

Technical Bulletin #11 Key Flooring Systems Concrete Surface & Environmental Conditions for Installation

The need for good environmental conditions is a often-ignored requirement for polymer flooring applications on concrete floors. These conditions concern the moisture or the movement of moisture, temperature, and humidity in a building.

Our recommendations for concrete preparation are clearly defined in Technical Bulletin #1. The movement of air, humidity, and surface temperature must also be monitored.

I. TEMPERATURE

For best results, the floor temperature should be above 55°F when installing Key Flooring Systems (preferably above 65°F).

II. DEW POINT & HUMIDITY

Dew point is a very important test parameter to watch when installing Key Flooring Systems. In all cases, Key Resin Company recommends the surface temperature should be 5°F above the dew point.

The amount of water vapor that can absorb is limited by the temperature of the air. As the temperature rises, air can hold more water vapor. When air at any temperature has absorbed all the water it can hold, the air is said to be saturated (or at the dew point). As the vapor-laden air moves through the building, it cools. Should it cool sufficiently to reach the dew point, condensation takes place.

When the surface temperature of the concrete floor is less than the dew point, moisture will condense on the surface and, in some cases, be absorbed into the concrete slab. When this happens prior to, during, or up to 72 hours after the application of Key Flooring Systems, the cure of these systems is interrupted causing dull or blushed surface defects and poor adhesion.

When the surface temperature of the concrete substrate is 5°F above the dew point, these problems can be avoided.

The most effective way to ensure proper conditions during the installation of Key Flooring Systems is to install it after the building has been brought to “use conditions of temperature and humidity.” Continuous air movement and good ventilation will also minimize possible condensation in questionable circumstances.

The chart on the following page relates the dew point to relative humidity and temperature. Use this as a guide to determine the best conditions when installing Key Flooring Systems.

KEY RESIN COMPANY TECHNICAL BULLETIN



Temperatures (°F) of Dew Points vs. Relative Humidity

	100% RH	15% RH	20% RH	25% RH	30% RH	35% RH	40% RH	45% RH	50% RH	55% RH	60% RH	65% RH	70% RH	75% RH	80% RH	85% RH	90% RH	95% RH	100% RH
100°	34.0	42.5	51.0	56.5	62.0	66.5	71.0	74.5	78.0	80.5	83.0	85.5	88.0	90.5	93.0	95.0	97.0	98.5	100
95°	30.0	39.0	48.0	53.5	59.0	63.0	67.0	70.0	73.0	76.0	79.0	81.5	84.0	86.0	88.0	90.0	92.0	93.5	95.0
90°	27.0	35.0	43.0	48.5	54.0	58.0	62.0	65.5	69.0	71.5	74.0	71.5	79.0	81.0	83.0	85.0	87.0	88.5	90.0
85°	24.0	32.0	40.0	45.0	50.0	54.0	58.0	61.0	64.0	66.5	69.0	67.0	74.0	76.0	78.0	80.0	82.0	83.5	85.0
80°	20.0	27.5	35.0	40.5	46.0	49.5	53.0	56.5	60.0	62.5	65.0	67.0	69.0	71.0	73.0	75.0	77.0	78.5	80.0
75°	17.0	24.0	31.0	36.5	42.0	45.5	49.0	52.0	55.0	57.5	60.0	62.0	64.0	66.0	68.0	70.0	72.0	73.5	75.0
70°	13.0	20.5	28.0	32.5	37.0	41.0	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.0	64.0	65.5	67.0	68.5	70.0
65°	11.0	17.5	24.0	28.5	33.0	36.5	40.0	43.0	46.0	48.5	51.0	53.0	55.0	57.0	59.0	60.5	62.0	63.5	65.0
60°	9.0	14.5	20.0	24.5	29.0	32.0	35.0	38.0	41.0	43.0	45.0	47.5	50.0	52.0	54.0	55.5	57.0	58.5	60.0
55°	8.0	12.5	17.0	21.0	25.0	28.0	31.0	33.5	36.0	38.5	41.0	43.0	45.0	47.0	49.0	50.5	52.0	53.5	55.0
50°	4.0	8.5	13.0	17.0	21.0	24.0	27.0	29.5	32.0	34.0	36.0	38.0	40.0	42.0	44.0	45.5	47.0	48.5	50.0
45°	4.0	7.0	10.0	13.5	17.0	19.5	22.0	24.5	27.0	29.5	32.0	34.0	36.0	38.0	40.0	41.5	43.0	44.0	45.0
40°	5.0	7.5	10.0	12.5	15.0	17.0	19.0	21.5	24.0	26.0	28.0	29.5	31.0	32.5	34.0	35.5	37.0	38.5	40.0

REV 08/30/21 v1.0