

The following reference tables are included in this section in the order listed:

Equivalent Weights

Metric Conversion Table

Paper Weight Reference Chart

Approximate Roll Weights

Paper Temperature Conditioning Chart

## EQUIVALENT WEIGHTS

| Equivalents<br>For | BOOK<br>(25 x 38) | BOND<br>(17 x 22) | COVER<br>(20 x 26) | BRISTOL<br>(22 1/2 x 28 1/2) | INDEX<br>(25 1/2 x 30 1/2) |
|--------------------|-------------------|-------------------|--------------------|------------------------------|----------------------------|
| BOOK               | 30                | 12                | 16                 | 20                           | 25                         |
|                    | 40                | 16                | 22                 | 27                           | 33                         |
|                    | 45                | 18                | 25                 | 30                           | 37                         |
|                    | 50                | 20                | 27                 | 34                           | 41                         |
|                    | 55                | 22                | 30                 | 37                           | 45                         |
|                    | 60                | 24                | 33                 | 41                           | 49                         |
|                    | 65                | 26                | 36                 | 44                           | 53                         |
|                    | 70                | 28                | 38                 | 47                           | 57                         |
|                    | 75                | 30                | 41                 | 51                           | 61                         |
|                    | 80                | 32                | 44                 | 54                           | 65                         |
|                    | 90                | 36                | 49                 | 61                           | 74                         |
|                    | 100               | 39                | 55                 | 68                           | 82                         |
|                    | 120               | 47                | 66                 | 81                           | 98                         |
| BOND               | 33                | 13                | 18                 | 22                           | 27                         |
|                    | 41                | 16                | 22                 | 27                           | 33                         |
|                    | 51                | 20                | 28                 | 34                           | 42                         |
|                    | 61                | 24                | 33                 | 41                           | 50                         |
|                    | 71                | 28                | 39                 | 48                           | 58                         |
|                    | 81                | 32                | 45                 | 55                           | 67                         |
|                    | 91                | 36                | 50                 | 62                           | 75                         |
|                    | 102               | 40                | 56                 | 69                           | 83                         |
| COVER              | 91                | 36                | 50                 | 62                           | 75                         |
|                    | 100               | 40                | 55                 | 68                           | 82                         |
|                    | 110               | 43                | 60                 | 74                           | 90                         |
|                    | 119               | 47                | 65                 | 80                           | 97                         |
|                    | 146               | 58                | 80                 | 99                           | 120                        |
|                    | 164               | 65                | 90                 | 111                          | 135                        |
|                    | 183               | 72                | 100                | 123                          | 150                        |
|                    | 238               | 94                | 130                | 160                          | 194                        |
| BRISTOL            | 84                | 33                | 46                 | 57                           | 69                         |
|                    | 99                | 39                | 54                 | 67                           | 81                         |
|                    | 114               | 45                | 62                 | 77                           | 93                         |
|                    | 119               | 47                | 65                 | 80                           | 97                         |
|                    | 148               | 58                | 81                 | 100                          | 121                        |
|                    | 178               | 70                | 97                 | 120                          | 146                        |
| INDEX              | 110               | 43                | 60                 | 74                           | 90                         |
|                    | 134               | 53                | 74                 | 91                           | 110                        |
|                    | 171               | 67                | 94                 | 115                          | 140                        |
|                    | 208               | 82                | 114                | 140                          | 170                        |

Example : What is the equivalent weight of a Sub 70 BOOK in a BOND paper? Refer to Sub 70 in the Book column. Sub 70 in a BOOK paper is equivalent to Sub 28 BOND paper as indicated on the same line

## METRIC CONVERSION TABLE

Listed below is a conversion table showing metric weights in grams per square meter (g/m<sup>2</sup>) for commonly used basis weights in American or English usage. Note that no basic size is necessary in describing the metric weight, but simply the weight in g/m<sup>2</sup>. The United States is not at this moment officially on the metric system, but metric weights are currently in use elsewhere on the North American continent (Canada has already made the official conversion), and it is anticipated that over a period of the next few years metric weights will come into more common usage in the U.S. This simple table is provided as a familiarization device.

| PRESENTLY USED BASIS WEIGHTS IN POUNDS PER 500 SHEETS |                   |                    |                       |                                                     | – BASIC SIZE IN INCHES                            |                  |                                          |
|-------------------------------------------------------|-------------------|--------------------|-----------------------|-----------------------------------------------------|---------------------------------------------------|------------------|------------------------------------------|
| BOND<br>(17 X 22)                                     | BOOK<br>(25 X 38) | COVER<br>(20 X 26) | BRIST OL<br>(23 X 35) | BRISTOL<br>(22 <sup>1/2</sup> X 28 <sup>1/2</sup> ) | INDEX<br>(25 <sup>1/2</sup> X 30 <sup>1/2</sup> ) | TAG<br>(24 X 36) | METRIC<br>WEIGHTS<br>(g/m <sup>2</sup> ) |
|                                                       | 20                |                    |                       |                                                     |                                                   |                  | 30                                       |
| 9                                                     |                   |                    |                       |                                                     |                                                   |                  | 34                                       |
|                                                       | 24                |                    |                       |                                                     |                                                   |                  | 36                                       |
| 11                                                    |                   |                    |                       |                                                     |                                                   |                  | 41                                       |
|                                                       | 30                |                    |                       |                                                     |                                                   |                  | 44                                       |
| 13                                                    | 33                |                    |                       |                                                     |                                                   | 30               | 49                                       |
|                                                       | 35                |                    |                       |                                                     |                                                   |                  | 52                                       |
| 15                                                    |                   |                    |                       |                                                     |                                                   |                  | 56                                       |
|                                                       | 40                |                    |                       |                                                     |                                                   |                  | 59                                       |
| 16                                                    |                   |                    |                       |                                                     |                                                   |                  | 60                                       |
|                                                       | 45                |                    |                       |                                                     |                                                   | 40               | 65                                       |
|                                                       | 50                |                    |                       |                                                     |                                                   |                  | 67                                       |
| 20                                                    |                   |                    |                       |                                                     |                                                   |                  | 74                                       |
|                                                       |                   |                    |                       |                                                     |                                                   | 50               | 75                                       |
|                                                       | 60                |                    |                       |                                                     |                                                   |                  | 81                                       |
| 24                                                    |                   |                    |                       |                                                     |                                                   |                  | 89                                       |
|                                                       |                   |                    |                       |                                                     |                                                   | 60               | 90                                       |
| 28                                                    | 70                |                    |                       |                                                     |                                                   |                  | 98                                       |
|                                                       |                   |                    |                       |                                                     |                                                   |                  | 104                                      |
|                                                       |                   |                    |                       |                                                     |                                                   |                  | 105                                      |
|                                                       |                   | 40                 |                       |                                                     |                                                   | 70               | 108                                      |
| 32                                                    | 80                |                    |                       |                                                     |                                                   |                  | 114                                      |
|                                                       |                   |                    |                       |                                                     |                                                   |                  | 118                                      |
|                                                       | 90                |                    |                       |                                                     |                                                   | 80               | 120                                      |
| 36                                                    |                   |                    |                       |                                                     |                                                   |                  | 130                                      |
|                                                       |                   |                    |                       |                                                     |                                                   |                  | 133                                      |
|                                                       |                   | 50                 |                       |                                                     |                                                   | 90               | 135                                      |
|                                                       | 100               |                    |                       |                                                     |                                                   |                  | 146                                      |
| 40                                                    |                   |                    |                       | 67                                                  |                                                   |                  | 147                                      |
|                                                       |                   |                    |                       |                                                     |                                                   |                  | 148                                      |
|                                                       |                   |                    |                       |                                                     |                                                   |                  | 150                                      |

(CONTINUED ON NEXT PAGE)

## METRIC CONVERSION TABLE

| BOND<br>(17 X 22) | BOOK<br>(25 X 38) | COVER<br>(20 X 26) | BRISTOL<br>(23 X 35) | BRISTOL<br>(22 <sup>1/2</sup> X 28 <sup>1/2</sup> ) | INDEX<br>(25 <sup>1/2</sup> X 30 <sup>1/2</sup> ) | TAG<br>(24 X 36) | METRIC<br>WEIGHTS<br>(g/m2) |
|-------------------|-------------------|--------------------|----------------------|-----------------------------------------------------|---------------------------------------------------|------------------|-----------------------------|
|                   |                   | 60                 |                      |                                                     |                                                   |                  | 162                         |
|                   |                   |                    |                      |                                                     | 90                                                | 100              | 163                         |
|                   |                   |                    | 100                  | 80                                                  |                                                   |                  | 175                         |
|                   |                   | 65                 |                      |                                                     |                                                   |                  | 176                         |
|                   | 120               |                    |                      |                                                     |                                                   |                  | 178                         |
|                   |                   | 70                 |                      |                                                     |                                                   |                  | 189                         |
|                   |                   |                    |                      | 90                                                  |                                                   |                  | 197                         |
|                   |                   |                    |                      |                                                     | 110                                               |                  | 199                         |
|                   |                   |                    |                      |                                                     |                                                   | 125              | 203                         |
|                   |                   | 80                 |                      |                                                     |                                                   |                  | 216                         |
|                   |                   |                    | 125                  |                                                     |                                                   |                  | 218                         |
|                   |                   |                    |                      | 100                                                 |                                                   |                  | 219                         |
|                   |                   |                    |                      |                                                     |                                                   | 150              | 244                         |
|                   |                   |                    |                      |                                                     | 140                                               |                  | 253                         |
|                   |                   |                    | 150                  |                                                     |                                                   |                  | 262                         |
|                   |                   |                    |                      | 120                                                 |                                                   |                  | 263                         |
|                   |                   | 100                |                      |                                                     |                                                   |                  | 270                         |
|                   |                   |                    |                      |                                                     |                                                   | 175              | 285                         |
|                   |                   |                    | 175                  |                                                     |                                                   |                  | 306                         |
|                   |                   |                    |                      | 140                                                 | 170                                               |                  | 307                         |
|                   |                   |                    |                      |                                                     |                                                   | 200              | 325                         |
|                   |                   |                    | 200                  |                                                     |                                                   |                  | 349                         |
|                   |                   |                    |                      | 160                                                 |                                                   |                  | 351                         |
|                   |                   | 130                |                      |                                                     |                                                   |                  | 352                         |
|                   |                   |                    |                      | 180                                                 |                                                   |                  | 395                         |
|                   |                   |                    |                      |                                                     | 220                                               |                  | 398                         |
|                   |                   |                    |                      |                                                     |                                                   | 250              | 407                         |
|                   |                   |                    |                      | 200                                                 |                                                   |                  | 438                         |

## CONVERSION FORMULAS

Given the metric weight (g/m2), convert to basis weight in pounds:

$$\frac{\text{Metric weight} \times \text{Basis area in inches}}{1406.5} = \text{Basis weight in pounds}$$

Given the basis weight in pounds, convert to metric weight:

$$\frac{\text{Basis weight pounds} \times 1406.5}{\text{Basis area inches}} = \text{g/m2}$$

Round off result to closest even number

## SPECIAL SIZE WEIGHT CALCULATOR - PAPER WEIGHT REFERENCE CHART

| BOND,<br>LEDGER |         | BOOK,<br>TEXT |         | COVER |         | BRISTOL |         | BRISTOL   |                                       | INDEX |                                       | TAG   |         |
|-----------------|---------|---------------|---------|-------|---------|---------|---------|-----------|---------------------------------------|-------|---------------------------------------|-------|---------|
| Basis           |         | Basis         |         | Basis |         | Basis   |         | Basis     |                                       | Basis |                                       | Basis |         |
| Sub             | 17 x 22 | Sub           | 25 x 38 | Sub   | 20 x 26 | Sub     | 23 x 35 | Sub       | 22 <sup>1/2</sup> x 28 <sup>1/2</sup> | Sub   | 25 <sup>1/2</sup> x 30 <sup>1/2</sup> | Sub   | 24 x 36 |
|                 |         |               |         |       |         |         |         |           |                                       |       |                                       |       |         |
| 8               | .0428   | 20            | .0421   |       |         |         |         |           |                                       |       |                                       |       |         |
| 9               | .0481   |               |         |       |         |         |         |           |                                       |       |                                       |       |         |
|                 |         | 24            | .0505   |       |         |         |         |           |                                       |       |                                       |       |         |
| 10              | .0535   | 25            | .0526   |       |         |         |         |           |                                       |       |                                       |       |         |
| 11              | .0588   | 27            | .0568   |       |         |         |         |           |                                       |       |                                       |       |         |
| 12              | .0642   | 30            | .0632   |       |         |         |         |           |                                       |       |                                       |       |         |
| 13              | .0695   | 33            | .0695   |       |         |         |         |           |                                       |       |                                       |       |         |
|                 |         | 35            | .0737   |       |         |         |         |           |                                       |       |                                       |       |         |
| 15              | .0802   |               |         |       |         |         |         |           |                                       |       |                                       |       |         |
| 16              | .0856   | 40            | .0842   |       |         |         |         |           |                                       |       |                                       |       |         |
|                 |         | 45            | .0947   |       |         |         |         |           |                                       |       |                                       |       |         |
| 20              | .1070   | 50            | .1053   |       |         |         |         |           |                                       |       |                                       |       |         |
| 24              | .1283   | 60            | .1263   |       |         |         |         |           |                                       |       |                                       |       |         |
| 28              | .1497   | 70            | .1474   | 40    | .1538   |         |         |           |                                       |       |                                       |       |         |
| 32              | .1711   | 80            | .1684   | 45    | .1730   |         |         | 57        | .1778                                 |       |                                       |       |         |
| 36              | .1925   | 90            | .1895   | 50    | .1923   |         |         |           |                                       |       |                                       |       |         |
| 40              | .2138   | 100           | .2105   |       |         |         |         | 67        | .2090                                 |       |                                       |       |         |
| 44              | .2352   |               |         | 60    | .2308   |         |         | 80        | .2489                                 | 90    | .2314                                 | 100   | .2315   |
|                 |         | 120           | .2526   | 65    | .2500   | 100     | .2484   | 82<br>1/2 | .2573                                 |       |                                       |       |         |
|                 |         | 140           | .2947   |       |         |         |         | 90        | .2807                                 | 110   | .2829                                 | 125   | .2894   |
|                 |         | 150           | .3158   | 80    | .3077   | 125     | .3106   | 100       | .3119                                 |       |                                       |       |         |
|                 |         |               |         | 94    | .3615   |         |         |           |                                       |       |                                       |       |         |
|                 |         |               |         | 100   | .3846   | 150     | .3727   | 120       | .3743                                 | 140   | .3600                                 | 150   | .3472   |
|                 |         |               |         | 110   | .4231   | 175     | .4348   | 140       | .4366                                 | 170   | .4372                                 | 175   | .4051   |
|                 |         |               |         | 130   | .5000   | 200     | .4969   | 160       | .4990                                 |       |                                       | 200   | .4630   |
|                 |         |               |         |       |         |         |         | 180       | .5614                                 | 220   | .5657                                 | 250   | .5787   |
|                 |         |               |         |       |         | 225     | .6211   | 200       | .6238                                 |       |                                       |       |         |

**To Determine the Weight Per Thousand (M) Sheets of a Special Size:** Multiply the area of the special size (length x width) by the decimal shown in light face next to the desired Substance (Sub.) **Example:** A cover 20 x 40 - Sub **65**. Multiply 20 x 40 x .25 (the decimal listed in the Cover column next to Sub **65**). The weight per thousand (M) sheets of 20 x 40 - Sub **65** is 200M. There may be a slight variation in poundage resulting from individual mill customs.

**For Quick Weight Comparisons:** Papers of different types on any given horizontal line are generally similar in weight. **Example:** How does a Sub **65** cover compare in weight to a book paper? Locate Sub **65** in the Column. Read across. Sub 65 cover (.25) is slightly lighter in weight than a Sub **120** book paper (.2526)

APPROXIMATE ROLL WEIGHTS AND  
LINEAR FEET IN A ROLL  
(3" O.D. CORE)

ROLL WEIGHT PER INCH OF WIDTH

| ROLL<br>DIAMETER | BOND  | MIMEO | DUPLI-<br>CATOR | LEDGER | SAFETY | OFFSET | COVER | INDEX |
|------------------|-------|-------|-----------------|--------|--------|--------|-------|-------|
| 10"              | 1.71  | 1.45  | 2.14            | 2.14   | 2.25   | 1.96   | 1.59  | 2.17  |
| 12"              | 2.58  | 2.17  | 3.25            | 3.25   | 3.33   | 2.93   | 2.37  | 3.27  |
| 14"              | 3.61  | 3     | 4.52            | 4.52   | 4.62   | 4.12   | 3.36  | 4.53  |
| 16"              | 4.89  | 4.03  | 6               | 6      | 6.16   | 5.43   | 4.44  | 6.09  |
| 18"              | 6.17  | 5.18  | 7.72            | 7.72   | 7.7    | 6.94   | 5.64  | 7.79  |
| 20"              | 7.7   | 6.29  | 9.62            | 9.62   | 9.7    | 8.64   | 7     | 9.55  |
| 22"              | 9.37  | 7.83  | 11.8            | 11.8   | 11.63  | 10.46  | 8.52  | 11.59 |
| 24"              | 11.29 | 9.37  | 13.86           | 13.86  | 14.01  | 12.58  | 10.29 | 13.97 |
| 26"              | 13.21 | 10.78 | 16.42           | 16.42  | 16.56  | 14.86  | 12.09 | 16.68 |
| 28"              | 15.27 | 12.57 | 19              | 10     | 19.25  | 17.13  | 14.04 | 19.23 |
| 30"              | 17.71 | 14.5  | 21.94           | 21.94  | 22.02  | 19.4   | 16.29 | 22.11 |
| 32"              | 20.27 | 16.55 | 25.28           | 25.28  | 25.1   | 22.44  | 18.39 | 25.17 |
| 34"              | 22.84 | 19    | 28.23           | 28.23  | 28.49  | 25.32  | 20.79 | 28.56 |
| 36"              | 25.4  | 21.3  | 31.82           | 31.82  | 31.88  | 28.35  | 23.19 | 31.95 |

**WEIGHT**

Example: A 20" diameter roll of Bond weight 77 lbs. For each 10 inches of width.

**LINEAR FEET**

To calculate length of roll, use the following formula for Bond, Duplicator, Ledger, and Safety

$$\text{Length (feet)} = \frac{\text{Weight per Inch} \times 15,583}{\text{Substance Weight}}$$

Example: Given a 26" diameter roll of 20 lb. Duplicator then the  
 Length (feet) =  $\frac{16.42 \text{ lb./inch} \times 15,583}{20 \text{ lb.}}$  or 12,794 feet

To calculate the length of roll, use the following formulas for Offset, Cover, or Index:

**Offset:**  $\text{Length (feet)} = \frac{\text{Weight per Inch} \times 39,583}{\text{Substance Weight}}$

**Cover:**  $\text{Length (feet)} = \frac{\text{Weight per Inch} \times 21,667}{\text{Substance Weight}}$

**Index:**  $\text{Length (feet)} = \frac{\text{Weight per Inch} \times 32,406}{\text{Substance Weight}}$

## PAPER TEMPERATURE CONDITIONING CHART

Coated paper requires conditioning, particularly in cold weather. Unwrapping paper while cold and allowing it to stand in the pressroom "will very quickly develop a bad case of waviness because its low temperature chills the air immediately surrounding the pile and raises the relative humidity to approximately the saturation point, or 100 per cent. Under these conditions, the edges of the sheet may pick up 10 to 12 per cent of moisture before the pile warms up. As the temperature of the pile rises, this excess of moisture will be partially given off, but in the process the moisture content of the paper at the edges will follow the desorption curve and will not return to the same moisture content as the rest of the sheet. While the waviness may be reduced somewhat, it will not disappear." - (Lithographic Technical Foundation Bulletin 8).

The cubic feet per skid is the length x width x height, all in inches, and dividing the total by 17728. The temperature difference is determined by noting the outdoor temperature at the time the paper arrives and the temperature of the pressroom. The number of hours indicated in the chart is the time the paper should remain in its original wrapping unopened to come into balance with the pressroom temperature.

### TEMPERATURE DIFFERENCE

|            | 10'     | 15'     | 20'     | 25'     | 30'     | 40'     | 50'     | 60'      |
|------------|---------|---------|---------|---------|---------|---------|---------|----------|
| 6 cu.ft.   | 5 hrs.  | 9 hrs.  | 12 hrs. | 15 hrs. | 18 hrs. | 25 hrs. | 35 hrs. | 54 hrs.  |
| 12 cu. ft. | 8 hrs.  | 14 hrs. | 19 hrs. | 22 hrs. | 27 hrs. | 38 hrs. | 51 hrs. | 78 hrs.  |
| 24 cu. ft. | 11 hrs. | 16 hrs. | 23 hrs. | 28 hrs. | 35 hrs. | 48 hrs. | 67 hrs. | 100 hrs. |
| 48 cu.ft.  | 14 hrs. | 19 hrs. | 26 hrs. | 32 hrs. | 38 hrs. | 54 hrs. | 75 hrs. | 109 hrs. |
| 96 cu. ft. | 15 hrs. | 20 hrs. | 27 hrs. | 34 hrs. | 41 hrs. | 57 hrs. | 79 hrs. | 115 hrs. |

## PAPER THICKNESS BY GRADE

Since Printing Production cannot be intelligently evaluated without due consideration to the caliper (thickness) of the grade to be printed, we list below excerpts from PIA Production PAR System of Production Control.

| GRADE             | BAS IS | AVERAGE THICKNESS | GRADE           | BASIS | AVERAGE THICKNESS |
|-------------------|--------|-------------------|-----------------|-------|-------------------|
| BOND              | 9      | 0.002             | COVER - Antique | 50    | 0.007             |
| 17 x 22           | 13     | 0.0025            | 20 x 26         | 65    | 0.009             |
|                   | 16     | 0.003             |                 | 80    | 0.0105            |
|                   | 20     | 0.004             |                 | 100   | 0.0135            |
|                   | 24     | 0.0045            |                 | 130   | 0.018             |
| BRISTOL - Smooth  | 82 1/2 | 0.00675           | EGGSHELL        | 50    | 0.0045            |
| 22 1/2 x 28 1/2   | 90     | 0.00775           | 25 X 38         | 60    | 0.005             |
|                   | 100    | 0.00875           |                 | 70    | 0.006             |
|                   | 120    | 0.01025           |                 | 80    | 0.0065            |
|                   | 140    | 0.01225           | ENGLISH FINISH  | 45    | 0.0025            |
|                   | 160    | 0.01425           | 25 x 38         | 50    | 0.0035            |
|                   | 180    | 0.0165            |                 | 60    | 0.004             |
|                   | 200    | 0.0175            |                 | 70    | 0.0045            |
| 23 x 35           | 100    | 0.00675           | INDEX           | 90    | 0.007             |
|                   | 110    | 0.00775           | 25 1/2 X 30 1/2 | 110   | 0.0085            |
|                   | 125    | 0.00875           |                 | 140   | 0.0115            |
|                   | 150    | 0.01025           |                 | 170   | 0.014             |
|                   | 175    | 0.01225           |                 | 220   | 0.0175            |
|                   | 200    | 0.01425           | LEDGER          | 24    | 0.004             |
|                   | 225    | 0.01625           | 17 x 22         | 28    | 0.005             |
|                   | 250    | 0.0175            |                 | 32    | 0.00525           |
| BRISTOL - Antique | 90     | 0.0095            |                 | 36    | 0.00575           |
| 22 1/2 x 28 1/2   | 100    | 0.0105            |                 | 40    | 0.0065            |
|                   | 120    | 0.0125            |                 | 44    | 0.007             |
|                   | 140    | 0.0145            | OFFSET          | 50    | 0.004             |
|                   | 160    | 0.017             | 25 x 38         | 60    | 0.0045            |
|                   | 180    | 0.019             |                 | 70    | 0.005             |
|                   | 200    | 0.02              |                 | 75    | 0.0074            |
| 23 x 35           | 110    | 0.0095            |                 | 80    | 0.006             |
|                   | 125    | 0.0105            |                 | 100   | 0.0075            |
|                   | 150    | 0.0125            |                 | 120   | 0.009             |
|                   | 175    | 0.0145            | SUPER           | 50    | 0.0025            |
|                   | 200    | 0.017             | 25 X 38         | 60    | 0.003             |
|                   | 225    | 0.019             |                 | 70    | 0.004             |
|                   | 250    | 0.02              | TAG             | 80    | 0.006             |
| BRISTOL - Vellum  | 57     | 0.0077            | 24 x 36         | 100   | 0.0075            |
| 23 x 35           | 67     | 0.009             |                 | 125   | 0.009             |
|                   | 80     | 0.0103            |                 | 150   | 0.011             |
|                   | 100    | 0.0126            |                 | 175   | 0.0125            |
| COATED BOOK       | 60     | 0.003             |                 | 200   | 0.015             |
| 25 X 38           | 70     | 0.0035            |                 | 250   | 0.018             |
|                   | 80     | 0.004             |                 | 300   | 0.0225            |
|                   | 100    | 0.0055            | TEXT            | 60    | 0.0045            |
|                   | 120    | 0.006             | 24 x 38         | 70    | 0.0065            |
| COATED COVER      | 50     | 0.005             |                 | 80    | 0.007             |
| 20 x 26           | 60     | 0.006             | VELLUM          | 20    | 0.004             |
|                   | 65     | 0.0065            |                 | 24    | 0.005             |
|                   | 80     | 0.008             |                 | 28    | 0.006             |
|                   | 100    | 0.01              |                 | 32    | 0.0065            |
|                   |        |                   |                 | 36    | 0.0075            |
|                   |        |                   |                 | 40    | 0.0085            |

The thicknesses shown are approximate. Paper thickness will vary from mill to mill.

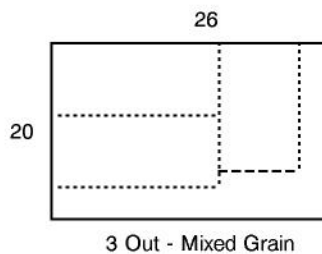
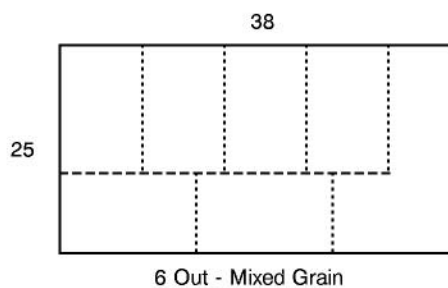
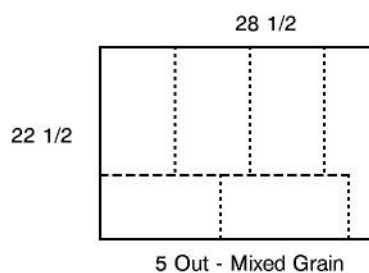
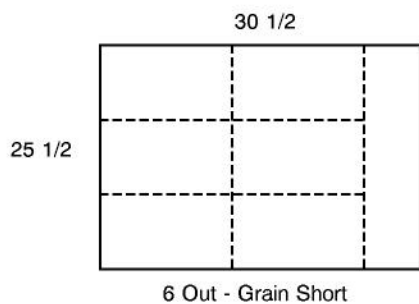
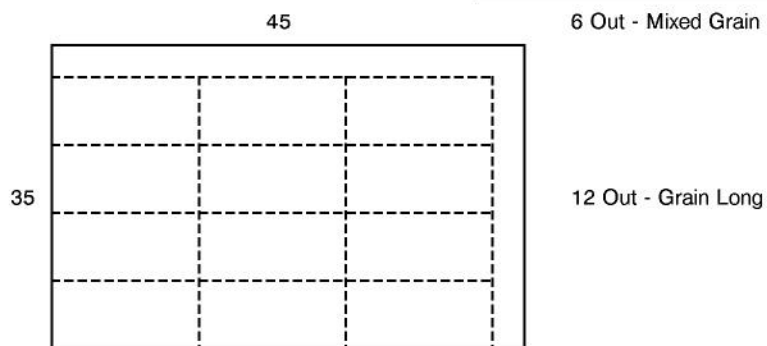
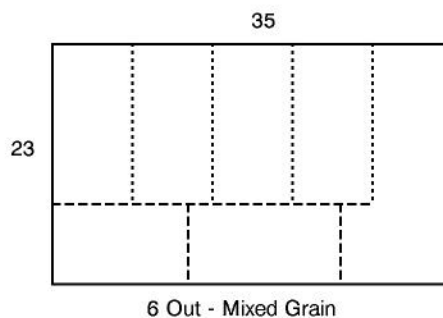
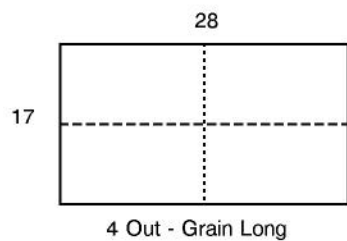
## PAGES PER INCH: INSTRUCTIONS

To make four thicknesses, or eight pages, fold a sheet of paper twice. With a micrometer/caliper, read the thickness of four sheets in points or thousandths of an inch. In the column headed "pages per inch", you will find the number of pages per inch. These will correspond to the micrometer reading.

| CALIPER<br>FOUR<br>SHEETS | PAGES<br>PER<br>INCH | CALIPER<br>FOUR<br>SHEETS | PAGES<br>PER<br>INCH | CALIPER<br>FOUR<br>SHEETS | PAGES<br>PER<br>INCH |
|---------------------------|----------------------|---------------------------|----------------------|---------------------------|----------------------|
| 8.8                       | 910                  | 18                        | 444                  | 29                        | 276                  |
| 8.9                       | 900                  | 18.5                      | 432                  | 29.5                      | 272                  |
| 9                         | 888                  | 19                        | 420                  | 30                        | 266                  |
| 9.4                       | 850                  | 19.5                      | 410                  | 30.5                      | 262                  |
| 9.5                       | 842                  | 20                        | 400                  | 31                        | 258                  |
| 10                        | 800                  | 20.5                      | 390                  | 31.5                      | 254                  |
| 10.5                      | 762                  | 20.6                      | 397                  | 32                        | 250                  |
| 11                        | 726                  | 20.7                      | 386                  | 32.5                      | 246                  |
| 11.1                      | 720                  | 21                        | 380                  | 33                        | 242                  |
| 11.5                      | 696                  | 21.5                      | 372                  | 33.5                      | 238                  |
| 12                        | 666                  | 22                        | 364                  | 34                        | 234                  |
| 12.2                      | 656                  | 22.5                      | 356                  | 34.5                      | 232                  |
| 12.3                      | 650                  | 23                        | 348                  | 35                        | 228                  |
| 12.5                      | 640                  | 23.5                      | 340                  | 35.5                      | 224                  |
| 13                        | 614                  | 24                        | 332                  | 36                        | 222                  |
| 13.4                      | 596                  | 24.5                      | 326                  | 36.5                      | 218                  |
| 13.5                      | 592                  | 25                        | 320                  | 37                        | 216                  |
| 14                        | 570                  | 25.5                      | 414                  | 37.5                      | 212                  |
| 14.5                      | 552                  | 26                        | 308                  | 38                        | 210                  |
| 15                        | 532                  | 26.2                      | 318                  | 38.5                      | 208                  |
| 15.5                      | 516                  | 26.5                      | 302                  | 39                        | 204                  |
| 16                        | 500                  | 27                        | 296                  | 39.5                      | 202                  |
| 16.5                      | 484                  | 27.5                      | 290                  | 40                        | 200                  |
| 17                        | 470                  | 28                        | 286                  |                           |                      |
| 17.5                      | 456                  | 28.5                      | 280                  |                           |                      |

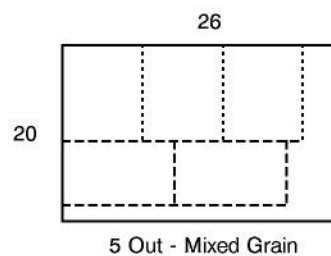
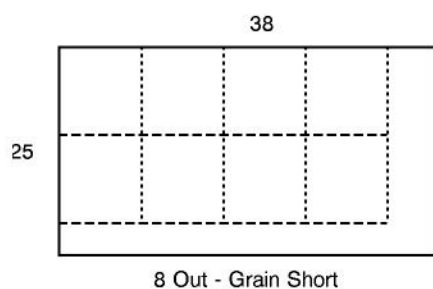
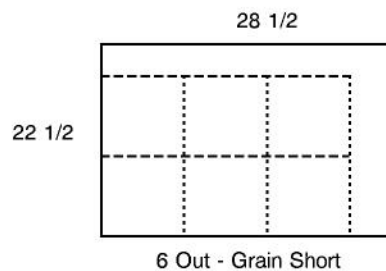
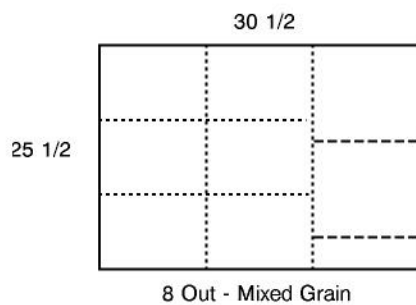
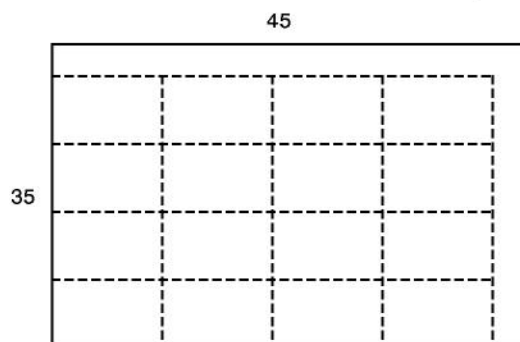
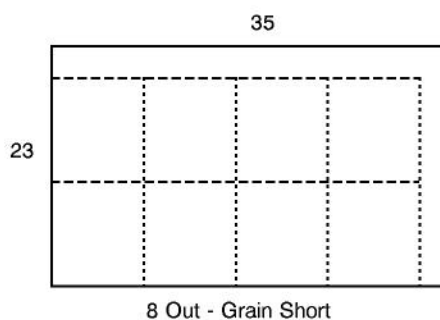
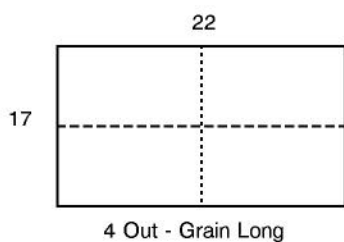
## OPTIMAL CUT

Number of 8 ½ x 14 sheets in large sheet.



## OPTIMAL CUT

Number of 8 ½ x 11 sheets in large sheet.



## CUTTING CHART

## FINISHED SHEET SIZE

|                   | 3" X 5" | 4" X 6" | 5" X 8" | 7 <sup>1/4</sup> " X 10 <sup>1/2</sup> " | 8" X 10 <sup>1/2</sup> " | 8 <sup>1/2</sup> " X 11" | 8 <sup>1/2</sup> " X 14" | 9" X 12" | 10" X 14" | 11" X 17" | 12" X 18" |
|-------------------|---------|---------|---------|------------------------------------------|--------------------------|--------------------------|--------------------------|----------|-----------|-----------|-----------|
| 8 1/2" X 11"      | 5       | 3       | 2       | 1                                        | 1                        | 1                        | ●                        | ●        | ●         | ●         | ●         |
| 8 1/2" X 14"      | 6       | 4       | 2       | 1                                        | 1                        | 1                        | ●                        | ●        | ●         | ●         | ●         |
| 9" X 11"          | 6       | 3       | 2       | 1                                        | 1                        | 1                        | ●                        | ●        | ●         | ●         | ●         |
| 11" X 17"         | 10      | 6       | 4       | 2                                        | 2                        | 2                        | 1                        | 1        | 1         | 1         | ●         |
| 12" X 18"         | 12      | 8       | 4       | 2                                        | 2                        | 2                        | 1                        | 2        | 1         | 1         | 1         |
| 12 3/8" X 18 1/8" | 12      | 8       | 4       | 2                                        | 2                        | 2                        | 1                        | 2        | 1         | 1         | 1         |
| 12 1/2" X 19"     | 12      | 8       | 4       | 2                                        | 2                        | 2                        | 1                        | 2        | 1         | 1         | 1         |
| 14" X 20"         | 16      | 10      | 4       | 2                                        | 2                        | 2                        | 2                        | 2        | 2         | 1         | 1         |
| 17" X 22"         | 21      | 14      | 8       | 4                                        | 4                        | 4                        | 2                        | 2        | 2         | 2         | 1         |
| 17" X 28"         | 27      | 18      | 10      | 4                                        | 4                        | 4                        | 4                        | 3        | 2         | 2         | 1         |
| 17 1/2" X 22 1/2" | 21      | 14      | 8       | 5                                        | 4                        | 4                        | 3                        | 2        | 2         | 2         | 1         |
| 19" X 24"         | 28      | 18      | 9       | 5                                        | 5                        | 4                        | 3                        | 4        | 2         | 2         | 2         |
| 19" X 25"         | 32      | 18      | 10      | 5                                        | 5                        | 4                        | 3                        | 4        | 2         | 2         | 2         |
| 20" X 26"         | 32      | 20      | 12      | 5                                        | 5                        | 5                        | 3                        | 4        | 3         | 2         | 2         |
| 22" X 28"         | 39      | 25      | 12      | 6                                        | 6                        | 6                        | 4                        | 5        | 4         | 3         | 2         |
| 22" X 34"         | 44      | 29      | 16      | 9                                        | 8                        | 8                        | 4                        | 5        | 4         | 4         | 2         |
| 22 1/2" X 28 1/2" | 39      | 25      | 12      | 6                                        | 6                        | 6                        | 5                        | 5        | 4         | 3         | 2         |
| 22 1/2" X 34 1/2" | 44      | 28      | 16      | 9                                        | 8                        | 8                        | 6                        | 5        | 4         | 4         | 2         |
| 22 1/2" X 35"     | 49      | 29      | 18      | 9                                        | 8                        | 8                        | 6                        | 5        | 4         | 4         | 2         |
| 23" X 29"         | 41      | 25      | 14      | 8                                        | 8                        | 6                        | 5                        | 5        | 4         | 3         | 2         |
| 23" X 35"         | 51      | 29      | 18      | 9                                        | 8                        | 8                        | 6                        | 5        | 4         | 4         | 2         |
| 24" X 36"         | 56      | 36      | 21      | 9                                        | 9                        | 8                        | 6                        | 8        | 5         | 4         | 4         |
| 25" X 38"         | 61      | 36      | 23      | 10                                       | 9                        | 8                        | 6                        | 8        | 5         | 4         | 4         |
| 25 1/2" X 30 1/2" | 50      | 30      | 18      | 8                                        | 8                        | 8                        | 6                        | 6        | 5         | 3         | 3         |
| 25 1/2" X 38"     | 61      | 36      | 23      | 10                                       | 9                        | 8                        | 7                        | 8        | 5         | 4         | 4         |
| 26" X 38"         | 61      | 36      | 23      | 10                                       | 9                        | 8                        | 7                        | 8        | 5         | 4         | 4         |
| 26" X 40"         | 65      | 40      | 25      | 11                                       | 11                       | 10                       | 7                        | 8        | 6         | 4         | 4         |
| 26 1/2" X 40"     | 65      | 40      | 25      | 11                                       | 11                       | 10                       | 7                        | 8        | 6         | 4         | 4         |
| 28" X 40"         | 72      | 46      | 25      | 11                                       | 11                       | 10                       | 8                        | 9        | 8         | 4         | 4         |
| 28" X 44"         | 77      | 51      | 40      | 12                                       | 12                       | 12                       | 10                       | 9        | 8         | 6         | 4         |
| 28 1/2" X 34 1/2" | 61      | 39      | 20      | 9                                        | 9                        | 9                        | 8                        | 8        | 6         | 5         | 3         |
| 35" X 45"         | 105     | 62      | 36      | 18                                       | 16                       | 16                       | 12                       | 13       | 9         | 8         | 4         |

NUMBER OF SHEETS OUT

PARENT SHEET SIZE

Note: The above chart represents the maximum number of pieces obtainable from a specific size using combination cuts. Your actual results may be different if you specify grain direction.