PRI Construction Materials Technologies LLC

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Laboratory Test Report

Report for:	Adrienne Bowman Dow Silicones Corporation 2200 West Salzburg Road Midland, MI 48686
Product Name:	DOWSIL™ 890-SL
Project No.:	2107T0056
Dates Tested:	Jun. 20, 2024 – Jan. 27, 2025
Test Methods:	ASTM D5893
Results Summary:	Compliant with ASTM D 5893

Purpose:

Evaluate the liquid sealant for specification properties in accordance with ASTM D5893: *Standard Specification for Cold Applied, Single Component, Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements*.

DOWSIL™ 890-SL is a one-part, self-leveling silicone material that cures to an ultra-low-modulus silicone rubber upon exposure to atmospheric moisture.

Test Methods:

Testing was completed as described in ASTM D5893/D5893M-16(2021): *Standard Specification for Cold Applied, Single Component, Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements*. Test methods assigned or referenced include ASTM C639: *Standard Test Method for Rheological (Flow) Properties of Elastomeric Sealants*, ASTM C661: *Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer*, ASTM C679: *Standard Test Method for Tack-Free Time of Elastomeric Sealants,* ASTM C792: *Standard Test Method for Effects of Heat Aging on Weight Loss, Cracking, and Chalking of Elastomeric Sealants,* ASTM C793: *Standard Test Method for Effects of Laboratory Accelerated Weathering on Elastomeric Joint Sealants*, ASTM C1183: *Standard Test Method for Extrusion Rate of Elastomeric Sealants,* ASTM D412: *Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension,* ASTM D2202: *Standard Test Method for Slump of Sealants* and ASTM D5329: *Standard Test Methods for Sealants and Fillers, Hot-Applied, for Joints and Cracks in Asphaltic and Portland Cement Concrete Pavements.*

The laboratory test results presented in this report are based on the material(s) supplied and tested. The results, and by extension any statements of conformity, opinions, or interpretations, apply the "simple acceptance" decision rule for measurement uncertainty accounting. This report is for the exclusive use of stated client. Only the client is authorized to permit copying or distribution of this report and then only in its entirety. PRI Construction Materials Technologies LLC assumes no responsibility nor makes a performance or warranty statement for this material or products and processes containing this material in connection with this report.

Sampling: The following materials were purchased by PRI:

Product	Source	Date Received	Sampling
DOWSIL™ 890-SL *(Batch: HO10010013)*	Coastal Construction	Jun. 19, 2024	PRI

Results:

Property	Test Method	Results				Requirement
Cure Evaluation 1 specimen; 1/2" x 1/2" x 2"; Cure specimen 21d+4h @ 73.4±3.6°F & 50±5%RH	ASTM D5893	1				
Visual Inspection *[Pass/Fail]*		**Pass**				No presence of any uncured material
Rheological Properties 1 specimen; ¾" x ½" x 6"; Cond. sealant 16-24h @ 40±3.6°F		1	2	**Avg**		
Type NS – Slump (in)	ASTM D2202	NT	NT	**NT**		≤ 0.3
Type SL – Type III [*Pass/Fail*]	ASTM C639	**Pass**				Smooth, level with no bubbling
Extrusion Rate 1 specimen; Cond. sealant 16h @ 73.4±3.6°F & 50±5%RH; Test Cond. @ 73.4±3.6°F & 50±5%RH Test with polyethylene nozzle @ 40psi for 60s	ASTM C1183 Procedure A	1				
Specific Gravity		**1.3**				Report
Extrusion Rate (ml/min)		**208**				≥ 20
Tack-Free Time 1 specimen; Test Cond. 73.4±3.6°F & 50±5%RH	ASTM C679	1				
Evaluate at 5hr±10min *[Pass/Fail]*		**Pass**				Pass
Tack-Free Time (min)		**110**				Report
Effects of Heat Aging 2 specimens; 5" x 1-1/2" x 1/4"; Cure 7d @ 73.4±3.6°F & 50±5%RH; Test Cond. 21d @ 158±3.6°F	ASTM C792	1	2	3	**Avg**	
Percent Weight Loss (%)		3.5	3.3	3.4	**3.4**	≤ 10
Visual Examination *[Pass/Fail]*		Pass	Pass	Pass	**Pass**	No cracking or chalking

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Property	Test Method	Results							Requirement
Bond 3 specimens per condition; 1/2" x 1/2" x 2"; Substrate – unprimed concrete Cure 21d+4h @ 73.4±3.6°F and 50±5%RH; Test 5 cycles; Rate 1/8 in/h; Extension ½"	ASTM D5893 / ASTM D5329	1		2		3			
Non-Immersed Bond *[Pass/Fail]* Tested @ -20+2°F		**Pass**		**Pass**		**Pass**			No crack, separation, or other opening
Water Immersed Bond *[Pass/Fail]* 96h immersed @ 73.4±3.6°F Tested @ -20+2°F		**Pass**		**Pass**		**Pass**			No crack, separation, or other opening
Oven-Aged Bond *[Pass/Fail]* Test Condition 7d+2h @ 158+2°F Tested @ -20+2°F		**Pass**		**Pass**		**Pass**			No crack, separation, or other opening
Hardness 2 specimens; 5" x 1-1/2" x 1/4"; 3 measurement readings per specimen (6 total); Cure. 21d @ 73.4±3.6°F & 50±5%RH	ASTM C661	1	2	3	4	5	6	**Avg**	
Cond. 2h @ -20+2°F (Durometer Type A-2)		9	9	10	11	8	10	**10**	≤ 25
Cond. 73.4+3.6°F (Durometer Type 00)		62	65	69	64	64	67	**65**	≥ 30
Flow 1 specimen; 40mm x 60mm x 3.2mm; Cure. 21d @ 73.4±3.6°F & 50±5%RH; Test Cond 72+0.5h @ 200+2°F	ASTM D5893 / ASTM D5329	1							
Visual Inspection for Flow *[Pass/Fail]*		**Pass**							No Flow
Tensile Properties 5 specimens; Die C; Rate 20in/min; Cure 21d+4h @ 73.4±3.6°F & 50±5%RH Tested @ 73.4±3.6°F & 50±5%RH;	ASTM D412 Method A	1	2	3	4	5	**Avg**	StDev	
Ultimate Elongation (%)		958	912	910	969	1045	**959**	55	≥ 600
Tensile Stress @ 150% Elongation (psi)		8	8	8	9	10	**9**	1	≤ 45
Effects of Accelerated Weathering *[Pass/Fail]* 3 specimens; 5" x 1-1/2" x 1/8"; Cure 72h @ 73.4±3.6°F and 50±5%RH; Test Cond. 5,000h ASTM G154, Cycle 1	ASTM D5893 / ASTM D5329 / ASTM C793	1		2		3			
Visual Inspection *[Pass/Fail]*		**Pass**		**Pass**		**Pass**			No physical change
Visual Inspection *[Pass/Fail]* after Test Cond. 24h @ -15±3.6°F; Test 180° around 1/2" ø in 1s @ -15°F		**Pass**		**Pass**		**Pass**			No physical change
Resilience 1 specimen; 2-3/4" ø x 1-3/4"; 3 measurement readings per specimen (3 total); Cure 21d+4h @ 73.4±3.6°F & 50±5%RH; Test Cond 7d + 2h @ 158+2°F Tested @ 73.4±3.6°F & 50±5%RH;	ASTM D5893 / ASTM D5329	1		2		3		**Avg**	
Resilience (%)		85		85		85		**85**	≥ 75

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Statement of Compliance: The product tested complies with the specification requirements within ASTM D 5893: *Standard Specification for Cold Applied, Single Component, Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements*. The product was evaluated as a self-leveling, single component silicone sealant. The laboratory test results presented in this report are representative of the material tested.

Signed: Anthony Catlett

Anthony Catlett
Manager

Date: Jan. 27, 2025

Report Issue History:

Issue #	Date	Pages	Revision Description (if applicable)
Original	01/27/2025	4	NA

END OF REPORT

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