

## Understanding Paper Weights

### WHO SHOULD READ THIS BULLETIN:

Any person struggling with the arcane system of paper weights commonly used in North America.

“My last printer said I used a 24# paper previously. This time I used a 50# paper and the book came out thinner. How can this be?”

Questions like this arise from a lack of understanding of paper basis weights. This, plus the failure of printers to explain the practical implications of paper weight, can create great frustration and confusion.

The system of paper weights dates back to medieval Europe. It is not the purpose of this bulletin to give an in-depth history of the evolution of paper weights, but instead to present an overview that will shed light on the system that is used exclusively throughout North America.

It is important to understand the system so that when you hear paper defined as, say, 50# offset, you understand what it means.

typically purchased in 8<sup>1</sup>/<sub>2</sub>”x11” or 12”x18” for digital use, and 23”x35” or 26”x40” for offset use. Nonetheless, the basis size for these papers is 25”x38”.

**Basis weight** – Now we come to the meat of the matter. For any paper type, we take the total weight of one ream of paper cut to the basis size. This gives us our basis weight. Let’s use 20# bond, one of the most common papers in general use, as an example. One ream (500 sheets, always) of the basis size (17”x22”) weighs twenty pounds. Now, we can cut that ream into quarters to give us letter size (8<sup>1</sup>/<sub>2</sub>”x11”) then pile 200,000 of those letter-sized sheets on a skid, the way Copresco buys it. Even though this paper will now weigh one ton, it is still 20# bond, because one ream of the basis size still weighs 20 pounds.

# – The number sign, when it appears after the number, commonly signifies “weight in pounds.”

### Common Weights

It is worth noting that, although this system allows for virtually any weight of any paper to be defined, in fact only certain weights are manufactured. You will never be able to buy, say, a 100# index paper. Index is manufactured in 90#, 110# and 140# weights. In fact, because index is the only type of paper available in these weights, print and paper professionals will often refer to such paper as simply “90#” instead of 90# index.

### Definitions

**Paper type** – Terms such as offset, ledger, tag, bristol and index tell us what type of paper we are dealing with. Many of the names are quite obvious such as book and cover. Some, like newsprint, are very specific in use; others, such as bond, encompass an incredible variety of papers.

**Ream** – This technically means 500 sheets of paper. It does not mean that the paper is necessarily wrapped or cartoned in units of 500; in fact, for heavy-weight papers, this would lead to outrageously thick packages.

It is also not the unit of measure used for pricing paper. Cost is quoted by hundred-weight (cwt) or by 1,000 sheets (M).

Suffice it to say that it would not be practical to talk about the weight of a single sheet of paper, so the 500-sheet ream is the unit that has been chosen to illustrate such comparisons.

**Basis size** – This is the size we presume a type of paper to be when we determine weight. It is not necessarily the size the paper is most commonly sold in. For example, book or offset papers are most

### Metric System

While North America uses the age-old system previously discussed, we would be remiss not to mention the metric system now used by the rest of the world: grams per square meter. This system, like everything else metric, is at first examination very simple. The weight of one sheet of any paper measuring 1 meter x 1 meter is the basis weight. No need to understand the concept of ream or paper type. This weight will often be printed in miniscule letters on a package label. For example: 75 g/m<sup>2</sup>.

While most of the world embraces the metric system, Americans have thus far militantly resisted anything that references grams or meters. This is unlikely to change any time in the near future.

## TechTopics

In 2002, Copresco celebrated 15 years of technical innovation and digital printing service.



## General Information

Still confused about paper weights? Call the experts at Copresco. Our staff has extensive knowledge of paper.

We offer a wide range of papers in various weights, finishes and colors. We will be happy to recommend a stock that is best suited for your job and show you paper swatches or make up a sample of your book.

Our staff will also gladly answer your questions about software applications, digital files preparation and transmission, binding and our digital printing services.

*TechTopics* is a continuing series of technical bulletins on digital technology, document preparation and on-demand printing.

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*TechTopics* issues are also available in PDF format on our website.

*Note: See TechTopics No. 11 for details on metric paper sizes. No. 18 will contain a comprehensive chart comparing the weights of six different types of paper.*



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