mail, organizational dividers and labels. These papers are recyclable and environmentally friendly. Many of these papers have recycled content and are even FSC® certified.



## paper content



### WOOD

Wood pulp comes from softwood trees such as spruce, pine, fir, larch and hemlock, and hardwoods such as eucalyptus, aspen and birch. Some paper is made brand-new from trees, either small trees harvested just for that purpose, or from sawmill scraps left over when larger trees are made into lumber. Typically, printing and writing papers are made from hardwood fiber blends, while newsprint and kraft paper, such as that used for shopping bags, are made from softwood fibers.



### COTTON

Cotton linters, tiny fibers that adhere to the cottonseed, are gathered to produce the pulp used to make cotton fiber papers. Today most cotton content papers are made for premium letterhead applications, and are usually available in 25% or 100% cotton content. Papers made from cotton fiber are highly regarded for their tactility, quality and longevity.



### RECYCLED FIBER

This fiber is derived from recovered material, and can fall into two different categories: pre consumer and post consumer.

#### **Pre consumer fiber**

These materials have not reached their intended end-use by a consumer, and include allowable waste left over from manufacturing, converting and printing processes. Examples include: paper mill production and converting scraps, or pre consumer deinking material.

#### **Post consumer fiber**

Post consumer material is defined as waste paper such as office paper and newspaper that has reached a consumer and served its intended purpose. It is then separated from other pieces of solid waste materials to be returned for recycling into a new type of paper. Examples include office wastepaper, junk mail and magazines from people's homes, even undeliverable mail at the Postal Service's dead-letter office. There are different levels of post consumer; the greater the percentage of post consumer material in the paper, the less resource intensive it is because it is closer to true "closed-loop" recycling.



### TREE FREE

A tree free paper can be made from a number of agricultural products other than trees, including bagasse (sugar cane), bamboo, and of course, cotton.



## textures

### LINEN

A crisp embossed finish made by pressing a pattern that resembles the look of fine linen fabric into the paper. The best linen papers have an identical pattern pressed into both sides of the sheet.

### LAID

The closely "lined" appearance in the finish of writing and printing papers created during the formation of fibers as they become a sheet of paper. A handmade brass cylinder called a dandy roll lightly touches the surface and displaces the fibers, creating the laid pattern before the sheet dries. Laid papers resemble the look of handmade paper going back to the origins of the first papers made by the Chinese.

### VELLUM

A paper finish that exhibits a noticeable toothy surface that is very similar to eggshell or antique finishes. A vellum finish is relatively absorbent, providing good ink penetration. Many fine artists use vellum paper for their drawings because of the way the texture pulls the graphite from the pencil.

### FELT

A finish applied to the paper in one of two ways. Originally felt papers were made at the wet end of the paper machine by using felts of a distinctive weave. The fibers would settle into the weave, creating a paper that mimicked the woven material. Today, the vast majority of felt papers are made by embossing this distinctive pattern into the paper while it is on the paper machine. Embossed felt papers are far more consistent sheet after sheet and run after run.



## paper properties

### OPACITY

This is the amount of "show through" in a sheet from one side through to the other. The higher the opacity, the less likely the printing on one side will be visible from the other side. Greater opacity is achieved by either making the paper thicker during manufacturing, adding colored dyes to stop light from passing through the sheet, or adding certain chemicals like calcium carbonate to fill voids within the paper fibers, thereby making it more opaque.

### FORMATION

Refers to the uniformity or lack of it in the distribution of the wood, cotton or alternative fibers used when manufacturing paper. It can be observed by looking through the sheet in front of a light source; a good formation is uniform and provides an optimum printing surface, while a poor formation is cloudy and may cause a printed image to appear mottled and uneven.

### BRIGHTNESS

A technical measurement of the light reflected back from a paper. The higher the number is (up to 100), the brighter the sheet. This measurement usually applies to white paper.

### ARCHIVAL

These papers are made in a neutral pH system, usually buffered with calcium carbonate. This increases the longevity of the paper, making them ideal for legal documents. Today, most premium writing, text and cover papers are made acid free.



## paper weights

### BASIS WEIGHT

The weight (in pounds) of a ream (500 sheets) of paper cut to the basic size for a particular grade of paper. Basic sizes are: writing = 17 x 22, text = 25 x 38, cover = 20 x 26. Basis weight strongly influences the strength properties of a paper, as well as other properties such as thickness, opacity, and runnability. The term and measurement of basis weight is primarily used in North America.

### GSM WEIGHT

In the metric system, used primarily outside North America, basis weight is referred to as grammage and is given in grams per square meter.

Paper Weights can be confusing. For example, one might think that 90lb. index is heavier than 80lb. cover. However, because of the way basis weights are calculated, it's not. Here is a comparison chart to help you when choosing a paper weight.

Paper	Comparable to:	GSM	Paper	Comparable to:	GSM
20lb. Writing/Bond	50lb. Text	75	100lb. Text	67lb. Bristol (similar)	148
24lb. Writing/Bond	60lb. Text	90	67lb. Bristol	100lb. Text (similar)	147
28lb. Writing/Bond	70lb. Text	105	90lb. Index	60lb. Cover (similar)	163
32lb. Writing/Bond	80lb. Text	120	110lb. Index	74lb. Cover (similar)	199
50lb. Text	20lb. Writing/Bond	74	140lb. Index	93lb. Cover (similar)	253
60lb. Text	24lb. Writing/Bond	89	65lb. Cover	97lb. Index (similar)	176
70lb. Text	28lb. Writing/Bond	104	80lb. Cover	120lb. Index(similar)	216
80lb. Text	32lb. Writing/Bond	118	100lb. Cover	150lb. Index (similar)	270



## environmental properties



### FOREST STEWARDSHIP COUNCIL™ (FSC®)

FSC certification is a third party certification program that ensures the paper meets the Forest Stewardship Council's standards for well-managed forests and the responsible use of forest resources. To identify a paper as FSC certified, each touchpoint from the forest to the printer finishing the job must be certified to hold up to regress auditing standards.



### GREEN SEAL™

Green Seal certification is a third party certification whose symbol, when associated with a product, assures the customer that the papers are made with a minimum of 30% post consumer fiber and that mill processes, including packaging, are environmentally preferable.



### GREEN-E

Green-e certification is a third party certification attesting that renewable electricity has replaced fossil fuels with energy generated from sources such as hydro, wind, solar power or biomass energy sources.



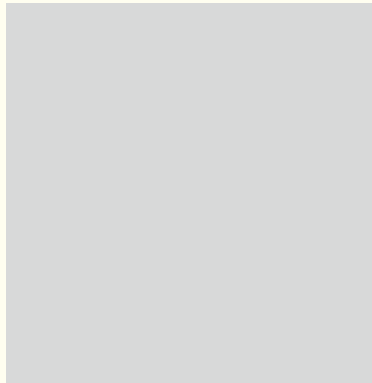
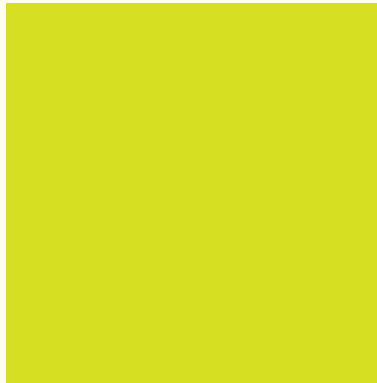
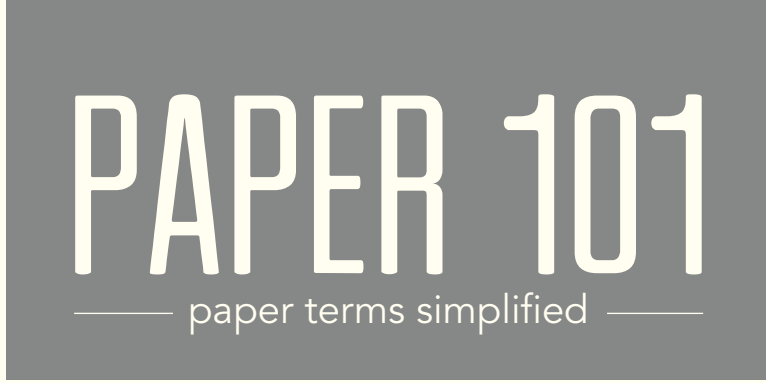
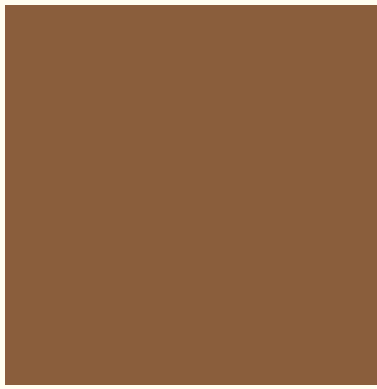
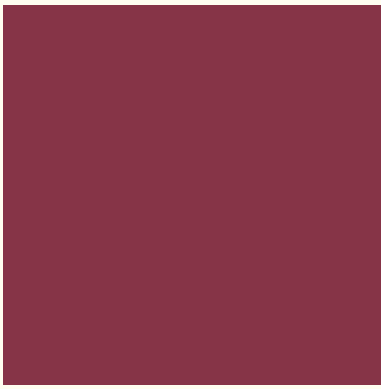
### CARBON NEUTRALITY (Net Zero Emissions)

Achieve net zero carbon emissions by countering the amount of carbon released with an equivalent amount sequestered or buying enough carbon credits to make up the difference.



### PROCESSED CHLORINE FREE

A term reserved only for papers made with 100% post consumer recycled fiber, meaning the paper is manufactured without elemental chlorine or chlorine derivatives.



- CLASSIC CREST® Papers
- CLASSIC® Linen Papers
- CLASSIC® Laid Papers
- CLASSIC COTTON® Papers
- CRANE'S CREST® Papers
- ENVIRONMENT® Papers
- CAPITOL BOND® Papers
- Neenah® Color Copy
- ASTROBRIGHTS® Papers
- EXACT® Papers
- ASTROPARCHE® Papers



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