

General Notes On Storage Of Corrugated Cardboard Material

When storage is impossible under normal conditions of temperature and relative humidity the product should at least be brought to the production lines for a recommended period of time of 24 hours before being used unless, as may exist in certain operations, the conditions around the production area are either extremely humid or extremely dry. If both the storage and production areas are at extreme conditions, then the product should be used as soon as possible and remain stretch wrapped until the time for use.

Conditioning of the corrugated board in optimum climatic conditions must exist for achieving high-quality results with cardboard.

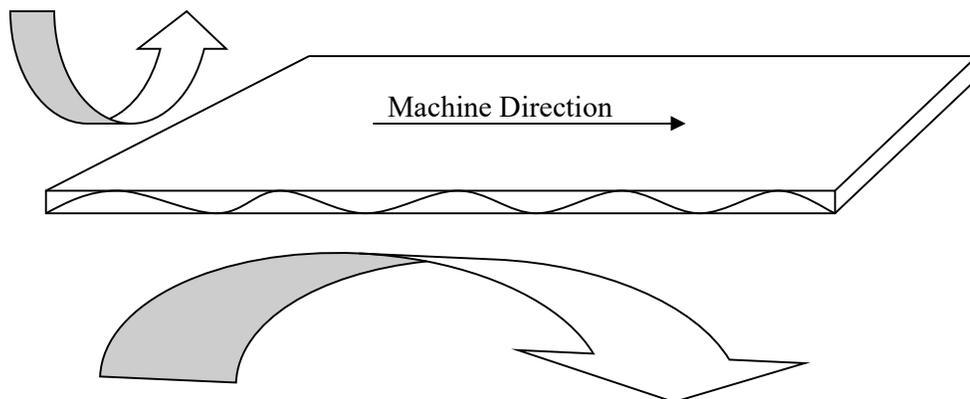
It is extremely important to allow the substrate to become acclimatised to the environment of the production room.

The effect of relative humidity, and temperature can change the properties of the corrugated board. It is proven that corrugated board absorbs more water under air circulation than in still air.

It is well known that corrugated board is sensitive to ambient atmospheric conditions. The cellulosic fibres, from which the corrugated material is made absorb water, swell and weaken at high humidity and release water and stiffen at low humidity.

The wet elongation curves for the paper in corrugated cardboard are all S-shaped and are at the flattest between 40-60% relative humidity. Elongation is less along the papers manufacturing length than across its width. Because the fibres tend to orient themselves in the machine direction and the fibres swell many times more diametrically.

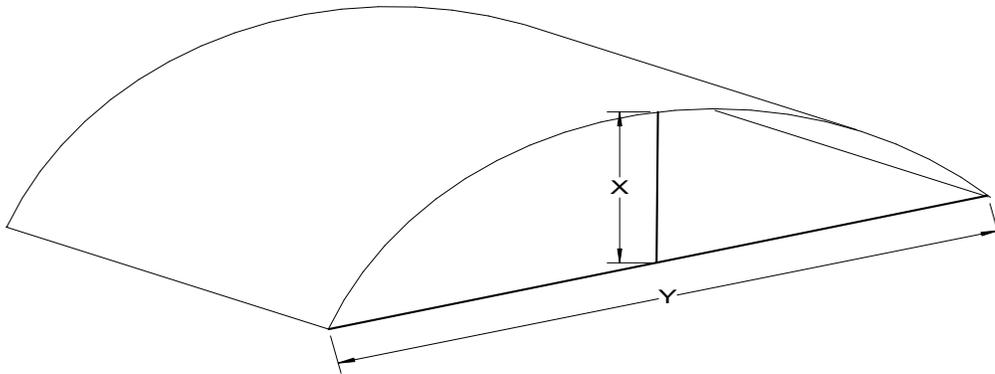
During manufacture of corrugated cardboard, the paper is exposed to stresses that may remain largely latent. As soon as the paper then takes on moisture, it tends to contract in the machine direction while expanding transversely.



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- **Warp - Width & Length**

Warp is measured by placing a board onto a flat surface; the maximum deflection of the board from the flat surface is then measured. The deflection measurement is then divided by the width or length, depending on dimension being checked, and multiplied by 100 to give a percentage.



$$(X/Y) * 100 = \text{Warp Factor}$$

The maximum allowed warp percentage is 2.5, values above this will result in the board being identified as non-conforming and will require authorisation as to its suitability to meet customer's needs.

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A table giving maximum deflection readings is attached

Warp Factors

Board Dimension (upto)	Maximum Deflection Allowed (mm)	Board Dimension (upto)	Maximum Deflection Allowed	Board Dimension (upto)	Maximum Deflection Allowed
200	5	1700	43	3200	80
300	8	1800	45	3300	83
400	10	1900	48	3400	85
500	13	2000	50	3500	88
600	15	2100	53	3600	90
700	18	2200	55	3700	93
800	20	2300	58	3800	95
900	23	2400	60	3900	98
1000	25	2500	63	4000	100
1100	28	2600	65	4100	103
1200	30	2700	68	4200	105
1300	33	2800	70	4300	108
1400	35	2900	73	4400	110
1500	38	3000	75	4500	113
1600	40	3100	78	4600	115