

Basis Weights

Basis weight, a term used in the United States, is a measurement system we all love but can be very confusing for those new to the industry. When my son first entered the printing industry, he came home one evening and asked this question: "I was printing a 80 lb text and an 80 lb cover. One was light and the other heavy. How can they both be 80 lb?" Well I had to tell him my theory on how the basis weight measuring system we use today evolved. Americans adopted the current measuring system from our fore bearers - the English who were at the time using feet, inches, etc. The way I see, as my theory and it just my theory, it goes like this:

Long time ago there were no large paper companies. Most, if not all, were small shops making a grade or a couple of grades. One small paper maker was making 8-1/2" x 11" sheets of paper. They had to figure out a better measurement system. In making their paper, they made a frame that measured 17" x 22" and was created to make 4-sheets at one time. Well, they made a weight of pulp and made one 17" x 22" sheet of paper. They figured they would have to make many more to somehow come up with a weight measuring system so they decided to make 499 more sheets, each measuring 17" x 22". Now with the 500 sheets they placed the paper on a scale and the 500 sheets weighed 20 lb. They then made an amount of heavier pulp and did they same thing, making 500 sheets, each measuring 17" x 22". When they weighed the 500 sheets the stack weighed 24 lbs! They called this grade "Substance 20 or 24 writhing" which was a standard paper for the pen at the time.

Now there was another small paper maker down the sheet. They were making book paper which was a total different size from the writing grade the other paper maker was making. They decided the best frame size form them would be 25" x 38" to get the maximum amount of sheets. Following the same method the writing paper maker utilized, they made 500 sheets measuring 25" x 38" of a pulp weight, When they placed the 500 sheets on a scale the paper weighed 50 lbs! They then made a heavier weight pulp and again made 500 sheets and weighed the paper. The 500 sheets weighed 60 lbs!

Now as it goes, another paper maker was making heavy paper for covers. Since their paper size was entirely different from the paper maker making writing or book grades they came up with a frame size of 20" x 26". Following the methodology of the other two paper makers, they made their heavy pulp and made 500 sheets. They then weighed the paper, and it turned out the pile of 500 sheets weighed 80 lbs!

What you can see is that the process was very simple. A 80 lb Book weight, for example, and a 80 lb Cover both would to have the same basis weight. However, it is the frame size that derives the weight. At some point when the book paper maker made 500 sheets, each measuring 25" x 38" the pile weighed 80 lbs. The same principle applied for the cover maker. They made 500 sheets, each measuring 20" x 26" and when weighed they measured 80 lbs! Now you can see why my son was confused!

There are many different basis weight frame sizes that have resulted in differing basis weights. Maybe someday the United States will join the rest of the world and utilize the metric system rather than basis weights. Until then, you can use your International Paper Stock Source Book to easily make any weight conversions!