



ADHESIVES – SEALANTS – CHEMICAL PRODUCTS FOR BUILDING

15th September 2015

**Results of Pull Out Test Conducted on Drybase Shower
Base Using Mapelastic AquaDefense Waterproofing
Membrane and Keraflex Maxi S1 Tile Adhesive**

Test initiated at the request of:

**Mr Jason Goodhue
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Pull out test – tiles laid 14/08/15

Pull out test conducted on the 15/09/15

All tests were conducted under controlled conditions with the ambient temperature at approximately 23°C and the relative humidity at approximately 50%.

The pull out tests were undertaken on a supplied piece of media blasted fibreglass board that was first adhered to a concrete slab using Kerapoxy. This was done to ensure the stability of the board during the pull out process.

- The prepared side of the test board was divided into two sections, one side was treated with Eco Prim Grip primer and the other left unprimed.
- Two coats of Mapelastic AquaDefense were then applied over the entire area, allowing sufficient curing time between coats and sufficient curing time after the final coat, as per the technical data sheet.
- The area was then applied with Keraflex Maxi S1 tile adhesive using a 6mm notched trowel
- In each of the two sections (primed and non primed) five 50mm x 50mm ceramic test tiles were laid.
- The test was then left untouched to fully cure at approximately 23°C and 50% RH for the minimum cure period of 28 days. This is the period required for the adhesive to reach its full strength as per the technical data sheet for Keraflex Maxi S1.

Test Results

These following figures are an average of the 5 individual readings for each of the two sections.

With Primer

Eco Prim Grip, Mapelastic AquaDefense and Keraflex Maxi S1

0.96 N/mm²

Without Primer

Mapelastic AquaDefense, Keraflex Maxi S1

1.20 N/mm²

Observation

The failure point for the test was within the adhesive bed itself which is termed as a cohesive failure. This occurs when the adhesion to the substrates exceeds the adhesive bed's ability to hold itself together and separation occurs within the adhesive. This type of failure is ideally what we are looking for as it shows the adhesive has reached the limit of its strength without releasing from the substrates.

In both cases (with and without primer) the Mapelastic AquaDefense waterproof membrane tested with Keraflex Maxi achieved an average adhesion strength greater than the minimum required for an adhesive to be classified as a C1 (unmodified) adhesive, which requires a pull off reading of at least 0.5 N/mm².

However, for a warrantable installation over a waterproof membrane, the pull off result for the adhesive must be greater than 1 N/mm², thereby meeting the requirements of a C2 (modified) adhesive.

Conclusion

According to the results of the testing and the warranty requirements, Mapei NZ Ltd can offer a performance warranty for Mapelastic AquaDefense when applied directly to the correctly prepared Drybase fibreglass shower tray, without any primer.

General

The suitability of an adhesive or waterproof membrane cannot to be based solely on its performance in a laboratory test situation, and other factors such as humidity, heat, thermal shock and substrate stability need to be considered as well.

Advice from a MAPEI representative should be sort prior to any decisions being made as to the suitability of one adhesive or waterproof membrane over another in any given situation.

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