

‘ZINC-RICH’ PRIMERS – WHEN LESS IS MORE

Australian Standards define Zinc-Rich primers as having at least 85% zinc. Contrary to popular belief we have established that this heavy loading is questionable because:

- The strength of the cathodic current that the ‘zinc-rich’ primer is attempting to achieve is a function of the purity and quality of the zinc additives, yet the standard makes no mention about the quality of the zinc additive(s);
- Base resins do not have a strong chemical bond with the zinc fillers, so the mere presence of the fillers detracts from the resin’s properties;
- The reduced resin content affects the primer’s ability to bond onto the substrate (*so the primer’s are therefore less surface tolerant*) and also makes the primers brittle and prone to cracking when subjected to variations in temperatures and vibration;
- Less resin content means that there is less protection from chemical reactions caused by surface contaminants;
- The lack of resin makes the epoxy zinc rich primers more porous, which is an issue because the moisture converts the zinc into harmful zinc salts.

Our experience and testing has shown that it is more important to use high quality zinc concentrates and micaceous fillers as they:

- Increase the surface area for the resin to bind onto;
- Ensure we maintain a high resin content;
- Effectively create an impossible path for contaminants to ever reach the substrate; and
- Creates an impervious barrier that reflects heat and improves UV resistance .

As a result of years of testing and analysis in our laboratory we have come to the conclusion that less is more and that our 83% zinc content performs far better than high zinc content coatings, while we also achieve a far better adhesion than conventional zinc coatings. In practice this means is that our primers:

- are not porous;
- provide better galvanic protection than most high-build, ‘zinc-rich’ systems;
- have far better surface tolerance, which means that they work really well on ST3 surfaces;
- do not crack, even when applied up to 300µm (which is a big issues when coating corners and hard to reach areas);
- do not need to be topcoated as soon as possible after being applied to prevent microcracking and porosity issues.

In this day and age, when we have better quality raw materials and more high-tech testing facilities at our disposal, it is hardly surprising that we have been able to achieve a more balanced outcome.

Just one more reason to join the MCU-Revolution