International Product Assurance LABORATORIES

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November 12, 2024

Schluter Systems
Attn: Kali Pharand
194 Pleasant Ridge Rd.
Plattsburgh, NY 12901
USA

Dear Kali Pharand,

The sample you identified as "Waterproofing and Uncoupling Membrane" was tested per CA 01350 VOC Emissions per your request (IPAL Test Report: IPAL-0089-24). The testing was performed by Research Triangle Park (RTP) Laboratories in Raleigh, NC. All comments, findings, and interpretations within this report were made by RTP Laboratories.

Testing was conducted on the sample submitted for emissions of total volatile organic compounds (TVOC), aldehydes, formaldehyde, and specific individual volatile organic compounds (VOCs). Any emissions were measured and the resultant emissions to the environment were determined for each of the potential pollutants.

The attached report includes the detailed test results.

Green Building Standard, Rating System, or Code	**Criteria**	**Results**
LEED V4.1	Credit: Low-Emitting Materials, Flooring At least 90% of all flooring, by cost or surface area, meets the VOC emissions evaluation: • Product has been tested according to CDPH Standard Method v1.2 – 2017 and complies with the VOC limits in Table 4-1 of the method: Max Allowable Concentration of Target CREL VOCs No. 1 – 35 (including formaldehyde and acetaldehyde) • The range of total VOCs after 14 days was measured as specified in the CDPH Standard Method v1.2 and is reported (TVOC ranges: 0.5 mg/m^3 or less, between 0.5 and 5 mg/m^3, or 5 mg/m^3 or more).	None Detected None Detected (≤0.5mg/m^3)

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IgCC (ASHRAE 189.1) 2021	Section 801.4.2.3 (8.4.2.3) Emissions of floor covering materials installed in the building interior, and each product layer within a flooring system containing more than one distinct product layer, shall be individually determined according to CDPH Standard Method and shall comply with the limit requirements: Table 4-1 Max Allowable Concentration of Target CREL VOCs No. 1 – 35 (including formaldehyde and acetaldehyde)	None Detected
CHPS (U.S.) 2020	EQ C6.1.2 Flooring Systems All flooring systems installed in the project's interior totaling 90% or more of the total floor area shall be tested for emissions of VOCs of concern with respect to chronic inhalation exposures following the specifications of the CDPH Standard Method V1.2, 2017 (CDPH Standard Method): Table 4-1 Max Allowable Concentration of Target CREL VOCs No. 1 – 35 (including formaldehyde and acetaldehyde)	None Detected
WELL v2	X06 VOC Restrictions Flooring. 90% of cost or surface area tested per methods and VOC emission thresholds established in CDPH Standard Method v1.2: Table 4-1 Max Allowable Concentration of Target CREL VOCs No. 1 – 35 (including formaldehyde and acetaldehyde)	None Detected
BREEAM	Hea 02 Criterion 10 Flooring materials, ≤ 0.06 mg/m^3 formaldehyde, ≤1.0 mg/m^3 TVOCs, per CDPH Standard Method	None Detected
Living Building Challenge 4.1	Imperative 10 Healthy Interior Performance Install products that comply with emissions limits of the CDPH Standard Method v1.2-2017 (or international equivalent) for 90% of interior building products that have the potential to emit volatile organic compounds (VOCs): Table 4-1 Max Allowable Concentration of Target CREL VOCs No. 1 – 35 (including formaldehyde and acetaldehyde)	None Detected

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The following is an image of the sample submitted for testing.

SAMPLE PHOTO

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11/12/2024

Katelyn Simpson
Director of Laboratory Service

Research Triangle Park Laboratories, Inc.
7201 ACC Blvd., Suite 104
Raleigh, NC 27617

919 510-0228 Telephone
919 510-0141 Fax *Web Site: www.rtp-labs.com*

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DEA Registered

March 11, 2024

International Product Assurance Laboratories
100 Clemson Research Boulevard
Anderson, SC 29625

Attn: Ashley Moore

PROJECT: VOCs Testing –Report of VOC Chamber Tests.
Purchase Order: 4628
RTP Labs ID: 24-006-02 Ditra-Heat-PS

Enclosed with this letter is the report for the sample received on February 12, 2024 in good condition. The manufacturing date is listed on the COC form. The sample was tested for VOCs emissions according to ASTM D5116 Small Chamber Test and California Specification 01350 Test Methods. The sample was prepared according to the sample preparation descriptions as described in CA 01350. The chamber testing was started on February 15, 2024 with a 10-day conditioning period, followed by a 96-hour test as described in CA 01350.

The test results are summarized in the attached document. The testing method reporting limits are 0.001 mg/m^3 using the California Standard Classroom Model.

If you have any questions, please give me a call at (919) 510-0228.

Sincerely,

Alston Sykes, Principal Chemist
Attachments: attachments and photos

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0089-24

TCNA
The Council of North America, Inc.

Chain of Custody Form

For Testing of Product/Material per CA DHS Section 01350
Please fill out a separate chain of custody form for each product tested

Section A — General Information (Section A)

Manufacturer Name:	Schluter Systems
Street Address:	194 Pleasant Ridge Road
City/State:	Plattsburgh, NY
Zip/Postal Code:	12901
Country:	United States
Contact Name:	Kali Pharand
Contact Title:	Product Standards and Sustainability Coordinator
Phone/Fax Numbers:	888-472-4588 x 4152
Email Address:	sustainability@schluter.com

Section B — Sampling Information (Section B)

Product Name:	DITRA		
Manufacturer Product ID #:	DITRA-HEAT-PS		
Sample ID # (Same as TCNA Test Report #):	Waterproofing and Uncoupling Membrane		
Product Category:	Waterproofing and Uncoupling Membrane		
Product Subcategory:			
Date Manufactured:	NOV '23		
Plant Name and Location:	PLATTSBURGH, NY		
Date and Time Sample Collected from Plant:	01/31/24		
Collection Location within Plant:	SAMPLES		
Number of Sample Pieces Collected (Attach Photos):	4		
Sample Collected by:	SHAMIM MONDAL	Signature:	Shamim Mondal
Sample Packaged and Shipped to TCNA By:	SHAMIM MONDAL	Signature:	Shamim Mondal
Shipping Date:	2/1/24		
Carrier/Airbill Number:	UPS		

Section C — TCNA Receipt Information (Section C)

Arrival to:	Tile Council of North America, Inc. 100 Clemson Research Boulevard Anderson, SC 29625		
Receipt Date:	2.8.2024		
Received By:	Ashley Moore	Signature:	Ashley Moore
Logged into TCNA Database by:	Ashley Moore		
TCNA Test Report #:	0089-24		
Shipment Forwarded To RTP Laboratories By:	Ashley Moore	Signature:	Ashley Moore
Shipment Date:	2.9.2024		
Carrier/Airbill Number:	UPS -		

Section D — RTP Laboratories Receipt Information (Section D)

Arrival to:	Research Triangle Park Laboratories, Inc. 7201 ACC Blvd., Suite 104 Raleigh, NC 27617		
Receipt Date:	2-12-24		
Received By:	Alston Sykes	Signature:	A. Sykes
Condition of Shipping Package:	GOOD		
Condition of Sample:	GOOD		
Laboratory ID #:	24-006-02		

Research Triangle Park Laboratories, Inc.
7201 ACC Blvd., Suite 104
Raleigh, NC 27617

919 510-0228 Telephone
919 510-0141 Fax *Web Site: www.rtp-labs.com*

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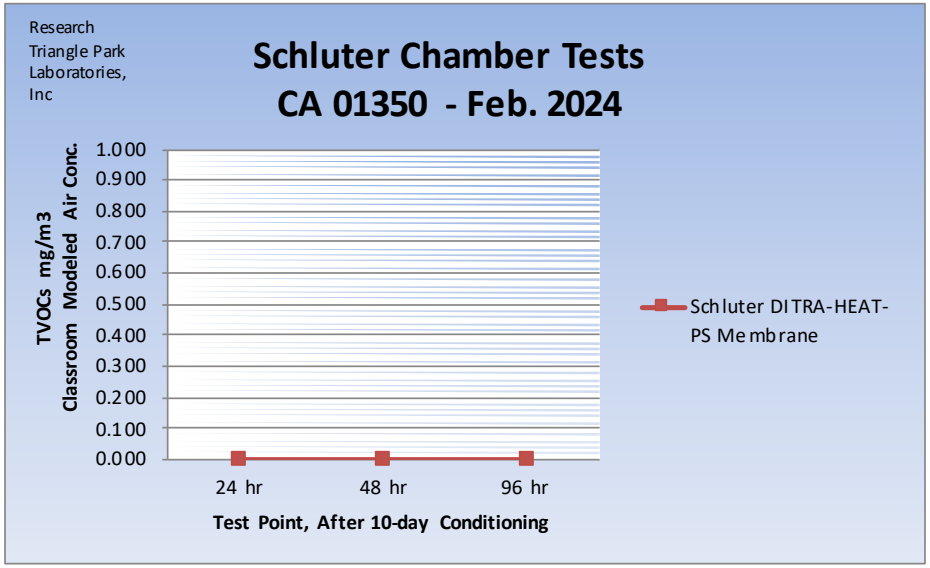
Photo of Sample Received Feb. 12, 2024:
24-006-02 (IPAL-0089-24) Ditra-Heat-PS

Research Triangle Park Laboratories Inc, 7201 ACC Blvd., Raleigh, NC 27617

California 01350/ASTM D5116 Small Chamber Tests for Volatile Organic Compound Emissions From Products

Project ID: 24-006-02
Client: Tile Council of North America
Sample Receipt Date: Feb. 12, 2024
Test Start Dates: Feb. 15, 2024
Products:

	Modeled Standard Classroom Concentration, mg/m3			
	24 hr	48 hr	96 hr	LOQ
Schluter DITRA-HEAT-PS Membrane	0.000	0.000	0.000	0.001



Standard Classroom Model Parameters:

Room Dimensions: 40 ft length x 24 ft wide x 8.5 ft ht
Room Volume: 231 m^3
Ventilation Rate: 0.90 air changes per hour
Net Floor Surface: 89.2 m^2

Chamber and Sample Conditions:

Chamber Volume: 50 Liters
Temperature: 20-25 C; Relative Humidity: 45-55 %
Air Exchange Rate: 1 per hour (0.833L/min = 50 liters)
Sample Surface Area: 0.0232 m^2
Sample Loading Factor: 0.5 m^2/m^3

Sample Receipt Date: **2/12/2024** **Test Start Date:** **2/15/2024** 10 day conditioning performed prior to 96 h testing.

Project ID: **24-006-02**
Sample ID: **Schluter Ditra-Heat-PS (IPAL-0089-24)**
Client: **IPA Labs**

Standard Classroom Parameters

Room Dimensions, ft	40x24x8.5
Room Volume, m3	231
Ventilation Rate, ach	0.9
Net Surface Area, m2	89.2

ASTM D5116 Small Chamber Method

California Specification 01350

Paints and Wallcoverings Model: 94.6 m2
Flooring Products Model: 89.2 m2

	Emission Factors (ug/(m2*h))						**Cm**	**Cm**	Cm	
Compound Name	**02/16/24 24 hr Chamber Conc. ug/m3**	**24 hr EF**	**02/17/24 48 hr Chamber Conc. ug/m3**	**48 hr EF**	**02/29/24 96 hr Chamber Conc. ug/m3**	**96 hr EF**	**Classroom: 24 hr Modeled Air Conc. ug/m3**	**Classroom: 48 hr Modeled Air Conc. ug/m3**	**Classroom: 96 hr Modeled Air Conc. ug/m3**	**1/2 CREL 12/2008 (A)Acute (C)Chronic**
GC/MS Target, LOQ 2 ng/L (ug/m3)										
None Detected	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
GC/MS TICs, LOQ 5 ng/L (ug/m3)										
None Dectected	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
HPLC Aldehydes, LOQ 2 ng/L (ug/m3)										
Formaldehyde	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	4.5 C
Acetaldehyde	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	70 C
TVOCs LOQ 25 ng/L (ug/m3) Use 1 for < value	0.0	**0.0**	0.0	**0.0**	0.0	**0.0**	**0.0**	**0.0**	**0.0**	**ug/m3**
							0.000	**0.000**	**0.000**	**mg/m3**

Reporting Limit, 0.001 mg/m3

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DEA Registered

October 24, 2024

International Product Assurance Laboratories
100 Clemson Research Boulevard
Anderson, SC 29625

Attn: Ashley Moore

PROJECT: VOCs Testing –Report of VOC Chamber Tests. Updated with Office Model
Purchase Order: 4628
RTP Labs ID: 24-006-02 Ditra-Heat-PS

Enclosed with this letter is the report for the sample received on February 12, 2024 in good condition. The manufacturing date is listed on the COC form. The sample was tested for VOCs emissions according to ASTM D5116 Small Chamber Test and California Specification 01350 Test Methods. The sample was prepared according to the sample preparation descriptions as described in CA 01350. The chamber testing was started on February 15, 2024 with a 10-day conditioning period, followed by a 96-hour test as described in CA 01350.

The test results are summarized in the attached document. The testing method reporting limits are 0.001 mg/m^3 using the California Standard Office Model.

If you have any questions, please give me a call at (919) 510-0228.

Sincerely,

Alston Sykes, Principal Chemist
Attachments: attachments and photos

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PA Registration #68-1664
DEA Registered

0089-24

Chain of Custody Form

For Testing of Product/Material per CA DHS Section 01350
Please fill out a separate chain of custody form for each product tested

Section A — General Information (Section A)

Manufacturer Name:	Schluter Systems
Street Address:	194 Pleasant Ridge Road
City/State:	Plattsburgh, NY
Zip/Postal Code:	12901
Country:	United States
Contact Name:	Kali Pharand
Contact Title:	Product Standards and Sustainability Coordinator
Phone/Fax Numbers:	888-472-4588 x 4152
Email Address:	sustainability@schluter.com

Section B — Sampling Information (Section B)

Product Name:	DITRA		
Manufacturer Product ID #:	DITRA-HEAT-PS		
Sample ID # (Same as TCNA Test Report #):	Waterproofing and Uncoupling Membrane		
Product Category:	Waterproofing and Uncoupling Membrane		
Product Subcategory:			
Date Manufactured:	NOV '23		
Plant Name and Location:	PLATTSBURGH, NY		
Date and Time Sample Collected from Plant:	01/31/24		
Collection Location within Plant:	SAMPLES		
Number of Sample Pieces Collected (Attach Photos):	4		
Sample Collected by:	SHAMIM MONDAL	Signature:	Shamim Mondal
Sample Packaged and Shipped to TCNA By:	SHAMIM MONDAL	Signature:	Shamim Mondal
Shipping Date:	2/1/24		
Carrier/Airbill Number:	UPS		

Section C — TCNA Receipt Information (Section C)

Arrival to:	Tile Council of North America, Inc. 100 Clemson Research Boulevard Anderson, SC 29625		
Receipt Date:	2.8.2024		
Received By:	Ashley Moore	Signature:	Ashley Moore
Logged into TCNA Database by:	Ashley Moore		
TCNA Test Report #:	0089-24		
Shipment Forwarded To RTP Laboratories By:	Ashley Moore	Signature:	Ashley Moore
Shipment Date:	2.9.2024		
Carrier/Airbill Number:	UPS -		

Section D — RTP Laboratories Receipt Information (Section D)

Arrival to:	Research Triangle Park Laboratories, Inc. 7201 ACC Blvd., Suite 104 Raleigh, NC 27617		
Receipt Date:	2-12-24		
Received By:	Alston Sykes	Signature:	A. Sykes
Condition of Shipping Package:	GOOD		
Condition of Sample:	GOOD		
Laboratory ID #:	24-006-02		

Research Triangle Park Laboratories, Inc.
7201 ACC Blvd., Suite 104
Raleigh, NC 27617

919 510-0228 Telephone
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DEA Registered

Photo of Sample Received Feb. 12, 2024:
24-006-02 (IPAL-0089-24) Ditra-Heat-PS

Research Triangle Park Laboratories Inc, 7201 ACC Blvd., Raleigh, NC 27617

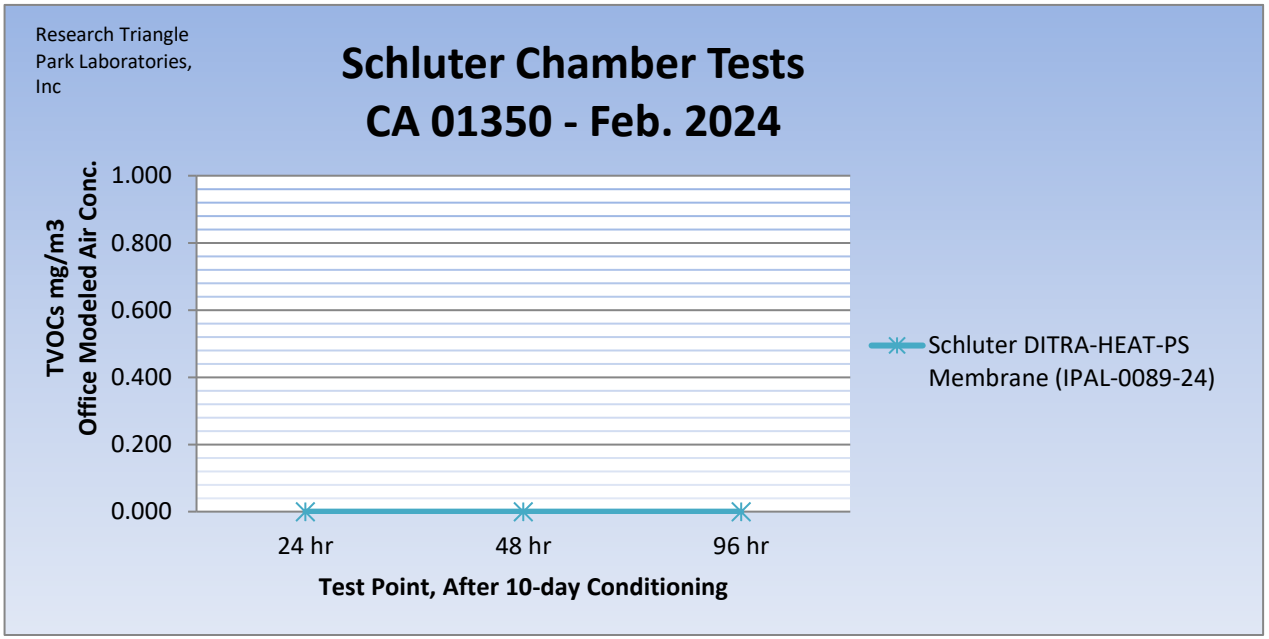
California 01350/ASTM D5116 Small Chamber Tests for Volatile Organic Compound Emissions From Products

Project ID: 24-006-02
Client: Tile Council of North America
Sample Receipt Date: Feb. 12, 2024
Test Start Dates: Feb. 15, 2024
Products:

Schluter DITRA-HEAT-PS Membrane (IPAL-0089-24)

Modeled Standard Office Concentration, mg/m3

24 hr	48 hr	96 hr	LOQ
0.000	0.000	0.000	0.001



Standard Office Model Parameters:

Room Dimensions: 12 ft length x 10 ft wide x 9.0 ft ht

Room Volume: 30.6 m^3

Ventilation Rate: 0.68 air changes per hour

Net Floor Surface: 11.15 m^2

Chamber and Sample Conditions:

Chamber Volume: 50 Liters

Temperature: 20-25 C; Relative Humidity: 45-55 %

Air Exchange Rate: 1 per hour (0.833L/min = 50 liters)

Sample Surface Area: 0.0232 m^2

Sample Loading Factor: 0.5 m^2/m^3

Sample Receipt Date: **2/12/2024** **Test Start Date:** **2/15/2024** 10 day conditioning performed prior to 96 h testing.
Project ID: **24-006-02**
Sample ID: **Schluter Mortar SetA50W (IPAL-0088-24)**
Client: **IPA Labs**
Schluter DITRA-HEAT-PS Membrane (IPAL-0089-24)

Standard Office Parameters
Room Dimensions, ft 12x10x9.0

Room Volume, m3 **30.6**
Ventilation Rate, ach **0.68**
Net Surface Area, m2 **11.15**

ASTM D5116 Small Chamber Method

California Specification 01350

Office Paints and Wallcoverings Model: 33.4 m2
Office Flooring Products Model: 11.15 m2

	Emission Factors (ug/(m2*h))						**Cm**	**Cm**	Cm	
Compound Name	**02/16/24 24 hr Chamber Conc. ug/m3**	**24 hr EF**	**02/17/24 48 hr Chamber Conc. ug/m3**	**48 hr EF**	**02/29/24 96 hr Chamber Conc. ug/m3**	**96 hr EF**	**Office: 24 hr Modeled Air Conc. ug/m3**	**Office: 48 hr Modeled Air Conc. ug/m3**	**Office: 96 hr Modeled Air Conc. ug/m3**	**1/2 CREL 12/2008 (A)Acute (C)Chronic**
GC/MS Target, LOQ 2 ng/L (ug/m3)										
None Detected	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
GC/MS TICs, LOQ 5 ng/L (ug/m3)										
None Dectected	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	
HPLC Aldehydes, LOQ 2 ng/L (ug/m3)										
Formaldehyde	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	4.5 C
Acetaldehyde	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	70 C
TVOCs LOQ 25 ng/L (ug/m3) Use 1 for < value	0.0	**0.0**	0.0	**0.0**	0.0	**0.0**	**0.0**	**0.0**	**0.0**	**ug/m3**
							0.000	**0.000**	**0.000**	**mg/m3**

Reporting Limit, 0.001 mg/m3