

Park Home Case Study Number Five

The Importance of Coating Preparation

By their very nature water based coatings cure by a progressive evaporation of the water trapped within the coating therefore, for any water based coating to be fully effective it must be allowed to adequately dry out before any further coatings are applied.

The actual rate of evaporation of water from a given coating is a direct function of the dryness of the surrounding air (expressed as the relative humidity), the degree of air movement over the surface of the coating and temperature level.

The effects from these three factors on evaporation can be appreciated in the following examples:

If the **temperature** and **humidity** remain the same but the **air movement** increases from 5 mph to 20 mph:-

Then evaporation will increase by **300%**

If the **humidity** and **air movement** remain the same but the **temperature** changes from 60°C to 90°C:-

Then evaporation will increase by **300%**

If the **temperature** and **air movement** remain the same but the **humidity** decreases from 90% - 70%:-

Then evaporation will increase by **300%**

However:

If the **air movement increases** from 5 mph to 20 mph

And

If the **temperature increases** from 60° to 90°

And

If the **humidity decreases** from 90% - 70%

The combined actions would improve the actual drying time by 900%

This simple example serves to highlight the importance of ensuring the combination of all three conditions to ensure that a full film formation (the hard coating left when the water has evaporated) can be achieved.

Recognition of the importance of adequate preparation in the application of water based coatings will always ensure a trouble free system.