

September 15, 2018

Testing Report

Prepared for: Ed Rau, AFE
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Summary

The purpose of this test was to determine the adhesion between a fiberglass panel and concrete using the material bonding CR Flex polyurethane (herein referred to as bonding material) without primer, minimal fiberglass preparation, and a damp concrete substrate. The results of the testing indicated an average bond strength of 240-290 psi which resulted in a substrate failure of the concrete in both cases.

Methodology

A fiberglass sample panel was brought to us by Ed Rau of AFE. We obtained a 3000psi concrete block for testing purposes. The fiberglass panel was prepared by sanding with coarse 80 grit sand paper. The concrete block was given no surface preparation and was dampened with water immediately prior to application of bonding material. The fiberglass panel was pressed gently into the bonding material until excess bonding material was extruded on all sides. After six hours the fiberglass panel was drilled for placement of 50mm dollies. An adhesive material Enecon SpeedAlloy was used to bond the test dollies to the fiberglass substrate. After full cure of the bonding adhesive the pull test commenced using an Elcometer 506 hydraulic adhesion testing unit that outputs a digital reading. The results of testing can be seen in Figure 6 and described above in the summary.

If you have any questions about this report or would like a video of the test please feel free to contact us.

Best Regards,



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Appendix: Photographic Documentation
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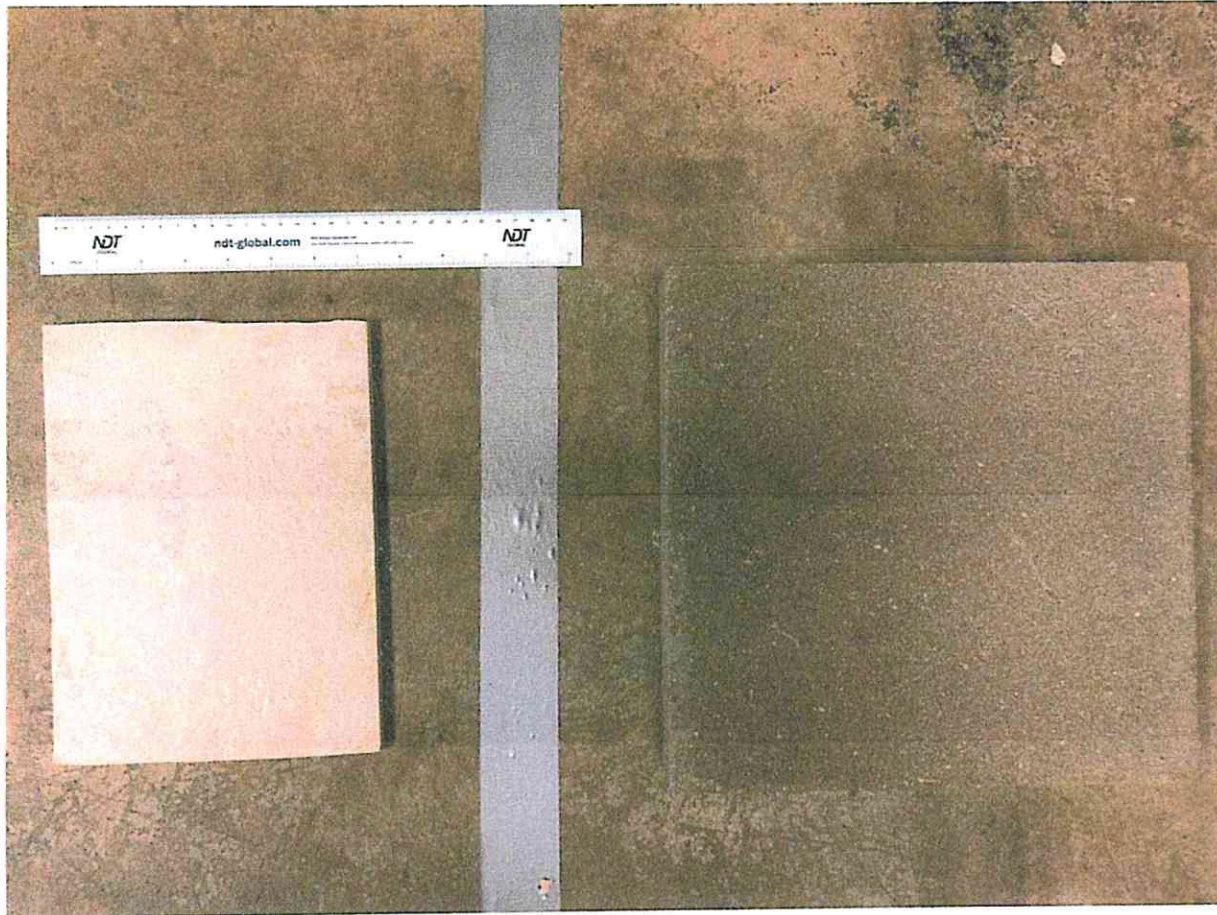


Figure 1: Fiberglass substrate with minimal sanding, and wetted concrete block.

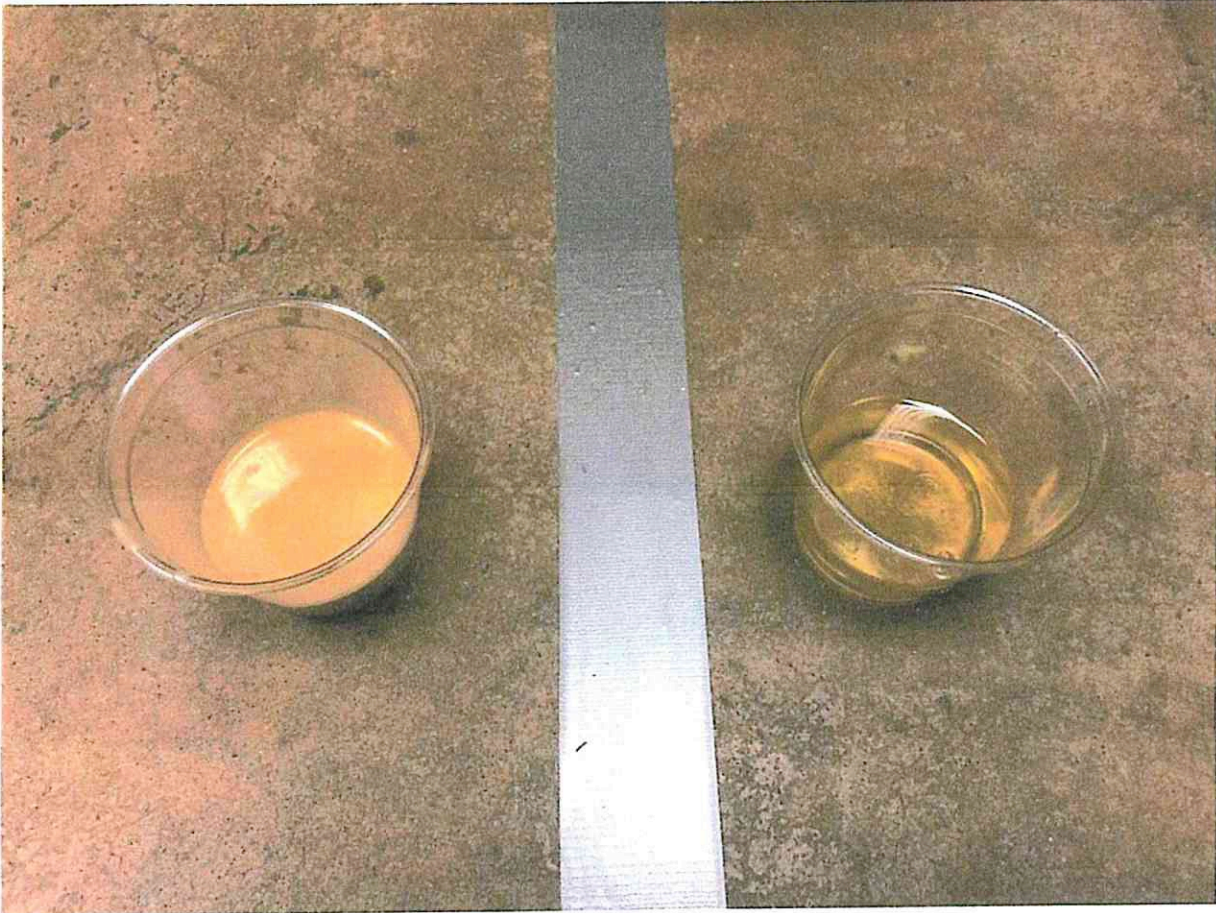


Figure 2: Proportional measured mix of bonding material.

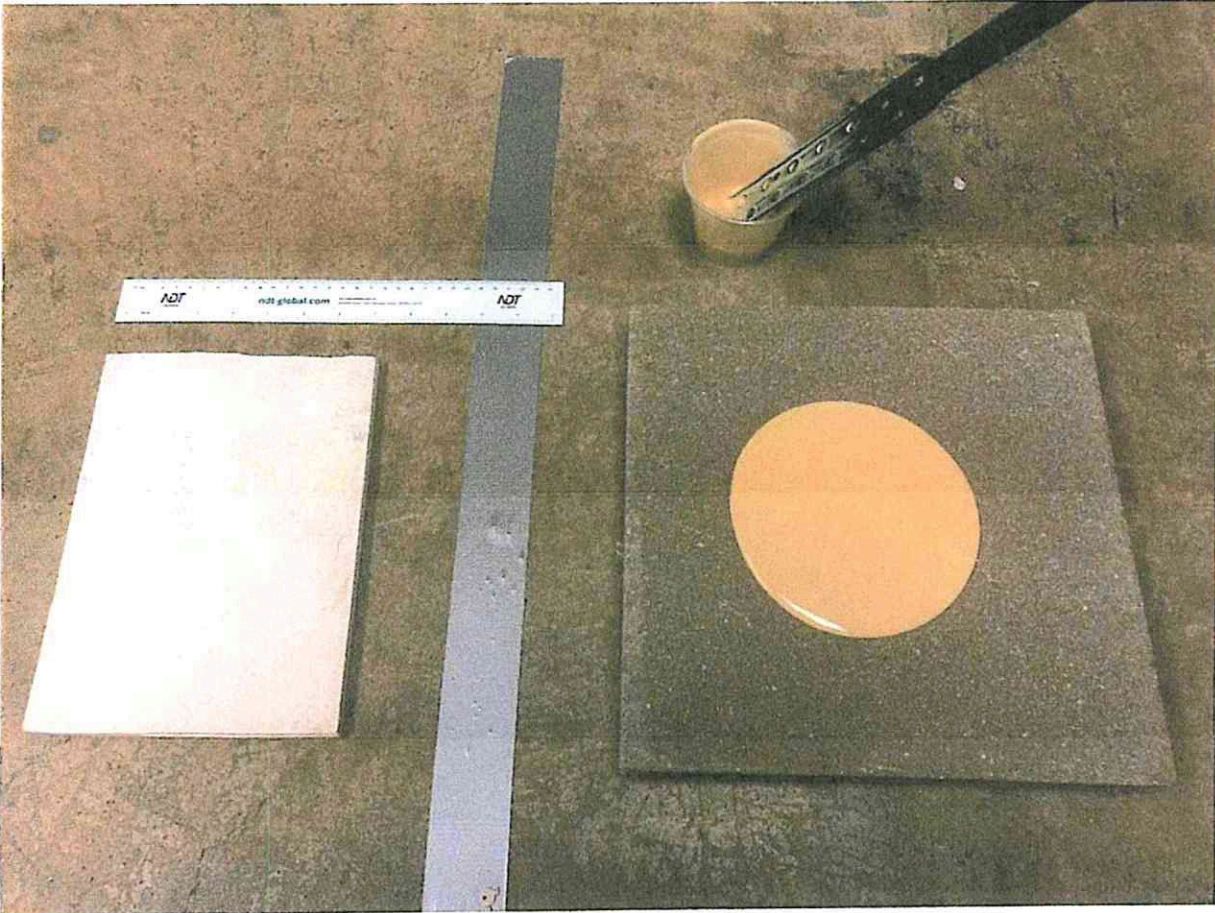


Figure 3: Bonding material applied to wetted concrete substrate.

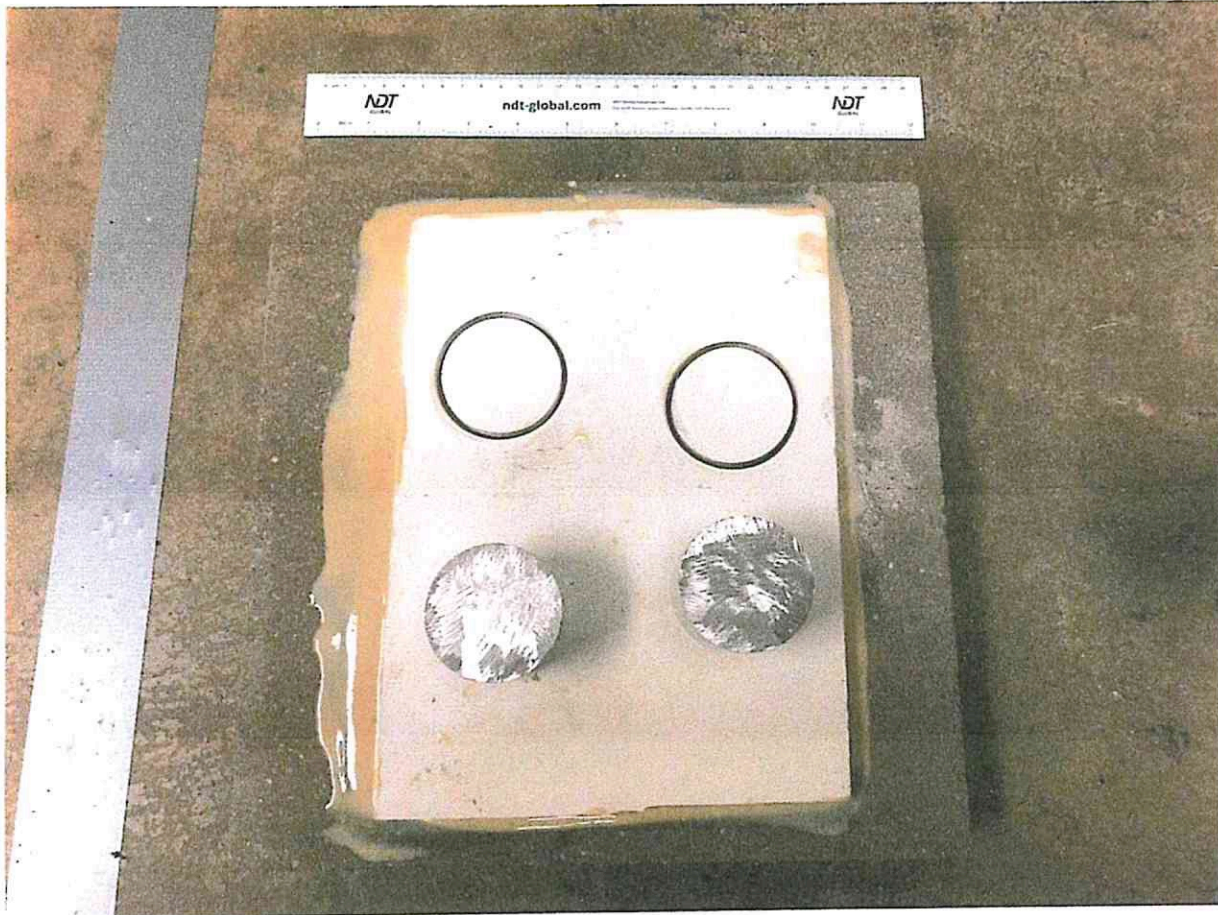


Figure 4: Fiberglass panel adhered to concrete block, test points drilled for 50mm test dollies.

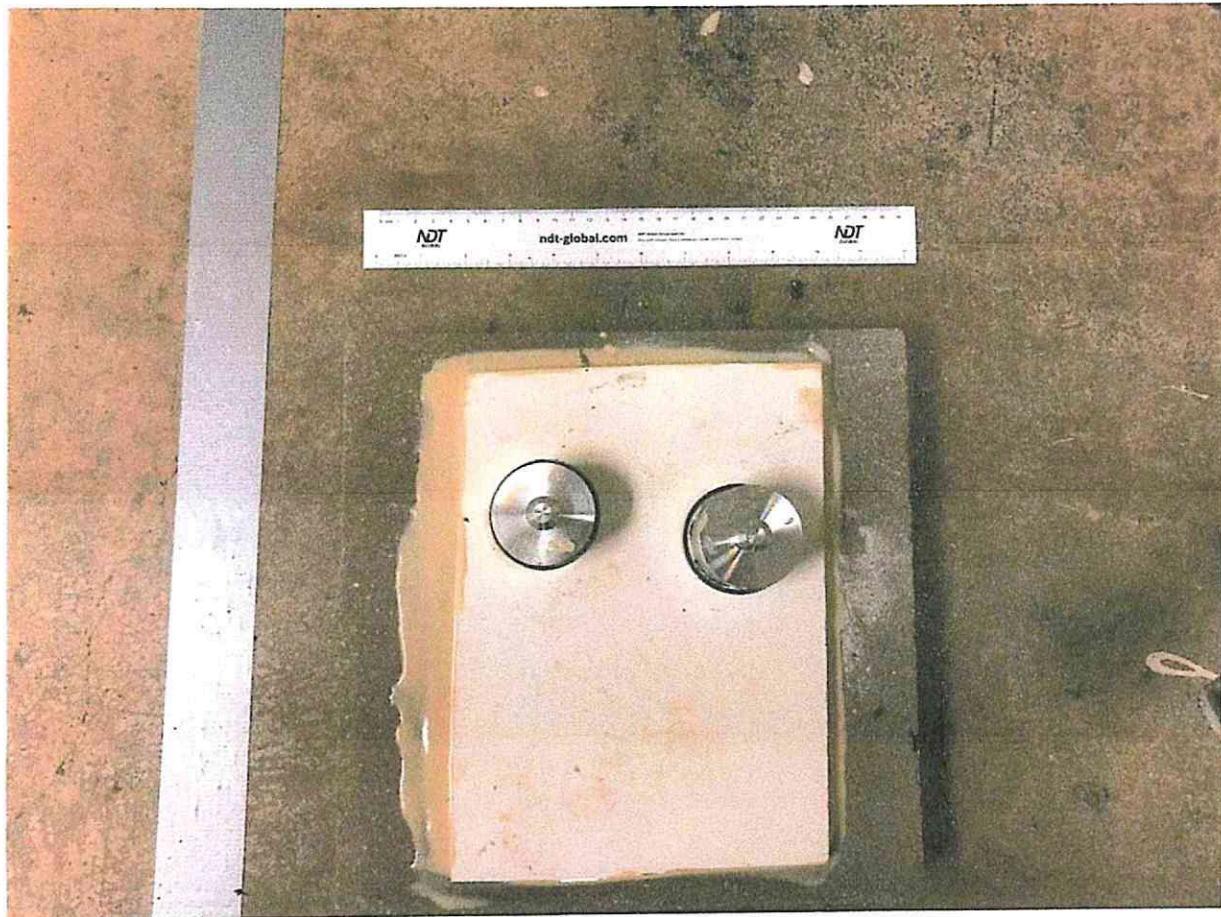


Figure 5: 50mm test dollies bonded to fiberglass using Enecon SpeedAlloy.



Figure 6: 50mm test dollies pulled using Elcometer 506 adhesion test unit, and visible substrate failure.