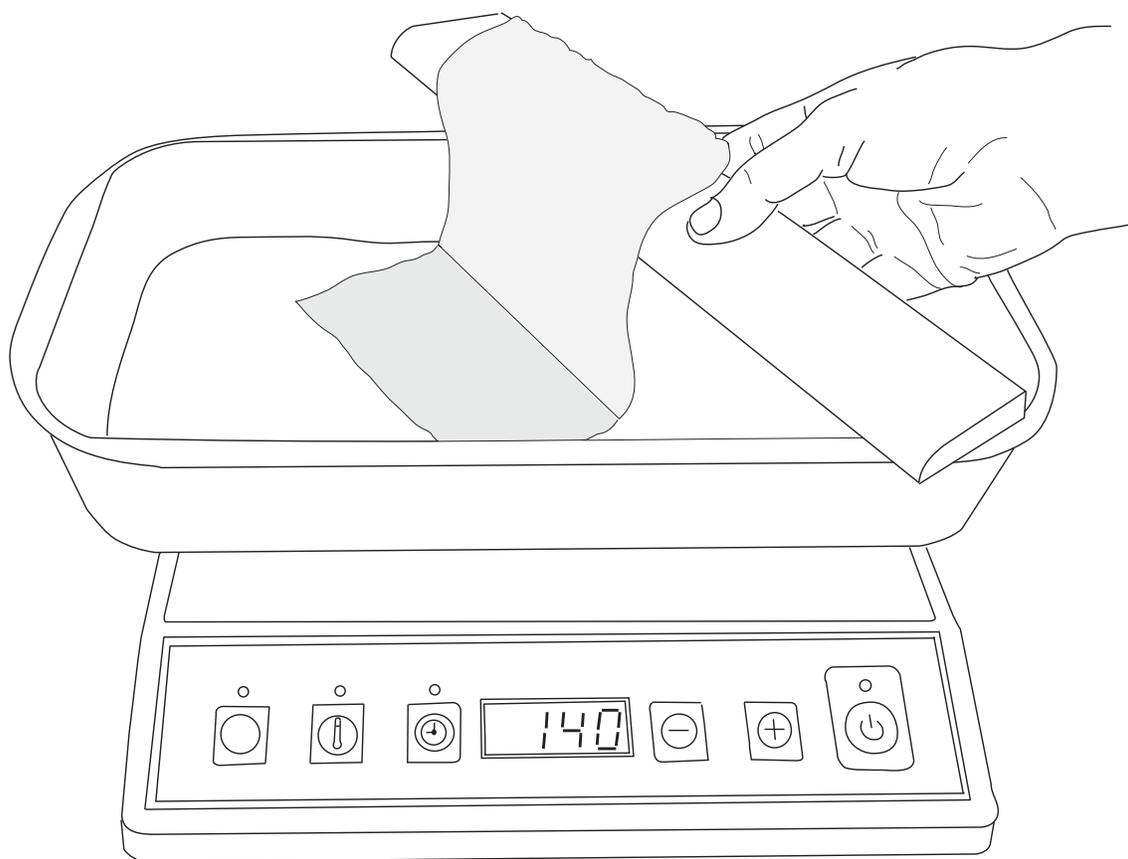


# Determinate Hand Papermaking

## X

### Sizing and Finishing



*Text and illustrations by*  
Donald Farnsworth  
2017

## Sizing, Curing and Finishing

After sheets have been made and dried, they are referred to as waterleaf or unsized paper. These sheets will soak up water like a blotter. Sizing will impart resistance to liquids on the paper surface, creating a paper that slows water and ink penetration.

External sizing is done with dilute hide glue (such as rabbit skin glue). Other external sizing includes starches. These days various unseemly chemicals, aluminum sulfate, activated rosin, and synthetic alkaline resins are added to the pulp before sheet formation. This type of sizing is called "internal sizing."

To size with rabbit skin glue, use a 2 to 5% solution by weight of solids to water.<sup>6</sup> (e.g., 40g of hide glue crystals for 1 liter of water for a 4% solution) Dissolve the glue crystals in water heated to 140° to 150°. Heating at higher temperatures degrades the efficacy of the size. Adding a pinch (.1%) of alum (potassium aluminum sulfate) to the hot size bath will make a more water-resistant paper.

Once brought to temperature and the hide glue crystals have dissolved, submerge the paper into the hot liquid, soak for 10 to 20 seconds, lift from the tub and let the sheets drain, then set on a blotter or porous surface. Air dry, moving the paper from time to time to stop it from sticking to the blotter.

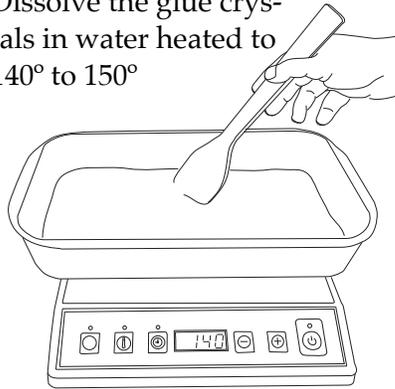
### Curing & Flattening

Once sized and dried, place the paper under weight or in a book press to cure the paper and coax it flat. Start with gentle pressure, shuffle the papers every 12 hours and gradually increase the pressure. Repeat the process 3 or 4 times until flat.

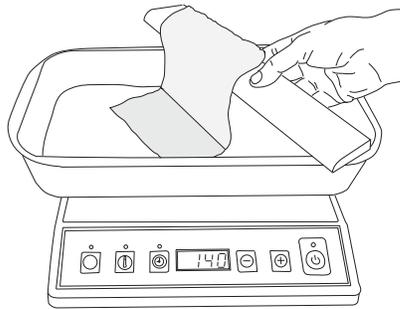
### Finishing & Calendering

For additional textural possibilities, burnish the finished sized paper with a smooth turned hardwood burnisher, a polished stone, or between platens in an etching or litho press.

Dissolve the glue crystals in water heated to 140° to 150°

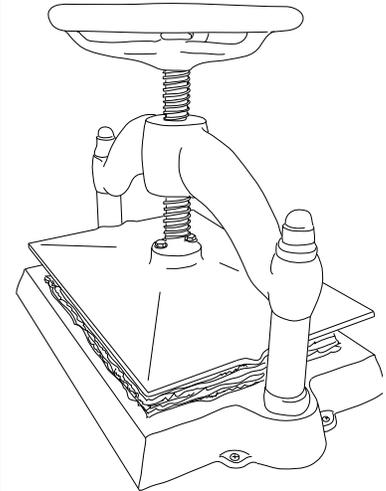


Saturate paper with the hot hide glue



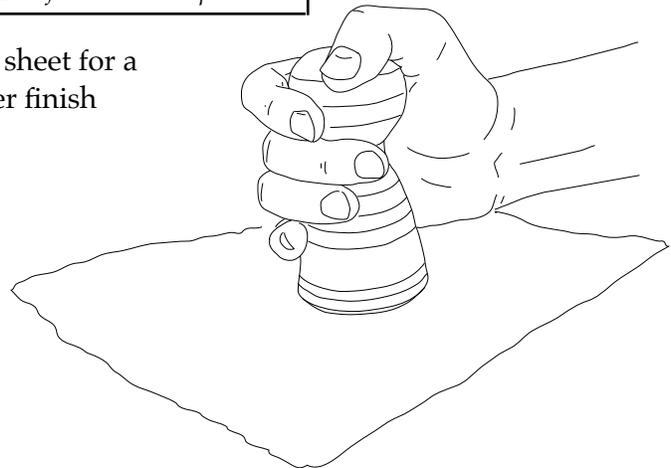
Caution: Be safe around hot liquids.

Air dry sized paper and press to cure and flatten



Gradually increase pressure every 12 to 24 hours.

Burnish sheet for a smoother finish



6. There are various recipes and methods of sizing; several are documented here: <http://imclains.com/productinfo/documents/SizingPaper.pdf>

## Series links:

- No. I: [Introduction: fibers, hydration, fibrillation & freeness and suppliers](#)
- No. II: [Retting: lignin removal using mycelium](#)
- No. III: [Calculating paper weight with a smartphone app](#)
- No. IV: [Finding the surface area of an irregular sheet](#)
- No. V: [Blender processing paper fiber](#)
- No. VI: [Formulating pulp for color and content](#)
- No. VII: [Making small paper with 3D printed deckle box and an AeroPress](#)
- No. VIII: [Techniques for forming laid and wove paper without a vat](#)
- No. IX: [Drying handmade paper](#)
- No. X: [Sizing and burnishing](#)

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