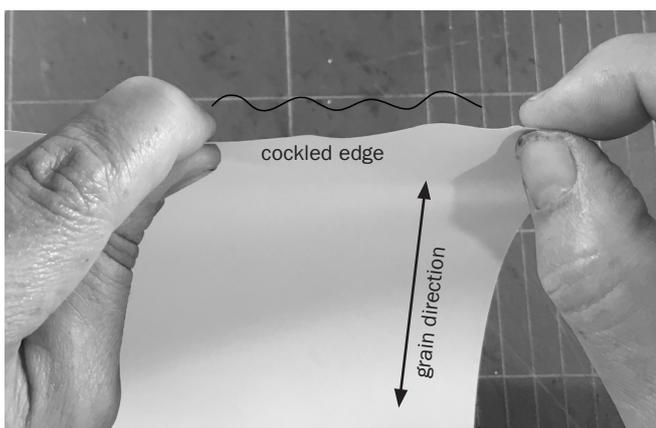
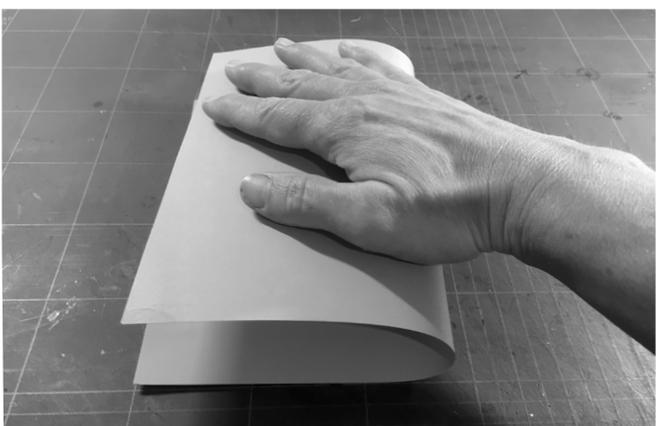


Bookbinding - Essentials

Grain Direction



Most materials have a grain and it is important to spend a little time understanding this principle and why it is so important in bookbinding.

Looked at under a microscope, the fibres of a material such as paper would be seen to lie in parallel lines. These lines indicate the grain direction. Long grain and short grain are terms given to a material depending on how it was cut in relation to its grain direction. For example, a sheet of paper is labelled short grain when the grain direction moves parallel to its short side.

The general rule is that all materials that make a book; paper, cloth and board should have their grain running parallel to the spine from the head to the tail as materials bend more easily across the grain than against it.

Failure to observe this results in books prone to cracking and splitting and may cause the book covers to warp when the materials with opposing grains are glued together.

Determining Grain Direction

The simplest way to tell the grain direction of a sheet of paper is by testing on which side there is greater resistance to bending. Lay the piece of paper flat and gently turn over one long edge without folding the paper as in fig.1. Do the same with the short edge, fig.2. You will notice that turning it one way will be less resistant than the other. In this example there is less resistance turning it on itself on the long edge. This indicates the paper is long grain.

Another way to test the grain direction of a paper is to drag your finger and thumb along the long edge and the short edge of the paper. One edge will cockle more than the other. The edge with more cockling is the edge running across the grain. For example, if the paper cockles more on the long edge, then the paper is short grain.

This final method is especially useful when determining the grain direction of board or heavy weight paper where it is not possible to fold the sheet over. On most paper packaging, swatch books and paper mill stock sheets, grain direction will be noted as the last dimension of the sheet. For example paper with the dimensions displayed as 210x297mm would be grain long. Whereas a ream with the dimensions 297x210mm would be grain short.

With regard to materials that are supplied on a roll such as bookcloth the grain will always run parallel to the edge of the roll.