

**Paper Conditioning Takes Time, But Saves It Too**

The moisture content of paper at the time of manufacture is in the neighbourhood of 5 to 6 per cent, depending on the type and the manufacturer's process. The paper maker goes to great lengths to control this water content within very narrow limits to safeguard the uniform quality of his paper. Then he packages it in a moisture-tight wrapping to prevent any deviation during shipping and storage.

However, there is nothing the paper manufacturer can do about the atmosphere of the pressroom. If RH there differs from the RH to which the paper was pre-conditioned by the mill, or if it fluctuates widely, open packages of paper will undergo dimensional changes, as we have seen.

The best solution of course, is to control humidity of the pressroom within reasonable limits. Unless this is done, paper must be *conditioned*—adjusted to pressroom atmospheric conditions—before running if operating difficulties are to be minimized. The steps in paper conditioning are briefly reviewed here. They require a certain amount of time, to be sure; but conditioning may save the time and cost of re-running a job that is unacceptable.

When stock is brought into the pressroom from a storage area where the temperature is considerably higher or lower, the skid should remain *unopened* until the temperature of the paper is equalized with that of the pressroom. This may vary from a couple of hours to a week, depending on the temperature difference and the cubic volume of the skid.

When the skid is unwrapped, it should be tested for moisture balance with a sword hygrometer. This instrument has a moisture-sensing element at the end of a flat blade (hence the name) and, in the position corresponding to the hilt, a dial from which the RH is read. Electronically controlled swords are also available. Proper use of this instrument is important if it is to yield useful results.

**Sword Pointers.** Wave the sword before using it to eliminate the influence of previous readings. Then insert it into the skid, preferably about a foot below the top and a foot from the corner. Avoid lifting the paper more than is absolutely necessary. Leave the sword inside the skid for at least 15 minutes, then record the reading and extract the sword. Flag the spot where the sword was inserted so that any damaged sheets can be removed before running through the press, where they might in turn damage the blanket or plate. Occasionally, compare sword

readings of room RH with those of a sling psychrometer as a check on sword accuracy.

For good offset work on single or 2-colour presses, the RH of the paper as determined by the sword should be slightly above that of the pressroom. At this level, evaporation of moisture during feeding and

**GENERAL TEMPERATURE CONDITIONING CHART FOR PAPER**

(From Lithographic Technical Foundation, January 1952)

Temperature difference between paper on arrival (outdoor temperature may be used for easy calculation) and temperature of pressroom (room in which paper is to be opened)

VOLUME OF PAPER IN CUBIC FEET	Temperature difference between paper on arrival (outdoor temperature may be used for easy calculation) and temperature of pressroom (room in which paper is to be opened)								
	10° hrs.	15° hrs.	20° hrs.	25° hrs.	30° hrs.	40° hrs.	50° hrs.	60° hrs.	
6	5	9	12	15	18	25	35	54	
12	8	14	18	22	27	38	51	78	
24	11	16	23	28	35	48	67	100	
48	14	19	26	32	38	54	75	109	
96	15	20	27	34	41	57	79	115	