



ABSTRACT

With the increase in the maintenance and repair of existing concrete structures, we are often faced with consulting, design engineers, product suppliers, contractors, or asset owners with different opinions on what the correct surface preparation should be for various product applications. One of the most important activities to consider during the repairs or coating of concrete structures is the surface preparation of the substrate. Should this preparation not be done correctly, the repair mortar or coating will surely delaminate/de-bond, and the repair or coating will fail with the risk of causing an accelerated deterioration of the structure and additional costs for rework.

The purpose of this research study is to establish a standardised surface preparation for some of the most common types of repair and coating systems on the market.

This will include:

- Methods of surface preparations using different types of equipment available in the market.
- Establishing the most cost-efficient systems while considering time and quality deliverables.
- Analysing the substrate after the preparation has been completed to determine the damage caused during the preparation, if any.
- Applying the various products to the prepared surface areas, as per the product supplier application methods
- After the repair or coating has cured, the various sections will be tested to establish which surface preparations are the most suitable for the product application.

After the research has been completed, a standardised methodology will be developed for the various products to ensure the maximum bond is achieved for the repair or coating systems while ensuring minimal damage to the substrate. This will include a surface grid sample.
