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Investigative Chemistry  
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Construction Materials  
Product Evaluation  
Welder Qualification

**CHEMICAL STAIN TESTING  
OF  
PANELS**

**Prepared for:  
Alpar Architectural Products  
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Minneapolis, MN 55417-0207**


**Client Purchase Order Number: 1114**

**Prepared By:**



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The test results contained in this report pertain only to the samples submitted for testing and not necessarily to all similar products.

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Stork Twin City Testing Corporation is an operating unit of Stork Materials Technology B.V., Amsterdam, The Netherlands, which is a member of the Stork Group

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**CHEMICAL STAIN TESTING OF PANELS**

**INTRODUCTION:**

This report presents the results of chemical stain tests conducted on a panel sample. The testing was authorized by Lisa Britton of Alpar Architectural Products on October 9, 2009. The testing and data analysis were completed on October 30, 2009.

The scope of our work was limited to conducting chemical stain tests on the samples submitted and reporting the results.

**SAMPLE IDENTIFICATION:**

The samples were identified as panels. Several sheets of the panel were provided by the customer. Stork Twin City Testing personnel removed areas of imperfections prior to testing.

**TEST METHOD:**

The samples were allowed to condition at standard laboratory conditions of 72 ± 4°F and 50 ± 5% relative humidity for at least 40 hours prior to testing. Several drops of each chemical or material being tested was applied to the panels provided and covered with a watch glass. Samples were exposed to the chemicals or materials for seven (7) days and then observed after rinsing them with water and wiping dry. The chemicals used were as follows:

Chemicals
50% Hydrofluoric Acid
30% Hydrofluoric Acid
62% Perchloric Acid
50% Perchloric Acid
10% Hydrofluoric Acid
30% Sulfuric Acid
3% Sulfuric Acid
70% Nitric Acid
50% Nitric Acid
30% Nitric Acid
10% Nitric Acid
10% Citric Acid
5% Acetic Acid
Oleic Acid
10% Sodium Hydroxide
1% Sodium Hydroxide
10% Ammonium Hydroxide
2% Sodium Carbonate

Chemicals
5% Phenol
10% Sodium Chloride
3% Hydrogen Peroxide
95% Ethyl Alcohol
50% Ethyl Alcohol
Acetone
Wesson Oil
“All” Detergent
Tomato Juice
Orange Juice Concentrate
Tea
Coffee
Isopropyl Alcohol
Pond’s Cold Cream
Mayonnaise
Mustard
Clorox
Pepsi-Cola

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**TEST DATA:**

Chemicals	Observation after 7 days
50% Hydrofluoric Acid	Slight bleaching
30% Hydrofluoric Acid	Very slight bleaching
62% Perchloric Acid	Very severe attack – see through panel
50% Perchloric Acid	Severe attack
10% Hydrofluoric Acid	Very slight bleaching
30% Sulfuric Acid	Very slight bleaching
3% Sulfuric Acid	Very slight bleaching
70% Nitric Acid	Severe bleaching and cracking
50% Nitric Acid	Severe bleaching and cracking through panel
30% Nitric Acid	Severe bleaching and cracking
10% Nitric Acid	Moderate bleaching and cracking
10% Citric Acid	No change
5% Acetic Acid	No change
Oleic Acid	No change
10% Sodium Hydroxide	Severe attack
1% Sodium Hydroxide	Slight bleaching and attack
10% Ammonium Hydroxide	No change
2% Sodium Carbonate	No change
5% Phenol	Slight bleaching and attack
10% Sodium Chloride	No change
3% Hydrogen Peroxide	No change
95% Ethyl Alcohol	No change
50% Ethyl Alcohol	No change
Acetone	Moderate attack



Figure 1: Chemicals during testing



Figure 2: Chemicals during testing

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**TEST DATA Continued:**



Figure 3: Location of 50% Hydrofluoric Acid



Figure 4: Location of 62% & 50% Perchloric Acid



Figure 5: 62% Perchloric Acid –see through

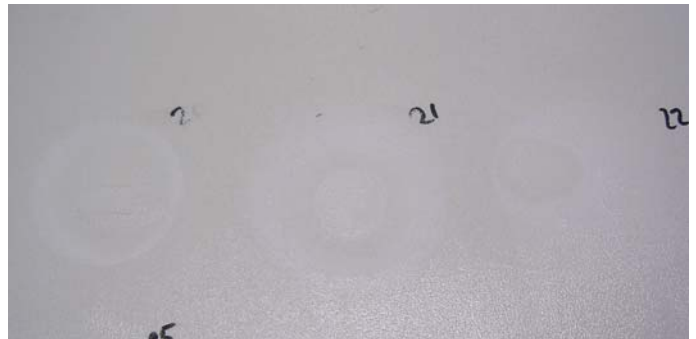


Figure 6: Location of 70, 50, & 30% Nitric Acid



Figure 7: Location of 10% Nitric Acid



Figure 8: Location of 10% Sodium Hydroxide

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**TEST DATA Continued:**

Material	Observation after 7 days
Wesson Oil	No change
"All" Detergent	No change
Tomato Juice	No change
Orange Juice Concentrate	No change
Tea	No change
Coffee	No change
Isopropyl Alcohol	No change
Pond's Cold Cream	No change
Mayonnaise	No change
Mustard	No change
Clorox	No change
Pepsi-Cola	No change

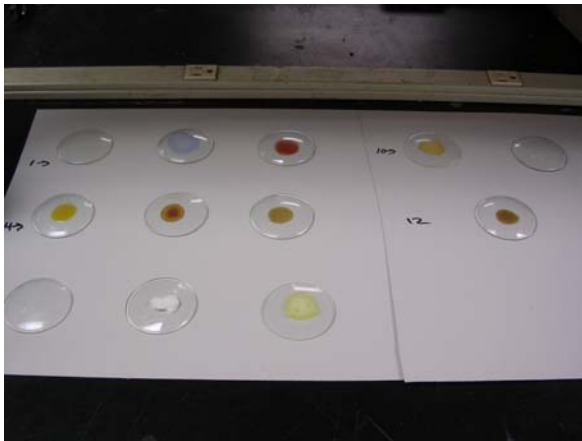


Figure 1: Potable Liquid Materials

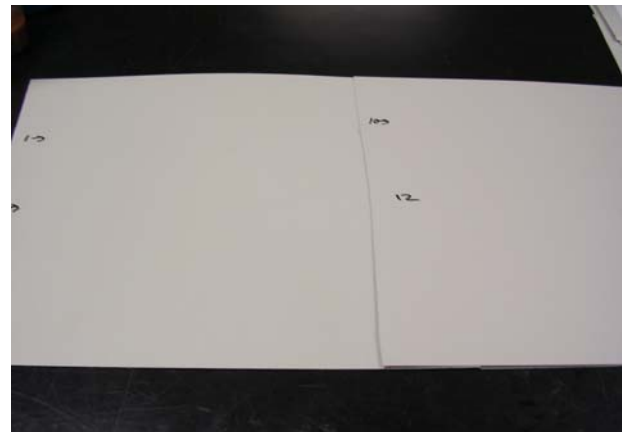


Figure 2: After 7 days

**REMARKS:**

The test materials not consumed in testing will be retained for 14 days from the date of this report and then discarded unless we receive written notification requesting otherwise.

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