



TRU Polished Overlay System

Presented by:

Joe Zingale

National Flooring Group Manager

CTS Cement Manufacturing Corp.

Company Overview

CTS Cement Manufacturing Corp

CTS is the leader in advanced cement technology with an extensive history of providing innovative and high performance cement products to the construction industry.

CTS Cement is the leading manufacturer of:



A high performance, fast setting, high early strength Calcium Sulfoaluminate (CSA) cement



An expansive additive used in the creation of Type K shrinkage compensating cement



Our cement technology began in the 1960's and products have been made available nationwide since 1981.



We are a 100% Employee owned company with a vested interest in producing cutting edge cement products.

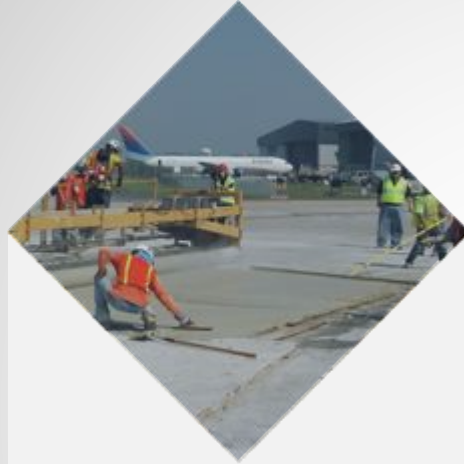
Product Overview

Bulk Rapid Set®



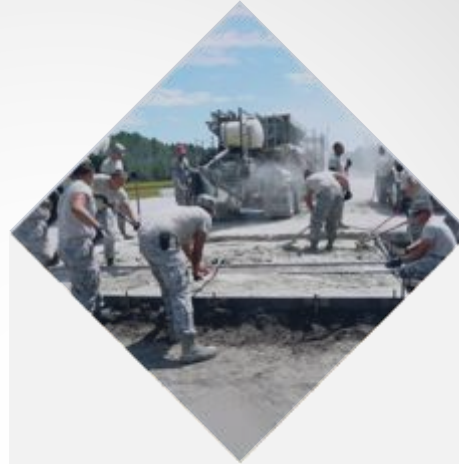
HIGHWAY & BRIDGE

- Emergency repairs, bridge deck overlays, full depth pavement panel replacement.
- California Freeway System(California Department of Transportation) 344,050 cubic meters of CSA Cement (492 kilometers of freeway) since 1995.



AIRPORT

- Runway, apron, taxiway repairs and panel replacement.
- Rapid Set® successfully used at the world's largest airports.



MILITARY

- Army corps of engineered approved products list for spall, crack and crater repairs on military airfields.



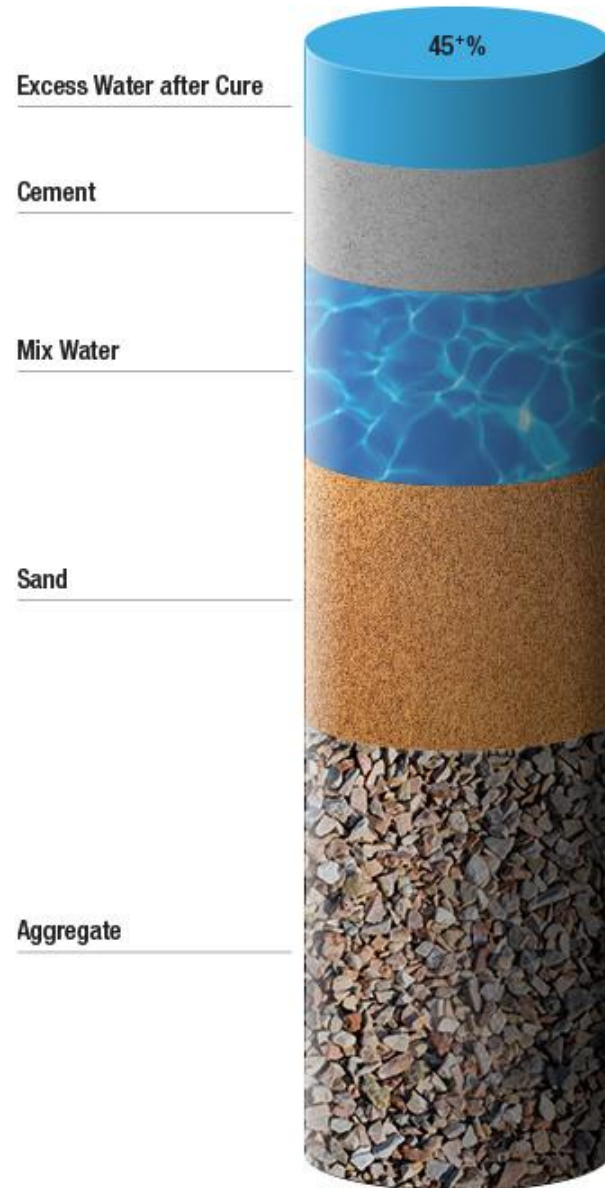
Fast | Strong | Durable

What is Rapid[®] Set?

Rapid Set[®] is
pure Hydraulic
Cement that
delivers
structural
strength in just
1 HOUR



PORTLAND Cement Concrete



CSA Cement Concrete

Comparable Mix Designs



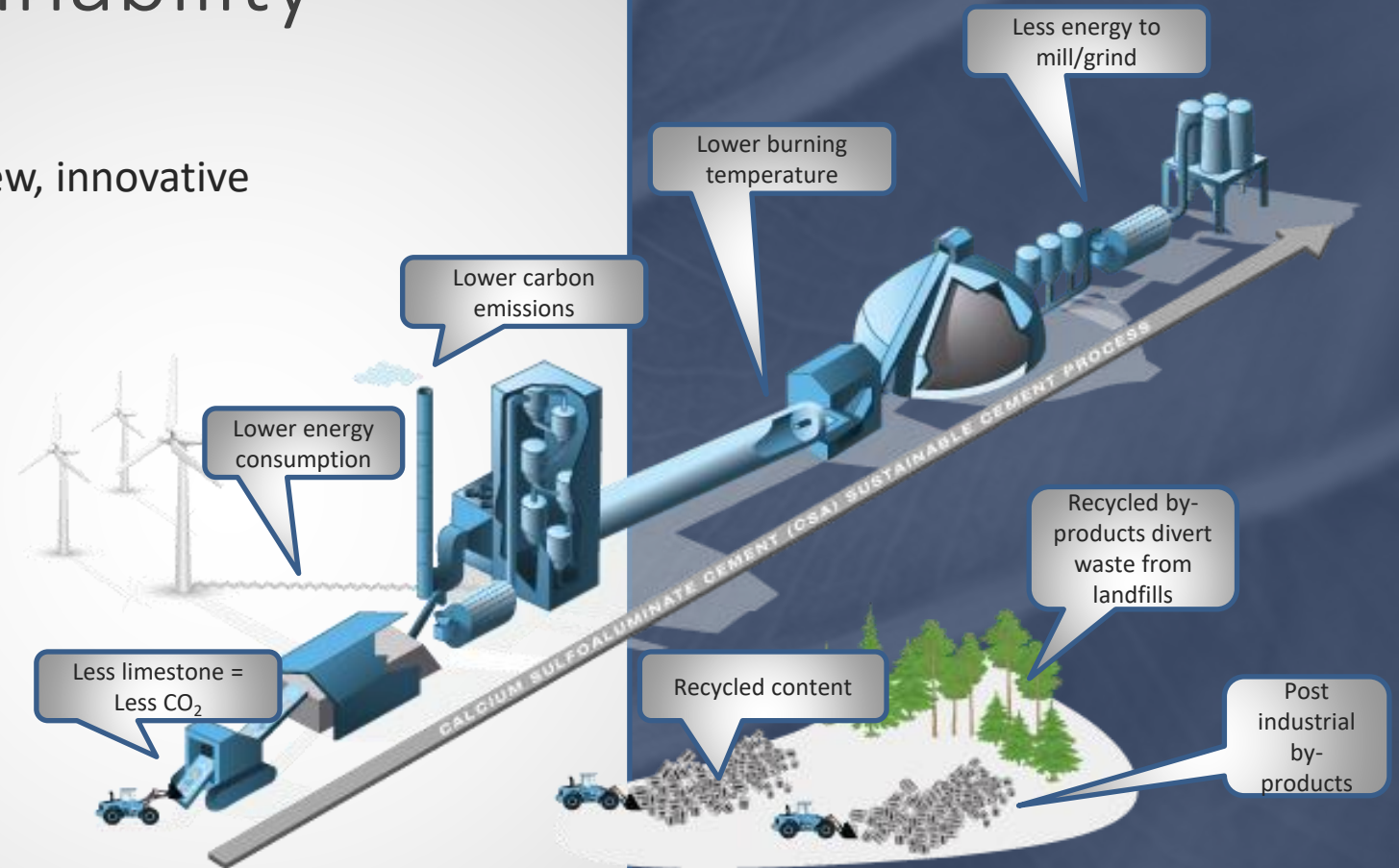
Innovation & Sustainability

Eco-friendly products through Advanced Cement Technology

Advanced cement technology provides new, innovative and eco friendly products.

CSA cement has a much smaller carbon footprint than Portland cement. During the manufacturing process it generates far less carbon dioxide (CO₂) than Portland cement, making it a “green” hydraulic construction material that is superior in most respects to Portland cement.

- **32%** reduced carbon emissions during production
- **65%** less consumption of natural resources and energy
- **2x** the service life of Portland



Objectives

- **Overview of TRU Self Leveling Polish Concrete Overlays**
 - Introduced in 2006 as the 1st wet or dry polishable overlayment
 - Growth in the Market
- **The Process**
 - Similar to polish concrete
 - Multi-step mechanical grinding & polishing, diamond tooling, densifier, with final stain protector
- **Features and Benefits of Rapid Set Polished Overlays**



Industry Leader

INDUSTRY LEADER

We have been in the forefront of architectural concrete floors since 2005. We have experience working on entire flooring systems with the leading manufacturers of grinding equipment, chemicals and mixing equipment. Because of our extensive experience, we have been able to revolutionize this explosive polished topping market into the commercial and industrial flooring communities.



LARGEST NETWORK OF TRAINED CONTRACTORS



BEST ON-SITE FIELD SUPPORT



CONTINUING EDUCATION – AIA SEMINARS



DESIGN AND INSTALLATION CONSULTANTS



TRU® INSTALLED WORLDWIDE

SIXTEEN YEARS IN THE INDUSTRY

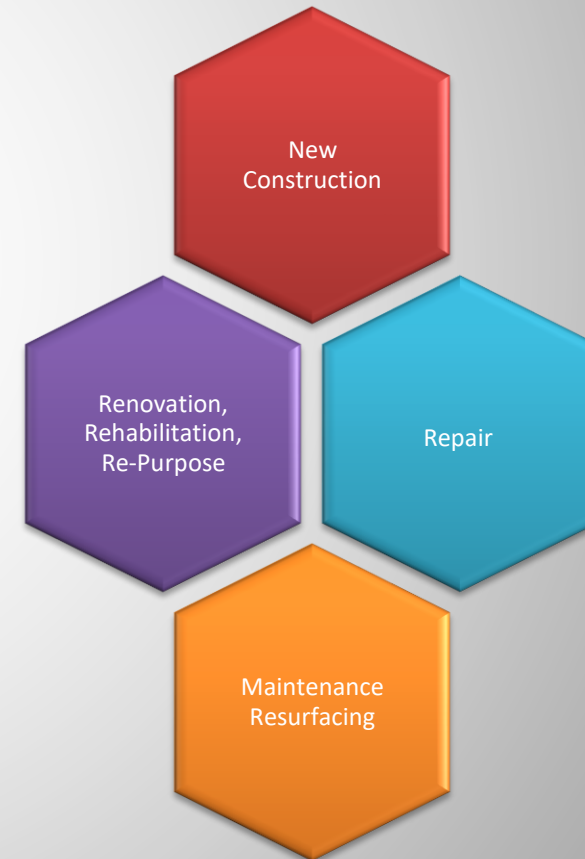
Polished concrete is a skilled profession. Over the years, we have trained and partnered with some of the best flooring contractors who install polished flooring systems for customers in all industries.

2004	Began development on self-leveling underlayment and overlayment.
2005	Discovered that Rapid Set® overlayment is compatible with concrete polishing techniques and equipment.
2006	Introduced Rapid Set® TRU® Self-Leveling as a polishable overlayment.
2009	Developed polishing system with HTC.
2010	Developed polishing system with STI.
	Introduced Rapid Set® TXP™ Epoxy Primer.
2011	Rapid Set® TRU® World of Concrete - Decorative Artistry Section.
	Developed polishing system with SASE.
	Developed polishing system with Superabrasive.
2013	First project with portable batch mixer.
	Developed polishing system with Husqvarna.
2014	Launched Rapid Set® TRU® PC.
2018	Launched Rapid Set® TRU® SP.

Polished Concrete



- **TRU Concrete Overlays can be used wherever a dense, wear resistant , architectural floor is desired.**
- **Typically, 3/8" to 1/2" thick**
10 mm – 12 mm
- **Can be Used for:**
 - New Construction
 - Rehabilitation/Renovation/ Re-Purpose
 - Repair
 - Maintenance Resurfacing



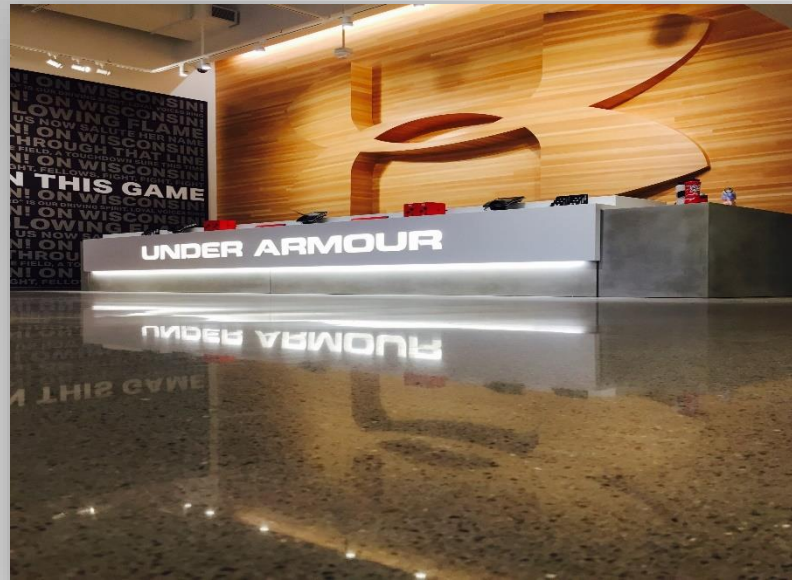
Polished Concrete



Polished Concrete



TRU Polished Floors



Ground and Coated TRU Floors



Art Museum



Restaurant



Cafeteria



Residence

Material Options

Which Products are Right for Your Project?

That depends on ...

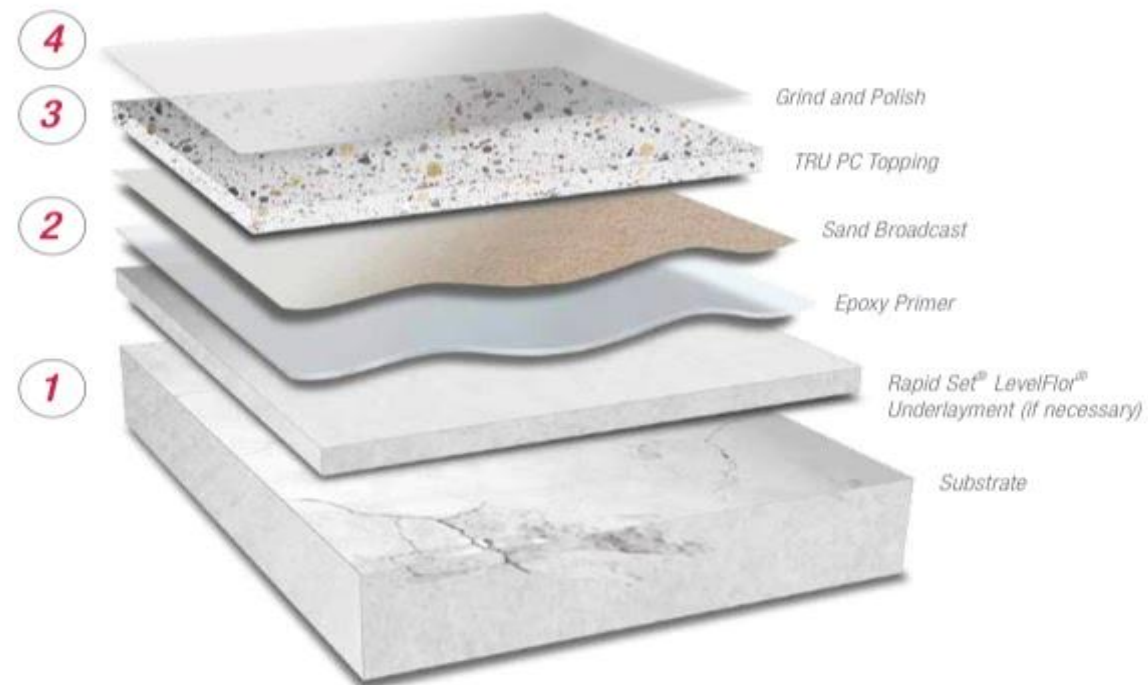
1. **Project Timeline/Construction Schedule**
2. **Environment/Application Area**
3. **Aesthetic Requirements**
4. **Maintenance Plan**
5. **Project & Maintenance Budgets**



THE PROCESS

OF A TRU® SELF-LEVELING POLISHED OVERLAY

1. **PROFILE SUBSTRATE:** Mechanically prepare the surface to obtain an ICRI CSP 3 to 5
 - All joints must be honored
 - Remove all loose, unsound, contaminated material
 - Suitable substrates require a minimum 3,000 psi (20.7 MPa) and a minimum density of 100 pcf (pounds per cubic foot)
 - Fill all cracks with the appropriate crack material
2. **PRIME:** Use our alkali-resistant fast-track Rapid Set® TXP™ Epoxy Primers. Our alkali-resistant TXP Epoxy Primers offer high bond and long term performance
 - Requires 1/2 to 3/4 lbs of 20 to 30 mesh dry silica sand per square foot
 - Suitable for substrates exhibiting an RH of up to 100%
 - Cure time:
 - Rapid Set® TXP SuperFast = 2-½ to 3 hours
 - Rapid Set® TXP Fast = 4 to 6 hours
3. **MIX AND PLACEMENT:** Choose one of the Rapid Set® TRU® products
 - Minimum depth of 3/8"
 - All joints must be honored
 - Options: colorants / aggregates
 - Use appropriate mixing equipment and placement tools
4. **GRIND AND POLISH:** In 24 hours
 - Grind wet or dry



POLISHED CONCRETE

is the one of the fastest growing market segments in decorative concrete today. Over the last decade, it has become one of the most viable flooring solutions for commercial and industrial flooring. If you are an architect, designer, builder or contractor, polished Rapid Set® TRU® toppings are the smart alternative for renovations or new construction projects that require a durable, fast-track, cost effective, eco-friendly, low maintenance flooring option.



TRU Self-Leveling



TRU SP



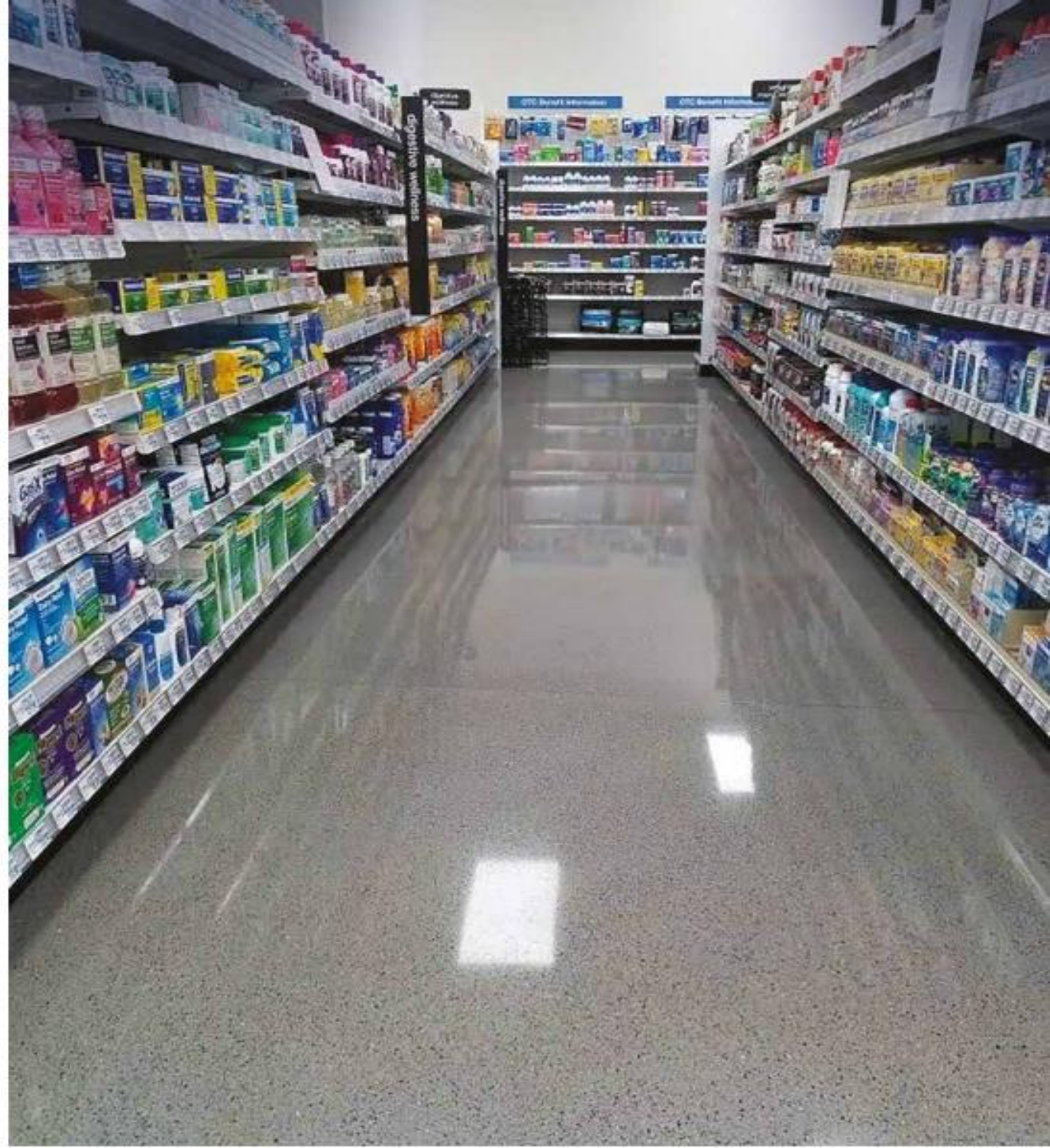
TRU PC

ADVANCED CEMENT TECHNOLOGY

CTS offers a complete line of fast-track high-strength decorative toppings, underlayments and repair materials, all formulated with our durable Rapid Set® BCSA cement technology that is built to last. TRU polished toppings are available in three different high-quality aggregate appearances, in a variety of colors and aggregate exposures that can achieve both design and performance goals.

TRU toppings are designed to be very dense and produce a high-quality polished finish that meets the slip coefficient of the polished community. Due to their high surface hardness, our polished toppings are capable of producing polished finishes with high reflectivity and excellent clarity like traditional concrete. When the level of flatness that can be gained is combined with our dense self-leveling concrete, the finished polished flooring is capable of reflecting images like a mirror, without waves or distortion. Reflections will look sharp and clear without a haze.

All TRU toppings are engineered for excellent adhesion to new (28 day old) or existing concrete substrates with long term durability. Our fast-track TRU toppings can be ground wet or dry to easily produce a uniform aggregate exposure.



TRU Overlays



Natural 1000



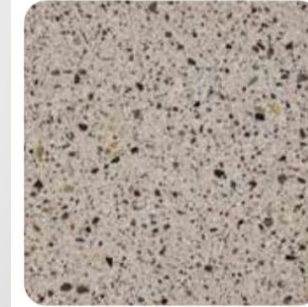
Gray 2000



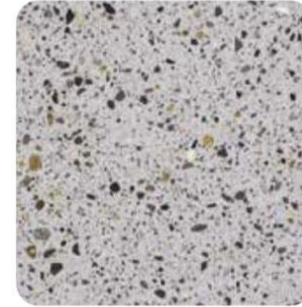
Natural 4000N



Gray 4000



Natural 3000N



Gray 3000

LET YOUR TRU®
CREATIVE IDEAS
SHINE IN YOUR
FLOORS

TRU® INTEGRAL COLORS

Samples shown should be used as a guide only. Results will vary due to aggregate, finishing techniques and environmental factors. To match specific color, jobsite testing should be done. *Represents the color and aggregate load from the bag with no additional colorants and/or aggregates. For more customized samples, colors, specifications, questions, or jobsite support, contact 800-829-3030 or info@ctscement.com



WHITE
1003



MOON ROCK
1152



SAND
1202



TERRA COTTA
1054



SADDLE BROWN
1064



CHOCOLATE
1084



GOLD
1092



YELLOW
1102



EMERALD
1222



VIOLET
1142



ROYAL BLUE
1122



SCARLET
1112



PLATINUM
1171



CHARCOAL
1174



BURNT SIENNA
1024



OLIVE GREEN
1192



SLATE
1172



BLACK
1162



WALNUT
1234



CAPPUCCINO
1254



TRU NATURAL*
1000



TRU GRAY*
2000

TRU[®] SP COLORS



TRU SP NATURAL*
4000N



IVORY
4003N



GRAY MIST
4014N



CLOUD
4001



FRENCH GRAY
4261



GRAY ASH
4172



EBONY
4162



TRU SP GRAY*
4000

TRU[®] PC COLORS



TRU PC NATURAL*
3000N



IVORY
3003N



GRAY MIST
3014N



CLOUD
3001



FRENCH GRAY
3261



GRAY ASH
3172



EBONY
3162



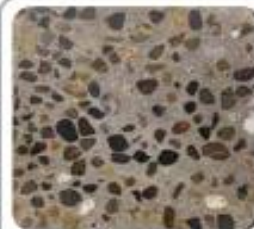
TRU PC GRAY*
3000

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CUSTOMIZE THE LOOK OF YOUR FLOOR

Add colors and aggregates to any of our TRU® Architectural Topping products for a unique customized look.

TRU[®]AZZO



TRU SL
GRAY | **1/4\"/>**



TRU PC
GRAY | **1/4\"/>**



TRU PC
GRAY | **TRAP
ROCK** | 3400

Heavy duty wear resistance



TRU SL
GRAY | **MARBLE
BLEND** | 2300



TRU SL
NATURAL | **GLASS
BLEND** | 5021



TRU SL
NATURAL | **GLASS
BLEND** | 5010



TRU SL
NATURAL | **MOTHER
OF PEARL** | 5011



TRU SL
NATURAL | **MOTHER
OF PEARL** | 5009

Samples shown should be used as a guide only. Results will vary due to aggregate, finishing techniques and environmental factors. To match specific color, jobsite testing should be done. For more customized samples, colors, specifications, questions, or jobsite support, contact 800-929-3030 or info@ctsccement.com.



SOME CLIENTS WE'VE FLOORED

Retail

99 Cent Store
Alexander McQueen
American Eagle
American Outfitters
Amina Rubinnacci
ASICS
Balenciaga
Banana Republic
Bauer Skate
Brooklyn Navy Yard
Burlington Coat Factory
Coach Mens Factory
Columbia Care Dispensary
Conn's HomePlus
CVS Pharmacy
Dollar Tree
Finish Line
Fit 2 Run
Five Below
Foot Locker
Forever 21
Hermès
Hollister
Hot Topic
Indochino
J.C. Penney
Just Cavalli
Leslie Pool
Lululemon
Lush
Mapco
MedMen Dispensary
MLB – Major League Baseball
Michaels
Nike
Nordstrom
Nordstrom Rack
Off Broadway Shoes

Old Navy

OndadeMar
O'Reilly Auto Parts
Original Penguin
Perry Ellis
Pet Pantry
PetSmart
Salt Life Clothing
Skechers
Target
TravisMathew
Tory Burch
Under Armour
Walgreens
WSS – Wholesale Shoe Store
Valli & Valli
The Void
Zadig & Voltaire

Box Store

Costco
Floor & Décor
Home Depot
Sam's Club
Walmart

Grocery Stores

Giant Grocery Store
Gordon Food Store
Green Wise
Grocery Outlet
Hi-Lo Grocery
Lidl
Smart & Final
Sprouts
Stew Leonard's
Stop & Shop
Whole Foods

Stadium/Arena

Bryant-Denny Stadium
Florida State University
Doak Campbell Stadium
State Farm Arena
University of Cincinnati
Nippert Stadium
West End Stadium

Government

American Air Force
Exchange Services
Fort Bragg Air Force Base
Fort Carson Air Force Base
Long Beach Fire House
Maxwell Air Force Base
NASA Robotic Technology Park

Medical

St. Petersburg General Hospital
Trinity Hospital

Hair Salon

Red Market Salon

Hotel

A Loft
Breakers
ECO Apartments
Hyatt – Cook County
Hyatt – Thompson Washington, D.C.
Marriott

Museums

Coming Museum of Glass
Norton Museum of Art

Offices

Amazon
Apple
Alcatel-Lucent
Boeing
CAT
Comcast
Consolidated Labels
Fanatics
Frost Bank Tower
Google
Gucci
Honda – Puerto Rico
Marc Fisher Shoes
Media Arts Office
MetLife
National Instruments
NBA – National Basketball Association
NHL – National Hockey League
Willis Tower

Restaurant

California Pizza Kitchen
Chipotle
Doc Ford's
High Five Yogurt
Krispy Kreme
Starbucks
Taverna Opa
Wahlburgers

Jewelry Store

Misaki Jewelry

Observation Deck

The Observation Deck
at CEB Tower

School/University

Fellsmere Boys School
Lane Community College
Seton High School
St. Petersburg Beach College
Texas A&M University
University of South Florida



International

Box Store

Costco – Beitou Taiwan

Church

Cathedral– Seoul Korea
Oakridge Lutheran Church

Retail

Yves Saint Laurent – Thailand



Office

Descente Innovation Complex
– South Korea

Residential

Bahia Kino – Mexico Residence

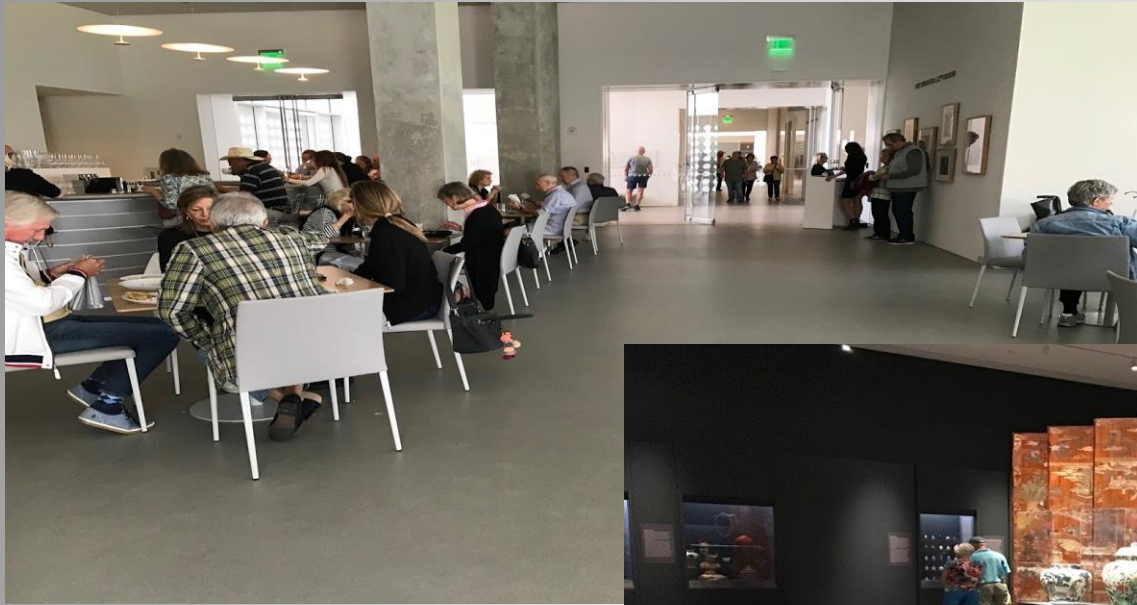
School/University

University of British Columbia
– Vancouver, Canada

Theme Park

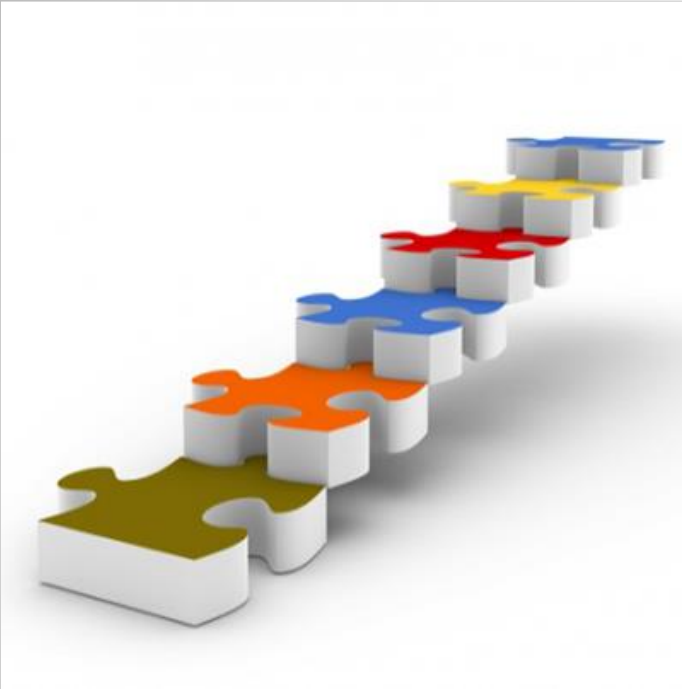
Warner Brothers World Abu Dhabi
– United Arab Emirates





Which one is polished concrete?

Installation Steps



Installation Steps

(1) Substrate Prep

(2) Prime & Sand Broadcast

4-6 Hours, Fast Cure Epoxy
1 Day, Standard Cure Epoxy

(3) Overlay Placement

(4) Grind & Densify

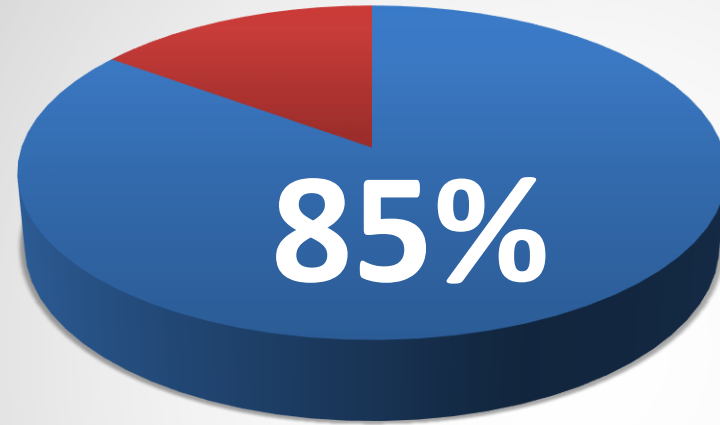
(5) Refine/Polish

(6) Accent Stains, Topical Colorants

(7) Protect (Guard, Sealer, Coating)

(8) Care & Maintenance

Installation Considerations



**OF ALL OVERLAY
INSTALLATION
FAILURES ARE DUE
TO SOME ASPECT
OF SUBFLOOR
PREPARATION**

Namely...

- *Improper substrate prep*
- *Improper use of patching & repair materials*
- *Improper selection of primer technology when elevated moisture vapor transmission rates exist*

Improper Repair Material



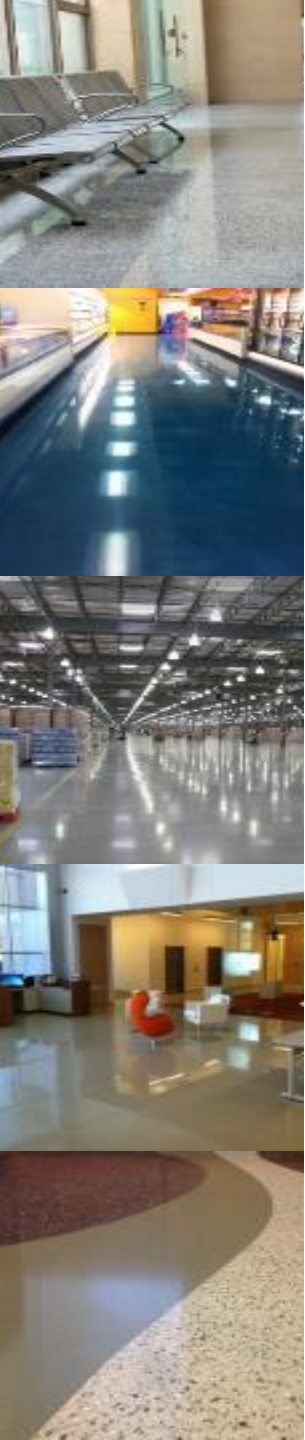
Installation Considerations

Substrate Prep

- **Confirm Floor Flatness** 1/8" in 10 feet, 3 mm in 3 meters
- **Drying Time** for a new slab applications:
minimum 28 days (60 to 90 preferred)
- **Bond to a Profiled, Sound Substrate |
Mechanical or Abrasive Prep to ICRI CSP 3-5**
- **Pre-Leveling or Patching** as Required
- **Substrate must be dry, clean, smooth, structurally sound
and free of all bond inhibitors**
*(E.g., dust, solvent, paint, wax, oil, grease, residual adhesive, adhesive
removers; curing, sealing hardening, or parting compounds; alkaline salts,
excessive carbonation or laitance, mold, mildew, and any other foreign
materials that may prevent adequate bond.)*
- **Do not use Adhesive Removers**



ICRI Surface Profiles



Acid Etched

CSP 1

Grinding

CSP 2

Light Shot Blast

CSP 3

Light Scarification

CSP 4

Medium Shot Blast

CSP 5

Medium Scarification

CSP 6

Heavy abrasive blast

CSP 7

Heavy Scarification

CSP 8

REPAIR MATERIALS



TROWEL-GRADE REPAIR MATERIALS

CONCRETE FOR PRESERVING, RESTORING, AND
RECONSTRUCTING BUILDINGS AND STRUCTURES

It is essential to repair and restore concrete structures due to the deterioration of the embedded reinforcing, which results in cracking and spalling of the concrete. Rapid Set® provides a full line of cementitious products for vertical, overhead, and horizontal repairs and restoration.



HIGH-STRENGTH POLYMER-MODIFIED STRUCTURAL REPAIR MORTAR

- Apply from 1/2" to 6" thick
- Ready for TXP Fast or TXP SuperFast Primer in just 3 hours
- Polymer modified: Excellent workability, and strong adhesion
- Rapid hardening: High early strength with ample working time
- Ready for self-leveling toppings in 16 hours
- Gray color: Formulated to a concrete gray color
- Corrosion resistance: Integral corrosion inhibitor
- Freeze-thaw resistance
- Air entrained



MULTI-PURPOSE REPAIR MATERIAL & NON-SHRINK GROUT

- Apply up to 4" thick
- Ready for TXP Fast or TXP SuperFast Primer in just 3 hours
- Fast: Sets in 15 minutes, structural strength in 1 hour
- Ready for self-leveling toppings in 16 hours
- Durable: Formulated for long life in critical applications
- Excellent bond: Superior adhesion to concrete, stone, brick, block, stucco and more
- Structural: For repair and new construction
- Multi-purpose: Use for concrete repair, grouting, anchoring, casting, underlayment and more



HIGH-STRENGTH STRUCTURAL REPAIR MORTAR

- Apply from 1/2" to 6" thick
- Ready for TXP Fast or TXP SuperFast Primer in just 3 hours
- Fast: Sets in 15 minutes, structural strength in 1 hour
- Ready for self-leveling toppings in 16 hours
- Structural: For repair and new construction
- Multi-purpose: Use for concrete repairs, wall repairs, stucco repairs, one-coat exterior plaster, underlayments, floors, formed work, and more



VERY RAPID HARDENING CONCRETE

- Apply from 2" to 24" thick
- Ready for TXP Fast or TXP SuperFast Primer in just 3 hours
- Fast: Sets in 15 minutes, structural strength in 1 hour
- Ready for self-leveling toppings in 16 hours
- Durable: Formulated for long life in critical applications
- Structural: For repair and new construction
- Multi-purpose: Use for concrete repair, formed work, setting posts, footings, floors, machine bases, and more

Repair Materials

UNDERLAYMENTS

LEVELFLO® Self-Leveling Underlayment

Rapid Set® LevelFlo® is an advanced hydraulic cement-based self-leveling underlayment that can be used both indoors and outdoors. It produces a flat, strong surface with high bond strength. LevelFlo is designed for fast track leveling applications.

Use LevelFlo when a high quality, fast-setting, self-leveling underlayment is needed. LevelFlo is ideal for all floor projects that need long flow life and working time while achieving high 24-hour strength. LevelFlo is an excellent choice for new floor projects and repair projects.



Product Highlights

- High performance
 - Formulated with Rapid Set hydraulic cement
 - Provides long-life durability in wet and dry environments
- Fast setting
 - Minimizes downtime
 - Ready for foot traffic in 2 to 4 hours
 - Ready for TXP Fast or TXP SuperFast Primer in 16 hours
 - May be used as a temporary work surface prior to installation of finished flooring
 - Ceramic tile flooring may be placed in as little as 4 hours

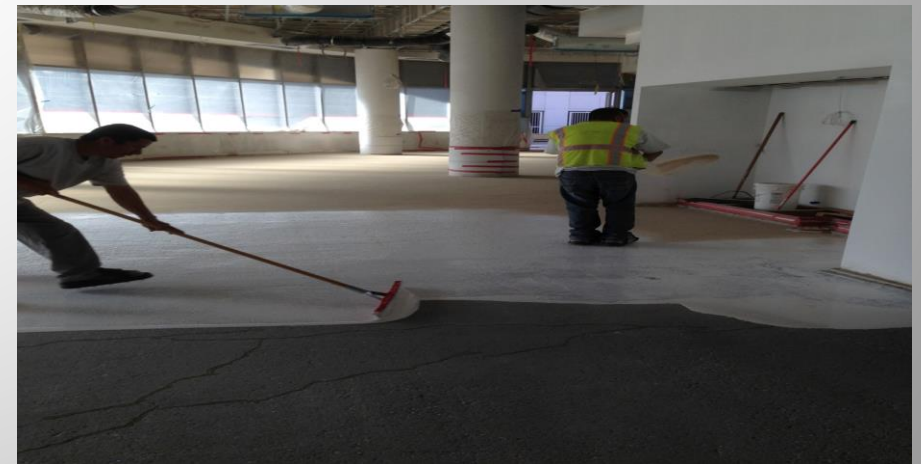
Performance

- Tested in accordance with ASTM C1708
- 3,000 psi (20.7 MPa) in 24 hours
- 5,000 psi (34.5 MPa) in 28 days

Environments

- Commercial, institutional and recreational facilities
- High-pedestrian traffic, forklift traffic or other rubber-wheeled traffic
- Schools, airports, warehouses, retail, restaurants, lobbies, and more

SUBSTRATE PREP



PRIMERS

PRIMERS

SEAL CONCRETE AND INCREASE ADHESION

Rapid Set's high-performance acrylic and epoxy primers are easy to apply and have no VOCs. Use these primers to seal porous concrete and improve the adhesion of Rapid Set® Self-Leveling Flooring Products and TRU® polished toppings to the substrate.



FAST CURE, 100% SOLIDS, TWO-COMPONENT, ALKALI RESISTANT EPOXY PRIMER

- Ready for overlay in 4 to 6 hours
- High bond strength: Excellent adhesion to concrete
- Seals concrete, minimizes pinholes in overlayment
- Low viscosity, deep penetrating
- Low odor, no VOC
- For substrates up to 100% RH
- Color: White



SUPER FAST CURE, 100% SOLIDS, TWO-COMPONENT, ALKALI RESISTANT EPOXY PRIMER

- Ready for overlay in as little as 2.5 hours
- High bond strength: Excellent adhesion to concrete
- Seals concrete, minimizes pinholes in overlayment
- Low viscosity, deep penetrating
- Low odor, no VOC
- For substrates up to 100% RH
- Color: Yellow

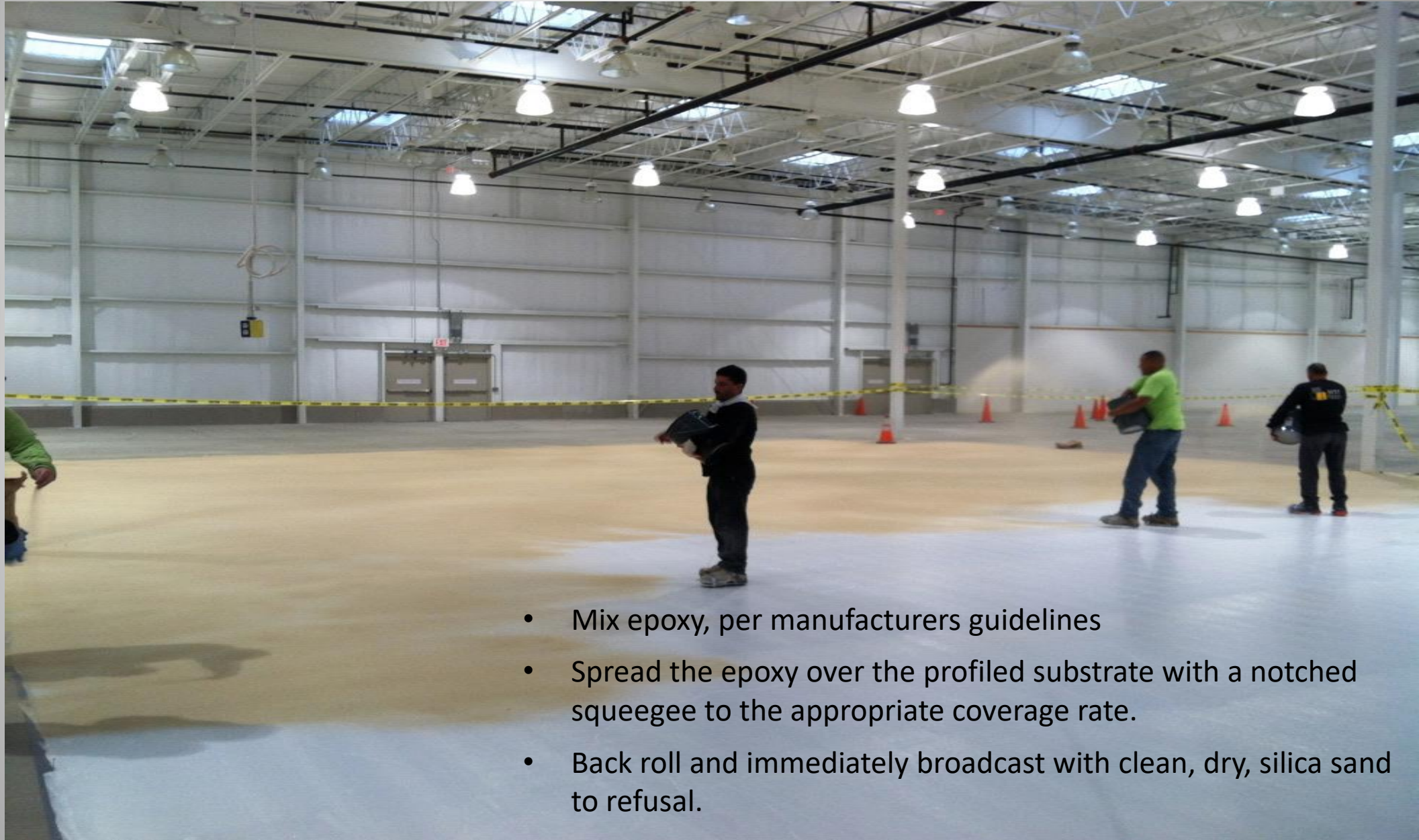


HIGH-ADHESION ACRYLIC PRIMER

- Seals porous concrete to prevent pinholes
- Improves adhesion
- Concentrated formula
- Low odor, no VOC
- Extend with water
- Accepts Rapid Set® LevelFlor® in 1 to 24 hours



TXP FAST EPOXY PRIMER



- Mix epoxy, per manufacturers guidelines
- Spread the epoxy over the profiled substrate with a notched squeegee to the appropriate coverage rate.
- Back roll and immediately broadcast with clean, dry, silica sand to refusal.

TXP FAST EPOXY PRIMER



TXP FAST EPOXY PRIMER RELATED ISSUES



REMOVE EXCESS SAND



TXP FAST EPOXY PRIMER



Correct Epoxy primer application



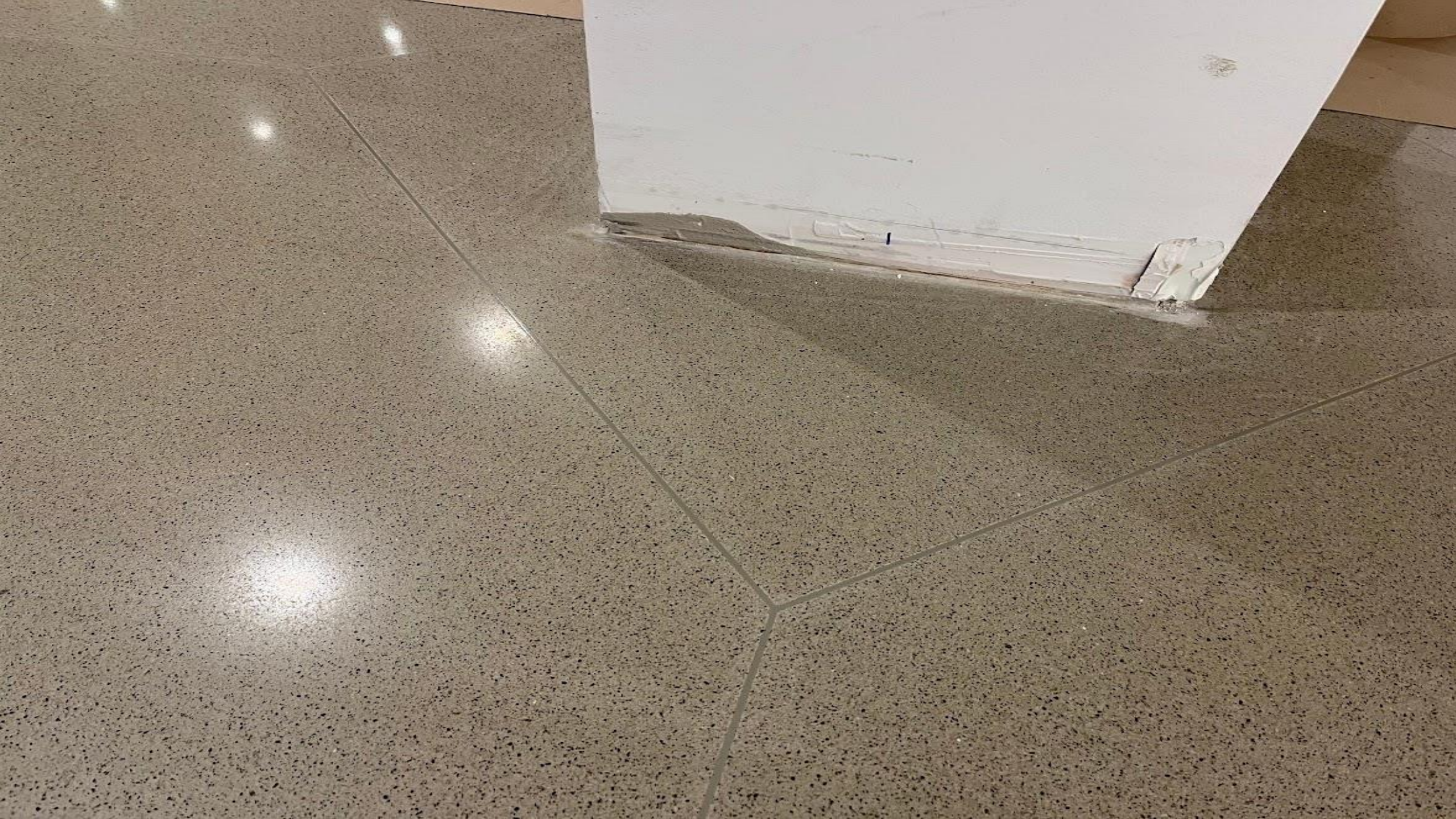
LEVELFLOOR

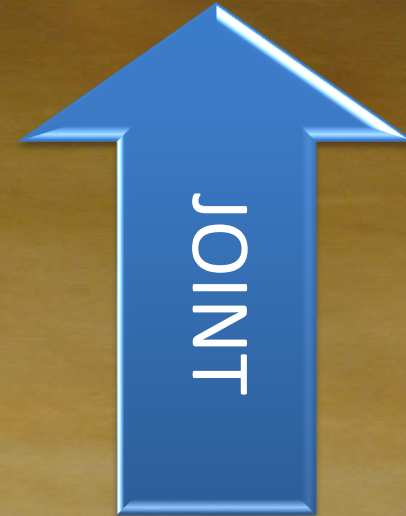
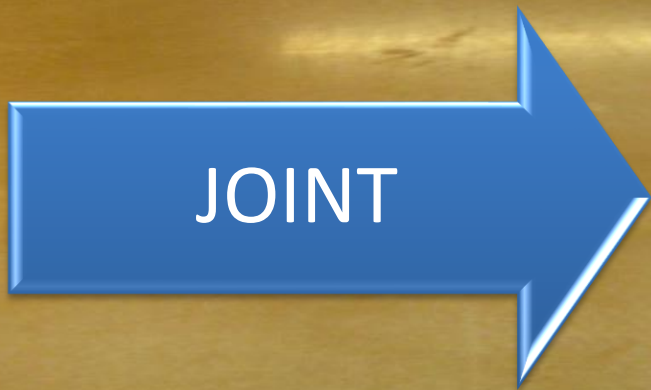


JOINT PLACEMENT









Non-honored Joints

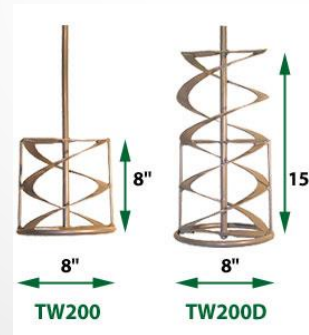
Mixing

Mixing Overlay Materials

- Establish a clean, equipped mixing station
- Crew must be familiar with materials prior to mixing
- Mix according to manufacturer's instructions
- Ensure a smooth, lump-free consistency batch to batch
- High shear mixing required



Batch Mixer



Strainers



Batch Mixer

MIXING STATION



- Batch mixers
- Hydraulic carts
- Transport carts
- Vacuums
- 55-gal drums - water
- Ice – Based on temp
- Measuring containers
- 5-gallon buckets
- Timers
- Flow Kit
- Temperature Gun
- Strainer/Screen
- Manpower

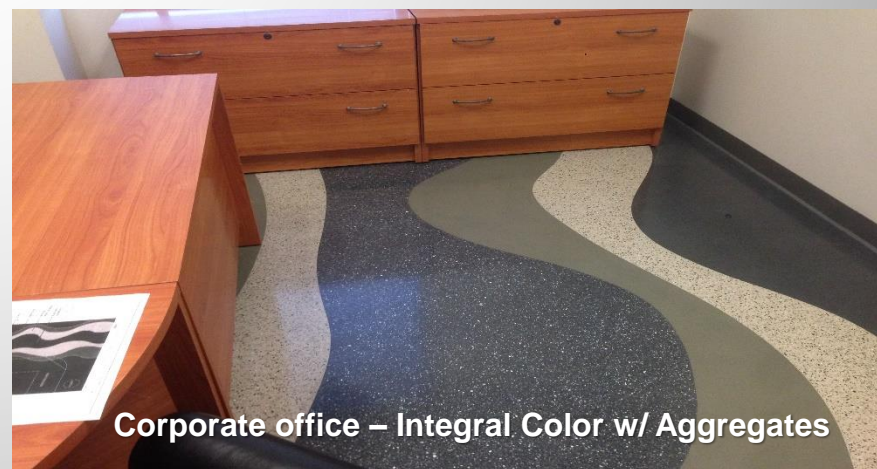
Integral Color

Liquid Pigments Produce the Most Consistent Results

- For integral color, add liquid to mix water and blend before mixing each batch.
- Precisely weigh/measure the colorant for each batch to ensure consistent coloring.
- The amount and color of the oxides used can alter the aesthetics and performance of cementitious overlays.
- Always conduct a test pour and monitor:
 1. Flow time
 2. Healing time
 3. Set time
 4. Ease of finishing
 5. Need of water curing



Grocery Store – Integral Color, Polished



Corporate office – Integral Color w/ Aggregates

TRANSPORTING AND PLACEMENT



Finishing



Smoother Trowel



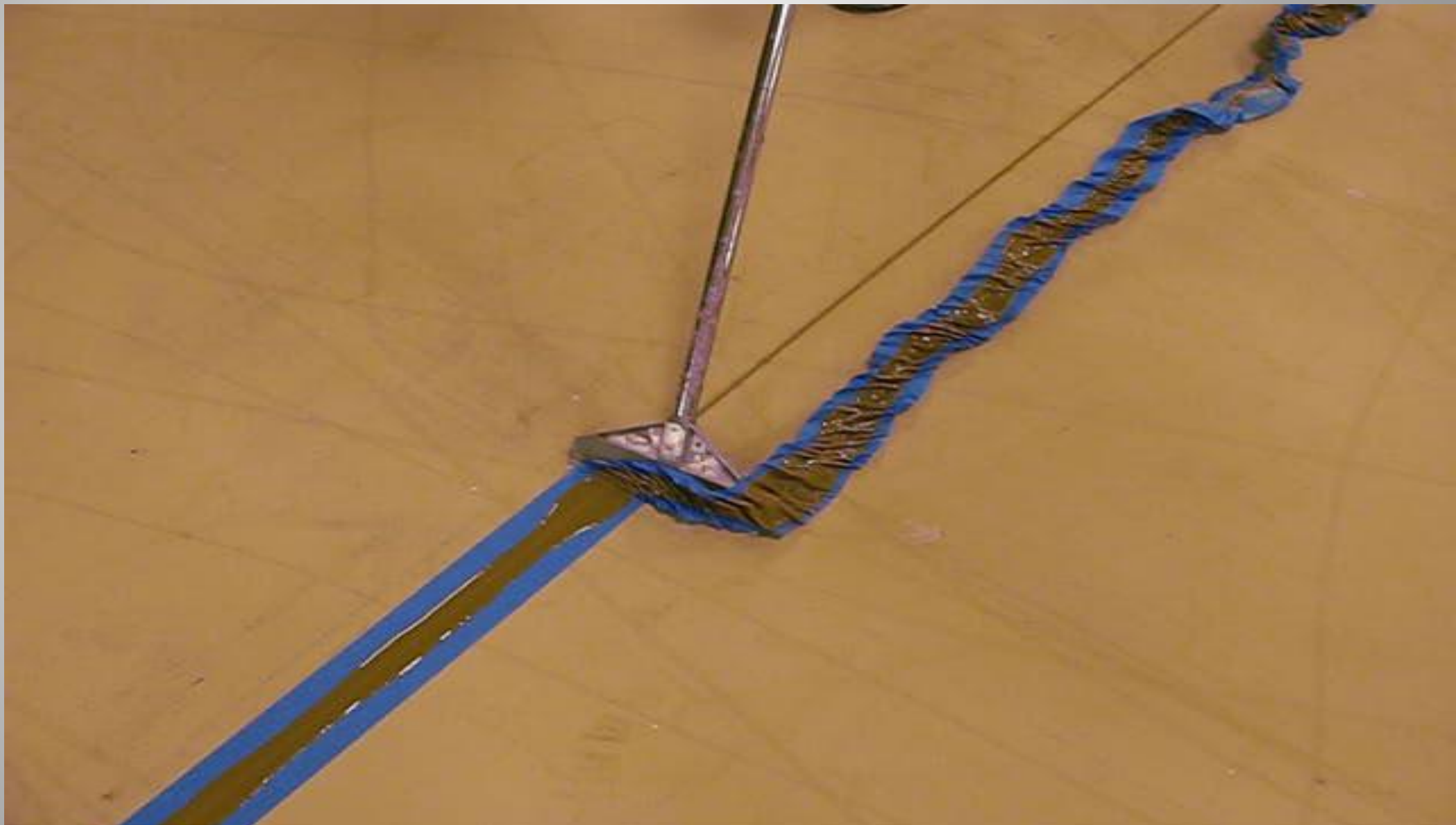
Porcupine Roller

- No wet curing is required under normal conditions at 70°F (21°C). If used in exterior applications, apply a fine water mist to the newly hardened surface.
- Avoid excessively dry, windy, hot or sunny conditions.
- Begin polishing after a 24-hour cure under normal conditions.

FINISHING TOOLS



JOINT MATERIAL



Grinding – 1st Cut



1st cut – Inspect Exposure





Densifiers

- **Increases Surface Hardness**
- **Increases Durability & Polished Aesthetic Longevity**
- **Reduces Permeability**
- **Improves Stain Resistance**
- **Less issues with guard application**
- **Follow Manufacturers Recommendations**

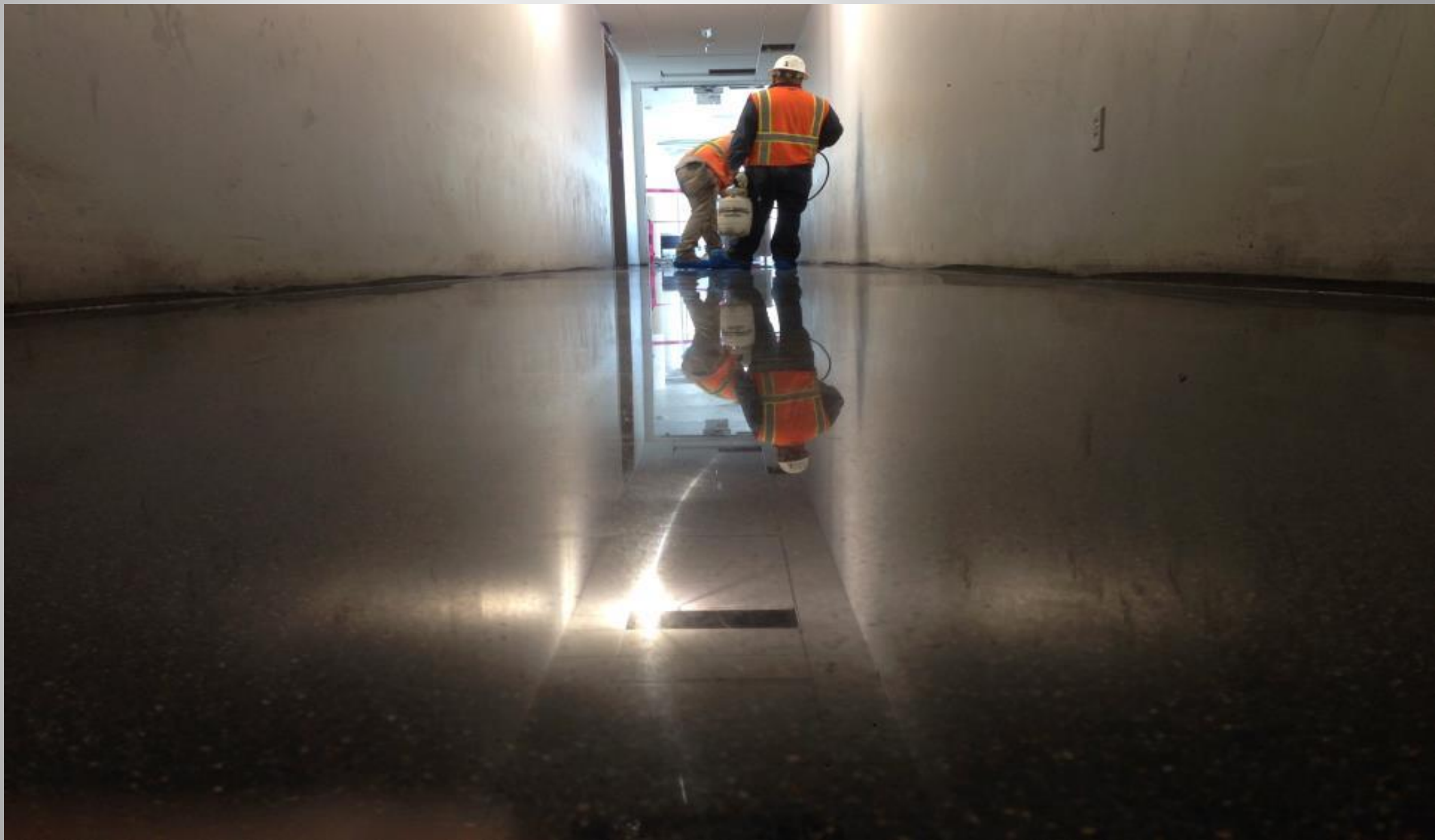
Densifying



Refining the polished overlay



Apply protection layer



Finished Floor



Complementary Products

Common Chemistries

– Penetrating Guards & Sealers

- *Interior & exterior, matte or satin finish, basic level of protection*

– Acrylic Sealers

- *Interior & exterior, solvent & water-based formulations, economical, standard chemical & abrasion resistance, wide range of sheen options, thin film coatings*

– Polyurethane Coatings

- *Interior & exterior, high traffic areas, wet environments, enhanced stain & abrasion resistance, wide range of sheen options, high-build coatings*
- *Impermeable coatings | MVT of on-grade slabs must be evaluated prior to use*

– Epoxy Coatings

- *Interior, high traffic areas, wet environments, long-wearing, abrasion & chemical resistant, high-build coatings*
- *Consider UV exposure and formulation (not all epoxies are the same)*
- *Impermeable coatings | MVT of on-grade slabs must be evaluated prior to use*





Complementary Products

Densifiers, Stain Guards, Sealers & Polishing Tools Influence Finish Sheen...

GLOSS LEVEL TABLE

LEVEL	GRIT	SHEEN LEVEL	GLOSS READING	APPEARANCE
1	100	Dull or Matte	N/A	Minimal reflectivity
2	400	Low Sheen	40-50	Slight image reflection with cloudy, white appearance
3	800	Shiny & Slightly Cloudy	50-60	Side reflectivity with fuzzy, moderate shine
4	1,500 - 3,000	High Sheen w/Clarity	60-80	Overhead and side reflectivity, with shiny wet appearance

Original Source: Bob Harris' Guide to Polished Concrete

From Level 1 (Matte – “No Polish”) to Level 4 (High Gloss – “Mirror”)

CONTRIBUTING TO A HEALTHIER PLANET, ONE FLOOR AT A TIME



Rapid Set® cement uses by-products from recycling processes as raw materials which are not removed from the ground. The production of normal portland cement emits roughly 0.9 tons of CO₂ per ton of cement. Rapid Set cement emits 32% less CO₂

than portland cement because of less fuel, lower temperatures, and less limestone being used in the production process. Since Rapid Set cement concrete lasts longer than portland cement concrete, replacement and maintenance are reduced, which means less pollution is released into the environment.

The TRU® Flooring system has been used in many facilities earning LEED Platinum, Gold, Silver, and Certified status. With millions of square feet of TRU installed, we are working to contribute to a sustainable world, one floor at a time.



Polished Concrete

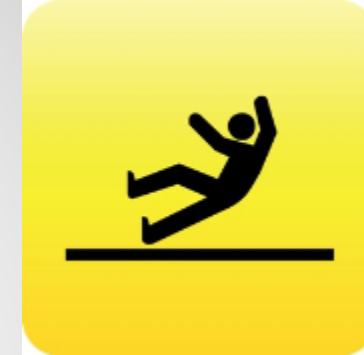
- *Has the lowest Volatile Organic Content (VOC) levels of any flooring option.*
- *Does not support growth of mold or dust mites.*
- *Does not provide “safe harbor” for allergens or other harmful organisms.*
- *Coefficient of Friction (COF) requirements can be managed via the grinding, honing, polishing and refinement process.*



Slip Resistance

Measuring Slip Resistance

- *ASTM uses a scale of 0.0 to 1.0 to measure the slip resistance of a surface.*
- *Readings under 0.5 can be a slip hazard.*
- *Readings above 1.0 become a trip hazard.*
- *ADA (American with Disabilities Act) recommends a slip resistance of 0.5.**
- *COF of 0.35 is considered “normal” for average walking.*
- *OSHA recommends a 0.6 slip resistance measurement.*



* <http://www.adaslipresistance.info/>

Maintenance

Care & Maintenance

- *Eliminates Disruptive Maintenance Requirements*
- *No Waxing, Polishing or Shampooing*
- *Regular Removal of Dirt & Debris (broom, dust mop)*
- *Monthly Buffing Recommended*
- *Periodic Reapplication of Sealers or Stain Guards**

**Follow Manufacturer's Recommendations for Best Performance*

Minimal Maintenance Reduces Lifecycle Costs & Contributes to Efficient Facility Maintenance Plans





*Thank
You!*



www.CTScement.com

Removeable Dividers



Design Options



Design Options



Design Options



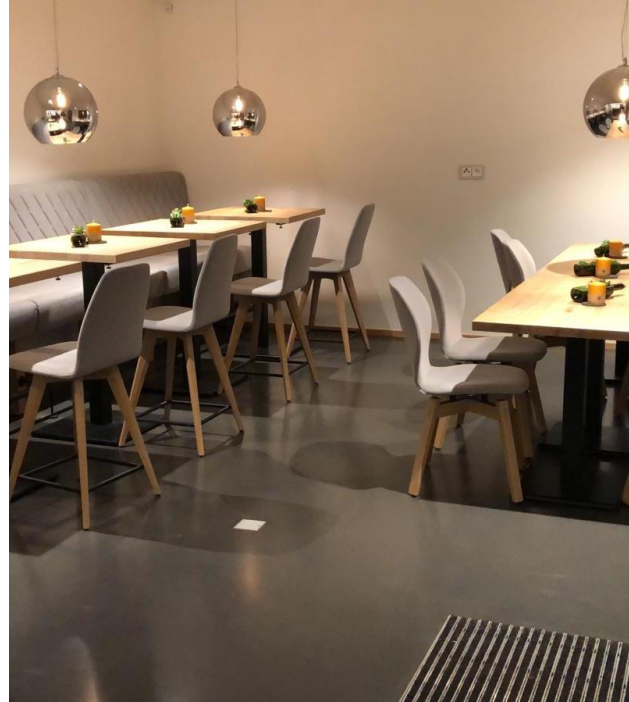




Tesla, Paris, France

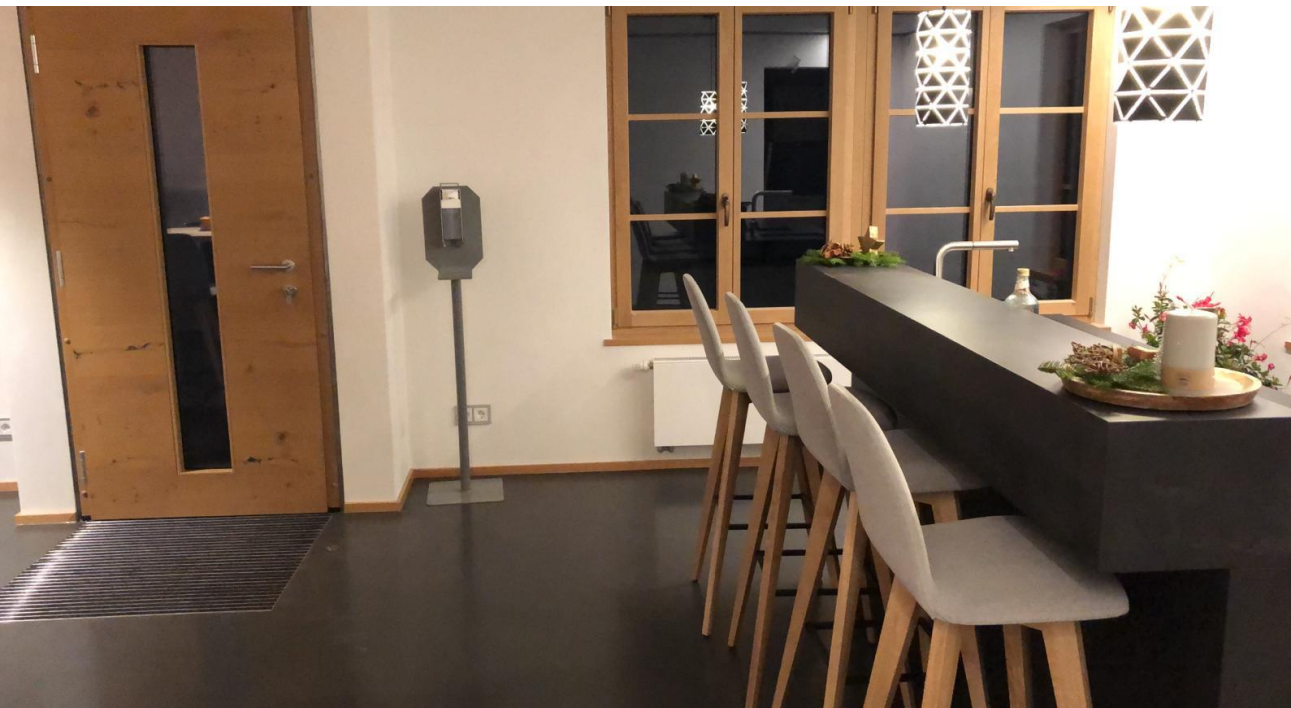
- TRU Self-Leveling nature, platinum pigmented
- 250 m²
- d = 10mm





Vinothek, Mehring, Germany

- TRU SL grau, black pigmented
- 160 m²
- d = 8 mm
- Application: Schlag





Bakery Schmidtmeier Bochum, Germany

- TRU PC grey black pigmented
- 90 m²
- d = 10 mm
- Application: Bräuner GmbH
- Year: 2019





ESI, Frankfurt, Germany

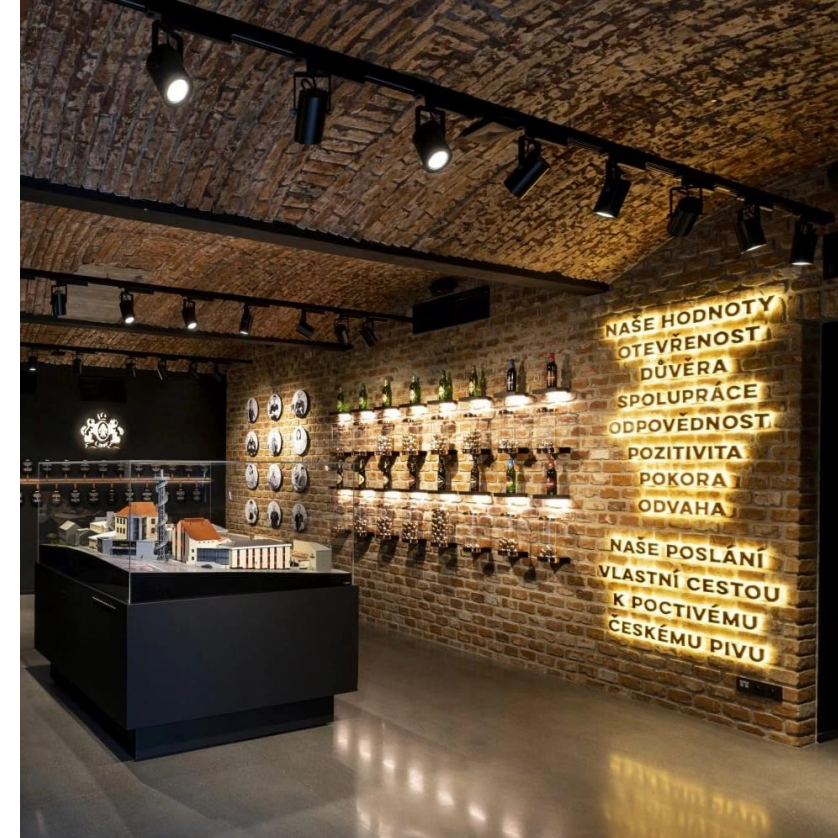
- TRU SL natural, beige pigmented
- 700 m²
- 116 steps and 6 stair heads
- d = 10 mm
- Application: Inkobau



Hütter, Dorsten, Germany

- KORODUR FSCem + TRU PC grey
- 250 m²
- d = 10 mm
- Application: Bräuner





Brewery Bernard, Humpolec, CzechRepublic

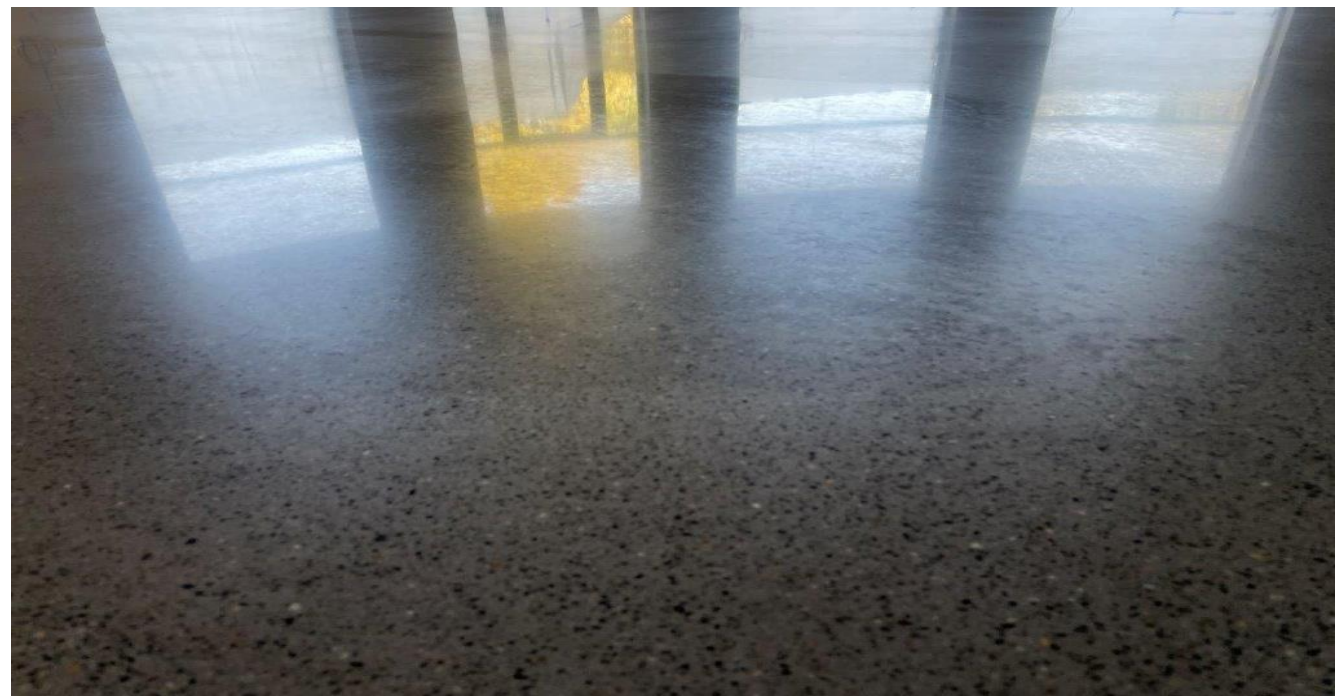
- TRU PC grey
- approx. 500 m²
- d = 12 mm
- Application: Provas, Czech republic
- Year: 2021
- Maintenance: OBTEGO





Shoe retail outlet Sportano, Warszawa, Poland

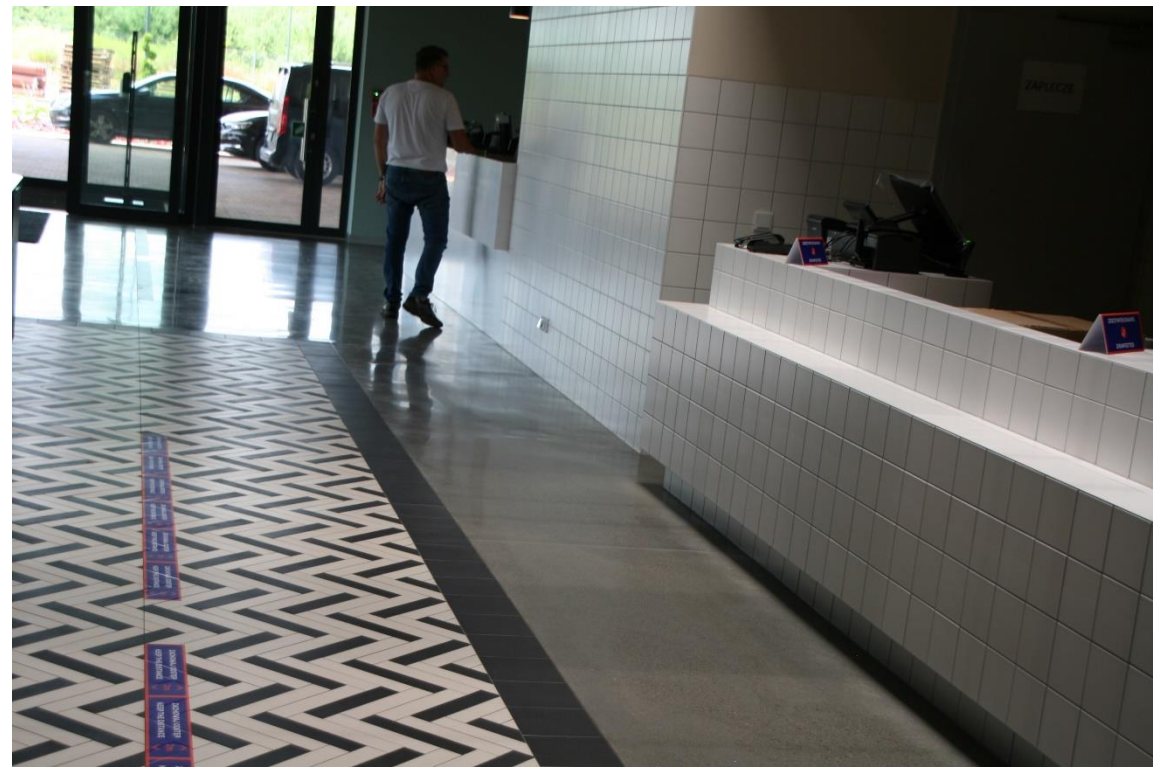
- TRU PC grey
- approx. 600 m²
- d = 10 mm
- Application: Concrete, Poland
- Year: 2022





Suntago, Wręcza, Poland

- TRU PC grey
- approx. 600 m²
- d = 10 mm
- Application: Concrete, Poland
- Year: 2020





Hilton, Stettin, Poland

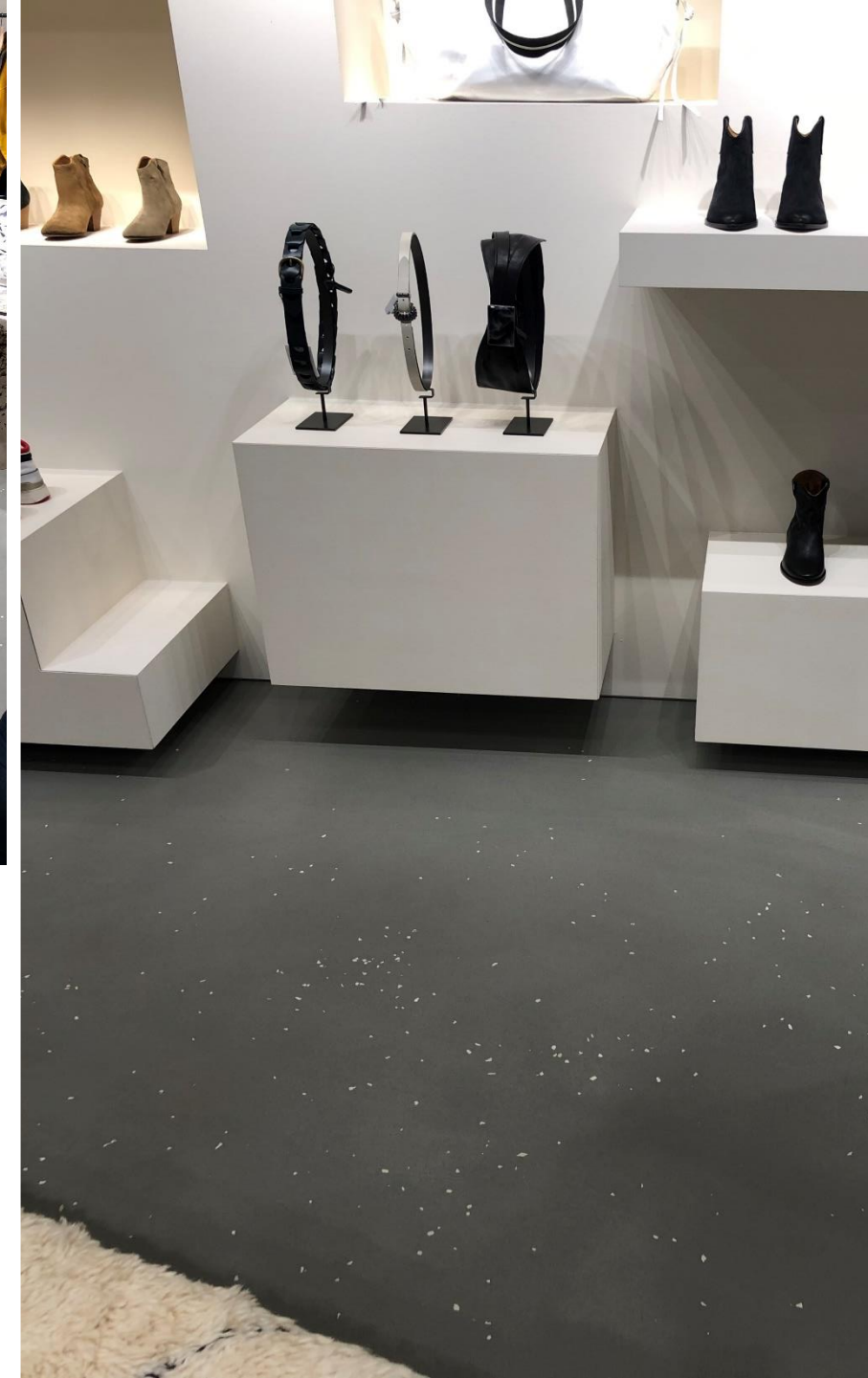
- TRU PC grey
- approx. 250 m²
- d = 15-20 mm
- Application: Concrete, Poland
- Year: 2020



BIG Ternay, France

- TRU PC grey
- approx. 200 m²
- d = 10 mm
- Contractor: BIG Bordas
- Year of construction: 2021





Isabel Marant, Vienna, Austria

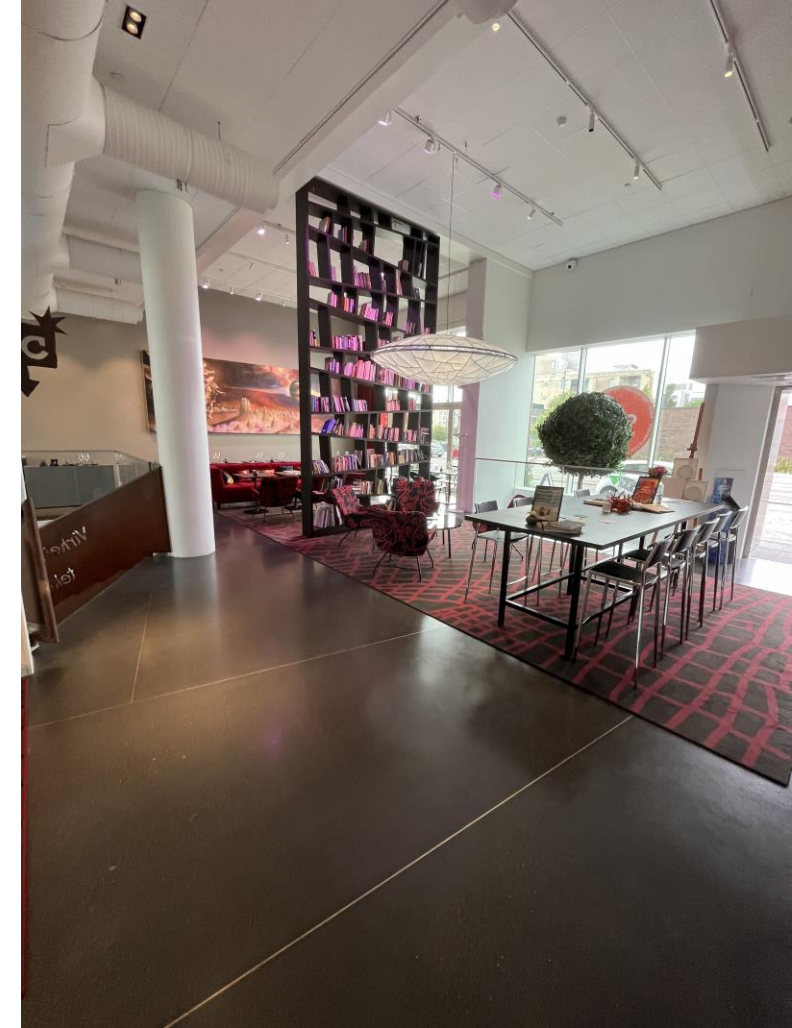
- TRU SL grey with white chips
- approx. 75 m²
- d = 10 mm
- Contractor: BIOLITE
- Year of construction: 2021



Hotel Mestari, Helsinki, Finland

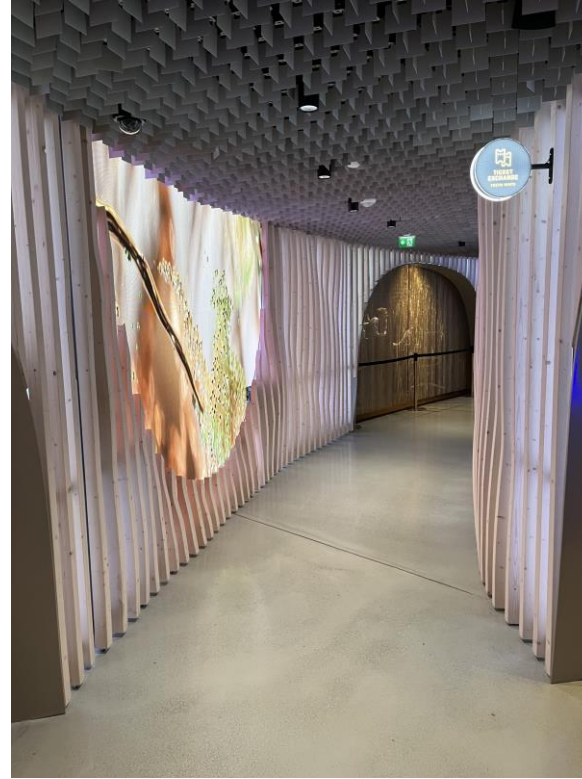
- TRU PC grey
- approx. 80 m²
- d = 12 mm
- Contractor: PDH Lattiat, Finland
- Year of construction: 2022





Hotel Ax, Helsinki, Finland

- TRU PC gray
- approx. 500 m²
- d = 12 mm
- Contractor: PDH Lattiat, Finland
- Year of construction: 2022



Casino Nokia Arena Tampere, Finland

- TRU PC natural with gold chips
- approx. 800 m²
- d = 12 mm
- Contractor: PDH Lattiat, Finland
- Year of construction: 2022

Design Options



Dividers





- **Project size** – 6Ksf, 557sm
- **TRU SP** integral colored & polished





- **Grocery store**
- **Project size – 23 K sf, 2787 sm**
- **Stored Completed: 3**
- **TRU PC polished**



- Retail
- Project size – 120,000 sf, 111,483 sm
- TRU PC polished





- **Retail**
- **Project size** – 30 K sf, 2787 sm
- **TRU PC polished**





- Clothing Store
- **Stores Completed** – 90+ stores in US, and Puerto Rico, Costa Rica, Canada
- **Project size** – 14K SF / 1300 SM
- **TRU PC** polished



- Clothing Store
- **Stores Completed - 25**
- **Project size – 5k SF / 464 SM**
- **TRU PC polished with ¼” TRU PC aggregate**



- Clothing Store
- **Stores Completed** – 35 stores
- **Project size** – 16K SF / 1486 SM
- **TRU PC** polished



- Craft Retail Store
- **Stores Completed** – about 45 stores in US & Canada
- **Project size** – 23K SF / 2130 SM
- **TRU PC** polished



- Drug Store
- **Stores Completed** – 10 stores in US, Hawaii and Puerto Rico
- **Project size** – 10K SF / 930 SM
- **TRU PC** polished



- Discount Retail Store
- **Stores Completed** – about 100 stores in US
- **Project size** – 8.5 SF / 790 SM
- Started with TRU Gray, now using TRU PC polished



- Flooring Retail Store
- **Stores Completed – 4**
- **Project size – 75K SF / 6967 SM**
- TRU PC Gray polished



- Marijuana Retail Store
- **Stores Completed** – 25
Project size – 4-8K SF / 370-740 SM
- **TRU** polished & integrally colored with Cool Gray



- Clothing Retail Store
- **Stores Completed** – 15
- **Project size** – 8K SF / 740 SM
- **TRU** polished & integrally colored with black

Costco



Corning Museum



HiLo Grocery



British Columbia University

