

Dew Point is defined as the temperature at which air becomes over saturated with moisture and the moisture condenses. A dew point is not the same as humidity alone.

A dew point of concern in a building results when the condensation from high inside humidities and low outside temperatures cause a dew point within the exterior building products. Tectum panels have been used for many years in very high humidity areas such as swimming pools and natatoriums without problems when they are properly designed. Tectum III panels have a built-in vapor retarder with the Dow Styrofoam\*\* insulation.

A dew point that results from inside/outside temperature differences, with moisture, can create problems with any roof deck including Tectum roof deck unless a vapor retarder is present with additional insulation above the vapor retarder. The objective is to add a vapor retarder and additional insulation to Tectum panels so that the dew point (condensation) does not occur within the Tectum panels and moisture does not penetrate the insulation and condense.

The amount of insulation to be used is determined by the inside/outside January temperatures and the relative humidity expected in the building. A chart is available in the current roof deck catalog showing the amount of insulation required to keep the dew point out of the Tectum deck. For example, the outside temperature at 12° F, an average mean temperature in January in Minnesota, with an inside temperature at 70° F and with a humidity of 30 percent in the building; a vapor retarder and a minimum insulation of R-7 should be added to Tectum I panels. Tectum III panels should be used if a high vapor drive is anticipated.

Every building has a certain amount of humidity. However, it becomes a problem only when the inside humidity and the outside temperature combine to cause condensation in the deck or insulation.

Proper design prevents a dew point from occurring within the roof deck system by designing for the average mean January temperature in the area, the likely normal humidity percentage inside and the probable inside temperature.

\*\* Trademark of the Dow Chemical Company