

Temperature Conditioning of Paper and Paperboard

Cubic Feet ↓	10°F	15°F	20°F	25°F	30°F	40°F	50°F	60°F
6 ft ³	5 hrs	9 hrs	12 hrs	15 hrs	18 hrs	25 hrs	35 hrs	54 hrs
12 ft ³	8 hrs	14 hrs	18 hrs	22 hrs	27 hrs	38 hrs	51 hrs	78 hrs
24 ft ³	11 hrs	16 hrs	23 hrs	28 hrs	35 hrs	48 hrs	67 hrs	100 hrs
48 ft ³	14 hrs	19 hrs	26 hrs	32 hrs	38 hrs	54 hrs	75 hrs	109 hrs
96 ft ³	15 hrs	20 hrs	27 hrs	34 hrs	41 hrs	57 hrs	79 hrs	115 hrs

To Use the Chart:

- Determine the pressroom temperature. Determine the temperature of the actual paper (an alternative would be the outside temperature), then subtract one from the other to find the difference. The top line of the chart above uses the temperature difference.
- Using the formulas below, determine the cubic feet (volume) in the paper to be acclimated. Thus if you have three rolls measuring 24" each, the height would be 72". If sheets, 12 cartons measuring 10" would be 120".
- Condition the paper in the pressroom environment for the prescribed time listed in the chart before processing it.

Determining the Cubic Feet (Volume)

To determine the cubic feet, use the appropriate formula below. All measurements are in inches,

Formula for Rolls:

$$\text{Cubic Feet} = \frac{\pi R^2 \text{Width}}{1728}$$

To compute the volume (Cubic Ft), multiply the width X 3.14 X radiuses squared, and then divide by 1728.

Therefore the computation for a 60" diameter roll that is 24" wide would be:

$$\frac{3.14 \times (30 \times 30) \times 24}{1728} = \text{Cubic Feet or } l$$

$$\frac{3.14 \times 900 \times 24}{1728} = 39.25 \text{ CF}$$

Formula for Sheets:

$$\frac{\text{Length} \times \text{Width} \times \text{Height}}{1728} = \text{Cubic Feet}$$