Differentiation between General Purpose Epoxies and ATPG's High Performance Coatings

Epoxy coatings are generally packaged in two parts that are mixed prior to application. The two parts consist of 1) an epoxy resin which is cross-linked with 2) a co-reactant or hardener. Epoxy coatings are formulated based upon the performance requirements for the end product. When properly catalyzed, and applied, epoxies produce a hard, chemical and solvent resistant finish. They are typically used on concrete and steel to give resistance to water, alkali and acids.

It is the specific selection and combination of the epoxy component (Part A) and the hardener component, (Part B) that determines the final characteristics and suitability of the epoxy coating for any given environment.

General purpose epoxies, such as those used for flooring, primers and light industrial applications have utilized polyamide curing agents for a number of years. While these materials have proven sufficient in certain, limited, industrial applications, they are not suitable for a harsh environment due to their pronounced chalking as well as additional limitations.

Chalking. Oxidation or degradation of a coating due to weathering is the generally accepted definition of chalking. Chalking occurs when the coating does not exhibit sufficient resistant to the combined interactive forces of UV bombardment, rain, snow, and temperature cycles and is characterized by the development of a white powder on the surface of the coating.

Moisture pick up. These epoxies are designed for application in environments with up to a maximum 85% RH. High humidity and/or the presence of moisture will cause discoloration or a "greasy" exudate feel and poor uniformity of appearance. The polyamide cured resins are adversely affected by the moisture and will separate and cause discoloration.

Discoloration from Exposure to UV Light (Sunlight) This is a surface phenomenon attributed to the natural darkening of epoxy resin upon exposure to UV or sunlight. This problem occurs most often in areas with intermittent sunlight, creating a checkerboard effect.

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ATPG High Performance Coatings

ATPG coatings are based upon a completely unique polymer chemistry. The proprietary polymer utilized in our coating systems improves the environmental impact of the coating and thus eliminates the inclusion of toxic solvents. furthermore, the revolutionary and proprietary curing agents used in the coating enable it to outperform other coatings available in the market.

ATPG‘ s curing agent is a proprietary, modified cycloaliphatic agent specifically formulated to impart enhanced performance qualities when compared to other curative systems. When combined with our specially modified, proprietary, solventless thermoset epoxy the resultant ring structure of the formulation provides greater structural flexibility which enhances adhesion, pigment retention, UV resistance, weatherability, permeability, tensile strength, chemical and impact resistance all, ideal attributes of a high performance coating.

The majority of traditional epoxy coatings use water or VOC- (Volatile Organic Compounds) laden solvents as the vehicle to keep the coating in a liquid state so it can be transferred from the container to the surface. VOCs are harmful to the environment and are also detrimental to the coating system performance.

The drying process of these traditional coatings relies on solvent or water evaporation. A coating inadvertently applied too thickly may not be able to allow the solvents to fully evaporate out of the coating leading to solvent entrapment. This can result in blisters, voids, pinholes, or soft spots in the coating. ATPG High Performance Coatings eliminate the solvent risks.

A unique feature of ATPG is its low surface tension. Unlike the more commonly used solid resins cut in solvent ATPG has excellent penetrating properties & flow until it is truly “chemically” cured, as opposed to partially cured through solvent evaporation alone ATPG Coatings deliver better edge retention than solvent based coatings. As ATPG High Performance Coating’s cure, they do not shrink like solvent-based coatings or pull away from surface edges, thus significantly increasing surface protection and reducing failures in the field

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