

## APPROVALS AND TESTING

### TEST DATA: Poly-I-Gard® 246SF Vehicular Deck System

#### Summary of Test Report Conducted by Ramtech Laboratories on the Poly-I-Gard® 246SF Decking System

1. Weathering Test: ASTM G-23, Atlas Twin Arc Weatherometer Type DH 2000 hours (equivalent to approximately 6 years of natural weathering).

Visual Examinations: No signs of chalking, crazing, cracking, blistering, delaminating, spalling, softening or any other deleterious effects.

ASTM-D 751, Five specimens weathered and five specimens aged per AC39 Sec. IV A & B. Stretch rate 12 ± 0.5 in./min.

| <u>With Aggregate</u> | <u>Tensile Strength(lb./in.)</u> | <u>Elongation(%)</u> |
|-----------------------|----------------------------------|----------------------|
| Control               | 21.3                             | 89                   |
| Weathered             | 12                               | 131                  |
| % Change Weathered    | 43.6                             | 32                   |
| Aged                  | 23                               | 111                  |
| % Change Aged         | 7.3                              | 15.2                 |

| <u>Without Aggregate</u> | <u>Tensile Strength(lb./in.)</u> | <u>Elongation(%)</u> |
|--------------------------|----------------------------------|----------------------|
| Control                  | 41.8                             | 169                  |
| Weathered                | 29                               | 154                  |
| % Change Weathered       | 30.6                             | 8.9                  |
| Aged                     | 50                               | 133                  |
| % Change Aged            | 16.4                             | 21.3                 |

2. Aging Test: ASTM D-412, Stretch rate 20 ± 0.5 in./min. Procedure D & E. Six cycles of each procedure. Material tested without aggregate

Visual Examination after Aging Test: No sign of chalking, crazing, cracking, blistering, delamination, or any other deleterious effects.

|                    | <u>Tensile Strength(psi)</u> | <u>Elongation (%)</u> |
|--------------------|------------------------------|-----------------------|
|                    | <u>ASTM D-412</u>            | <u>ASTM D-412</u>     |
| Control            | 2573                         | 254                   |
| Weathered          | 3666                         | 280                   |
| % Change Weathered | +42.5                        | +10.2                 |
| Aged               | 3982                         | 308                   |
| % Change Aged      | +54.8                        | +21.5                 |

Bond Strength (psi), ASTM C-297:

|                 | <u>Metal</u>                 | <u>Concrete</u>  |
|-----------------|------------------------------|------------------|
|                 | <u>Polyprime 21</u>          |                  |
| Control         | 414                          | 458              |
| Aged            | 401                          | 436              |
| % Change        | 3.2                          | 5.0              |
| Mode of Failure | Adhesion failure of concrete | Cohesive failure |

|                 | <u>Metal</u>                 | <u>Concrete</u>  |
|-----------------|------------------------------|------------------|
|                 | <u>Polyprime 2140</u>        |                  |
| Control         | 406                          | 389              |
| Aged            | 395                          | 391              |
| % Change        | 2.7                          | 0.6              |
| Mode of Failure | Adhesion failure of concrete | Cohesive failure |

3. Percolation Test: ICC-ES Evaluation Svc., Inc. AC 39 Sect. IV-G Loss due to Percolation after the 1000 cycles abrasion test (% of original head, max. allowed 1%): 0%

4. Absorption Test: ASTM D 570, 24 hour immersion in distilled water. Weight % of water absorption (max. allowed 5%): 1.86%

5. Water Vapor Transmission (WVT) Test: ASTM E-96 Desiccant Method: WVT: 0.000000249 grams/Pa · sec · m<sup>2</sup>; WVT: 4.350 grains/ft<sup>2</sup> · hr · in. Hg

6. Abrasion Test: ASTM D-1242 Method A as modified by ICC-ES Evaluation Svc., Inc. AC 39 Sect. IV-F (1000 cycles, 1000 grams, No. 80 TP Aluminum Oxide Grit). Thickness lost (max. allowed 20 mils): 0.009 in.

7. Concentrated Load Test: AC 39, Sec. IV L. One inch diameter steel plate with rounded corners.

| <u>Load [lbs]</u>          | 100   | 200   | 300   |
|----------------------------|-------|-------|-------|
| <u>Deflection [inches]</u> | 0.020 | 0.028 | 0.037 |

8. Impact Resistance: A two pound steel ball dropped eight feet onto the decking system. Test was performed three time with an average indentation of 0.027 in.

9. Crack Resistance (Crack Bridging): Top coat showed signs of cracking while bottom coat maintained its integrity.

10. Chemical Resistance Tests: ASTM D-2299 Determine Relative Stain Resistance of Plastics by immersing specimens in 18 reagents @ 122°F (50°C) for 16 hours.

| <u>Reagent:</u>           | <u>Non-Abraded</u> | <u>Abraded</u> |
|---------------------------|--------------------|----------------|
| Heavy duty detergent sol. | 1                  | 1              |
| Muriatic acid             | 2                  | 2              |
| Ammonia solution - 5%     | 1                  | 1              |
| Anti-Freeze               | 1                  | 1              |
| Kerosene                  | 1                  | 1              |
| Salt Solution - 10%       | 1                  | 1              |
| Chlorine Solution - 10%   | 1                  | 1              |
| Paint thinner             | 1                  | 1              |
| Turpentine                | 1                  | 1              |
| Sulfuric Acid - 3%        | 1                  | 1              |
| Transformer Oil           | 1                  | 1              |
| Sulfuric Acid - conc.     | 3                  | 3              |
| Diesel fuel               | 1                  | 1              |
| Hydraulic Fluids          | 1                  | 1              |
| Gasoline - Regular        | 1                  | 1              |
| Toluene                   | 1                  | 1              |
| Lubricating oil           | 1                  | 1              |
| Soap Solution             | 1                  | 1              |

NUMBER CODE: 1. Unaffected 2. Superficially Affected 3. Considerably Affected

Note: a) Of the 18 reagents used in the chemical resistance test, only sulfuric acid concentrate caused a deterioration of the decking system.

b) Wearing surface revealed no cracking, crazing, delamination, or any other deleterious effects.

c) The test specimens which were coded "No. 2 or 3" could not be restored to their original surface condition by normal cleaning methods.

11. Low Temperature Flexibility: AC 39 Sec. K. 5°F. No cracking or crazing upon visual examination under 5x magnification in the bent condition.

12. Fire Resistance Test Series Class "A": U.B.C. Standard 32-7, ASTM E-108, U.L.790, N.F.P.A. No. 256, Spread of Flame Test (2 decks) on concrete surfaces. B)

Spread of Flame Test (2 decks):

|                           | <u>Base (in.)</u> | <u>Length (in.)</u> |
|---------------------------|-------------------|---------------------|
| Deck 1                    | 15                | 18                  |
| Deck 2                    | 15                | 27                  |
| Max. Flame Spread Allowed | 40                | 72                  |

Poly-I-Gard® 246 SF vehicular deck system will satisfactorily withstand the Flame Spread portion of the test for Class A Rating in UBC STD #32-7, ASTM E108, UL 790 and NFPA No. 256, when constructed, installed and tested as described herein.

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