



CRANE Composites



LABORATORY REPORT

FRP Panel “Torture” Test
with Glasbord Panels

GLASBORD



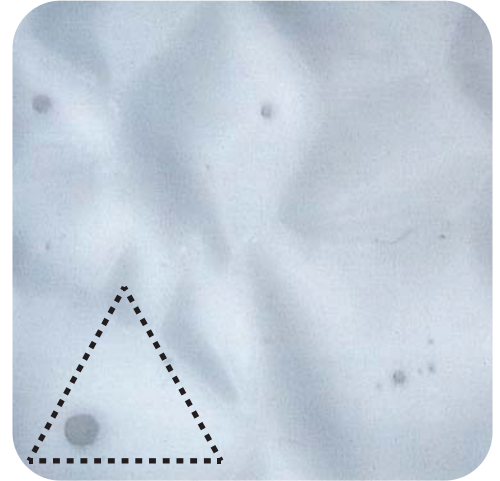
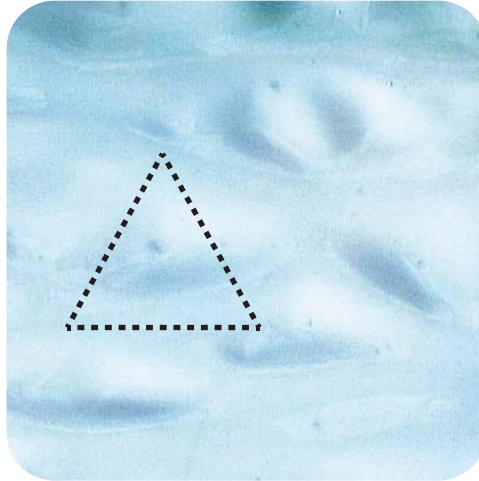
The Only FRP panel with *Surfaseal*

WHERE TRADITION & INNOVATION CONVERGE

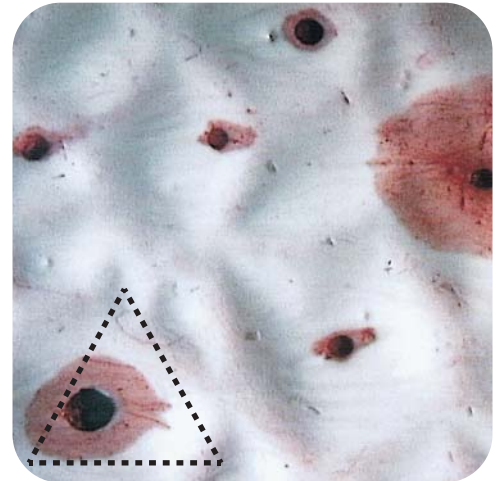
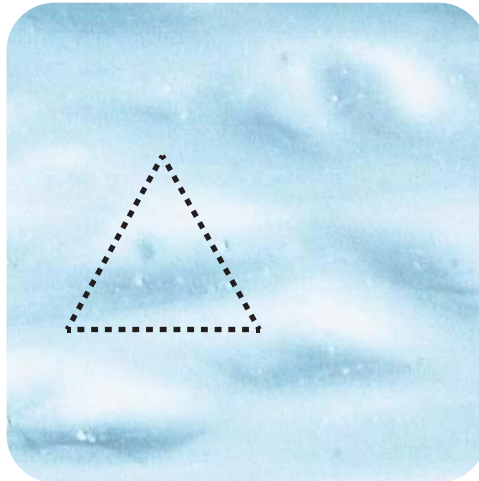
GLASBORD[®]
The Only FRP panel with *Surfaseal* by CRANE Composites

Brand A

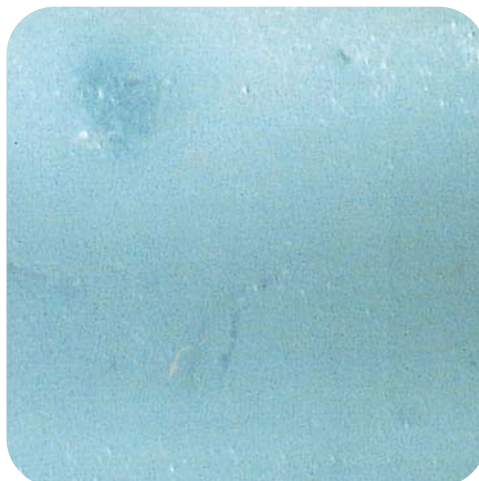
Before Staining
25x Magnification



After Staining
25x Magnification

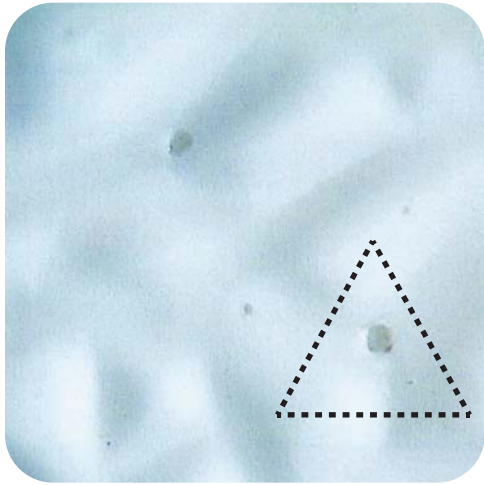


After Staining
93x Magnification

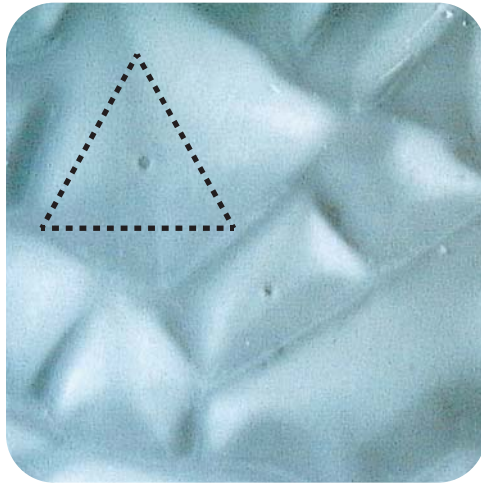


FRP Panel "Torture" Test with Glasbord Panels

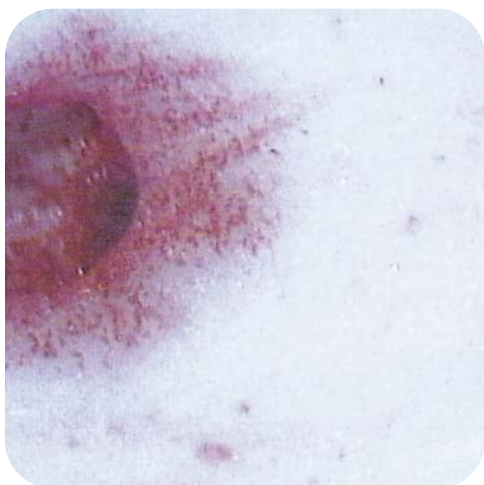
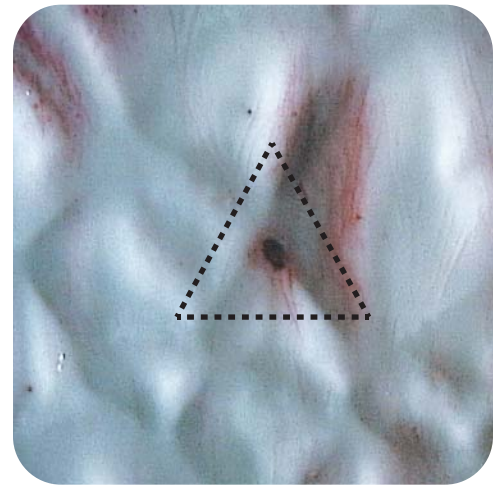
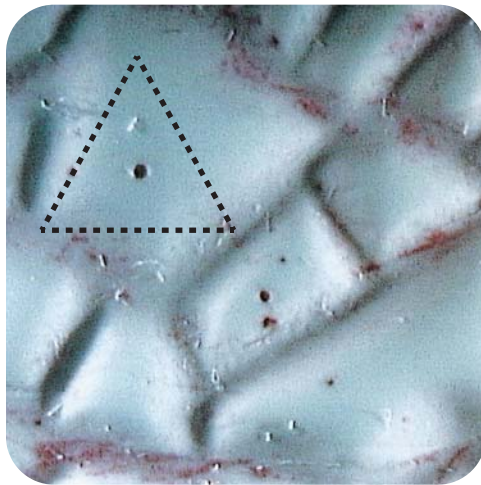
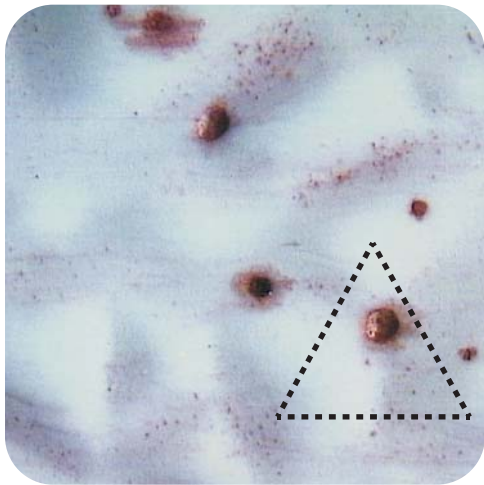
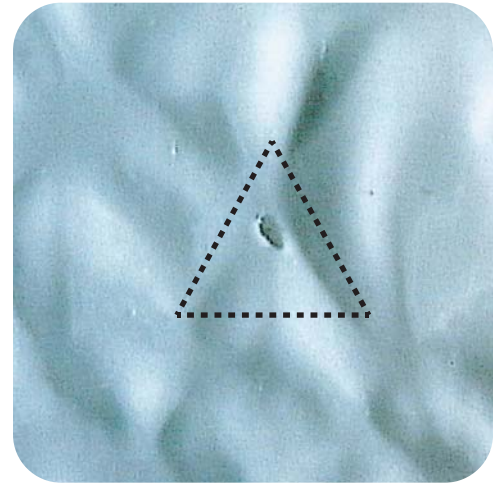
Brand B



Brand C



Brand D



Test Procedure

PURPOSE

To visually compare the cleanability and resistance to surface abrasion of commercial grade FRP panels.

EQUIPMENT

- Video Imaging Microscope - Navitar Micromate
- Red Penetrating Dye or Permanent Black Marker
- 5" x 1" Stiff Wire Brush
- Lint Free Rag
- FRP Cleaner

SAMPLE PREPARATION

1. Cut samples to 5" x 8"
2. Clean samples of markings or dirt

PROCEDURE

A. Abrade Panels

1. Using the wire brush, vigorously abrade the samples applying strong, even pressure.
2. Abrade each sample with 10 cycles. One cycle consists of a forward and backward motion over the entire length of the panel.

B. Staining Samples

Using either a permanent black marker or red penetrating dye, apply even coverage to the entire length of the abraded area.

C. Clean the Panels

1. Spray the FRP cleaner directly onto the panel surface and begin wiping off the stain with the lint free rag.
2. Change the cleaning rag often to assure that the stain is being wiped off and not smeared on the panel.
3. To effectively remove the stain, the sample may require additional spraying of FRP cleaner on the panel surface.

EVALUATING & REPORTING RESULTS

- A. Evaluate samples with Video Imaging Microscope.
- B. Observe the abraded areas for actual surface damage.
- C. Compare the amount of stain that remained on the surface of various panels after being cleaned.

CONCLUSION

Inspection of the samples before abrasion shows open surface porosity on samples A, B, C, & D. Inspection of the samples after cleaning shows scratches on the surface of A, B, C, & D and additional open surface porosity. Penetrating dye has been absorbed by the scratches and surface porosity and was not removed by cleaning.

The Surfaseal finish on the Glasbord sample has sealed the surface and protected the panel during abrasion. No penetrating dye was absorbed by the panel.

"Competitive samples photographed in this test were received from customer inventories. These microphotographs represent the observed differences and apply only to the sample universe studied. Samples or products from magnified areas were chosen by Crane Composites lab technicians as representative of the entire surface."

