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Accredited by National Voluntary Laboratory Accreditation Program - Lab Code 100252
ISO / IEC 17025 and relevant requirementsof ISO 9002

September 28, 2009

TPR^2 Corporation
161 Interstate Lane
Waterbury, CT 06705

Att: **Mr. John Liutkus PhD**
Technical Director

Re: DL-14815R
Via FAX 203-756-8779

OBJECTIVE

To determine the performance properties of an elastomeric high build coating.

PRODUCT TESTED

The elastomeric coating was submitted for testing by TPR^2 Corporation. The coating was identified as:

(AFES) Flexible Thermal Coating,
Flexible Fireshell, Active Fire Extinguishing, AFES-F4.

PROCEDURES

The performance properties of the ***AFES-F4 Flexible Thermal Coating, Flexible Fireshell*** coatings *were* determined using the following procedures.

Procedures	Test Methods
Flexibility, Method A – Conical Mandrel	ASTM D 522
Scrub Resistance	ASTM D 2486
Abrasion Resistance, Falling Sand	ASTM D 968
Impact Resistance, Direct & Reverse Impact	ASTM D 2794
Adhesion, Pull-off Strength	ASTM D 4541
Freeze/Thaw Resistance, Five cycles	ASTM D 2243
Accelerated Weathering – 1000 hours (on mortar) 8 hours UVA 340 at 60°C followed by 4-hours Condensation at 50°C	ASTM G 153

Procedures	Test Methods
Tensile Properties Tensile Strength at Break Percent Elongation at Break	ASTM D 412
Wind Driven Rain	TT-C-555B / ASTM D 6904
Mold Resistance	TT-P-29 / ASTM D 3273
Sag Resistance	FTMS 141 Method 4494
Moisture Resistance, 100-hours (on mortar)	ASTM D 4585
Visual Color Change	ASTM D 1729
Degree of Chalking	ASTM D 4214
Degree of Cracking	ASTM D 661

TEST RESULTS

The test results for the ***AFES-F4 Flexible Thermal Coating, Flexible Fireshell*** coating can be found in the appendix.

DL Labs, Inc.

Mario Lazaro, Jr.
Assistant Technical Director

APPENDIX

TEST RESULTS

AFES-F4 Flexible Thermal Coating, Flexible Fireshell

Flexibility, Percent Film Elongation	
One coat application	32%
Two coat application	32%
Scrub Resistance	370 cycles
Abrasion Resistance	
Falling Sand Abrasion	>1000 Liters
Impact Resistance	
Direct Impact	>160 inch-pounds
Reverse Impact	>160 inch-pounds
Adhesion Strength	
Pull-off Strength	90 psi
Mode of Film Failure	Cohesive, 100%
Freeze Thaw Resistance	
After Three Freeze / Thaw Cycles	Coagulated
Accelerated Weathering – 1000 hours (on mortar)	
Gloss Change, visual	
500-hours	None
1000-hours	None
Chalking	
500-hours	None
1000-hours	None
Cracking	
500-hours	None
1000-hours	None

APPENDIX

TEST RESULTS

AFES-F4 Flexible Thermal Coating, Flexible Fireshell

Tensile Properties

Tensile Strength at Break	45 psi
Percent Elongation at Break	55%

Wind Driven Rain Resistance

Without masonry block filler

Water Absorption, 0.2 pounds maximum	0.06 pounds
Visible leaks	None
Rear face dampness	None

With masonry block filler

Water Absorption, 0.2 pounds maximum	0.03 pounds
Visible leaks	None
Rear face dampness	None

Mold / Fungus Resistance

Fungal Growth	10 ASTM Rating
	No fungal growth

Sag Resistance >12-mils

Moisture / Humidity Resistance – 100-Hours (on mortar)

Blistering	4F
After 24-48 hour recovery period	Satisfactory
Loss of Adhesion	None
Wrinkling	None
Other defects	None