7 Reasons Why Epoxy Floors Fail

Epoxy Enamel is formulated to provide excellent chemical, abrasion and direct impact resistance for interior exposures, which can be used on concrete and steel substrates. Epoxy floors are beautiful and strong, but when they fail you can encounter all sorts of problems. Here are the top 7 reasons we found why Epoxy floors fail:

1. Lack of Proper Preparation

This is most probably the biggest reason why Epoxy floors fail and the number one reason for failure. If you want to coat an old substrate with an Epoxy Coating you need to make sure the substrate is ready to accept the coating. Grind and clean the substrate thoroughly as required. The substrate must be dry and free of dust or any substances that could cause the Epoxy not to bond properly with the substrate. Effective preparation is key.

2. Humidity

Epoxy products do not react well to high humidity or moisture in the substrate. Ensure that the substrate is completely dry, that there is no moisture or water ingress from above and below. If there is any moisture in the floor, the Epoxy coating will fail.

3. Weak Substrate

If you apply a high quality Epoxy coating to a poor or weak substrate (cement) the Epoxy will detach from the substrate. In this case it is not the Epoxy which fails but the substrate (cement), which will cause the Epoxy to crack or lift.

4. No or weak Epoxy Primer

It is critical to apply an Epoxy Primer prior to applying the Epoxy top coat. The Epoxy Primer should be thin in order to penetrate the smallest holes in the substrate (cement). The Epoxy Primer makes it possible for adhesion to take place between the substrate (cement) and Epoxy. The Primer will act as an intermediate coat which will ensure proper adhesion between the substrate (cement) and the Epoxy.

Floors experience heavy wear and tear and require a durable, hard-wearing coating. If there is improper adhesion between the substrate (cement) and the Epoxy, the Epoxy floor coating will fail.

5. Incompatible Substrates

Make sure that the substrate is both compatible with Epoxy in terms of adhesion and tensile strength. Epoxy may not be compatible with the substrate. For example, never coat wooden floors, metal sheeting or PVC linings with Epoxy. These materials have a substantial degree of flexibility, whereas Epoxy does not share these properties, which will cause the Epoxy to crack.

6. Contaminated Substrates

This problem is often encountered in older installations such as workshops and factories. If the floor has been contaminated with oils, greases and different types of chemicals it will create a reaction with the Epoxy and adhesion failure will occur. It is essential to thoroughly remove the contaminants properly prior to application. In severe cases, grinding or milling of the substrate would be

recommended. Another alternative would be to add a layer of cement based, self-leveling screed, followed by priming and Epoxy overcoating.

7. Incorrect Epoxy vs Catalyst Ration

Epoxy is a twin pack coating, consisting of Epoxy Enamel and Catalyst. These two separate components need to be mixed in the following ratio: 4 parts Epoxy Enamel to 1 part Epoxy Catalyst by volume. This ratio is critical to coating performance. Failure to follow this mixing ratio may result in product failure (e.g. coating remains soft and tacky, or may dry too quickly making application problematic). Ensure that the product is mixed properly. Mixing the Epoxy with a stick is not good enough. Mixing with an electrical mixer for 3 – 4 minutes is recommended.

For further product information, Technical Data Sheets (TDS) and Safety Data Sheets (SDS) visit www.durapaints.co.za