TECHNICAL BULLETIN

Paint Skinning

Paint skinning is a fairly common occurrence throughout the paint industry. Essentially, a paint skin can develop when the paint inside the bucket comes into contact with the underside of the lid during handling, shipping, tinting and/or normal use. When conditions are right, the paint on the lid can dry, form a skin and subsequently fall back into the paint causing lumps to be suspended in the paint.

What causes paint skins to form?

Many factors influence the formation of skins. For example, some paints skin more easily than others – higher solids and lower VOC paints are most likely to skin. Heat causes paint skins to form, so skinning is always worse in the summer. Also different climates, such as hot deserts areas versus cool coastal regions, can influence how much skinning occurs. Lastly, the resin system used in paint can also affect the severity of the problem. Paints formulated with 100% acrylic resins will still form skins, but the skins adhere to the lid versus falling off into the can. Some resin systems will not adhere to the lid as well.

Although a paint bucket is sealed, what causes paint skins to still form? When a bucket of paint is exposed to warm conditions, a temperature difference occurs inside the bucket and the lid becomes warmer than the rest of the bucket. This temperature imbalance makes the water evaporate out of the paint on the underside of the lid and condense on the cooler surface of the paint in the can. As the water leaves the paint on the lid, the remaining paint will start to dry and form a skin.

How to prevent or minimize bucket skins during field application

Although paint manufacturers do their best to prevent skinning, it is an industry recommended practice to strain paint through a nylon strainer bag or other type of filter prior to application. This will help to ensure any potential skins are filtered out of the paint. Additionally, always re-seal the lid and achieve as tight a seal as possible after use. If the paint is to be stored for a prolonged period before its next use, some additional steps can be taken to minimize the formation of a skin, or prevent the skin from ‘dropping’ into the paint.

- Float 6-8 oz of clean water on the remaining paint in the bucket (water-based paint only). This will help to keep a dried skin from forming on the paint.
- Before sealing the lid, place clear ‘plastic’ wrap across the entire top of the bucket to create a better seal. This will help to reduce air movement and prevent any previously dried paint on the lid from dropping into the paint during shaking or re-mixing.
- Try and store all paints in an area where a constant temperature of 70-80°F can be maintained. Do not store paint in direct sunlight.

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What has Dunn-Edwards® done to minimize skinning?

During the bucket manufacturing process, solid plastic is heated until it becomes liquid. It is this 'liquid' material that forms the paint bucket and lid. As the plastic cures, an oily film forms and develops as residue on the surface of the lid. Dunn-Edwards has chosen to use suppliers that 'burn' off that film (commonly referred to as "heat treating") so in the event paint contacts the lid, the skin will adhere to the cover more firmly as opposed to falling back into product.

With the start-up of our new Phoenix plant in Arizona, during the canning process, we 'float' a thin layer of water on top of the paint before sealing the lid. The floating process helps to create a thin barrier between the paint and the head space in the bucket, minimizing the ability of the paint contacting the lid. The addition or 'floating' of 6-8 oz of water does not have any affect on the paint product or its performance.

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