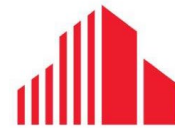




WESTERNTM
SPECIALTY CONTRACTORS
CONFIDENCE THROUGH PERFORMANCE

partnering with



**CUSHMAN &
WAKEFIELD**

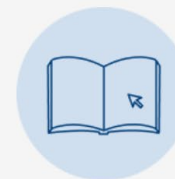
Western Education: The Learning Platform

Visit the link below (or in the chat)
to register while we wait to get started!

www.westernplatform.com/sign-up/



Six foundational courses



10 ebooks and guides



Access to all future content

Presentation Overview

- Western Overview
- Parking Garages
 - Types
 - Maintenance
- Deck Coatings
- Preventative Maintenance

Today's Quiz: Where is Westy?



*This picture not included in total count

How many times can you spot Westy Waterdrop throughout the presentation?

Send your guess to:

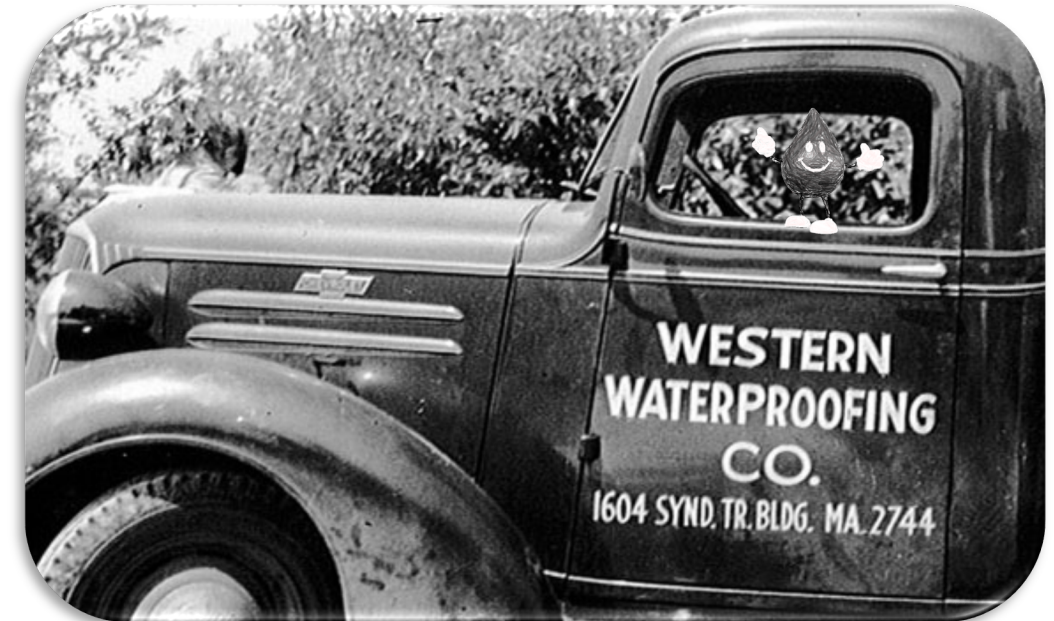
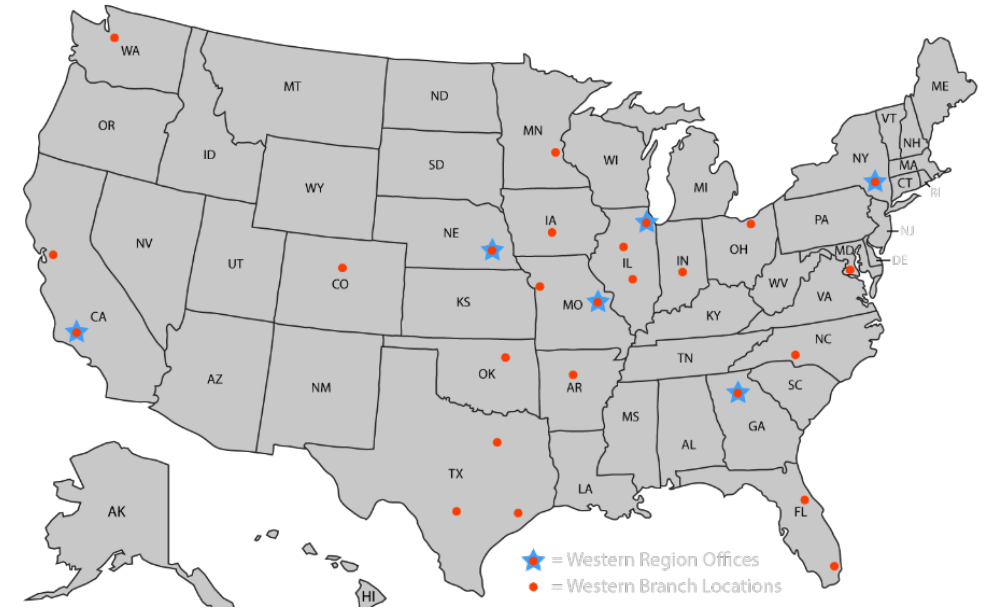
JessicaG@Westerngroup.com

For a chance to win a
\$50 Gift Card!

Western Specialty Contractors

America's Largest Contractor in Building Envelope Restoration

- Founded in 1915
- Specialize in:
 - Masonry
 - Concrete
 - Waterproofing
 - Facades
- Industry Leader in Safety





NATIONAL FOOTPRINT
WITH A SINGLE POINT OF
CONTACT



CONSISTENCY = QUALITY
CONTROL PROGRAM



TOP RATED SAFETY
PROGRAM



ASSISTANCE WITH ASSET
MANAGEMENT, BUDGET
PLANNING, PHASING OF
PROJECTS



PREFERRED SCHEDULING
AND PRICING



TRAINING AND
EDUCATION:
MAINTENANCE PROGRAM,
REPAIR PRIORITIZATION

Cushman Preferred Vendor

National Account Program

WESTERN SPECIALTY CONTRACTORS
CONFIDENCE THROUGH PERFORMANCE

Area of Repair or Maintenance
Mortar Joint Repair - In general, the mortar was found to be in good condition, however, multiple areas of needed repair were noted.

Repair Option
Tuckpointing, recommend mortar joint pointing w/ of protect installed

Examples:

Area of Repair or Maintenance
Brick Replacement - In general, the brick found to be in good condition, however, areas of needed repair were noted.

Examples:

Budgetary Remarks:
Below is a schedule of values for the building based on the above described items and should be considered supplementary only. These options of repair costs are given with a range and are based on types, specific details and recommendations that we encounter. Actual pricing may vary based on material quantity or do not perform the work. These allowances are given for items that either we cannot subcontractors were solicited for these prices.

Work needed in next 2 to 5 years

No.	Description	Quantity	Unit	Price Range	Totals
1	Control Materials Sealant		LF	\$ - \$	
2	Control Panel Sealant		LF	\$ - \$	
3	Mortar Joint Repair at Entry		LF	\$ - \$	
4	Building Joint Repair		LF	\$ - \$	
5	Window Perimeter Sealant		LF	\$ - \$	
6	Glaze to Metal Sealant (Wet)		SP	\$ - \$	
7	Weatherstripping		SP	\$ - \$	
8	Weatherstripping		SP	\$ - \$	
9	Weatherstripping		SP	\$ - \$	
10	Weatherstripping		SP	\$ - \$	
11	Weatherstripping		SP	\$ - \$	
12	Weatherstripping		SP	\$ - \$	
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100	Weatherstripping		SP	\$ - \$	

Optional Work Items

No.	Description	Quantity	Unit	Price Range	Totals
11	Roof Drain Testing		EA	\$ - \$	
12	Accidental Damage		EA	\$ - \$	
13	Work needed in next 2 to 10 years		EA	\$ - \$	
14	Roof Drainage		EA	\$ - \$	
15	Roof Drainage		EA	\$ - \$	
16	Roof Drainage		EA	\$ - \$	
17	Roof Drainage		EA	\$ - \$	
18	Roof Drainage		EA	\$ - \$	
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100	Roof Drainage		EA	\$ - \$	

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The Learning Platform



What You Need to Know About Deck Coatings

Western breaks down what you need to know about deck coatings and action steps to take.

[VIEW LESSONS](#)

Parking Garage Cheat Sheet

Conditions to be checked



CRACKING

Noticeable fissures caused by construction or service-related stress resulting in moisture and chloride entry into the concrete.



SCALING

The loss of the surface of the concrete caused by the freeze-thaw cycle and inadequate air entrainment in the concrete.



SPALLING

Potholes resulting from corrosion induced stress.

www.westernspecialtycontractors.com/cushman-learn/

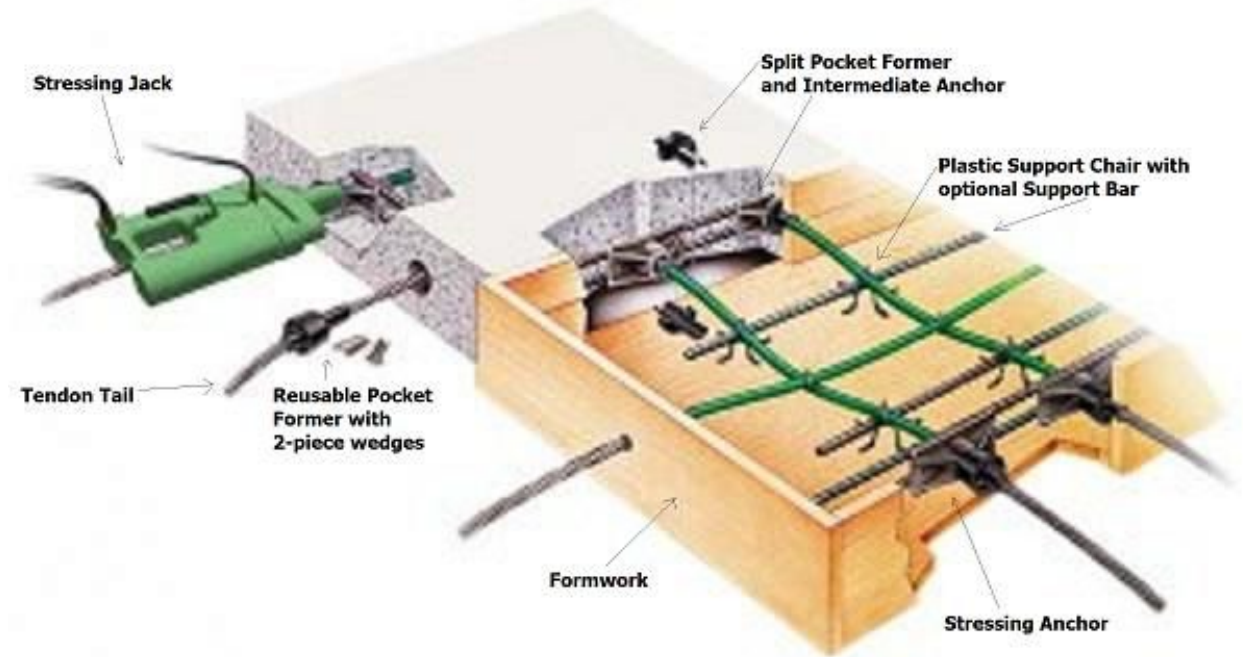
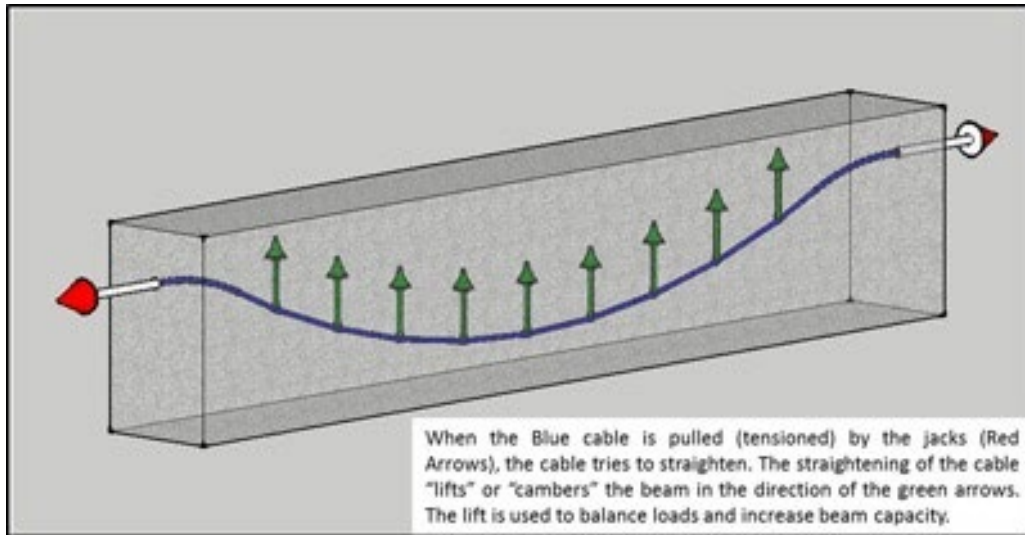


Dave Grandbois
Asst Branch Manager
Minneapolis

Common Types of Parking Structures



Post Tension



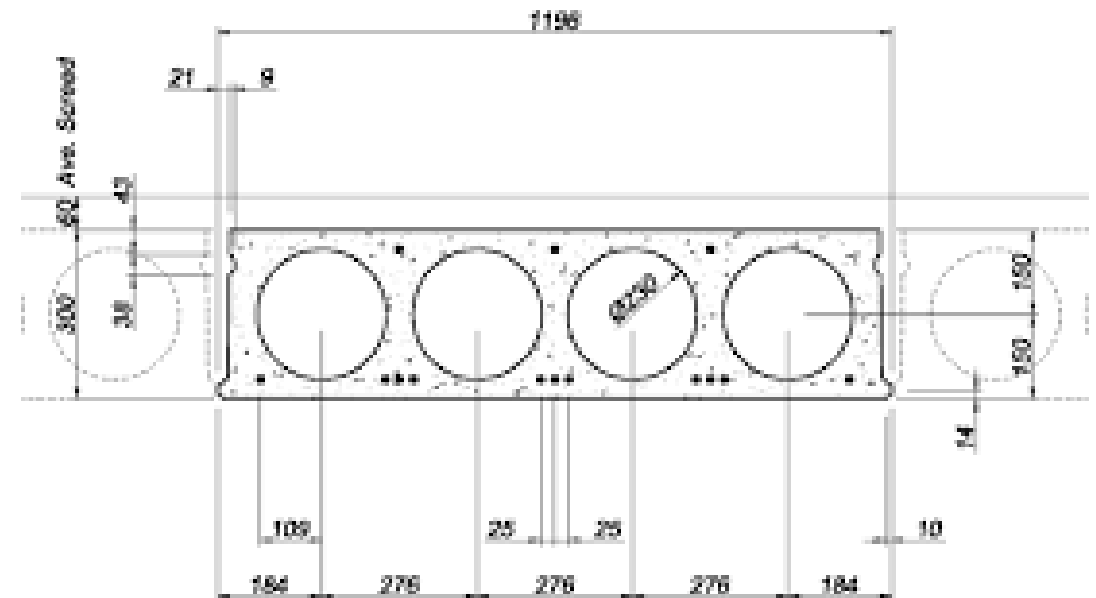
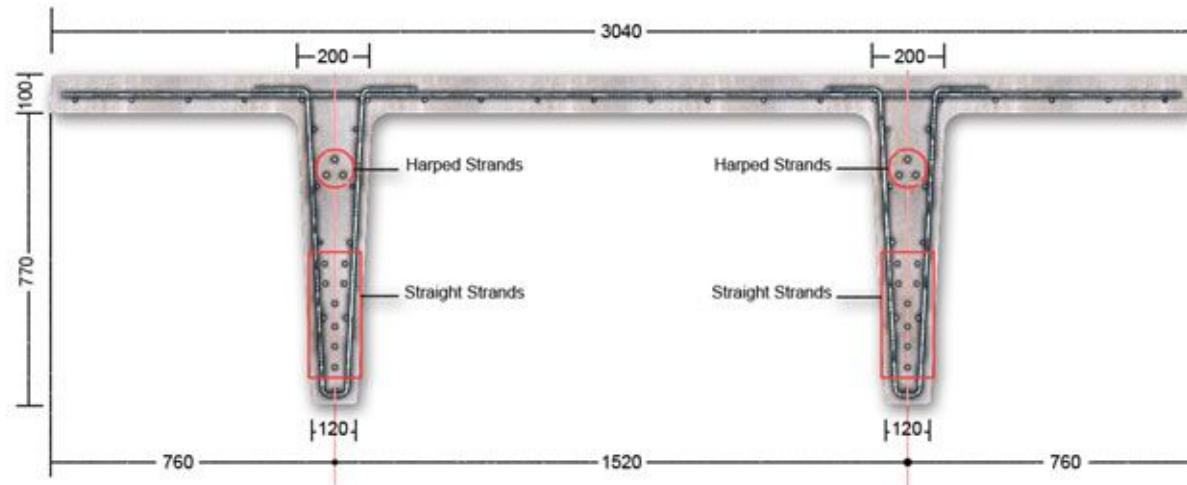


The Chicago Concrete Team working hard on a massive 119 Cubic Yard concrete pour.

Post Tension



Precast





Western's Denver Branch replaced a 55' long double-tee assembly weighing 30,000 LBS with a crane. This was a first for our branch but we were excited for the challenge!

Precast



Cast-in-Place Concrete

Parking Garage Repair Timeline

Annually

- Maintenance Items:
 - Delaminated, cracking, and/or falling concrete
 - Immediate Safety Concerns
 - Stall striping visibility

5-10 Years

- Deck Coatings
- Sealants
- Concrete cracking maintenance
- Maintaining striping/signage is within ADA compliance

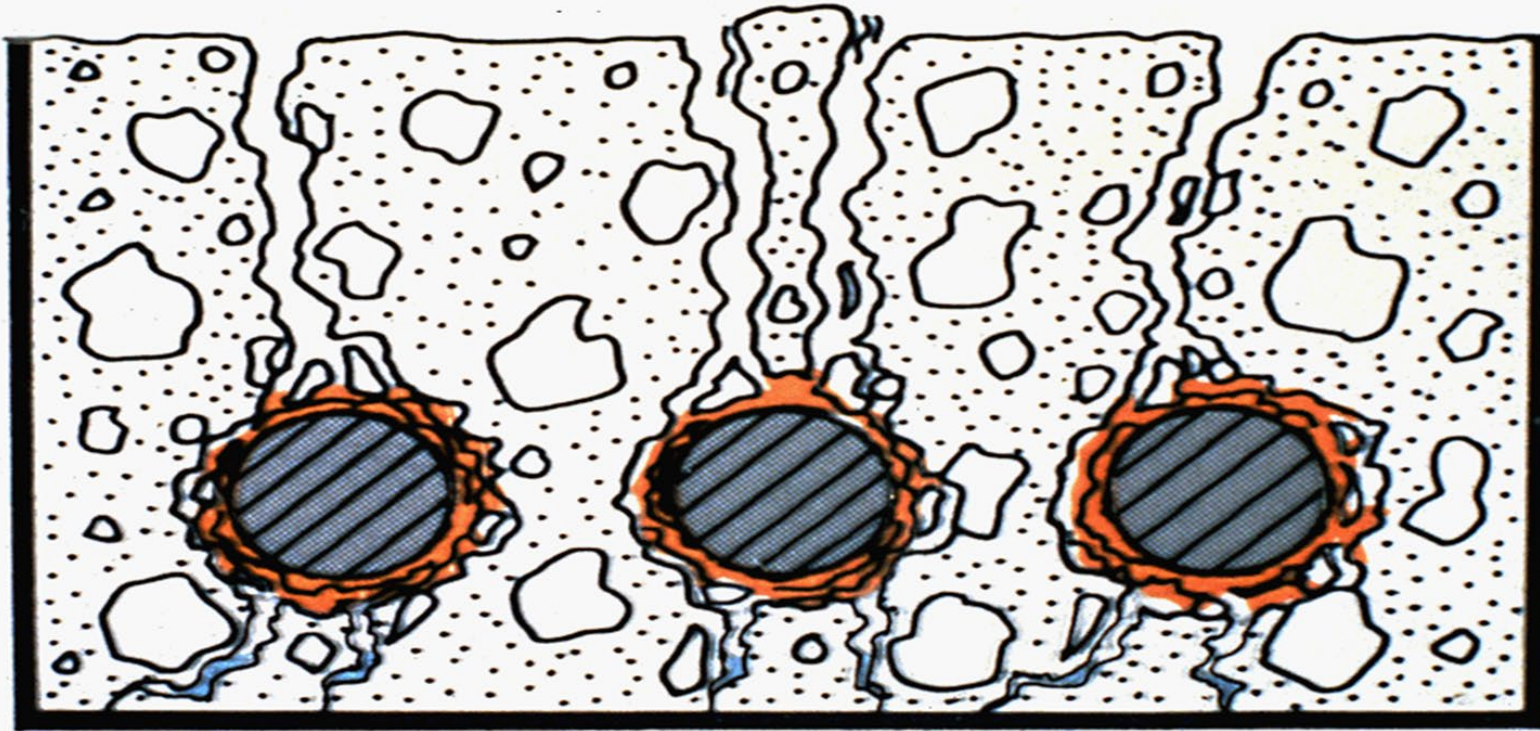
15-20 Years

- Continued concrete maintenance
- Preventative maintenance: add sealers or protective coatings
- Exposed structural steel components



Corrosion

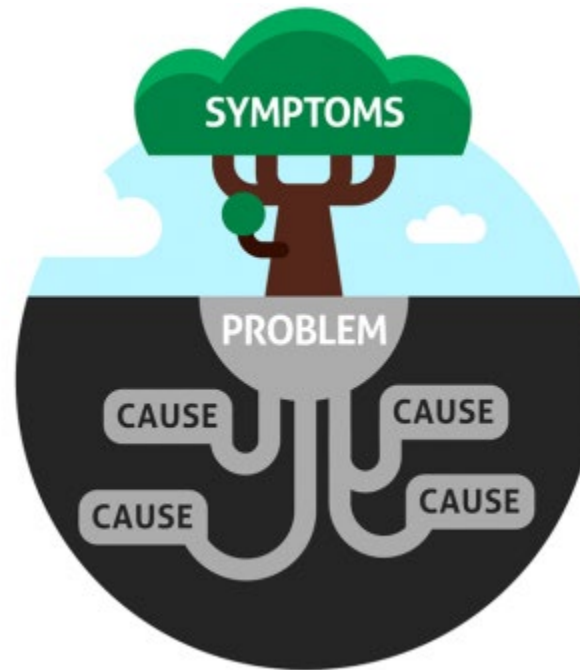
Corrosion of reinforcing steel is the leading cause of concrete deterioration



When steel corrodes, it gets bigger — and that's not good because there's no space for it to grow inside the concrete

Causes of Corrosion

- Road Salt (Chloride)
- Moisture
- Freeze Thaw Cycles
- Salt Air / Water
- Poor Design Mix
- Poor Workmanship



- Lack Of Maintenance
- Movement
- Acid Rain
- Daily Usage
- Carbonation
- Chloride Admixtures
- Hazardous Materials

Catch it ... before it's too late

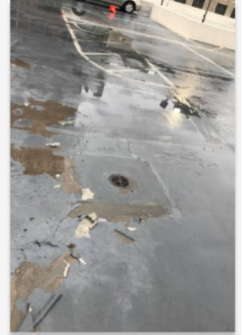
When you see the damage visually - it's too late.

Corrosion will go on for many feet beyond what you see visually.

When corrosion is set into the steel, it never goes away.

You can mitigate it and slow it down, but it's always going to be there.

Parking Garage Inspections: Where to Look



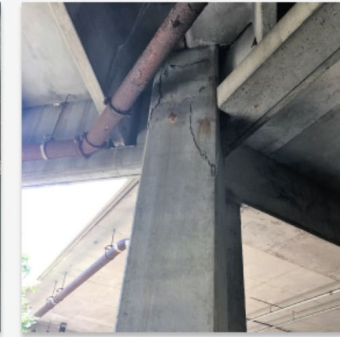
Concrete Beams

Concrete Slabs

Drains



Walls



**Support
Columns**

What to Look For



Corrosion



Cracking



Delamination/rust

What to Look For



Scaling



Leaching



**Peeling deck
coating**

What to Look For



Expansion Joint



**Deteriorated
Sealant**



**Exposed Structural
Steel**

In-House Inspections Check Lists

This checklist of conditions and structural elements was designed by Western Specialty Contractors to provide you with a systematic inspection of your parking garage.

BACKGROUND INFORMATION

Company Name	Age of Structure
Number of Parking Levels	Capacity
Type of Construction, if known (example: Pre-cast)	
Previous Repairs/Coating Used, if known	
Address	
City	State Zip

TO BE CHECKED

CONDITIONS

1. CRACKING

Noticeable fissures caused by construction or service-related stress resulting in moisture and chloride entry into the concrete.



2. SCALING

The loss of the surface of the concrete caused by the freeze-thaw cycle and inadequate air entrainment in the concrete.



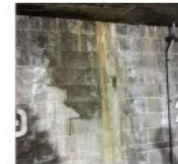
3. SPALLING

Potholes resulting from corrosion induced stress.



4. LEACHING

Water migration through the concrete slab that can result in corrosion in reinforcing steel and subsequent delamination and spalling of concrete.



5. LEAKING

Tell-tale signs include standing water, stains and possible damage to floor below.



6. EXPOSED REINFORCING STEEL

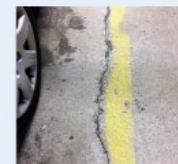
Caused by concrete deterioration resulting in dangerous corrosion of the reinforcing steel



STRUCTURAL ELEMENTS

1. CONCRETE SLABS

Floors and ceilings should be carefully checked for normal wear, initial and advanced deterioration.



LEVEL

1

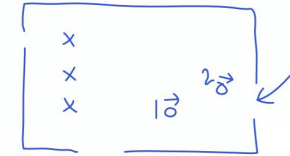
Expansion/construction joints
Other

CHECK:

Concrete slabs
Concrete beams
Support columns
Walls
Drains
Expansion/construction joints
Other

CONDITION:

Cracking - spalls-10% of total area
Cracks present in 24 beams
Cracks present in 36 columns
Shows signs of leaking in 15 areas
10 drains not working - 8 low spots in floor
joint failure - 342 lineal feet
Poor lighting by pay station.
Vegetation by entrance needs trimming.



2. CONCRETE BEAMS

A visual survey should be done to detect corrosion, exposed steel.



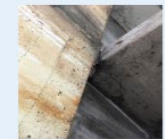
3. SUPPORT COLUMNS

Monitor for any signs of cracking or stress.



4. WALLS

Check for cracks, water entry points and other signs of stress and deterioration.



5. DRAINS

Check for obstruction causing water to pond and possibly leach through the concrete slabs.



6. EXPANSION AND CONSTRUCTION JOINTS

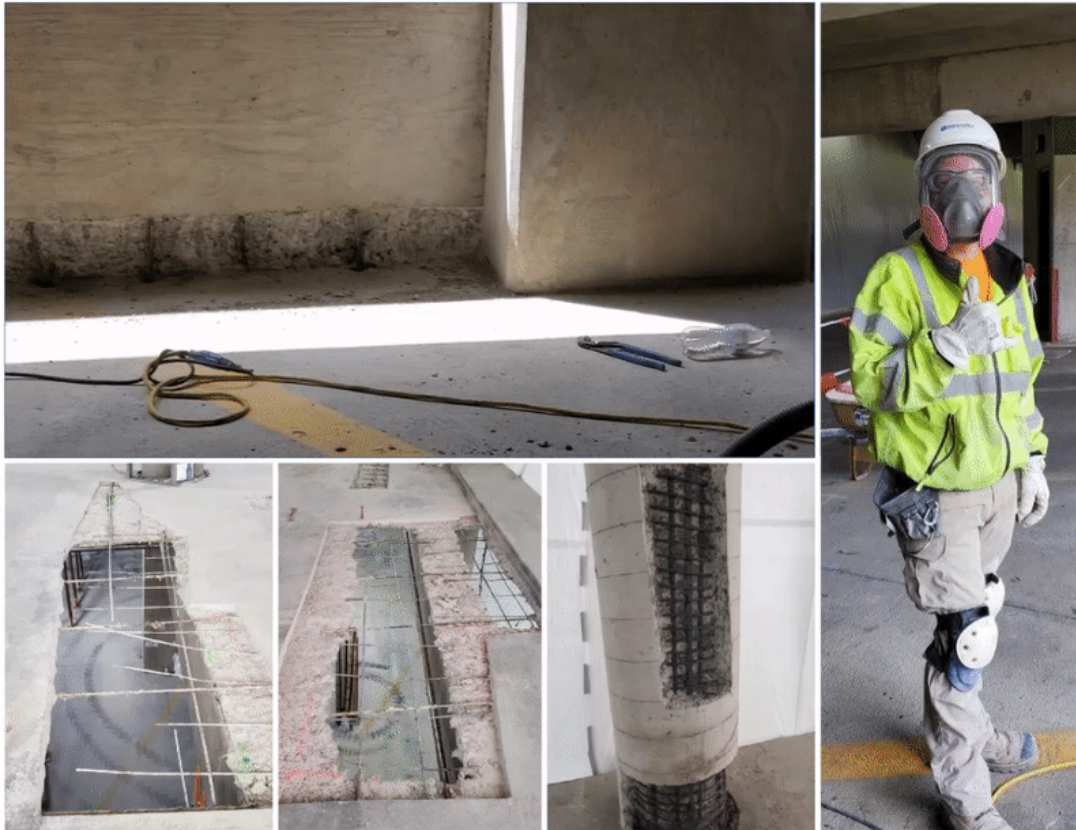
Check for joint failure or damage from traffic or snow plows.



Repairs



#WeAreWestern



Western's Tulsa's Crew even laying down on the job getting it done. Doing 4,000 LF of partial depth repair and 5,000 SF of full-depth repair in a parking structure in Downtown Tulsa.



#WeAreWestern



Western's Springfield, IL team hard at work completing full-depth concrete repairs in downtown Springfield.

Repairs



#WeAreWestern



The Chicago Concrete Team working hard on a massive 119 Cubic Yard concrete pour.



#WeAreWestern



Minneapolis crew working on 10,000 LF of Tee-to-Tee joint sealant replacement.

Repairs



#WeAreWestern



The Chicago Concrete branch performs overhead shotcrete repairs on a 108-year-old building located in the Chicago South Loop neighborhood.



#WeAreWestern



Western's Dallas Branch is pumping concrete in from the sides for a challenging parking garage beam repair at 6400 Legacy in Plano, TX.



Jeremy Bosl
Project Manager
Kansas City

Protecting Your Investment: Deck Coatings

- What:
 - Protective membrane to protect concrete
- Why:
 - To protect concrete, particularly after repairs
- When:
 - New concrete areas
 - Repair and maintenance of existing coatings



Deck Coatings

Surface Preparation

- Most important piece of the process

Shot Blasting

- Opens pores and allows for better bond

Cure Time

- Follow manufacturer's recommendations

*Deck coating:
simply a cheap
insurance*

The industry standard
useful life for deck
coatings is 5 years.

But with proper
maintenance, deck
coatings can last
upwards of 10 years.



**Preparation:
Shot-
blasting**



Preparation: Detail Surface Cracks



**After
Base Coat**



Intermediate Coat



Complete with Striping

Before and After





Traffic Coating

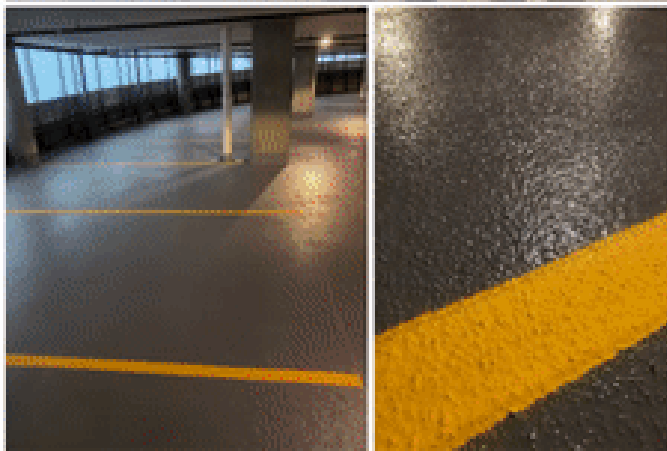


Western's Minneapolis crew is working on a 36,000 SF deck coating project!

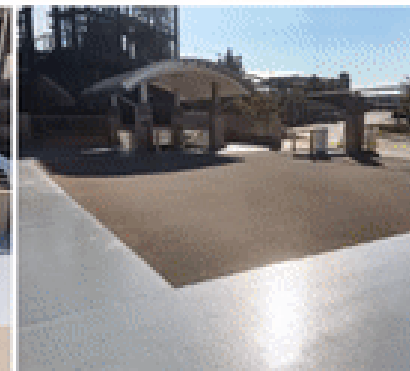


Greetings from Little Rock! Western's Little Rock Branch is finishing up a deck coating job in our downtown area.

Repairs



Western's DC branch installing a final coat of deck coating in downtown Baltimore steps from Camden Yards.

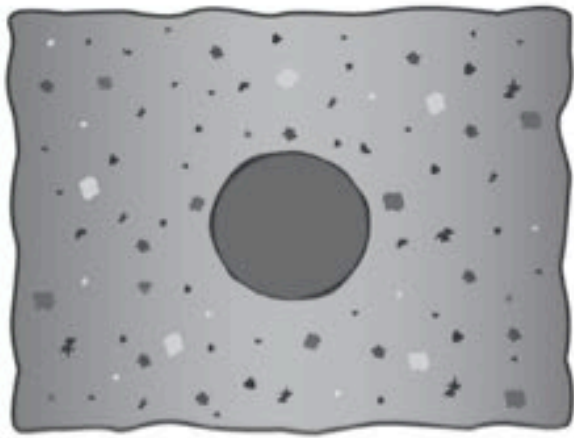


The Denver Branch just finished up the first phase of a 98,500 square foot coating project at Panorama parking garage. Our crew is hard at work trying to

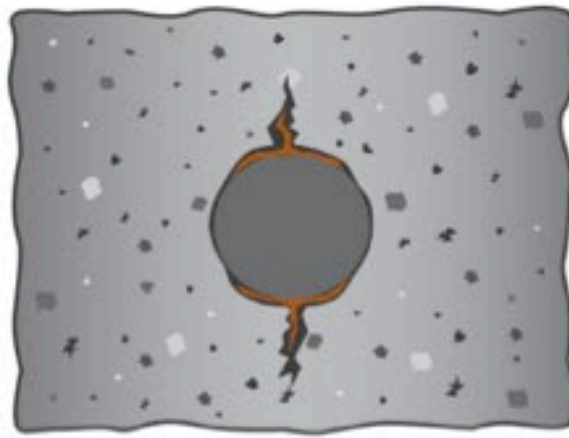
Repairs



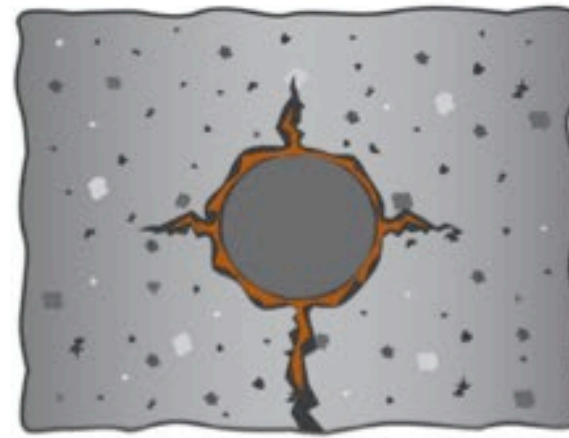
Carter Pogue
Branch Manager
St. Louis Concrete



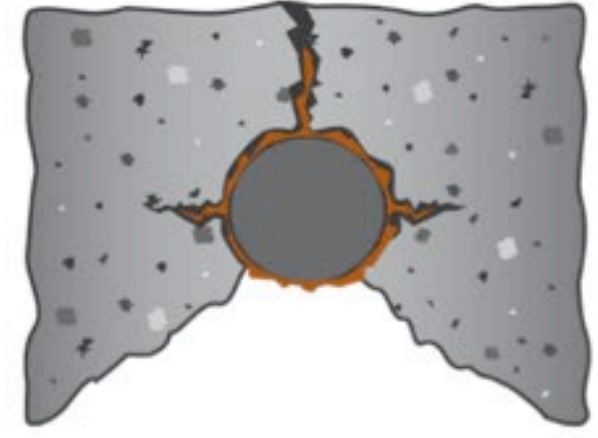
BEFORE CORROSION.



**BUILD-UP OF
CORROSION PRODUCTS.**



**FURTHER CORROSION.
SURFACE CRACKS.
STAINS.**



**EVENTUAL SPALLING.
CORRODED BAR.
EXPOSED.**

What is Happening Under the Surface

- Cracks allow for water to penetrate to the structural steel
- Structural steel begins to corrode
- Corrosion causes steel to expand
- Concrete begins to delaminate and spall
- Steel will continue to corrode causing loss of strength in structural steel

Additional Cost Considerations



Typical
Expansion Joint
approx. \$6,000
to replace



Typical Sealant
Joint approx.
\$6/LF to replace



Deferred maintenance
often leads to
additional costly
repairs

Deferred Maintenance Escalation

- Approximately 20% growth of repair area/year
- Approximately 3-5% cost increase/year





Cale Prokopf, RRO, REWO
Presenter

PAVETECH
CONSULTING 

an independent third-party consulting group

OUR HISTORY

PaveTech Consulting, Inc. was created in 2020 as a response to the growing market need of an independent, third party paving consultant.

PaveTech Consulting specializes in ADA designs, proper repair, maintenance of new and existing roadways, parking lots and parking structures.

Our partner company, RoofTech Consulting, Inc., was founded in 2001 to satisfy a need in the roofing and construction industry. RoofTech provides infrared thermography, FM 1-52 uplift testing, ASTM flood testing and electronic leak detection.

WHY THIRD-PARTY CONSULTANTS?

Self-inspection is critical for catching potential issues

But you don't know what you don't know

By partnering with RoofTech or PaveTech Consulting, every aspect of the job will be analyzed before the project bid

This ensures you get it right, the first time



ASSESSING PARKING STRUCTURES

Deck Coating

Extreme Weather Conditions

Electronic Leak Detection

Preventative Maintenance

COMMON ISSUES



“Lily Pad” art from the contractor



Too rough? A hazard for an ADA accessible path?
Will this accelerate surface failure?



Wild West of patching

COMMON ISSUES – cont.



Water infiltration due to masonry unit failure



Water infiltration due to failed roofing system



Water infiltration in a below grade parking level due to lack of water proofing

COMMON ISSUES – cont.



Failed handrail with rust jacking due to salts and weather



Reinforcement placed too close to the surface of the topping slab, resulting in the top surface failing due to rust jacking



PROJECT SCOPE & DEVELOPMENT

Bid Review

Submittal review

Pre-Construction Meeting

Quality Assurance Control Site Visits

Final Close-Out Inspection



Thank you for your time and attention.





Tanya Shepherd
Director
Business Development

Proactive VS Reactive



\$\$\$\$ savings



Strategic approach



More time planning = less time dealing with emergencies



Asset life extended



Downtime / inconvenience to tenants are reduced



Budgeting control

Budgeting

Components	Get to know the components that make up the exterior of portfolio
Understand	Understand age and remaining useful life of components
Work	Work with contractors / consultant / engineer to identify issues early
Inquire	Inquire about phasing options to minimize financial impact
Advantage	Advantage in allowing contractors adequate time to prepare scopes and pricing

How Western Can Help



Parking
garage
condition
assessment



Repair
prioritization
and cost
analysis



Budgeting
and
estimating



Provide short-
and long-
term repair
plans



In-house
training
&
Continuing
Education
Credits

The Learning Platform



What You Need to Know About Deck Coatings

Western breaks down what you need to know about deck coatings and action steps to take.

[VIEW LESSONS](#)

Parking Garage Cheat Sheet

Conditions to be checked



CRACKING

Noticeable fissures caused by construction or service-related stress resulting in moisture and chloride entry into the concrete.



SCALING

The loss of the surface of the concrete caused by the freeze-thaw cycle and inadequate air entrainment in the concrete.



SPALLING

Potholes resulting from corrosion induced stress.



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Today's Quiz: Where is Westy?



*This picture not included in total count

How many times did you spot Westy Waterdrop throughout the presentation?

Send your guess to:

JessicaG@Westerngroup.com

For a chance to win a
\$50 Gift Card!

Questions?

THANK YOU!!!



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