Finish

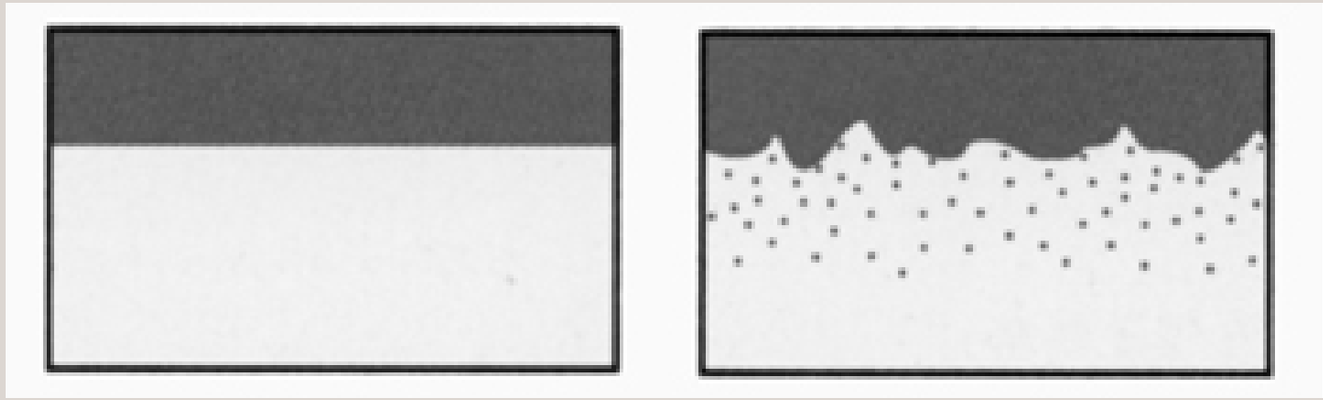
FINISH

+ Coated papers have a smooth clay coating applied over base paper
+ The base paper is made first, then put through a “bath” of clay coating or coated while running on a machine, with a blade and calender rollers smoothing out the coating on the paper
+ Calendaring is sort of like polishing. The more it’s polished, the shinier the paper gets
+ A calender is a series of hard pressure rollers used to form or smooth a sheet of material such as paper or plastic film. Through a combination of heat, pressure and friction, the paper acquires a high lustre surface
+ Varieties of coated paper range from pigmented to cast-coated. The coat consists of a mix of pigments, extenders such as china clay and chalk, and binders such as starch or latex. In addition, various chemicals are added to give the paper the desired characteristics

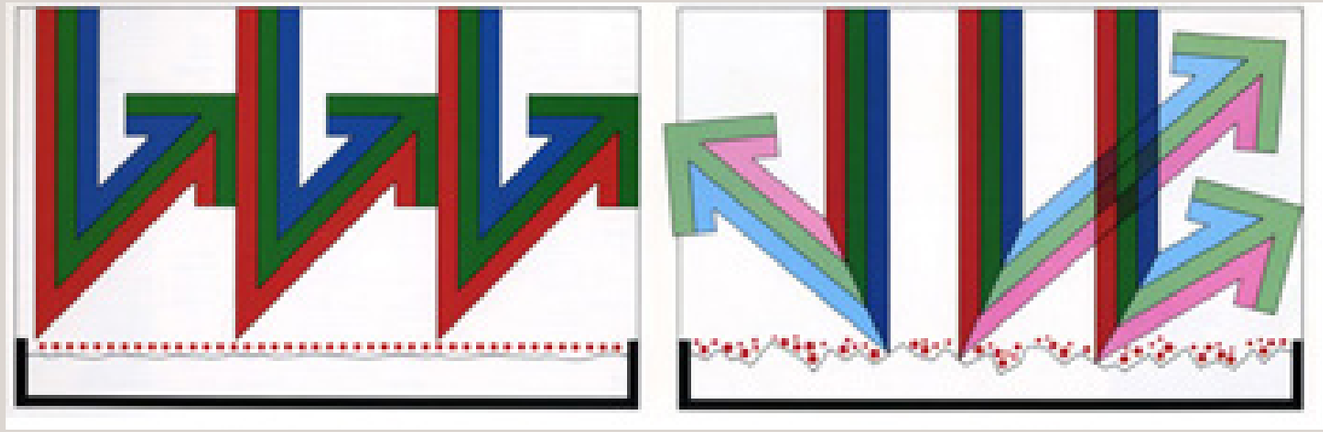
FINISH

+ If you have ever printed four-color process images on uncoated paper you probably noticed that the image seemed slightly soft or dull. When light hits an uncoated paper stock with a color image on it the light is dispersed. Since the light is scattered, this leaves us to perceive a less vividly colored image

+ When light hits coated paper all of the reflected light enters our eye giving us a bright, vivid colorful image. Sometimes this is the effect we are trying to achieve and sometimes we want a sharper image

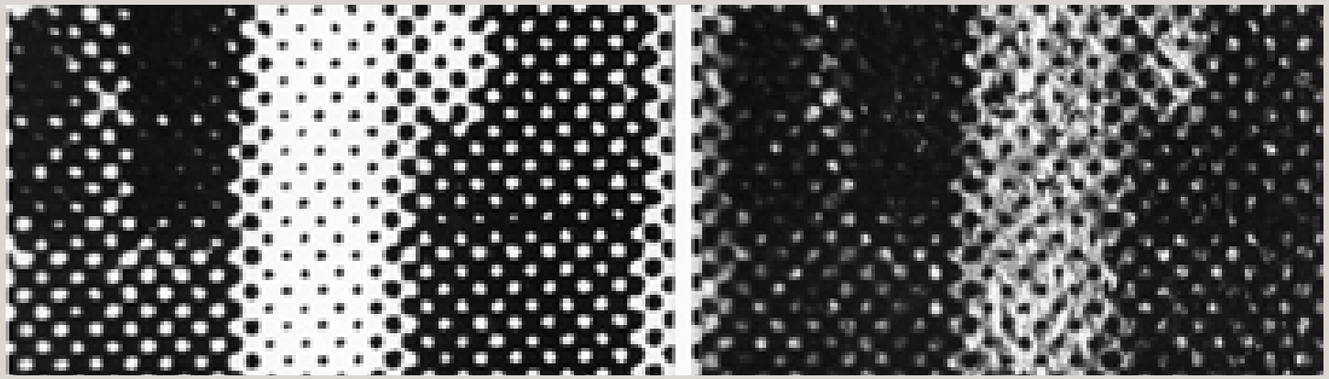


COATED UNCOATED



FINISH

+ A factor to keep in mind is dot gain. Ink will be absorbed by uncoated paper. This causes the dot to expand. You should plan on a 15 percent dot gain when printing on uncoated stock. On coated stock the ink stays on the surface. This may add to drying time

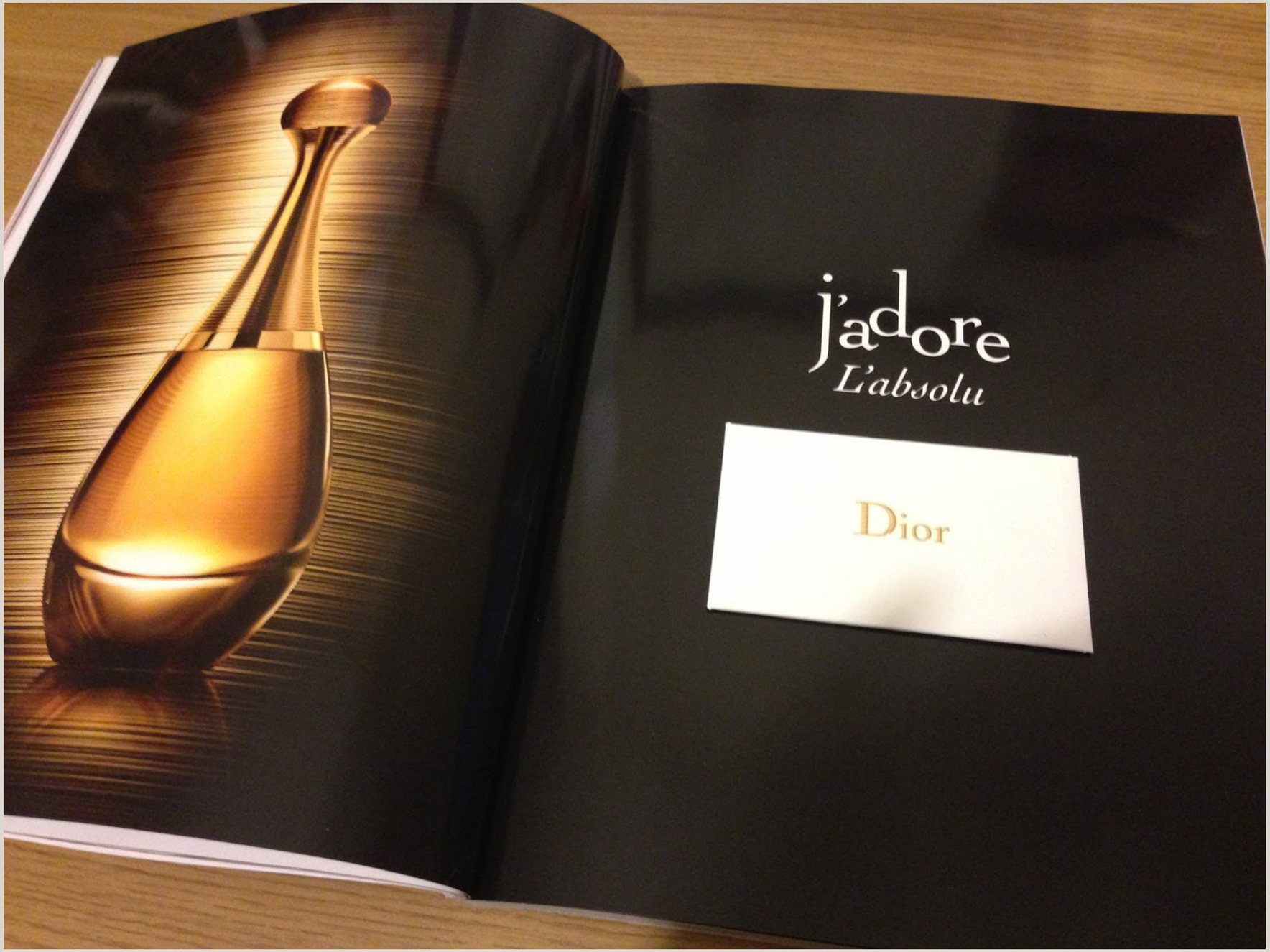


COATED UNCOATED

GLOSS

+ Gloss coated paper has a high sheen, as those in a typical magazine

+ Generally offer the widest color range and best resolution, but they suffer from glare which can be a problem under certain lighting conditions



GLOSS

+ Cast Coated Paper (such as “Kromekote”) has a very high gloss sheen made by pressing the paper against a polished hot metal drum while the coating is still wet

+ Some cast coated papers can be so smooth and shiny that you can see almost mirror-like reflections in the paper

GLOSS

IMAGE: Breakfast of Champions, 2013
by Elliot Vredenburg (photograph)

SEMI-GLOSS

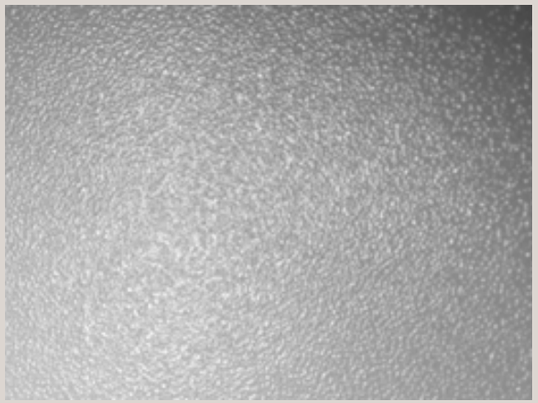
+ Semi-gloss or “luster” “satin” papers offer a good compromise between glare, color range, and durability

+ Has a repeating textured surface

+ With a color range close to that of glossy paper, semi-gloss achieves a wider range of color while at the same time reducing glare and smudges. Semi-gloss papers may not completely eliminate glare but most of them reduce glare to a point where it is not an issue except under the most extreme lighting conditions and viewing angles

SEMI-GLOSS

+ Has a repeating textured surface



SHALLOW SURFACE TEXTURE

MEDIUM SURFACE TEXTURE

DEEP SURFACE TEXTURE

UNCOATED PAPER

+ Not coated with clay or other surface sealants
+ Inks dry by absorbing into the paper
+ Some fine quality uncoated sheets contain a watermark
+ If your document is designed to be written on, your best option is to select an uncoated stock
+ Uncoated paper can be used for full color projects but colors tend to be less vibrant and produce a natural, refined look. You'll find letterheads, stationary, invitations, etc. are almost always printed onto uncoated paper
+ Soft, approachable and natural look

UNCOATED: LAID

+ Uncoated papers comprise a vast number of paper types and are available in a variety of surfaces, both smooth and textured (such as “laid” and “linen”

+ Manufactured with textured lines on its surface

+ This finish is used mostly for business stationery elements, like letterhead, envelopes and business cards

UNCOATED: LINEN

+ Similar to a laid finish, this paper has textured lines on the surface of the sheet, but they are finer and more regular than those that appear on a laid finish stock

+ Used frequently for business stationery

Density

DENSITY

+ Mass of the product per unit of area for a type of fabric, paper or paperboard

+ Meaured in grams per square meter (g/m2) and often called grammage

+ Or in the US paper is measured in terms of the mass (expressed as weight) per number of sheets, also known as basis weight. This is expressed as pounds of a ream of 500 (or in some cases 1000) sheets of a given (raw, still uncut) basis size

Note: A sheet of common copy paper that has a basis weight of 20 pounds (9.1 kg) does not have the same mass as the same size sheet of coarse paper (newsprint). In the former case, the standard ream is 500 sheets of 17-by-22-inch (432 by 559 mm) paper, and in the latter, 500 sheets of 24-by-36-inch (610 by 914 mm) paper.

WEIGHT

+ Paper weights in commercial printing can be very confusing. For example, a sheet of 20# bond (probably what you use on your copy machine) is about the same thickness as a sheet of 50# offset

+ The size of the sheet is used to calculate the base weight per ream of an uncut sheet. Because the sheet size varies between types of paper, the weight is non-linear

Bond Weight	Text/Book Weight	Cover Weight	Bristol Weight	Index Weight	Tag Weight	Metric Weight
16#	41#	22#	27#	33#	37#	50 gsm
17#	43#	24#	29#	35#	39#	64 gsm
20#	**50#**	28#	34#	42#	46#	75 gsm
21#	54#	30#	36#	44#	49#	80 gsm
24#	**60#**	33#	41#	50#	55#	90 gsm
27#	68#	37#	45#	55#	61#	100 gsm
28#	**70#**	39#	49#	58#	65#	105 gsm
29#	74#	41#	50#	61#	68#	110 gsm
32#	**80#**	44#	55#	67#	74#	120 gsm
36#	90#	**50#**	62#	75#	83#	135 gsm
39#	**100#**	55#	**67#**	82#	91#	148 gsm
40#	101#	55#	68#	83#	92#	150 gsm
43#	110#	**60#**	74#	**90#**	**100#**	163 gsm
45#	115#	63#	77#	94#	104#	170 gsm
47#	119#	**65#**	80#	97#	108#	176 gsm
51#	128#	70#	86#	105#	117#	190 gsm
53#	134#	74#	90#	**110#**	122#	199 gsm
54#	137#	75#	93#	113#	**125#**	203 gsm
58#	146#	**80#**	98#	120#	133#	216 gsm
65#	165#	**90#**	111#	135#	**150#**	244 gsm
66#	169#	92#	114#	138#	154#	250 gsm
67#	171#	94#	115#	**140#**	155#	253 gsm
70#	178#	98#	**120#**	146#	162#	264 gsm
72#	183#	**100#**	123#	150#	166#	271 gsm

WEIGHT

+ The size of the sheet is used to calculate the base weight per ream of an uncut sheet. Because the sheet size varies between types of paper, the weight is non-linear

Paper Type	Paper Size		- Number of sheets
Bond, writing, ledger	17	× 22	- 500 sheets
Manuscript cover	18	× 31	- 500 sheets
Blotting	19	× 24	- 500 sheets
Box cover	20	× 24	- 500 sheets
Cover	20	× 26	- 500 or 1000 sheets
Bristol and tag	22½	× 28½	- 500 sheets
Tissue	24	× 36	- 480 sheets
Newsprint	24	× 36	- 500 sheets
Hanging, waxing, bag, etc.	24	× 36	- 500 sheets
Book, Text, Offset	25	× 38	- 500 sheets
Index bristol	25½	× 30½	- 500 sheets
Paperboard (all types)	12	× 12	- 1000 sheets (1,000 square feet per ream)

WEIGHT

+ BOND - a letterhead-weight stock, typically 24# or 28# writing, and often has a watermark

+ TEXT PAPER - is thicker than a writing paper, but not as thick as a cover paper (card stock). Text-weight stationery paper is usually a 70# or 80# text

+ COVER PAPER - a card stock paper, such as those used for a business card or report cover. They are usually an 80# cover weight, although some brands of paper offer cover weight paper that is as thin as a 65# cover or as thick as a 100# cover or heavier

Bond Weight	Text/Book Weight	Cover Weight	Bristol Weight	Index Weight	Tag Weight	Metric Weight
16#	41#	22#	27#	33#	37#	50 gsm
17#	43#	24#	29#	35#	39#	64 gsm
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24#	**60#**	33#	41#	50#	55#	90 gsm
27#	68#	37#	45#	55#	61#	100 gsm
28#	**70#**	39#	49#	58#	65#	105 gsm
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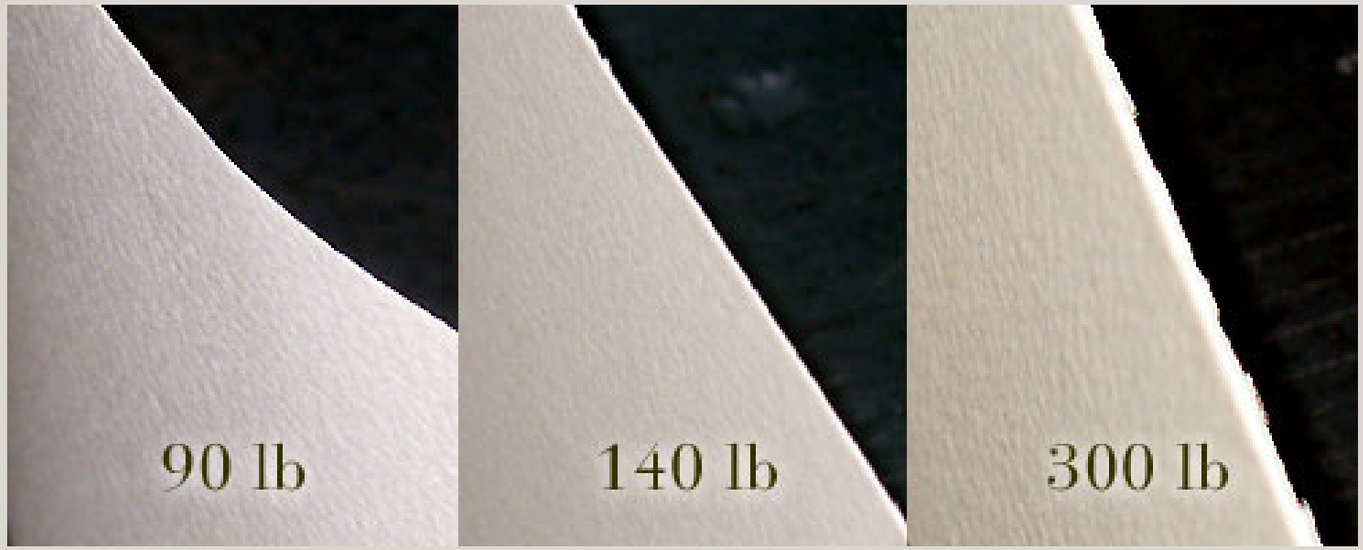
39#	**100#**	55#	**67#**	82#	91#	148 gsm
40#	101#	55#	68#	83#	92#	150 gsm
43#	110#	**60#**	74#	**90#**	**100#**	163 gsm
45#	115#	63#	77#	94#	104#	170 gsm
47#	119#	**65#**	80#	97#	108#	176 gsm
51#	128#	70#	86#	105#	117#	190 gsm
53#	134#	74#	90#	**110#**	122#	199 gsm
54#	137#	75#	93#	113#	**125#**	203 gsm
58#	146#	**80#**	98#	120#	133#	216 gsm
65#	165#	**90#**	111#	135#	**150#**	244 gsm
66#	169#	92#	114#	138#	154#	250 gsm
67#	171#	94#	115#	**140#**	155#	253 gsm
70#	178#	98#	**120#**	146#	162#	264 gsm
72#	183#	**100#**	123#	150#	166#	271 gsm

CALIPER

+ Paper thickness, or caliper, is a common measurement specified and required for certain printing applications

+ Typically a concern when calculating what caliper a printer can process

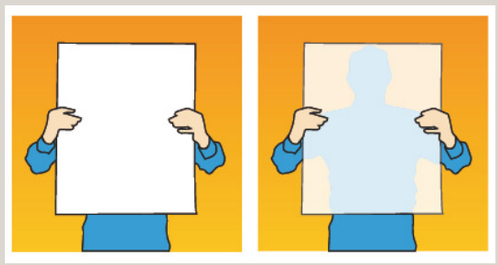
+ Usually measured in micrometres (1/1000 of a mm), or in the US also in mils. (1 mil = 0.001 inch = 25.4 µm



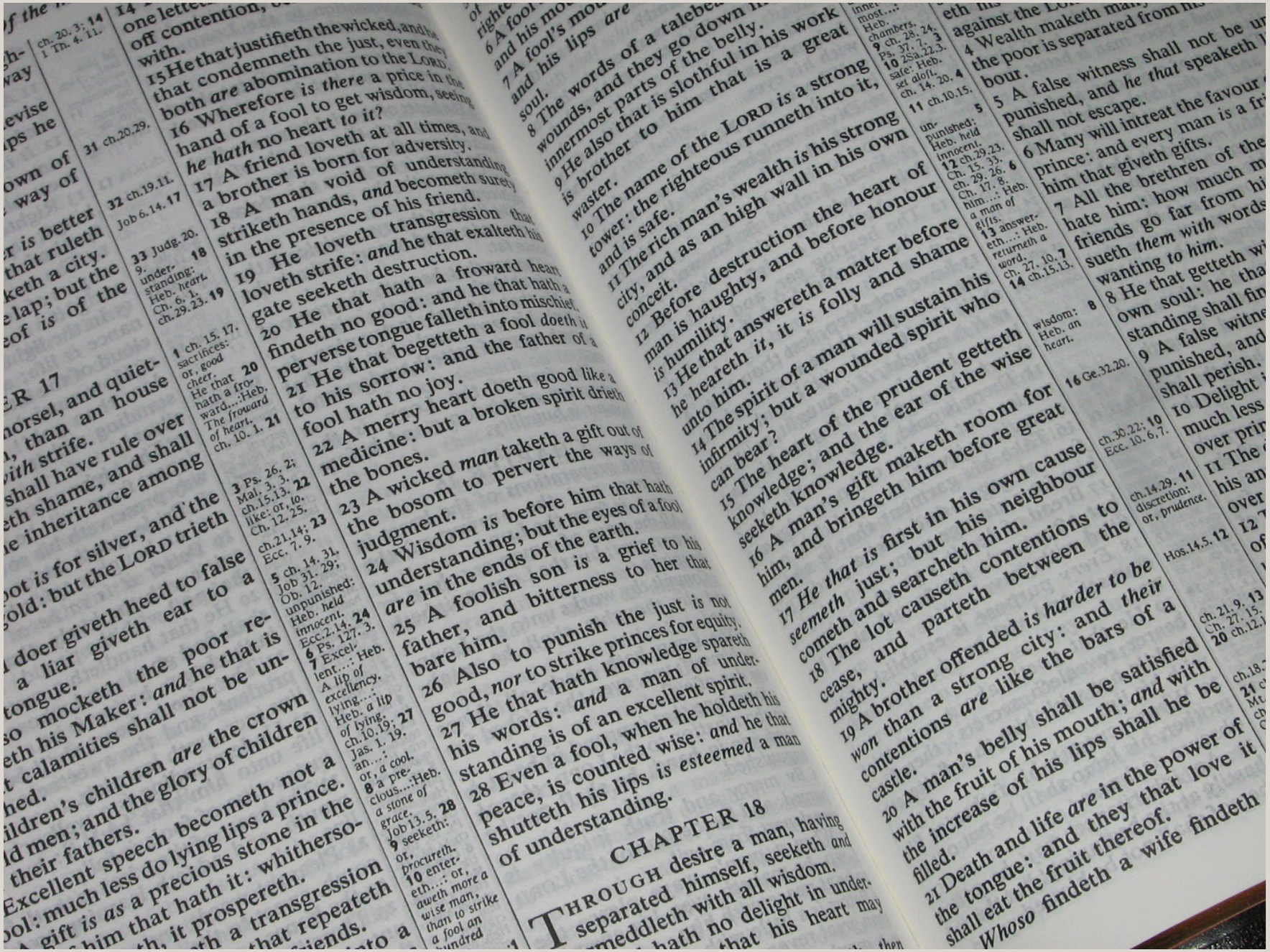
Opacity

OPACITY

+ Determined by its weight, ingredients and absorbency
+ Indicates how much printing will show through on the reverse side of a sheet
+ Opacity is expressed in terms of it's percentage of reflection. Complete opacity is 100% and complete transparency is 0%



HIGH OPACTITY LOW OPACTITY



Brightness

BRIGHTNESS

+ Measures the percentage of blue light the paper reflects
+ Most papers reflect 60-90% of light
+ Typically expressed on a scale of 1 to 100, with 100 being the brightest
+ Traditionally determined by the raw materials used in the paper making process
+ Now chemical processes can control brightness

BRIGHTNESS

+ Individually white paper appears quite white. But placed side-by-side, white papers show a range of colors Affects readability, the perception of ink color and the contrast between light and dark hues

+ The brighter and whiter the paper, the brighter and lighter the images. Colors on less bright papers are noticeably darker

COLOR

+ Different from brightness. Colored papers are treated with dyes in the paper making process