

WATERPROOFING MEMBRANES: REDGARD® SPEEDCOAT™'S RAPID CURING TECHNOLOGY EXPLAINED

CUSTOM's RedGuard® SpeedCoat™ Waterproofing Membrane has a unique, cross-linking moisture cure formula that allows it to cure rapidly regardless of the environmental conditions during installation.

Membranes that cure through evaporation

Typical water-based or latex-based liquid-applied waterproofing membranes rely on drying or evaporation of water from the product to form a waterproof membrane. As water evaporates, or is absorbed into the substrate, the polymer in the product will coalesce and form a waterproof film. If the water evaporates too quickly from the surface of the liquid material, a waterproof film can form on the surface and slow the evaporation of water throughout the wet membrane. If the water in the membrane evaporates too slowly, the liquid material can take substantially longer to dry.

The rate of water evaporation is dependent on the temperature and relative humidity of the surrounding environment. If the air is saturated with moisture, the relative humidity is high; water in the liquid waterproofing membrane cannot evaporate and remains in the film, resulting in slow drying. Temperature also affects the rate of evaporation. In cold weather, the water in the product evaporates slowly. When the ambient temperature heats up, the surface water is released quickly.

In addition, air flow (or lack of air movement) across the surface of the liquid membrane will affect the drying rate. As the air immediately above the liquid membrane becomes saturated with moisture, a gentle breeze is needed to replace it with fresh dry air. Fanning the product will help it dry quicker. If that breeze is too much, it can cause the product to dry too quickly, skinning over and trapping moisture that will actually slow the drying. As you can see, the unpredictable environment plays a major role in the installation of typical liquid-applied waterproofing membranes and can cause significant delays in the installation of the tile.

Moisture Cure Technology

CUSTOM's RedGuard SpeedCoat does not rely on evaporation to dry or cure the membrane. It is formulated to chemically cure from within the film. The chemical curing process is activated by moisture in the environment. RedGuard SpeedCoat's rate of curing is less dependent on relative humidity; in fact, it needs the moisture in the air to properly cure.

This is most apparent in cold weather, when the air does not hold as much moisture. At 40°F and with a relative humidity of 25%, it will take two coats of RedGuard SpeedCoat approximately 8 hours to cure before flood testing. If the relative humidity is increased to 85% at the same temperature, it only takes 4 hours for two coats to cure sufficiently for flood testing. A slightly damp surface will help to reduce the cure time in cold and dry situations. Traditional waterproofing can take significantly longer in these conditions.

Since warm air holds a lot of moisture, RedGuard SpeedCoat is not adversely affected by the relative humidity. At 90°F, the typical cure time before flood testing is 2 hours whether the relative humidity is 85% or 25%. In most instances of general waterproofing (application of one coat), you can count on RedGuard SpeedCoat to be dry and ready for tile installation in 1 hour.

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