POLYCOAT PRODUCTS
A Division of American Polymers Corp.

TEST DATA: Poly-I-Gard® 246 Vehicular Decking System

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

1. Weathering Test: ASTM G-23, Atlas Twin Arc Weatherometer Type DH 2000 hours (equivalent to approx. 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.

With Aggregate	Tensile Strength (lb./in.)	Elongation (%)
Control	16	35
Weathered	18	25
% Change Weathered	11.1	28.6
Aged	23	23
% Change Aged	30.4	34.3
Without Aggregate	**Tensile Strength (lb./in.)**	**Elongation (%)**
Control	50	129
Weathered	62	105
% Change Weathered	19.3	18.6
Aged	55	118
% Change Aged	9	8.5

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.

	Tensile Strength (psi) ASTM D-412	Elongation (%) ASTM D-412
Control	1175	282
Weathered	1057	186
% Change Weathered	10	-34
Aged	1000	270
% Change Aged	-14.9	-4.26

Bond Strength (psi), ASTM C-297:

Polyprime 21	Metal	Concrete
Control	326	330
Aged	384	429
% Change	+1.5	+2.3
Mode of Failure	Cohesive failure	Cohesive failure of concrete
Polyprime 2140	**Metal**	**Concrete**
Control	329	354
Aged	336	391
% Change	+1.9	+9.5
Mode of Failure	Cohesive failure	Cohesive failure of concrete

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%): 3.4%

5. Water Vapor Transmission (WVT) Test: ASTM E-96 Desiccant Method: WVT: 0.000000249 grams/Pa · sec · m²; WVT: 4.350 grains/ft² · 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): 0.005 in.

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

Load [lbs]	100	200	300
Deflection [inches]	0.019	0.030	0.038

8. Impact Resistance: A 2 lb. steel ball dropped 8 ft. to deck surface. Test performed three times with an average indentation of 0.029 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.

Reagent	Non-Abraded	Abraded
Heavy duty detergent sol.	1	1
Muriatic acid - 10%	2	2
Ammonia solution - 5%	1	1
Anti-Freeze	1	1
Kerosene	1	1
Salt Solution - 10%	1	1
Paint thinner - 10%	1	1
Chlorine Solution - 10%	1	1
Turpentine - 10%	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	1	1
Toluene	1	1
Lubricating oil	1	1
Soap Solution - 1%	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. 3 - Considerably Affected" 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.

Spread of Flame Test (2 decks):	Base (in.)	Length (in.)
Deck 1	15	22
Deck 2	15	20
Max. Flame Spread Allowed	40	72

Poly-I-Gard® 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.

13. One-Hour Fire-Resistive Construction: Based on the performance of the test assembly, Polydeck 400 Walking Deck System installed on ¾" thick C-D plywood as a substitute for the double wood floor described in Construction No. 13, Item 13-1.1, Table No. 7-C of the 1994 U.B.C. Standard No. 7-1. The assembly was tested with 2 x 10 floor joists spaced at 16 inches on center.
The average room temperature rise on the unexposed face was 260°F and the maximum single thermometer reading was 310°F after 65 minutes. The acceptance limit is 250°F average temperature rise with no single reading over 350°F above ambient after 60 minutes. The area under the test time v. temperature curve equals the standard time-temperature E-119 curve at 60.56 minutes.

ASTM C-957-93 (Ramtech Report #10988-97)

1. Dry Film Thickness: (3 coats): 39 ± 2 mils (0.099 ± 0.005 cm)

2. Weight Loss: ASTM 957-93, C-836 (max. allowed 40%): 15.3%

3. Low Temp. Flexibility and Crack Bridging: 10 cycles, 1/16" movement, @ -15°F: Passed

4. Adhesion in Peel: After water immersion (7 days, min. 5 lbs/in.), ASTM 957-93, C-794: 7.8 lbs/in

5. Chemical Resistance: ASTM C-957, D-471: Meets min. requirements

Minimum Requirements		Actual Tensile, psi	% of Control
Control	3619	100	--
Water	3526	97	70
Ethylene Glycol	3116	86	70
Mineral Spirits	3753	104	45

6. Weather Resistance and Recovery from Elongation: ASTM C-957-93, D-412: Meets minimum requirements.

	Elongation Recovery (%)	Tensile Strength (psi)	Elongation (%)
Control	92.5	3430	547
Weathered	92.0	3360	416
% of Control	99%	98%	94%

7. Abrasion Test: ASTM C-957-93, C-501, weight loss (Maximum allowed: 0.050 grams): 0.005 grams

Please read all information in the general guidelines, product data sheets, guide specifications and material safety data sheets (MSDS) before applying material. Published technical data and instructions are subject to change without notice. Contact your local Polycoat Products representative or visit our website for current technical data and instructions.