PAPERMAKING PROCESS

Today’s high quality papers require a highly technical and accurate manufacturing process. This diagram details the paper making process and illustrates the use of wood and paper for recycling.

1. **WOOD**
   - Wood is a renewable raw material for the pulp and paper industry and comes from sustainably managed forests.

2. **DE-BARKING AND CHIPPING**
   - Bark which cannot be used for papermaking is stripped from the logs and used for energy. Stripped logs are chipped into small pieces and recovered.

3. **MECHANICAL PULPING**
   - Woodchips are ground to separate the fibres. Pulps are used to make high volume commodity printing products such as newspaper and magazine paper.

4. **CHEMICAL PULPING**
   - The woodchips are cooked to remove lignin. Burning of the process by-products enables the whole pulping process to be energy self-sufficient.

5. **PULPING**
   - Paper for recycling is dissolved into pulp to separate the component fibres.

6. **HEADBOX**
   - The headbox sprays a mixture of water and fibre through a thin horizontal slit across the machine’s width onto an endless moving wire mesh.

7. **WIRE SECTION**
   - The water is then removed on this wire section. Here the fibres start to spread and consolidate into a thin mat. This process is called ‘sheet formation’.

8. **PRESS SECTION**
   - The press section squeezes the web of wet papers and lowers water content to 50%.

9. **CALENDERING**
   - After coating, the paper can be calendered. A calender is a device with two or more rollers through which the paper is run. The compression of the rollers and the application of heat give the paper its smooth and glossy properties, like ironing shirts.

10. **FINISHING REELS AND SHEETS**
    - The papers are then wound into a reel or cut into sheets, ready for printing and converting.

11. **COATING**
    - In the coating process, coating color is spread onto the paper surface. The coating colour contains pigments, binding agents, and various additives. Coating the paper several times often improves its printing properties. High-grade printing paper is coated up to 3 times.

12. **DE-INKING**
    - Adhesives and ink are removed using a flotation process.

13. **PAPER FOR RECYCLING**
    - Paper for recycling is an important material for the pulp and paper industry.

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15. **CLEANING**
    - The fibres are then washed; screened and dried. The pulp is ready to be used directly or it can be bleached into white paper.

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17. **PRESSING**
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18. **DRIYING**
    - A series of cast-iron cylinders, heated to a temperature in excess of 100°C, where the webs of sheets pass through and drying takes place.

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For more information visit www.paperoonline.org

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