



## Sika's Deck Coating Technology: *Textured Topcoats & One Shot Systems*

PRESENTED BY:  
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PRODUCT ENGINEER  
BUILDING & PARKING

BUILDING TRUST



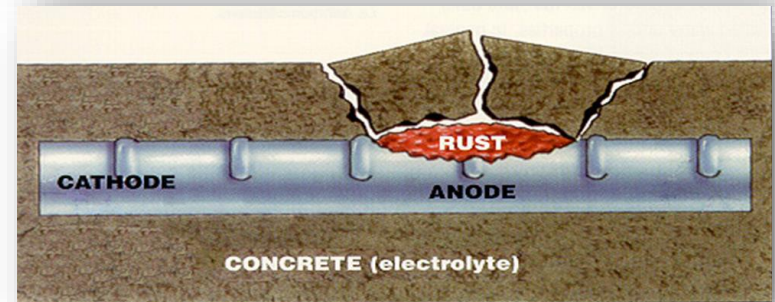
# DECK COATING TECHNOLOGY: AGENDA

- 1 THE NEED FOR TRAFFIC COATINGS
- 2 SUBSTRATE PREPARATION OVERVIEW
- 3 TRAFFIC SYSTEMS OVERVIEW
- 4 TEXTURED TOP COATS
- 5 THE ONE SHOT CONCEPT
- 6 SIKALASTIC 720 ONE SHOT
- 7 SIKALASTIC 726 BALCONY ONE SHOT



# WHY TRAFFIC MEMBRANES?

- Protect the structure....
- From what:
  - Moisture
  - Temperature cycles (freeze/thaw)
  - Contaminants
- Prevent concrete/structural deterioration!

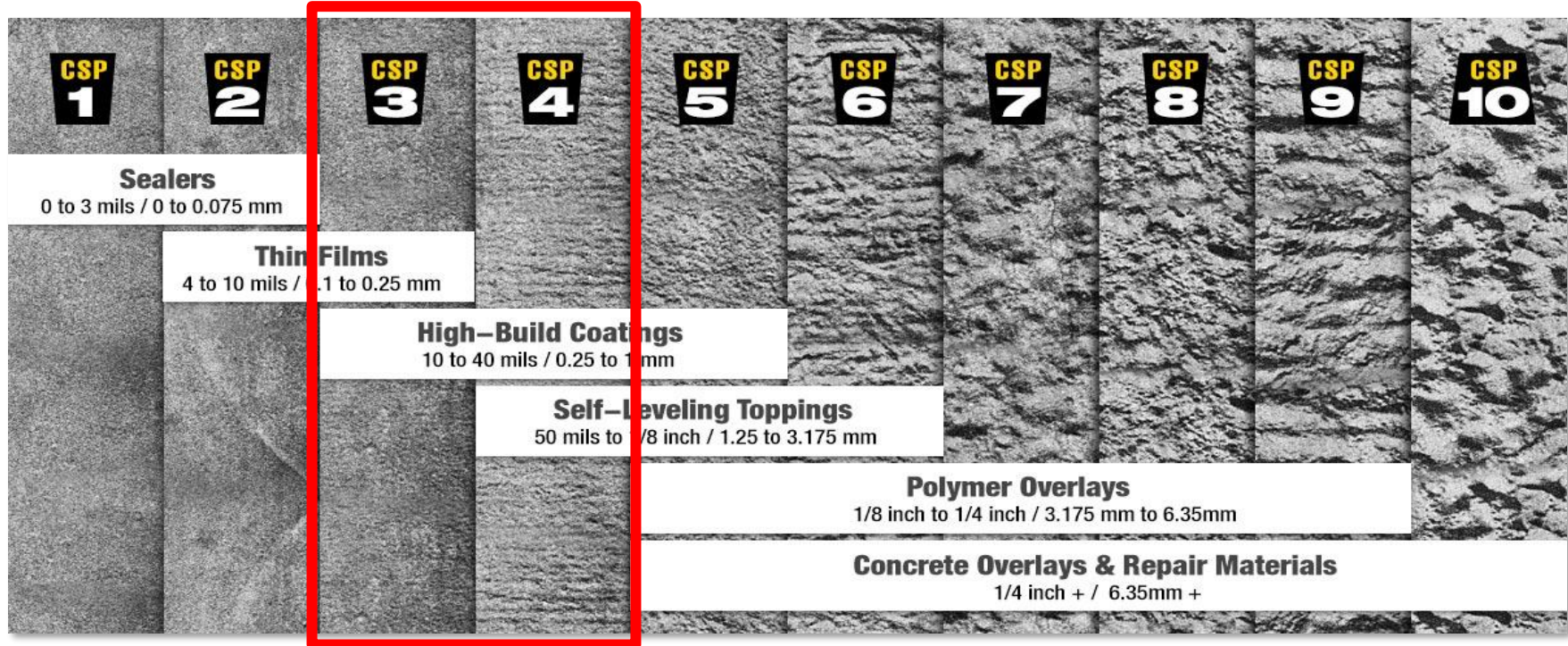


# TRAFFIC COATINGS: SURFACE PREPARATION



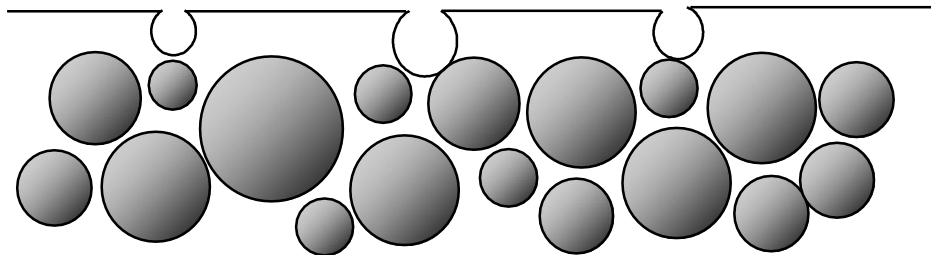
# INTERNATIONAL CONCRETE REPAIR INSTITUTE (ICRI)

Recommended preparation for each material

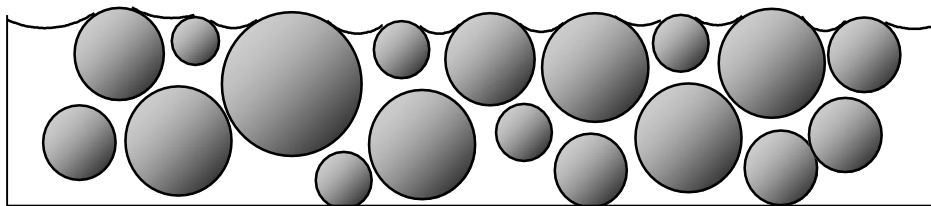


# THE REASON FOR SURFACE PREPARATION

## SUBSTRATE BEFORE PREPARATION



## SUBSTRATE AFTER PREPARATION





# COMPARISON OF PREPARATION METHODS FOR FLOORING



After bush hammering



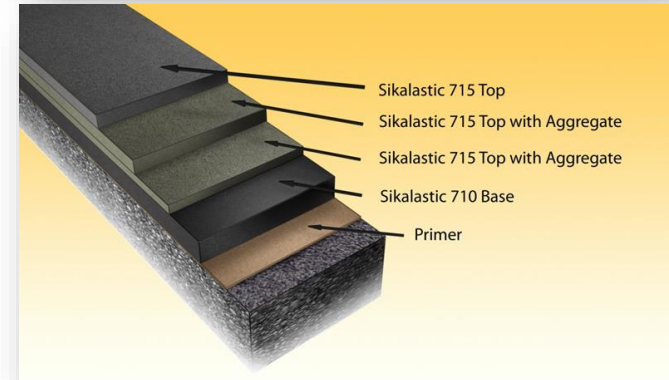
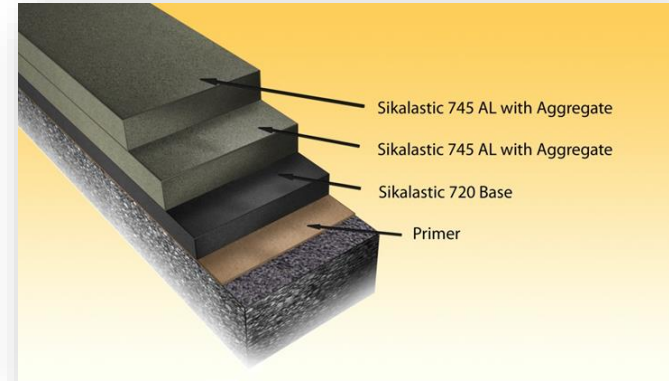
After shot/sand  
blasting

# TRAFFIC COATINGS: STANDARD SYSTEMS



# THE STANDARD TRAFFIC COATING SYSTEM

- A typical multi-step system is comprised of:
  - BASE COAT
  - TOPCOAT 1 (wear coat)
  - AGGREGATE BROADCAST
  - TOPCOAT 2
  - AGGREGATE BROADCAST



# STANDARD TRAFFIC COATINGS: THE BASE COAT

- Primary waterproofing layer
- Uninterrupted monolithic layer
- Flexible and crack bridging membrane



# STANDARD TRAFFIC COATINGS: THE TOP COAT

- The base coat must be protected.
- Topcoat creates a layer that protects the base coat.
- A main element of the topcoat is to prevent the base coat (the waterproofing layer) from being compromised.



# STANDARD TRAFFIC COATINGS: ADDING SLIP RESISTANCE

- Without texture the system would be too slippery, so texture had to be added to the topcoat.
- Broadcasting silica sand into the topcoat created a textured surface for slip resistance.







# SIKALASTIC 720/745 AL TRAFFIC SYSTEM

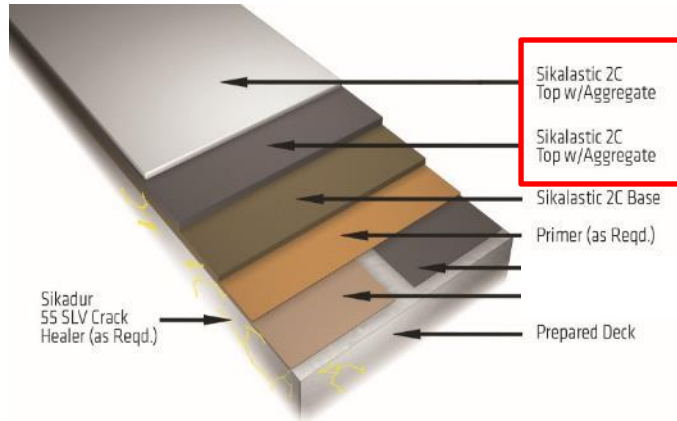
## TYPICAL SYSTEM BUILDS

System Guide	Pedestrian Traffic	Heavy Pedestrian / Light Vehicular	Heavy Vehicular Traffic - Seed and Lock	Heavy Vehicular Traffic - Seed and backroll
Primer	Sikalastic Primer - 300 sf/gal. Consult Sika for other primer options for recover and high moisture content substrates.			
720 Detail Coat	23 WFT over properly treated cracks and joints.			
720 Base Coat	23 WFT(23 DFT) - 70 sf/gal.			
745 AL Top Coat I	12 WFT (12 DFT) - 133 sf/gal	18 WFT (18 DFT) - 90 sf/gal	14 WFT (14 DFT) - 115 sf/gal	14 WFT (14 DFT) - 115 sf/gal
Aggregate	5-10 lbs/100 sf -seeded/ backrolled	10-20 lbs/100 sf -seeded/ backrolled	20-40 lbs/100 sf -seeded	10-15 lbs/100 sf -seeded (backroll optional)
745 AL Top Coat II			18 WFT (18 DFT) - 80 sf/gal	18 WFT (18 DFT) - 90 sf/gal
Aggregate				10-15 lbs/100 sf -seeded/ backrolled
Total Thickness	35 DFT (excluding aggregate)	41 DFT (excluding aggregate)	55 DFT (excluding aggregate)	55 DFT (excluding aggregate)
See separate Sikalastic® Aliphatic Top Coats data sheet for DecoQuartz® and DecoFlake® systems.				
NOTE: Coverage rates provided are optimal and are not guaranteed - coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique.				

# THE WEAR LAYER CONCEPT

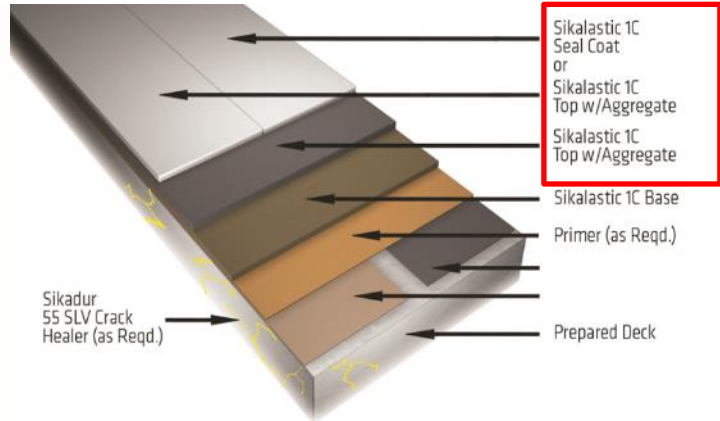
## Typical Vehicular Traffic System

- 45-55 mils system
  - 22-32 mils of wear resistance



## Typical Pedestrian Traffic System

- 35 mil system
  - 12 mils of wear resistance



# PERFORMANCE OF STANDARD SYSTEM



**Top Coat**  
18 mils  
Incorrect aggregate

The aggregate stays  
on the system

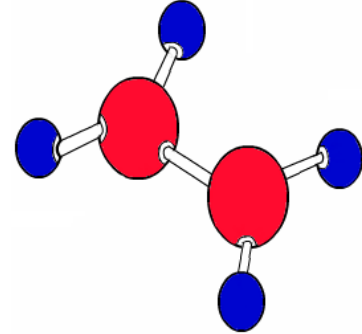
# TEXTURED TOPCOATS



# IMPROVING DURABILITY - TEXTURED TOPCOAT

How can we improve **aggregate retention in resin** to improve durability of the system?

- Create better bond between the aggregate and resin
- Based on our research, the best way to improve bond is a chemical reaction between the aggregate and resin

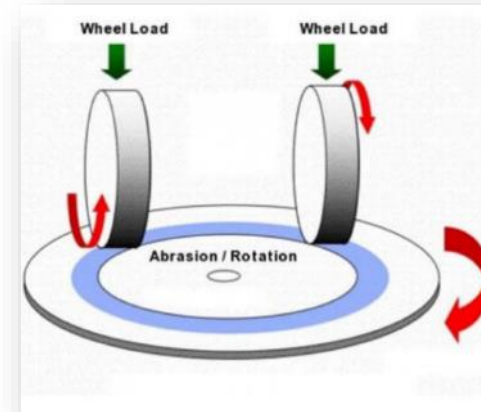


How do we test this?

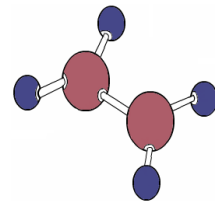
# HOW HAS WEAR RESISTANCE OF STANDARD SYSTEM BEEN TESTED ?

## ASTM 957 STANDARD SPECIFICATION

- ASTM 957 - section 5.9 Abrasion Resistance – **Test method C 501** (Taber Abraser test)
  - 5.9.1 Cast test samples of entire membrane **excluding aggregate** to a minimum total cured thickness of 20 mils
  - 5.9.3 Run test for 1000 cycles using CS-17 abrasion wheel
- All standard traffic systems **PASSED** this specification including Abrasion Resistance Test
- SHEAR STRESS and FLEXING MOVEMENTS ???  
braking, acceleration and turning the vehicles



# TEXTURED TOPCOATS – STATE OF THE ART



- Integral Proprietary Texture (non-silica)
  - ✓ Better abrasion resistance
  - ✓ Better aggregate retention
  - ✓ More durable



# DURABILITY – THE SIKA WAY

Sika has developed its own abrasion resistance testing machine PAT (Parking Abrasion Test).

Including:

- ✓ A **real** tire
- ✓ Shear stress & Flexing movement
- ✓ Tests **Full** system including Aggregate

## EXPERIMENTAL SETUP

880 lbs wheel load – simulating 3500 lbs standard vehicle load

Standard Tire 175/65 R14T  
Tire pressure 36 psi

2' x 2' concrete block + traffic system

Rotation by 90° angle

1 cycle profile is defined as  
5 seconds rotation  
followed by 6 seconds break

Heating up to 150 °F





# PERFORMANCE COMPARISON BETWEEN STANDARD SYSTEM (SEED) AND TEXTURED SYSTEM

500 CYCLES

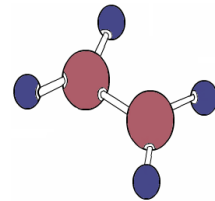
Standard system **classification 4**



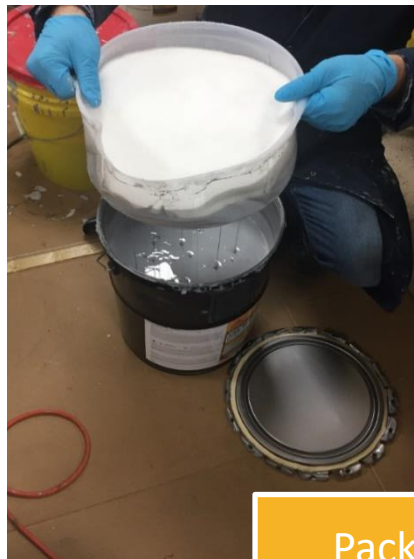
Textured system **classification 1**



# TEXTURED TOPCOATS – HOW DOES IT WORK?



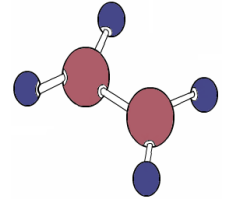
Premixed in factory



Packed separately and mixed at site



# SIKALASTIC TEXTURED TOP COATS



	Product	Application	Chemistry	Usage
One Component	Sikalastic 715 Textured	Base Coat	Aromatic PU	Vehicular & Pedestrian Traffic
	Sikalastic 715 Lo-VOC Textured	Base Coat	Aromatic PU	VOC Compliant, Vehicular & Pedestrian Traffic
	Sikalastic 736 Textured	Top Coat	Aliphatic PU	VOC Compliant, Vehicular & Pedestrian Traffic
Two Component	Sikalastic 745 Textured	Base Coat	Aliphatic PU	VOC Compliant, Vehicular & Pedestrian Traffic

# THE ONE SHOT CONCEPT: INNOVATION



# THE SIKALASTIC ONE SHOT CONCEPT

## A **One** Coat Traffic System

MONOLITHIC  
WATERPROOFING LAYER



FLEXIBLE  
FOR CRACK-BRIDGING



HIGH DURABILITY  
FOR WEAR RESISTANCE

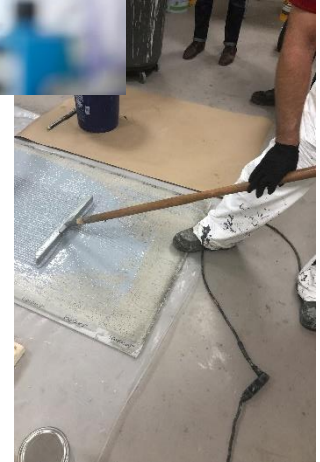


WORK SMARTER NOT HARDER!

# THE SCIENCE BEHIND SIKALASTIC ONE SHOT

The Sikalastic One Shot systems were achieved by building on **innovation** in two areas:

- **Polymer innovation**
- **Integral aggregate innovation**



# SIKA'S POLYMER INNOVATION

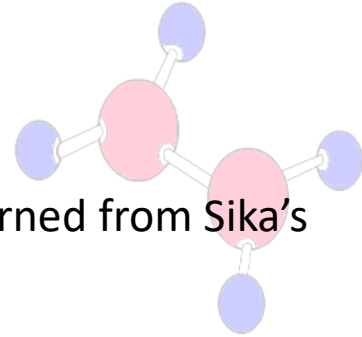
- Polyurethane resin that is
  - ✓ flexible enough to bridge cracks.
  - ✓ hard enough and durable enough to handle traffic
- Allows the Sikalastic One Shot approach to go **against** the traditional theory that there has to be a separate flexible base coat and separate wear resistant topcoats.



# INTEGRAL AGGREGATE INNOVATION



- Based on the lessons learned from Sika's Textured TopCoats
- Aggregate that forms a **chemical bond** with Resin.
- The **chemical bond** helps support the aggregate resistance to kick out.
- The **chemical bond** helps support the aggregate as the membrane is flexing with cracks.



# PROVING DURABILITY PERFORMANCE – THE SIKA WAY

Sika has developed its own abrasion resistance testing machine

Including:

- ✓ A **real** tire
- ✓ Shear stress & Flexing movement
- ✓ Tests **Full** system including Aggregate

## EXPERIMENTAL SETUP

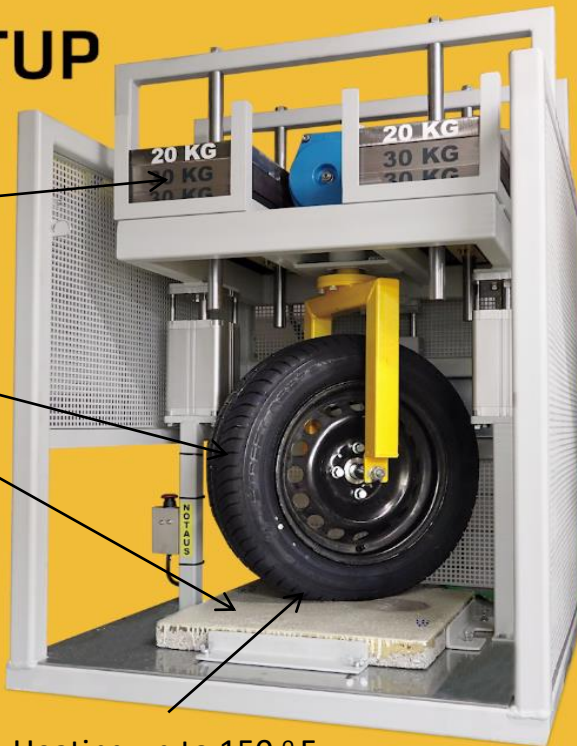
880 lbs wheel load – simulating 3500 lbs standard vehicle load

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2' x 2' concrete block + traffic system

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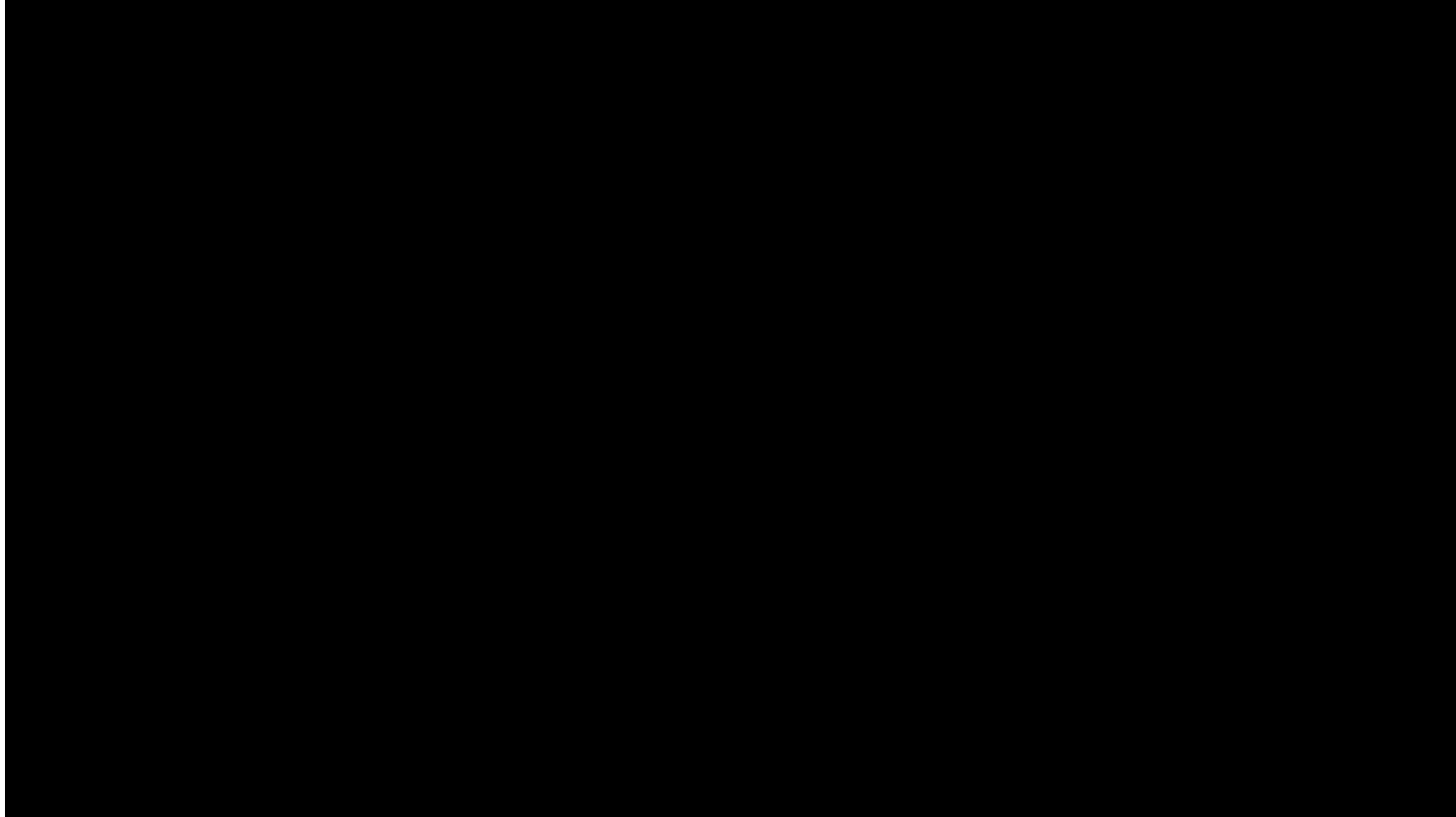
1 cycle profile is defined as  
5 seconds rotation  
followed by 6 second pause



Heating up to 150 °F



# THE SIKA PAT TEST IN ACTION



# Performance comparison between Standard System ( seeded), Textured System and One Shot System

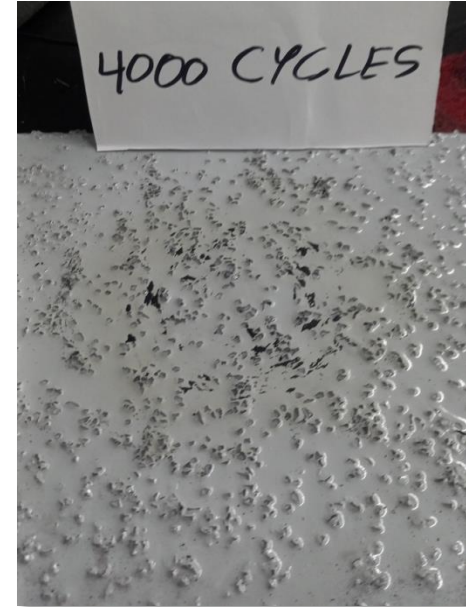
Standard system



Textured system



One Shot System



# THE SIKALASTIC ONE SHOT PRODUCTS

# SIKALASTIC ONE SHOT PRODUCTS

## SIKALASTIC-720 ONE SHOT

- A two-component, elastomeric polyurethane waterproofing coating intended for vehicular traffic.
- An extremely durable vehicular traffic coating system!



Sikalastic One Shot Innovation

## SIKALASTIC-726 BALCONY ONE SHOT

- A two-component, primerless polyurethane pedestrian traffic coating
- Perfect for balconies and pedestrian coating applications!



# SIKALASTIC 720 ONE SHOT: OVERVIEW





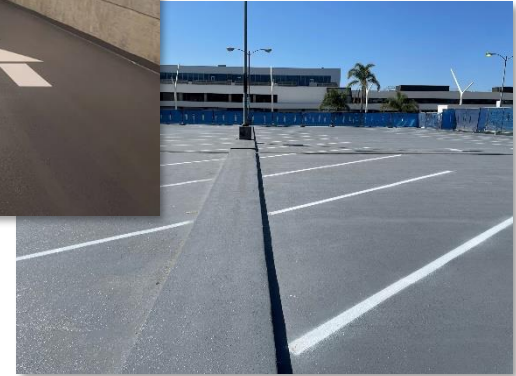
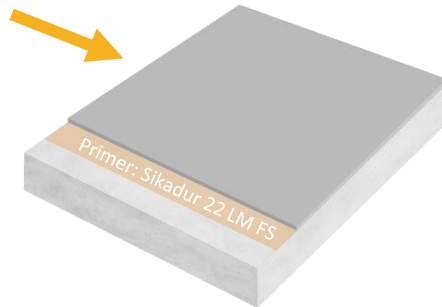
# SIKALASTIC 720 ONE SHOT

Sikalastic®-720 One Shot is a two-component, aliphatic, elastomeric polyurethane waterproofing traffic coating intended for vehicular and heavy vehicular traffic.

## Features

- ✓ Single coat system of 45 mils
- ✓ One thickness for drive lanes and parking stalls
- ✓ Meets ASTM C957 requirements
- ✓ Open to vehicular traffic in just 36 hours!

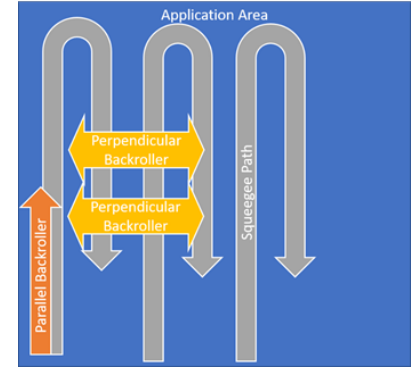
**45 mils of membrane and wear layer  
– ALL IN ONE!**



# SIKALASTIC 720 ONE SHOT: KEY APPLICATION TIPS

# SIKALASTIC 720 ONE SHOT: KEY TIPS

- Have a clear plan! Know who is squeegeeing, backrolling, mixing, & pouring out the material before starting.
- “Keep the train moving!”





# SIKALASTIC 720 ONE SHOT: KEY TIPS

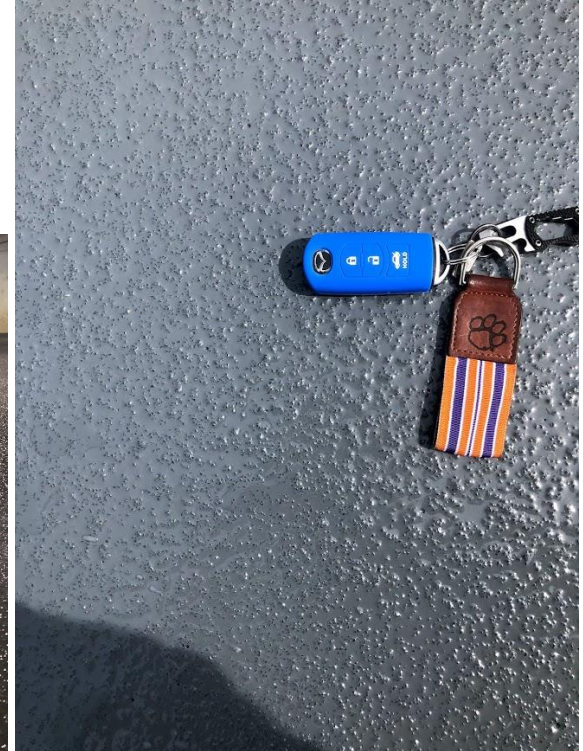
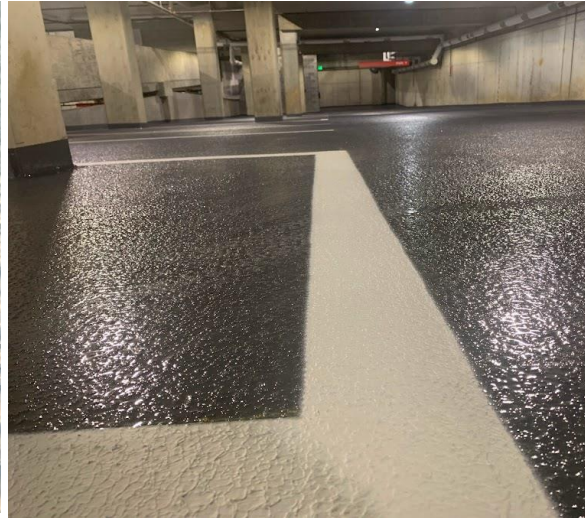
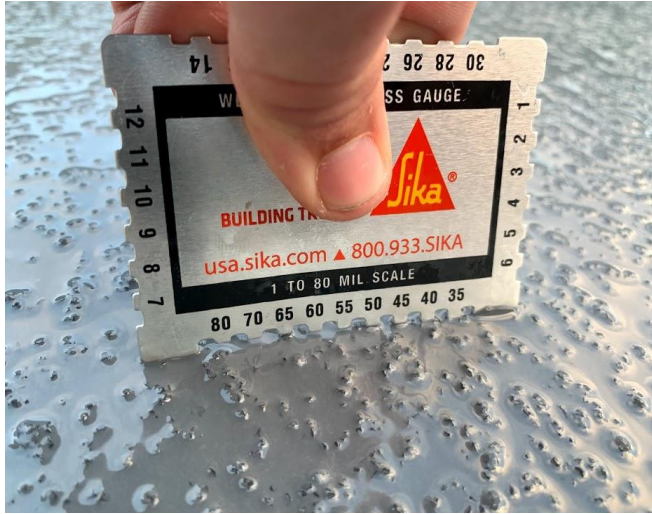
- Know you have the right squeegee! We recommend the Seymour Midwest SpeedSqueegee® HD, 30" - 3/8" W x 1/4" D (30-45 mil), Black Neoprene





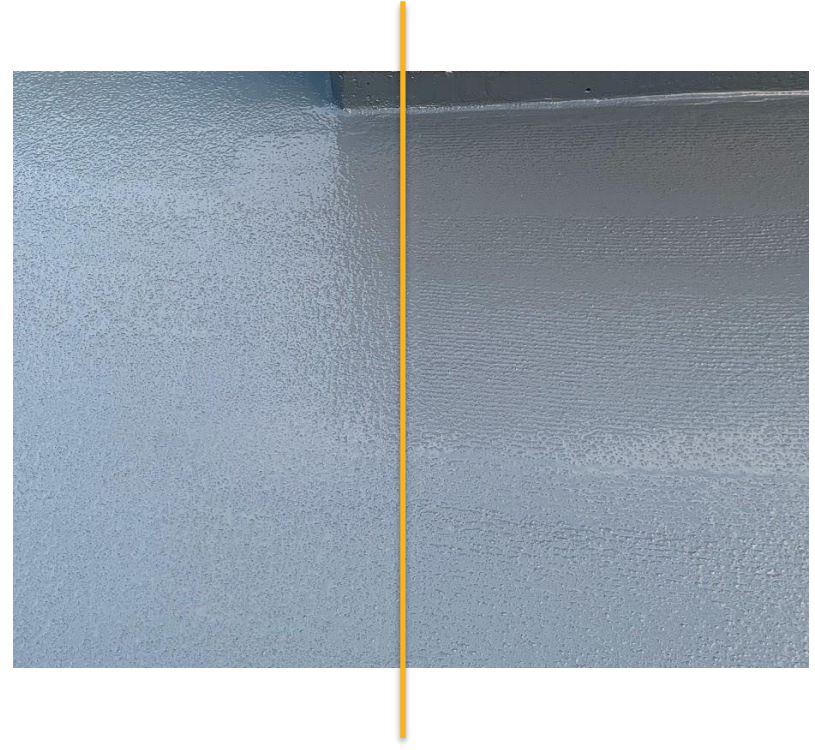
# SIKALASTIC 720 ONE SHOT: KEY TIPS

- Check your thickness! A good indicator of proper thickness is seeing the aggregate after backrolling



# SIKALASTIC 720 ONE SHOT: KEY TIPS

- Be systematic with your backrolling. Squeegee marks after application are areas missed when backrolling!



# SIKALASTIC 726 BALCONY ONE SHOT: OVERVIEW



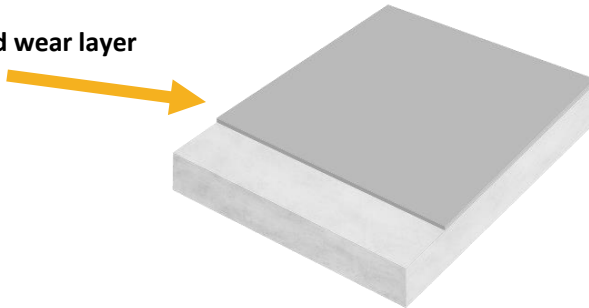
# SIKALASTIC 726 BALCONY ONE SHOT

Sikalastic®-726 Balcony One Shot is a two-component, aliphatic, elastomeric, polyurethane waterproofing traffic coating that has both superior flexibility and abrasion resistance.

## Features

- ✓ Single coat system of 35 mils
- ✓ Primerless application on concrete
- ✓ Convenient packaging - 100 ft<sup>2</sup> per kit
- ✓ Fast Turnaround - open to pedestrian traffic in just 8 hours!

**35 mils of membrane and wear layer  
– ALL IN ONE!**



# SIKALASTIC 726 BALCONY ONE SHOT: KEY APPLICATION TIPS



# SIKALASTIC 726 BALCONY ONE SHOT: KEY TIPS

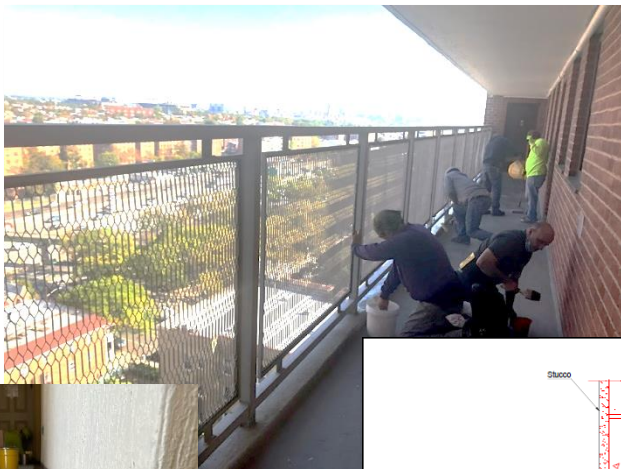
- Have a clear plan! Know who is squeegeeing, backrolling, mixing, & pouring out the material before starting.





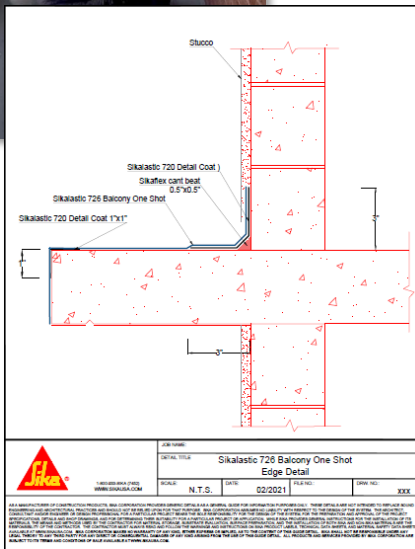


# SIKALASTIC 726 BALCONY ONE SHOT: KEY TIPS



Coat upturns, verticals and edge detail work prior to initiating the larger horizontal portions of the project

- It is critical **NOT** to work from the pail – either pour off into smaller pails or pour material along the base of any vertical



# SIKALASTIC 726 BALCONY ONE SHOT: KEY TIPS

- Know you have squeegee! We recommend the Seymour Midwest 18" EasySqueegee® with 25-30 WFT Mils Blade



# SIKALASTIC 726 BALCONY ONE SHOT: KEY TIPS

- Check your thickness! A good indicator of proper thickness is seeing the aggregate after backrolling





# SIKALASTIC 726 BALCONY ONE SHOT: KEY TIPS

- Be systematic with your backrolling. Squeegee marks after application are areas missed when backrolling!



# SIKALASTIC 726 BALCONY ONE SHOT: KEY TIPS

- Surface prep is essential when primerless! It is a one coat for performance and aesthetics



# ONE SHOT INNOVATION: KEY BENEFITS





## WHERE TO USE ONE SHOT:



# PROJECT HIGHLIGHT: LAX CONRAC, LOS ANGELES, CA

## *SIKALASTIC 720 ONE SHOT*

**Project Size:** ~890,000 sf

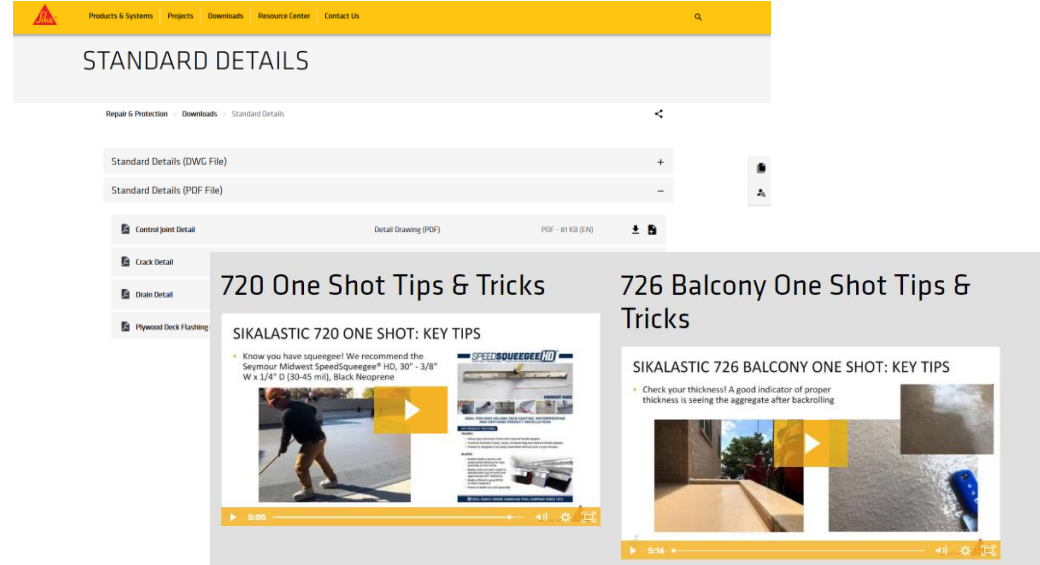
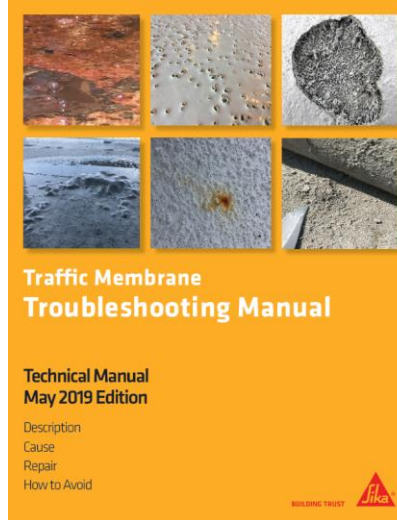
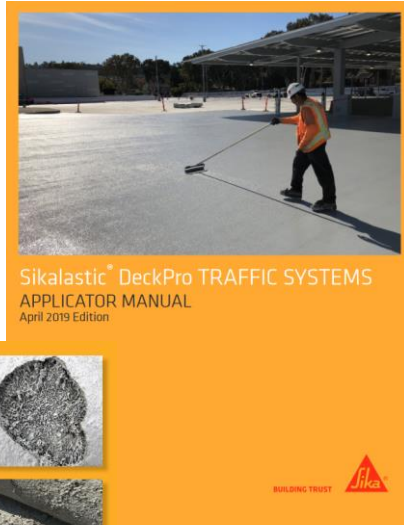
**Productivity:** ~14- 18 workers, averaged  
~45,000 – 55,000 sf of Sikadur 22 LM FS primer  
and Sikalastic 720 One Shot a day

**Labor Savings:** ~\$1 million+

Completed ~65,000 sf in one day!



# ADDITIONAL RESOURCES



**Sika Technical Services**

Phone: 1-800-933-7452 ext. 5



THANK YOU FOR YOUR ATTENTION!

***“THERE’S A WAY TO DO IT BETTER – FIND IT.” – THOMAS A. EDISON***

BUILDING TRUST

