



TRANSPO
T-17 Polymer Concrete
&
MMA Crack Sealers
&
T-18...*Thanks DeWayne!*

TRANSPO INDUSTRIES

Started in 1968, by entrepreneur Arthur M. Dinitz, with the driving philosophy of bringing product solutions to a nascent transportation industry.

For over 50 years, Transpo has been involved in the sales, marketing and research and development of both safety products and materials for the rehabilitation of infrastructure.

NEW ROCHELLE, NY. (CORPORATE and SAFETY PRODUCTS MANUFACTURING)
BERWICK, PA. (MATERIALS MANUFACTURING)



MATERIALS DIVISION

- METHYL METHACRYLATE (MMA) for OVERLAYS, SEALERS, PATCHING
- COLOR-SAFE MMA PAVEMENT MARKING FOR BIKE & BUS LANES, AIRPORTS AND INDUSTRIAL USE

SAFETY PRODUCTS DIVISION

- POLE-SAFE, BREAK-SAFE
- SCREEN-SAFE, BLAST-SAFE



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NATIONAL SALES FORCE

MIDWEST CUSTOMERS

- ❖ DOT's
- ❖ BRIDGE CONTRACTORS
- ❖ RAILROADS
- ❖ AIRPORTS



WE UNDERSTAND CONCRETE – REPAIR, MAINTAIN, BUILD!



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Advantage of MMA-based Materials: Application Temp and Curing Time

POLYMER RESIN	TEMPERATURE LIMIT	CURING TIME@ 70°F
EPOXY	50°-100°F	4 HOURS
POLYESTER	40°-100°F	4 HOURS
URETHANES	50°-100°F	1 HOUR
METHYL METACRYLATES (MMA)	14°-100°F	1 HOUR



TRANSPO T-17 MMA POLYMER CONCRETE



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AGGREGATE



RESIN



POWDER



PRIMER

T-17 Components



Mixer Options

TRANSPO T-17 POLYMER CONCRETE

Transpo's T-17 is the fastest, easiest, and most cost-effective way to permanently repair or build with!

- T-17 uses 100% polymer MMA resin - ***NO WATER!***
- T-17 is highly flowable & workable
 - Use NEAT or EXTENDED
- T-17 is fully cured in less than an hour
 - 5,000 psi (1-hr)
 - >10,000 psi (24 hrs)
- Superior Bond Strength – high *tensile strength!*
- DOESN'T SHRINK – ***NO WATER!***



TRANSPO T-17 POLYMER CONCRETE

FAST SET & HIGH EARLY STRENGTH

- Return to traffic in <1 hour due to T-17's fast set and HES property
- Shallow or full-depth repairs can be made at temperatures below zero (*because no water is used!*).
- 5,000 psi @2 hrs, >10,000 psi @24 hrs



TRANSPO T-17 POLYMER CONCRETE

Shallow or Full-Depth Repairs

No special tools, equipment or trades needed. Apply T-17 as:

- NEAT - bearing pads, grout, pop-outs
- EXTEND with prepackaged aggregate (3/8 or 3/4 inch) for partial or full depth



TRANSPO T-17 POLYMER CONCRETE

Additional Benefits

- Wide Application Temperature Range (-50 to 100°F; *subzero additives*)
- Fast Setting (45 min. at 70°F)
- High Early Strength (5,000 psi, @ 90 mins)
- Strong Chemical Bond (**no cold joints!**)
- Chemical Resistant
- UV Light Resistant
- Freeze-Thaw Resistant
- NO WATER -> NO SHRINKAGE!





T-17 Deck Patch

POLYMERIC OVERLAYS

Grinding, Shot Blasting, & Overlay – *2 hours!*

- Several States developed SP's
- No need to wait for moisture or strength
- One Mobilization/One Traffic Zone
 - Save's time & money
 - Increases safety!

T-17 MMA POLYMER CONCRETE ALTERNATIVE TO UHPC

Pulaski Skyway, NYC
Closure Pour

T17 Bid as option to UHPC

- \$6.5 Mil savings
Labor and Grinding
- >8,500 PSI (8 hrs)
- Lower Temperature Application



T-17 MMA POLYMER CONCRETE ALTERNATIVE TO UHPC

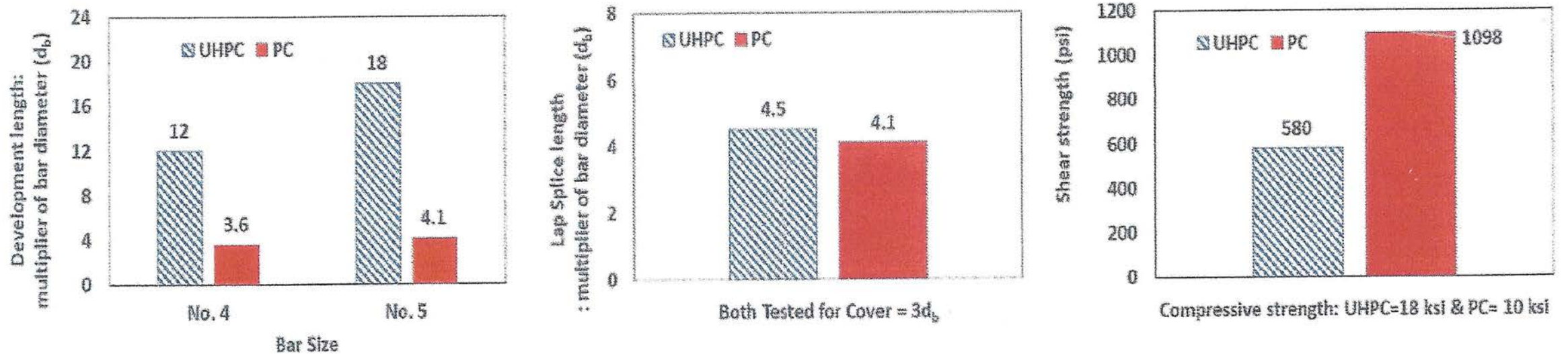


Fig. 2: Comparison of development length, splice length and shear strength of PC vs. UHPC

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Concrete Sealers T-70 MX30 (HMWM) T-78 (MMA)



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- **T-78 Methyl Methacrylate (MMA)**
- **T-70 MX30 High Molecular Weight Methacrylate (HMWM)**

- ❖ Both materials are designed to seal concrete cracks as small as 0.01 inches (0.25 mm).
- ❖ Crack Sealing is permanent and reapplication is not required.
- ❖ Bond to crack walls is greater than the tensile strength of existing concrete: > 250 psi (1.7mpA)

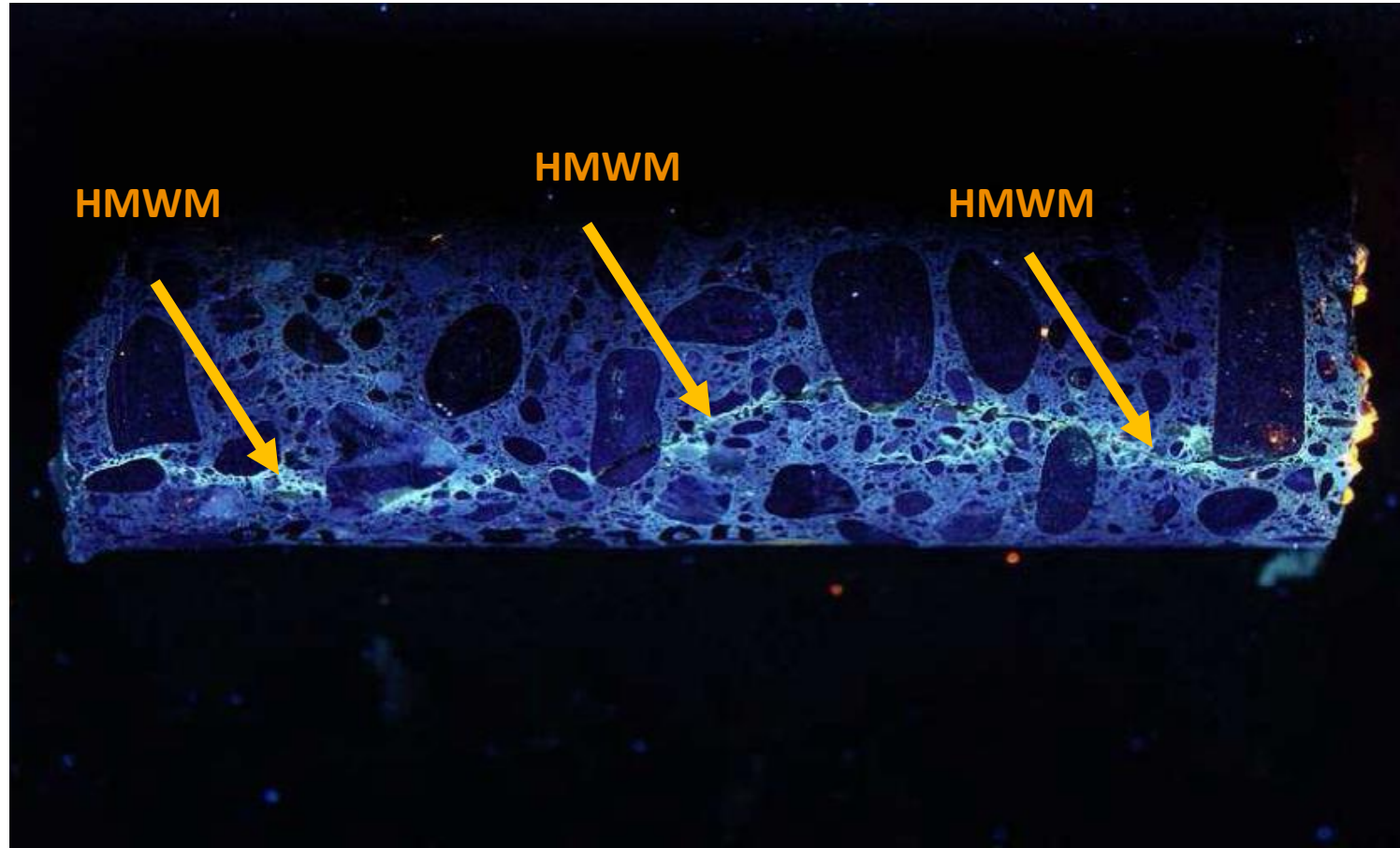


- **T-78 Methyl Methacrylate (MMA)**
- **T-70 MX30 High Molecular Weight Methacrylate (HMWM)**

- ❖ Low Viscosity <25 cps (*close to water!*)
- ❖ Deep penetration in smaller cracks .25mm
- ❖ Rapid Cure Times
- ❖ Rigid material that can **restore close to original design strength lost from cracking**



HMWM Treated Crack Specimen



- **T-78 Methyl Methacrylate (MMA)**
- **T-70 MX30 High Molecular Weight Methacrylate (HMWM)**

Pre application:

Prepare cracks by high pressure water or blowing with dry compressed air.

Wide Cracks >0.15 (3.8mm) can be filled with dry sand.



- T-78 Methyl Methacrylate (MMA)
- T-70 MX30 High Molecular Weight Methacrylate (HMWM)



- **T-78 Methyl Methacrylate (MMA)**
- **T-70 MX30 High Molecular Weight Methacrylate (HMWM)**

1) Individual Crack Treatment

- ❖ Mix small amounts of material that can be used in 5 minutes.
- ❖ Pour mixed resin into crack and repeat until material no longer absorbs into crack.
- ❖ Cure time will vary based on ambient and surface temperature 1-16 hours.



- T-78 Methyl Methacrylate (MMA)
- T-70 MX30 High Molecular Weight Methacrylate (HMWM)

2) Surface Flood Coat

- ❖ Mix 5 gallons of resin and hardener components thoroughly
- ❖ Pour onto concrete surface and spread with squeegees and or brooms (avoid puddles in surface)



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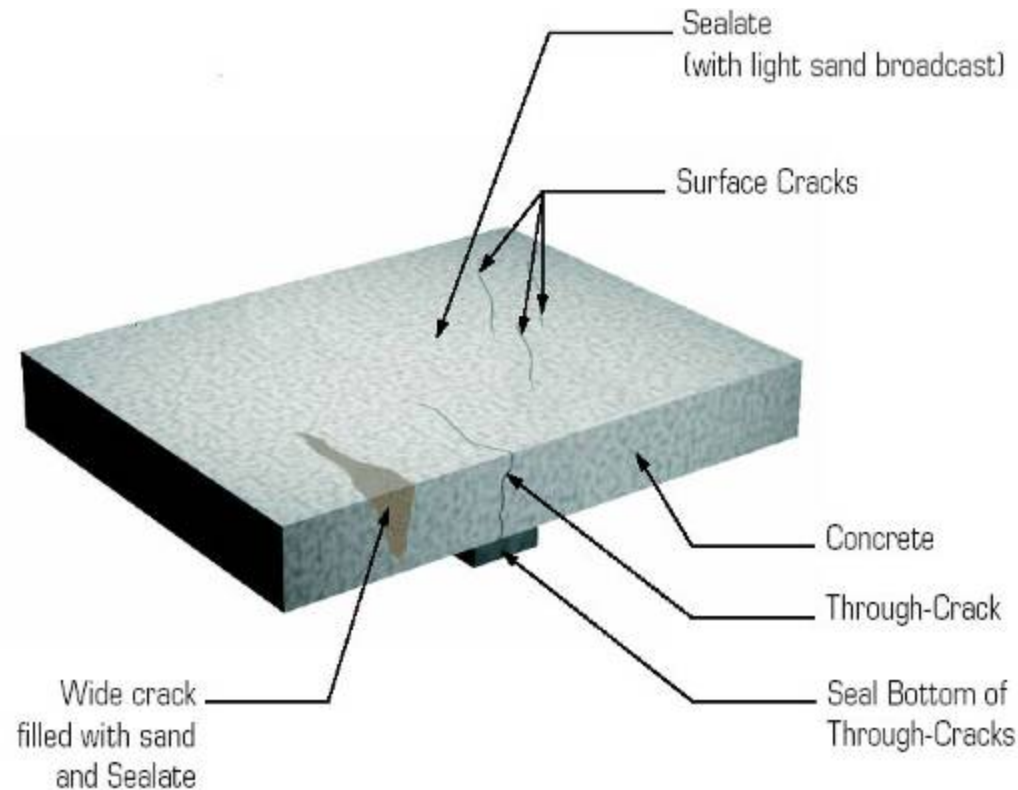
Surface Flood Coat

- ❖ While resin is wet apply light coat of coarse dry sand (1lb/sy)
- ❖ Cure time will vary based on product type and ambient and surface temperatures 1 – 16 hours.



- **T-78 Methyl Methacrylate (MMA)**
- **T-70 MX30 High Molecular Weight Methacrylate (HMWM)**

Features & Benefits



- ❖ Low Viscosity and Surface Tension
- ❖ Deep Crack Penetration
- ❖ Easy Single Application
- ❖ No Special Equipment
- ❖ Formation for vertical surface application
- ❖ Can be Pressure Injected



Consultant: Kimley-Horn
Contractor: Ram Const.
Agency: WCAA (DTW)
Location: Runway 22L-4R
Product: Transpo T-70 MX-30



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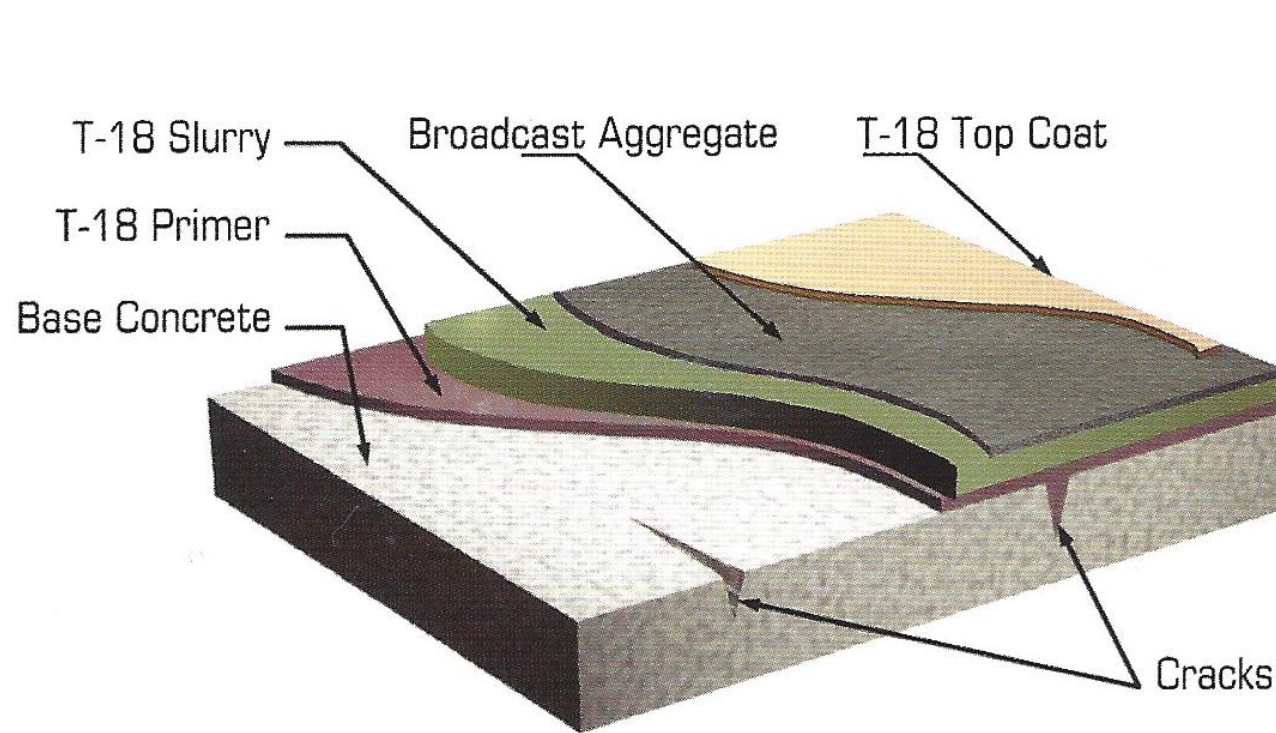
TRANSPORT-18 INSTALLATION

MASTERS ROAD BRIDGE

ST. CLAIR COUNTY, MICHIGAN

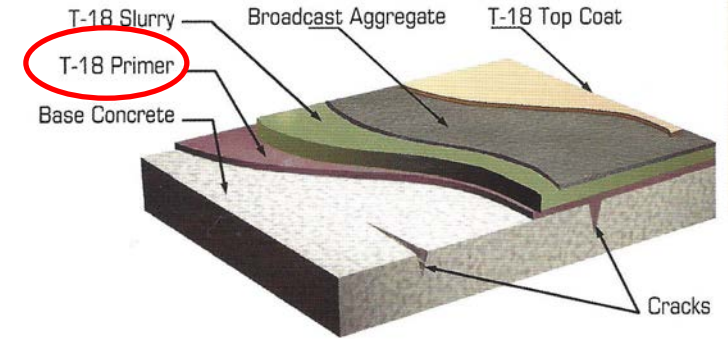
November 2018

T-18 Components



1. Primer
2. Slurry
3. Broadcast Aggregate
4. Top Coat

Priming Surface

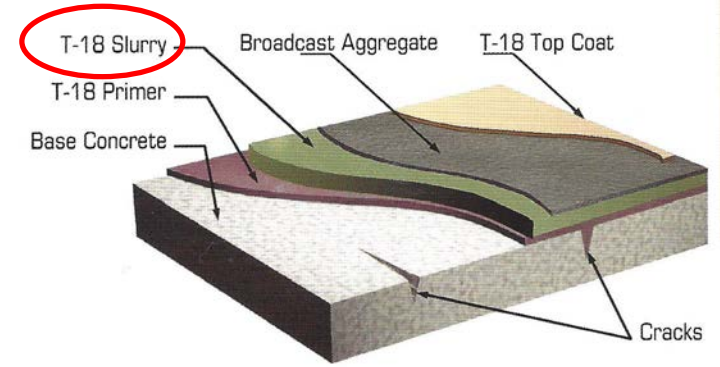


T-18 PRIMER

- 5-gallons Primer + BPO Powder Hardener
- Mix for 30 seconds
- Pour and Spread with nap roller (*no puddles!*)
- Application rate: ~100 sf per gallon
- Optional: light sand broadcast
- ~1-hour for cure (*tack free*)
- Thoroughly blow off surface



T-18 Slurry Mixing & Application



T-18 Slurry

- 2-gallons Resin + 50-lb Powder + BPO Powder Hardener
- Mix in mortar mixer for 30 seconds
- Discharge into wheelbarrow
- Dump and spread evenly with Gauge Rake
- Coverage should be approximately 27 sf
- Use spiked roller to remove rake edge marks



T-18 Slurry Mixing & Application – Gauge Rake

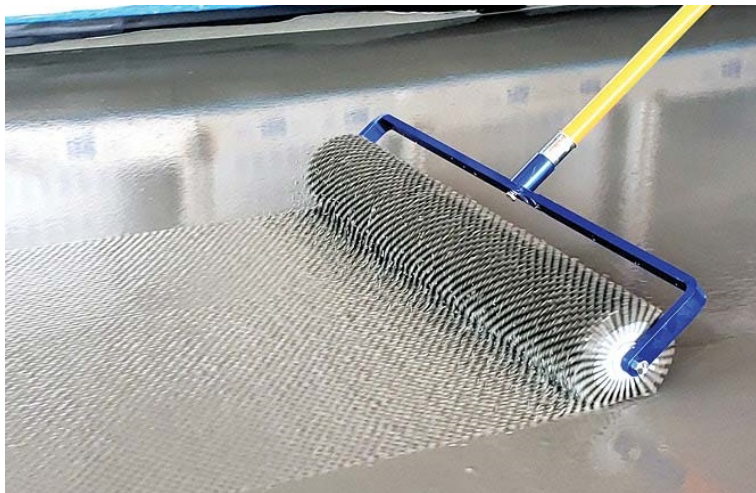


T-18 Slurry – Mixing & Application

- Spread evenly with Gauge Rake
- Use spiked roller to remove edge marks



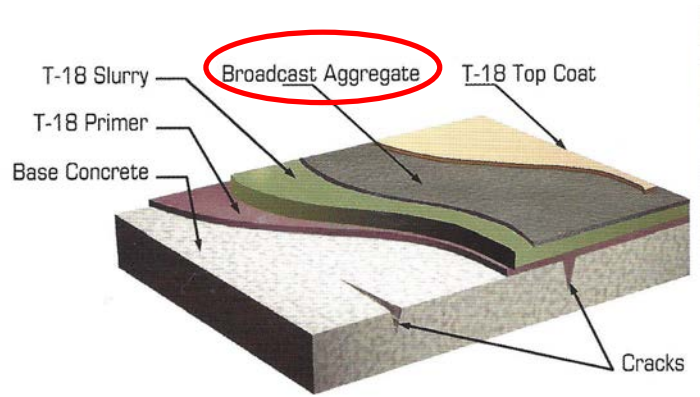
T-18 Slurry Mixing & Application – Spiked Roller



T-18 Slurry

- Use spiked roller to remove edge marks

T-18 Slurry Mixing & Application – Broadcast Aggregate

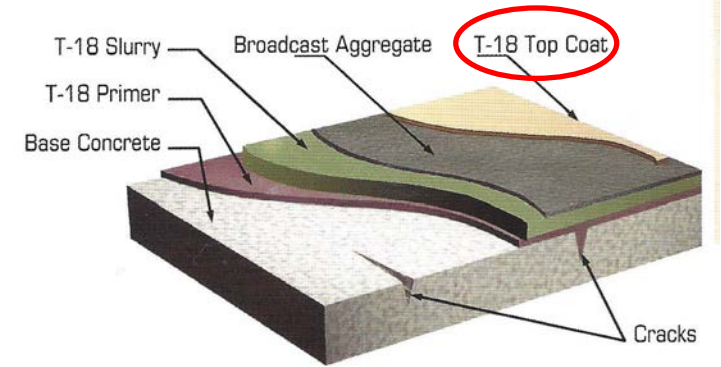


Broadcast Aggregate

- Allow aggregate to rain down
- Avoid rolling stone or rippling
- Cover to refusal
- Wait 1-hour and sweep loose stone
- Thoroughly blow off surface



Application of T-18 Top Coat



Top Coat Application

- 5-gallons Top Coat + BPO Powder Hardener
- Mix for 30 seconds
- Pour and spread with nap roller (*no puddles!*)
- Application rate: ~40 sf per gallon
- ~1-hour for cure (*tack free*)



Open To Traffic – 2-hours after Top Coat



US-23 SINGING BRIDGE (TAWAS CITY) - YESTERDAY



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UNOPENED T-17 MATERIAL FROM TAWAS PROJECT



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Questions?

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