



Temperature/Dew Point Graphs Very Important!

On the following pages you will find two graphs. These graphs were produced in conjunction with a Boston based environmental engineering firm under laboratory conditions. Notice that the first graph is for *Open Cell* Spray Foam insulation and the second one is for *Closed Cell* Spray Foam insulation.

On each graph you will notice that the air temperature is listed vertically to the left of the graph with the breakdown of *typical exterior wall components* listed across the bottom in the order of normal construction procedures; from the primer coat on the inside to the wood siding on the outside. The graphs are calculated using an outside air temperature of about 3 degrees F with an inside air temperature of about 72 degrees F.

The blue line on the graph represents the surface temperature at any given point through the wall section; the red line represents the Dew Point (the temperature at which any water vapor in the air will condense and turn into liquid water.)

The point at which these two lines cross is the location within the wall section where the Dew Point is achieved and water will form.

Notice the two red ovals on the lower location of wall components; these describe the foam insulation within the wall section- one is 5 inches of Open Cell Foam, the other is 3.5 inches of Closed Cell Foam insulation.

Now, look at where the red and blue lines cross; remember, this is the point at which water will start to condense. Notice that in BOTH cases, the lines cross within the plywood sheathing! This, of course, is impossible because air cannot go through the plywood sheathing thus there is no water vapor contained within the material.

This *Position of Dew Point* is of paramount importance to you! IF those red and blue lines cross *within the stud cavity* you will have water condensing in the wall *soaking the insulation material used*; whether it is rock wool, fiberglass or cellulose! Not only will you be prone to water damage, you also will be prone to mold growth- not to mention the drastic drop in the R-Value of the insulation used within the wall.

With the proper thickness of Spray Foam insulation (open or closed cell) installed in your home, you will never have condensation problems within the walls; period!

Ask ANY other type of building Insulation Company to give you a graph of their product as it relates to the Dew Point within the wall structure; we doubt they will, as it is assured that those little lines will cross inside the wall cavity leaving you with water in the walls.