



THE MAKING OF A WATERMARKED SHEET BY A CYLINDER MACHINE

(Traduzione inglese: Formazione di un foglio di carta filigranato a mano-macchina)

Project SCIENCE ON STAGE Ginevra, November 2005

_The sheet with a logo, an inscription, a drawing, a graph made by a computer and a printer is properly sized and stuck on a brass plate

-Finely drilled holes enable to saw with a fret and hacksaws to get the supporting points

-The next stage implies an accurate filing of the letters to shape them properly

-An acid solution removes irregularities to avoid burs during the making of the web

-After cutting the supporting frame, the letters are sewed, with a special thin steel wire, on the cylinder on which the web will be made

- The first operation to be done in the production process is to choose the cellulose to be refined

-A fixed quantity of cellulose is weighed

-The “pulper” will roughly break the fibres which will be homogenized and refined by the Hollander thus giving rise to hydrogen bonds which will render the mixture of fibres viscose with well definite chemical physical features

-The “Shopper Riegler” device enables to check the right refining of the mixture of fibres which is put at first into a concentration tank

-After being purified in a cleaner it is forced into a tank which keeps the level constant and finally into the cylinder machine which makes the product similar to handmade paper

-The mixture of fibres, free from impurities, fills up a tank where air is removed and the fibres remain attached to the surface of the drum giving rise to the wet web which is afterwards removed by a press coated with a slightly wet felt. At this stage the web loses most of water

-Then it is put into a set of drying cylinders to be definitely dried; eventually it is refrigerated by a cooling cylinder

-The rolling press and the “pope” perform the last operation

-A primary backlighting control will show the quality of the watermark and the uniformity of the web

-To sort out the watermarked sheets, properly torn by hand, is the last operation of this sophisticated process of highly qualified papermakers of the course specializing in papermaking at the Istituto Industriale “ Sen. Aristide Merloni” in Fabriano Italy.

Marco Galli

