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**Elastomeric Waterproofing Traffic-Bearing Membrane
ASTM C957 Evaluation**

for

Polycoat Products

**Poly-I-Gard 435 SC
Traffic Deck System**

**Polycoat Products
14722 Spring Avenue
Santa Fe Springs, California 90670**

July 30, 2016

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REPORT OF TESTS

SUBJECT: **Physical Analysis of Waterproofing Membrane**

PROJECT: **Poly-I-Gard 435 SC Traffic Deck System**

SPECIFICATION: ASTM C957-15, "Standard Specification for High-Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane With Integral Wearing Surface"

TEST METHODS: ASTM C501, "Standard Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser"

ASTM C794, "Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants"

ASTM C1305, "Standard Test Method for Crack Bridging Ability of Liquid-Applied Waterproofing Membrane"

ASTM D412, "Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension"

ASTM D471, "Standard Test Method for Rubber Property—Effect of Liquids"

ASTM D6511, "Standard Test Methods for Solvent Bearing Bituminous Compounds"

MATERIALS: Delivered to NTL in April 2016

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TEST DATA

System: **Poly-I-Gard 435 SC Traffic Deck System**

Components:

Primer:	Polyprimer EBF LV – 1 gallon / 300 sq. ft.
Base Coat:	PC 235SC – 1.5 gallons / 100 sq. ft.
Intermediate Coat:	Poly-I-Gard 246 SC – 1 gallon / 100 sq. ft. with sand broadcast @ 15 lbs / 100 sq.ft (backrolled)
Top Coat:	Poly-I-Gard 246 SC – 1 gallon / 100 sq. ft.

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TEST RESULTSA. ASTM D6511 – Weight Loss of Base Coat (modified per ASTM C957, section 5.11)

Test Date: May 2016
Material: Basecoat - PC 235SC
Duration: 72 hours

Results: **PASS**

	<u>PC 235SC</u>	<u>ASTM C957-15</u>
Weight Loss	13.2%	<i>40% max.</i>

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TEST RESULTS

B. ASTM C1305 – Crack Bridging (modified per ASTM C957, section 5.5)

Cast Date:	May 2016
Specimens:	Five assemblies
Application:	Primer – Polyprime EBF LV Basecoat – PC 235SC Intermediate Coat – Poly-I-Gard 246 SC with sand backrolled Top Coat – Poly-I-Gard 246 SC
Test Conditions:	-15 deg. F.
Duration:	10 cycles

Results: **PASS**

Poly-I-Gard 435 SC System ASTM C957-15

Crack Bridging @
10 Cycles

Specimen 1	no cracking @ 10 cycles
Specimen 2	no cracking @ 10 cycles
Specimen 3	no cracking @ 10 cycles
Specimen 4	no cracking @ 10 cycles
Specimen 5	no cracking @ 10 cycles

AVERAGE **no cracking @ 10 cycles** *no cracking*

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TEST RESULTS (continued)

C. ASTM C794 – Adhesion in Peel (modified per ASTM C957, section 5.6)

Cast Date: May 2016
Specimens: Four specimens per test applied over mortar and plywood
Application: Primer – Polyprime EBF LV
Basecoat – PC 235SC
Curing: 14 days at 73 deg F., then 7 days at 158 deg. F. before immersion
Immersion Duration: 7 days

Results: **PASS**

Polyprime EBF LV/PC 235SC ASTM C957-15

Adhesion – Cement Mortar

Specimen 1	23.2 lbf.	
Specimen 2	14.7 lbf.	
Specimen 3	12.6 lbf.	
Specimen 4	16.3 lbf.	
AVERAGE	16.7 lbf	<i>5.0 lbf. min.</i>

Adhesion – Plywood

Specimen 1	20.2 lbf.	
Specimen 2	12.1 lbf.	
Specimen 3	13.8 lbf.	
Specimen 4	14.2 lbf.	
AVERAGE	15.1 lbf	<i>3.0 lbf. min.</i>

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TEST RESULTS (continued)

D. ASTM D471 – Chemical Resistance (modified per ASTM C957, section 5.7)

Cast Date: May 2016
Specimens: Five dumbbells per test (Die C)
Application: PC 235SC
Curing: 21 days at 73 deg F. before chemical immersion
Immersion Duration: 336 hours

Results: **PASS**

	<u>PC 235SC</u>	<u>ASTM C957-15</u>
Tensile Retention (Water Immersion)		
Specimen 1	132%	
Specimen 2	83%	
Specimen 3	107%	
Specimen 4	83%	
Specimen 5	112%	
AVERAGE	103%	70%, min.
Tensile Retention (Ethylene Glycol)		
Specimen 1	79%	
Specimen 2	95%	
Specimen 3	66%	
Specimen 4	107%	
Specimen 5	99%	
AVERAGE	89%	70%, min.
Tensile Retention (Mineral Spirits)		
Specimen 1	68%	
Specimen 2	83%	
Specimen 3	140%	
Specimen 4	64%	
Specimen 5	101%	
AVERAGE	91%	45%, min.

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TEST RESULTS (continued)D. ASTM D471 – Chemical Resistance (modified per ASTM C957, section 5.7) - continued

Cast Date: May 2016
 Specimens: Five dumbbells per test (Die C)
 Application: Poly-I-Gard 246 SC
 Curing: 21 days at 73 deg F. before chemical immersion
 Immersion Duration: 336 hours

Results: **PASS**

Poly-I-Gard 246 SC ASTM C957-15

Tensile Retention (Water Immersion)

Specimen 1	81%	
Specimen 2	85%	
Specimen 3	47%	
Specimen 4	182%	
Specimen 5	106%	
AVERAGE	100%	70%, min.

Tensile Retention (Ethylene Glycol)

Specimen 1	93%	
Specimen 2	110%	
Specimen 3	93%	
Specimen 4	233%	
Specimen 5	102%	
AVERAGE	126%	70%, min.

Tensile Retention (Mineral Spirits)

Specimen 1	178%	
Specimen 2	186%	
Specimen 3	212%	
Specimen 4	182%	
Specimen 5	275%	
AVERAGE	207%	45%, min.

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TEST RESULTS (continued)

E. ASTM C957 – Weathering Resistance and Recovery from Elongation

Cast Date: May 2016
Specimens: Twenty dumbbell specimens per test (Die C)
Application: Primer – Polyprime EBF LV
Basecoat – PC 235SC
Intermediate Coat – Poly-I-Gard 246 SC*
Top Coat – Poly-I-Gard 246 SC
*(*no aggregate included per ASTM C957)*
Curing: 21 days at 73 deg F., then 7 days at 158 deg. F. before cutting
Weathering: 500 hours - fluorescent UV

Results: **PASS**

Poly-I-Gard 435 SC System ASTM C957-15

Recovery from Elongation, Initial

Specimen 1	100%	
Specimen 2	100%	
Specimen 3	100%	
Specimen 4	100%	
Specimen 5	100%	
Specimen 6	100%	
Specimen 7	100%	
Specimen 8	100%	
Specimen 9	100%	
Specimen 10	100%	
AVERAGE	100%	<i>90%, min.</i>

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TEST RESULTS (continued)

E. ASTM C957 – Weathering Resistance and Recovery from Elongation (continued)

Cast Date: May 2016
Specimens: Twenty dumbbell specimens per test (Die C)
Application: Primer – Polyprime EBF LV
Basecoat – PC 235SC
Intermediate Coat – Poly-I-Gard 246 SC*
Top Coat – Poly-I-Gard 246 SC
*(*no aggregate included per ASTM C957)*
Curing: 21 days at 73 deg F., then 7 days at 158 deg. F. before cutting
Weathering: 500 hours - fluorescent UV

Results: **PASS**

Poly-I-Gard 435 SC System ASTM C957-15

Tensile Retention

Specimen 1	105%	
Specimen 2	101%	
Specimen 3	104%	
Specimen 4	151%	
Specimen 5	141%	
Specimen 6	104%	
Specimen 7	167%	
Specimen 8	182%	
Specimen 9	84%	
Specimen 10	167%	
AVERAGE	131%	80%, min.

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TEST RESULTS (continued)

E. ASTM C957 – Weathering Resistance and Recovery from Elongation (continued)

Cast Date: May 2016
Specimens: Twenty dumbbell specimens per test (Die C)
Application: Primer – Polyprime EBF LV
Basecoat – PC 235SC
Intermediate Coat – Poly-I-Gard 246 SC*
Top Coat – Poly-I-Gard 246 SC
*(*no aggregate included per ASTM C957)*
Curing: 21 days at 73 deg F., then 7 days at 158 deg. F. before cutting
Weathering: 500 hours - fluorescent UV

Results: **PASS**

Poly-I-Gard 435 SC System ASTM C957-15

Elongation Retention

Specimen 1	95%	
Specimen 2	95%	
Specimen 3	95%	
Specimen 4	95%	
Specimen 5	71%	
Specimen 6	71%	
Specimen 7	119%	
Specimen 8	95%	
Specimen 9	143%	
Specimen 10	95%	
AVERAGE	98%	<i>90%, min.</i>

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TEST RESULTS (continued)

F. ASTM C501 – Abrasion Resistance (modified per ASTM C 957, section 5.9)

Cast Date: May 2016
Specimens: Three 4 x 4-in specimens
Application: Primer – Polyprime EBF LV
Basecoat – PC 235SC
Intermediate Coat – Poly-I-Gard 246 SC*
Top Coat – Poly-I-Gard 246 SC
*(*no aggregate included per ASTM C957)*
Curing: 14 days at 73 deg F., then 7 days at 158 deg. F. before testing
Duration: 1,000 cycles with CS-17 abrasion wheel

Results: **PASS**

Poly-I-Gard 435 SC System ASTM C957-15

Mass Loss @ 1,000 cycles

Specimen 1	5 mg.	
Specimen 2	5 mg.	
Specimen 3	5 mg.	
AVERAGE	5 mg.	<i>50 mg. max.</i>

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SUMMARY

The test results reported above from the Poly-I-Gard 435 SC Traffic Deck System met or surpassed the corresponding requirements as listed in ASTM C957-15, Table 1.

Respectfully submitted,

NELSON TESTING LABORATORIES



Mark R. Nelson
President