



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
6611C029

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
 BUYER 33
 304-558-2402

RFQ COPY

TYPE NAME/ADDRESS HERE

Specialty Products, Inc.
 5660 E. Virginia Beach Blvd.
 First Floor
 Norfolk, VA 23502

**DIVISION OF HIGHWAYS
 VARIOUS LOCALES AS INDICATED
 BY ORDER**

RODNEY

SHIP TO

DATE PRINTED 03/29/2011	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
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BID OPENING DATE: **04/19/2011** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	As detailed in Section 11 "Bid Schedule" 1	LS		745-56	As detailed in Section 11 "Bid Schedule"	\$17,622.00
REPAIR AND MAINTENANCE OF SILICONE, ASPHALT & CONCRETE REQUEST FOR QUOTATION (RFQ) OPEN END CONTRACT THE WEST VIRGINIA STATE PURCHASING DIVISION FOR THE AGENCY, THE WEST VIRGINIA DIVISION OF HIGHWAYS, IS SOLICITING BIDS FOR AN OPEN END CONTRACT TO PROVIDE MATERIALS FOR THE REPAIR AND MAINTENANCE OF SILICONE, ASPHALT, AND CONCRETE PER THE ATTACHED SPECIFICATIONS. TECHNICAL QUESTIONS CONCERNING THIS SOLICITATION MUST BE SUBMITTED IN WRITING TO SHERI SLONE IN THE WEST VIRGINIA STATE PURCHASING DIVISION VIA MAIL AT THE ADDRESS SHOWN IN THE BODY OF THIS RFQ, VIA FAX AT 304-558-4115, OR VIA EMAIL AT SHERI.D.SLONE@WV.GOV. ATTACHED FIND A WORD DOCUMENT FOR SUBMITTING TECHNICAL QUESTIONS. DEADLINE FOR ALL TECHNICAL QUESTIONS IS 04/08/2011 AT THE CLOSE OF BUSINESS. ANY TECHNICAL QUESTIONS RECEIVED WILL BE ANSWERED BY FORMAL ADDENDUM TO BE ISSUED BY THE PURCHASING DIVISION AFTER THE DEADLINE HAS LAPSED. EXHIBIT 10 REQUISITION NO.:						

RECEIVED
 2011 APR 15 AM 9:22
 WV PURCHASING DIVISION

SIGNATURE				SEE REVERSE SIDE FOR TERMS AND CONDITIONS	
TITLE President		FEIN 54-1445976	TELEPHONE (757) 461-6301	DATE 04/14/2011	
ADDRESS CHANGES TO BE NOTED ABOVE					

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

GENERAL TERMS & CONDITIONS REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.
 2. The State may accept or reject in part, or in whole, any bid.
 3. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
 4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.
 5. Payment may only be made after the delivery and acceptance of goods or services.
 6. Interest may be paid for late payment in accordance with the *West Virginia Code*.
 7. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
 8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
 9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
 10. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern the purchasing process.
 11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
 12. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
 13. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at www.state.wv.us/admin/purchase/vrc/hipaa.htm and is hereby made part of the agreement. Provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
 14. **CONFIDENTIALITY:** The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.
 15. **LICENSING:** Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, and the West Virginia Insurance Commission. The vendor must provide all necessary releases to obtain information to enable the director or spending unit to verify that the vendor is licensed and in good standing with the above entities.
 16. **ANTITRUST:** In submitting a bid to any agency for the State of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the State of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.
- I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.
2. Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Unit prices shall prevail in case of discrepancy. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
4. All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130
5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-1-6.6).



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LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
<p>ADDENDUM ACKNOWLEDGEMENT</p> <p>I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.</p> <p>ADDENDUM NO.'S:</p> <p>NO. 1</p> <p>NO. 2</p> <p>NO. 3</p> <p>NO. 4</p> <p>NO. 5</p> <p>I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS.</p> <p>VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.</p> <p>..... SIGNATURE Specialty Products, Inc. COMPANY .. April 14, 2011</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS			
SIGNATURE 	TELEPHONE (757) 461-6301	DATE 04/14/2011	
TITLE President	FEIN 54-1445976	ADDRESS CHANGES TO BE NOTED ABOVE	

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DATE						
NOTE: THIS ADDENDUM ACKNOWLEDGEMENT SHOULD BE SUBMITTED WITH THE BID.						
REV. 09/21/2009						
EXHIBIT 3						
LIFE OF CONTRACT: THIS CONTRACT BECOMES EFFECTIVE UPON AWARD AND EXTENDS FOR A PERIOD OF ONE (1) YEAR OR UNTIL SUCH "REASONABLE TIME" THEREAFTER AS IS NECESSARY TO OBTAIN A NEW CONTRACT OR RENEW THE ORIGINAL CONTRACT. THE "REASONABLE TIME" PERIOD SHALL NOT EXCEED TWELVE (12) MONTHS. DURING THIS "REASONABLE TIME" THE VENDOR MAY TERMINATE THIS CONTRACT FOR ANY REASON UPON GIVING THE DIRECTOR OF PURCHASING 30 DAYS WRITTEN NOTICE.						
UNLESS SPECIFIC PROVISIONS ARE STIPULATED ELSEWHERE IN THIS CONTRACT DOCUMENT, THE TERMS, CONDITIONS AND PRICING SET HEREIN ARE FIRM FOR THE LIFE OF THE CONTRACT.						
RENEWAL: THIS CONTRACT MAY BE RENEWED UPON THE MUTUAL WRITTEN CONSENT OF THE SPENDING UNIT AND VENDOR, SUBMITTED TO THE DIRECTOR OF PURCHASING THIRTY (30) DAYS PRIOR TO THE EXPIRATION DATE. SUCH RENEWAL SHALL BE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE ORIGINAL CONTRACT AND SHALL BE LIMITED TO TWO (2) ONE (1) YEAR PERIODS.						
CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE 	TELEPHONE (757) 461-6301	DATE 04/14/2011
TITLE President	FEIN 54-1445976	ADDRESS CHANGES TO BE NOTED ABOVE

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<p>NOTICE TO THE VENDOR IF THE COMMODITIES AND/OR SERVICES SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM TO THE SPECIFICATIONS OF THE BID AND CONTRACT HEREIN.</p> <p>OPEN MARKET CLAUSE: THE DIRECTOR OF PURCHASING MAY AUTHORIZE A SPENDING UNIT TO PURCHASE ON THE OPEN MARKET, WITHOUT THE FILING OF A REQUISITION OR COST ESTIMATE, ITEMS SPECIFIED ON THIS CONTRACT FOR IMMEDIATE DELIVERY IN EMERGENCIES DUE TO UNFORESEEN CAUSES (INCLUDING BUT NOT LIMITED TO DELAYS IN TRANSPORTATION OR AN UNANTICIPATED INCREASE IN THE VOLUME OF WORK.)</p> <p>QUANTITIES: QUANTITIES LISTED IN THE REQUISITION ARE APPROXIMATIONS ONLY, BASED ON ESTIMATES SUPPLIED BY THE STATE SPENDING UNIT. IT IS UNDERSTOOD AND AGREED THAT THE CONTRACT SHALL COVER THE QUANTITIES ACTUALLY ORDERED FOR DELIVERY DURING THE TERM OF THE CONTRACT, WHETHER MORE OR LESS THAN THE QUANTITIES SHOWN.</p> <p>ORDERING PROCEDURE: SPENDING UNIT(S) SHALL ISSUE A WRITTEN STATE CONTRACT ORDER (FORM NUMBER WV-39) TO THE VENDOR FOR COMMODITIES COVERED BY THIS CONTRACT. THE ORIGINAL COPY OF THE WV-39 SHALL BE MAILED TO THE VENDOR AS AUTHORIZATION FOR SHIPMENT, A SECOND COPY MAILED TO THE PURCHASING DIVISION, AND A THIRD COPY RETAINED BY THE SPENDING UNIT.</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.</p> <p>THE TERMS AND CONDITIONS CONTAINED IN THIS CONTRACT SHALL SUPERSEDE ANY AND ALL SUBSEQUENT TERMS AND CONDITIONS WHICH MAY APPEAR ON ANY ATTACHED PRINTED</p>						

SIGNATURE		SEE REVERSE SIDE FOR TERMS AND CONDITIONS	
TITLE	FEIN	TELEPHONE	DATE
President	54-1445976	(757) 461-6301	04/14/2011
ADDRESS CHANGES TO BE NOTED ABOVE			

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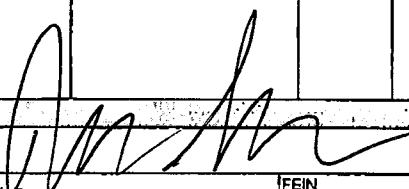
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LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
***** THIS IS THE END OF RFQ 6611C029 ***** TOTAL:						<u>\$17,622.00</u>

SIGNATURE:  SEE REVERSE SIDE FOR TERMS AND CONDITIONS
 TITLE: **President** TELEPHONE: **(757) 461-6301** DATE: **04/14/2011**
 FEIN: **54-1445976** ADDRESS CHANGES TO BE NOTED ABOVE

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1. **SPECIFICATIONS**

The following sections of the West Virginia Department of Transportation, Division of Highways Standard Specifications, Roads and Bridges, adopted 2000, as modified by the current Supplemental Specifications at time of bid opening shall apply to the administration of this contract: Sections 101, 102.4, 102.5, 105.1, 105.3, 105.4, 105.10, 105.11, 105.12, 105.13, 106.3, 106.4, 106.5, 106.6, 106.7, 106.9, 107.1, 107.2, 107.3, 107.14, 107.19, 107.20, 108.8, 109.1, 109.2 and 109.20.

The terms "Contractor and Vendor" used in the above specifications of this Contract are interchangeable. Contractor shall mean Vendor and Vendor shall mean Contractor.

West Virginia Department of Transportation, Division of Highways' Standard Specifications Roads and Bridges, adopted 2000, and the current Supplemental Specifications at time of bid opening may be obtained from:

West Virginia Division of Highways
State Capitol Complex
Engineering Division, Technical Section
Room A-650, Building 5
Charleston, West Virginia 25305

2. **CONCRETE PATCHING & REPAIR**

2.1 **SSI SILSPEC® FLEXPATCH POLYMER PATCHING MORTAR or "Equal"**

The polymer patching mortar shall be a three-component (polymer resin, curing agent, engineered blend of graded aggregates), 100 percent solids, high-strength, non-shrink, water-proof, abrasion resistant, non-conductive, semi-flexible patching material that adheres to concrete and steel, and requires no external application of heat for curing. The polymer patching mortar shall cure sufficiently to accept traffic within four (4) hours at a substrate temperature of 70° F. Minimum substrate temperature shall be 40° F. Shelf life of unopened material shall be one (1) year when stored between 50° F and 90° F. Polymer patching mortar shall meet the following physical requirements:

Compressive Strength:	1500 PSI min @ 4 hrs	ASTM C 579 Method B
	2400 PSI min @ 24 hrs	ASTM C 579 Method B
Bond Shear Strength:	650 PSI min	ASTM C 882
Linear Shrinkage	0.00 %	ASTM C 531
Abrasion Resistance:	1.0 max	ASTM C 501, Taber H22
Chloride Ion Perm:	1.0 max Coulombs	AASHTO T-277
Resilience:	70 % min	OK/OHD L6
Thermal Compatibility:	Pass	ASTM C 884

2.1.2 **WINTER GRADE SSI SILSPEC® FLEXPATCH POLYMER PATCHING MORTAR or "Equal"**

Winter grade polymer patching mortar shall have the same physical properties as 1.1 above except for substrate temperature. Winter grade polymer patching mortar shall have a substrate temperature range between 10° F and 40° F. The polymer patching mortar shall cure sufficiently to accept traffic within four (4) hours at a substrate temperature of 20° F.

2.2 IMCO TECHNOLOGIES INC., MG-KRETE REGULAR OR FINE or "Equal".

MG-Krete is a two component (Part A and B) high early strength structural repair material. Material can be used for all types of concrete repairs from patching deep holes to shallow feathering, poured in forms, trowel vertically and overhead. Material does not shrink on cure, self-priming and will bond to most construction materials (concrete, wood, steel, asphalt, etc.), cures rapidly with return to service in @ 30 min, is non-toxic and cleans up with water. MG-Krete has the following physical properties:

Water Absorption: waterproof

Compression Strength:

45 Min 2,610 psi

24 hrs 5,148 psi

7 days 5,815 psi

28 days 11,194 psi

Temp. Limits: 14° F (w/accelerator) to 100° F (w/retarder)

Initial Set Time @ 68° F 15 min.

2.2.1 IMCO TECHNOLOGIES INC., MG-KRETE WITH FLEX REGULAR or "Equal".

MG-Krete FLEX is similar to item 1.3 above, and can be used in areas where material may be subject to flexure.

2.2.2 IMCO TECHNOLOGIES INC., HIGH TEMPERATURE RETARDER or "Equal".

High Temperature Retarder is a powder additive that may be added to the MG-KRETE to extend working time when temperature rises above 77° F to 113° F.

2.2.3 IMCO TECHNOLOGIES INC., LOW TEMPERATURE ACCELERATOR or "Equal".

Low Temperature Accelerator is a powder additive that may be added to the MG-KRETE to accelerate cure when ambient temperature drops below 50° F. The accelerator may be used to help cure in temperatures as low as 15° F.

2.3 CERATECH INC. PAVEMEND SLQ VERY RAPID REPAIR MORTAR or "Equal".

Pavemend SLQ is a cementitious very rapid setting, self-leveling structural repair mortar. It is a single component powder that is water activated. Material can be used for horizontal and sloped concrete repairs in a wide range of temperature. Pavemend SLQ has the following physical properties:

Compression Strength:

1 hour 3,453 psi

24 hrs 4,090 psi

7 days 5,630 psi

28 days 7,483 psi

Bond Strength

24hrs 2,646 psi

Modulus of Elasticity

28 days 1.70 msi

Temp. Limits: 0° F to 90°

Initial Set Time @ 72° F 4-6 min.

2.3.1 CERATECH INC. PAVEMEND 15.0 RAPID REPAIR MORTAR or "Equal".

Pavemend 15.0 is a cementitious rapid setting, self-leveling structural repair mortar. It is a single component powder that is water activated. Material can be used for horizontal concrete repairs in a wide range of temperature. Pavemend 15.0 has the following physical properties:

Compression Strength:

2 hour	2,700 psi
3 hour	3,870 psi
24 hrs	4,230 psi
7 days	5,570 psi
28 days	6,300 psi

Bond Strength

24hrs	1,100 psi
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Modulus of Elasticity

28 days	3.30 msi
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Temp. Limits: 30° F to 110°

Initial Set Time @ 72° F 7-9 min.

2.3.2 CERATECH INC. PAVEMEND VR REPAIR MORTAR or "Equal".

Pavemend VR is a cementitious rapid setting, one step structural repair mortar with parging mortar consistency. It is a single component powder that is water activated. Material can be used for vertical and overhead concrete repairs in a wide range of temperature. Pavemend VR has 25-30 min of working time plus an additional 10 to 15 minutes to shape and shave the repair to match existing contours. Material can be applied in a single lift from 1/16" to over 4" without bonding agents. Pavemend VR has the following physical properties:

Compression Strength:

3 hour	2,516 psi
24 hrs	3,136 psi
7 days	4,226 psi
28 days	7,606 psi

Bond Strength:

24 hrs	1,590 psi
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Modulus of Elasticity

28 days	3.17 msi
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Temp. Limits: 40° F to 100°

Initial Set Time @ 72° F 15-20 min.

2.3.3 CERATECH INC. PAVEMEND SL RAPID REPAIR CONCRETE or "Equal".

Pavemend SL is a cementitious rapid setting, semi-leveling structural repair concrete. It is a single component powder that is water activated. Material can be used for horizontal concrete repairs in a wide range of temperature. Pavemend SL has the following physical properties:

Compression Strength:

1.5 hour	2,668 psi
2 hour	3,141 psi
24 hrs	6,392 psi
7 days	8,269 psi
28 days	9,392 psi

Bond Strength
28 days 4,380 psi
Modulus of Elasticity
28 days 4.02 msi
Temp. Limits: 40° F to 120°
Initial Set Time @ 72° F 15-20 min.

2.3.4 CERATECH INC. D.O.T. LINE RAPID REPAIR CONCRETE or "Equal".

D.O.T.Line is a cementitious rapid setting, semi-leveling structural repair concrete. It is a single component powder, aggregate extended, that is water activated. Material can be used for horizontal concrete repairs in a wide range of temperature. D.O.T.Line has the following physical properties:

Compression Strength:
2 hour 2,820 psi
24 hrs 6,115 psi
7 days 9,345 psi
28 days 10,510 psi
Bond Strength
7 days 2,745 psi
Modulus of Elasticity
28 days 5.20 msi
Temp. Limits: 30° F to 120°
Initial Set Time @ 72° F 20-30 min.

2.3.5 CERATECH INC. MAINLINE RAPID REPAIR CONCRETE or "Equal".

Mainline is a cementitious rapid setting, semi-leveling structural repair concrete. It is a single component powder, aggregate extended, that is water activated. Material can be used for horizontal concrete repairs in a wide range of temperature. Mainline has the following physical properties:

Compression Strength:
4 hour 3,010 psi
24 hrs 4,905 psi
7 days 7,415 psi
28 days 9,370 psi
Bond Strength
7 days 3,056 psi
Modulus of Elasticity
28 days 4.70 msi
Temp. Limits: 30° F to 120°
Initial Set Time @ 72° F 30-35 min.

3. CONCRETE SEALING AND WATERPROOFING

3.1 SSI DECKSEAL POLYMER DECK SEALANT or "Equal"

DECKSEAL is a two component polymer based sealing material designed for crack and surface sealing. Mix ratio is 1 part A to 1 part B. Typical coverage of 90 to 150 sq. ft./gal depending on porosity and surface profile of substrate. DECKSEAL contains U42 Fluorescent Tracer Dye, which illuminates under black light. This provides evidence of penetration. DECKSEAL has the following physical properties:

Chloride Ion Penetration:	0 % @ 90 Days Ponding	AASHTO T-259
Bond Strength:	2,220 PSI 14 Days	ASTM C 882
Brookfield Viscosity:	<50 cps	ASTM C 881
Water Absorption:	0.74 %max 24 hrs.	ASTM C 570
Tensile Strength:	3,000	ASTM D 638
Elongation @ Break:	4 % min	ASTM D 638
V.O.C.:	<250g/L	
Shelf Life:	1 Year Unopened	

3.2 SSI RE-DECK SKID-RESISTANT OVERLAY or "Equal"

SSI RE-DECK is a solvent-free, moisture insensitive, 100% solids, low modulus, two component urethane-epoxy bonding agent. Mix ratio is 1:1. When broadcast with select aggregate forms a skid-resistant overlay. Typical coverage of 40 sq. ft./gal first course with 10 lbs/sq. yd. aggregate and 20 sq. ft./gal second course with 14 lbs/sq. yd. aggregate. RE-DECK has the following physical properties:

Compressive Modulus:	65,000 PSI	ASTM D 695
Tensile Strength	2,500 PSI	ASTM D 638
Tensile Elongation	50%	ASTM D 638
Bond Strength:	3,000 PSI 14 day cure	ASTM C 882
Linear Shrinkage	Negligible	ASTM C 883
Absorption:	0.20 %	ASTM D 570
Chloride Ion Perm:	0.9 Coulombs	AASHTO T-277
Shore D Hardness:	70	ASTM D 2240
Thermal Compatibility:	Pass	ASTM C 884
Brookfield Viscosity:	1,500 cps RV3 @ 20 rpm	ASTM C 881

3.3 KANSAS BLEND FLINT FOR RE-DECK OVERLAY or "Equal"

Flint aggregate for use with SSI RE-DECK shall be clean dry flint, free of dust or contaminants that would interfere with the bonding to the SSI RE-DECK material. Flint material shall be angular in shape and have the following gradation:

Sieve	% Passing
#4	100
#8	30-40
#16	0-5
#30	0-1

3.4 IMCO TECHNOLOGIES INC., D-TECH 470 SEALER or "Equal"

D-TECH is a ready to use, clear, water-based penetrating sealer for application to the surface of concrete, above or below grade. D-TECH penetrates deeply into the capillary pores of the concrete and crystallizes, becoming part of the concrete itself. Sealer can be brushed, rolled or spayed on concrete for sealing, hardening, dust proofing, waterproofing and weatherproofing. D-TECH has the following characteristics:

- Increases concrete density and hardness
- Prevents chemical corrosion and physical abrasion of treated surface
- Effective in reducing freeze-thaw spalling
- Treatment is permanent and does not require subsequent re-application
- Effective negative side waterproofing of hydrostatic head over 115 ft.

- Reduces or eliminates efflorescence and leaching in concrete
- Effective barrier of water-vapor emission (without loss of breathability)
- Solvent-free, odor-free. Non-toxic, and non-flammable
- Improves bonding of cementitious toppings
- Ultra-violet stability
- Does not change the appearance of the concrete
- Can be applied to green concrete and old concrete
- Two light coats 300-400 sq. ft./gal depending on porosity and surface profile of substrate

3.5 AQUAFIN INC., AQUAFIN-IC ADMIX or "Equal".

AQUAFIN-IC ADMIX is a liquid water-proofing additive for concrete, consisting of a water based suspension of inorganic water-proofing agents. AQUAFIN-IC ADMIX can be added during the batching process or in a ready-mix truck at the job site. During concrete hardening AQUAFIN-IC ADMIX forms millions of fine crystalline fibers inside the capillary pores blocking the flow of water thus making the concrete permanently water-tight and increasing compressive strength by 25%. AQUAFIN-IC ADMIX has the following characteristics:

- Liquid for easier homogenous mixing and no clumping
- Resists extreme head pressure 460 ft or 200 psi
- Seals hairline cracks up to 1/64"
- Integral part of the concrete
- Allows concrete to breathe
- Max. water/cement ratio 0.55 before adding AQUAFIN-IC ADMIX
- Negligible effect on water reducers, plasticizers, slump, air entrainment
- 0 VOC & Non toxic
- Non-chloride, non-corrosive to steel
- Working temperature >40° F
- PH 10-12

3.6 INTERNATIONAL CHEM-CRETE, INC., PAVIX CCC100 or "Equal".

PAVIX CCC100 is a ready to use, clear, water-based penetrating sealer for application to the surface of concrete, above or below grade. PAVIX CCC100 provides three effective mechanisms for concrete protection by formation of two types of crystals and water repellency. In the presence of moisture, one type of crystal swells, therefore, blocking the pores completely. The second type of crystal absorbs the extra moisture on the surface of the first crystal preventing surface moisture on that crystal from diffusion to the concrete. PAVIX CCC100 has the following characteristics:

- Specific Gravity 1.1
- Seals Cracks Up to 1/16 inch
- Viscosity 2.4 centipoises
- Freeze Point 28°F
- Environmental No Hazards
- Color Clear
- Toxicity None
- Fumes None
- Flammability None
- Shelf Life 1 Year unopened

3.8 INTERNATIONAL CHEM-CRETE, INC., YUFIX CCC1000 or "Equal".

YUFIX CCC1000 is a clear water based catalyzed non-hazardous deep penetrating water repellent product. It is non-toxic, non-flammable, odorless, non-staining, non-film forming, and contains no VOC's. YUFIX CCC1000 is a water repellent and sealer for all above grade vertical concrete and masonry substrates that will not alter the color, texture or appearance of the surface. It chemically reacts with CO² in the atmosphere to become an integral part of the concrete or masonry substrate permanently sealing concrete and masonry substrate pores blocking ordinary capillary action of water. YUFIX CCC1000 has the following characteristics:

- Specific Gravity 1.06
- ASTM C-666 Freeze Thaw 150 cycles: No effect
- V.O.C. Content: Zero
- Toxicity: None
- Odor: None

3.9 INTERNATIONAL CHEM-CRETE, INC., Sofix CCC100 or "Equal".

Sofix CCC100 is a water based blend of catalyzed chemicals that permanently eliminate moisture transmission through concrete structures. Sofix CCC 100 produces water insoluble hydrophilic crystals within the concrete capillaries, voids and pores. It is non-toxic, non-flammable, odorless, and non-film forming hydrophilic moisture and vapor blocker for all above and on grade concrete and masonry substrates that will not alter the color, texture or appearance of the surface. Sofix CCC100 will form hydrophilic crystals even in the absence of calcium hydroxide that absorb moisture and rapidly swell to block concrete pores and capillaries, thus preventing moisture penetration. Sofix CCC100 has the following characteristics:

- Specific Gravity 1.07
- ASTM C-666 Freeze Thaw 150 cycles: 4.14 grams/ft²
- V.O.C. Content: Zero
- Toxicity: None
- Odor: None
- ASTM C-1218 Chloride Penetration: Passed
- ASTM C-044 Abrasion Resistance: 1.17 grams/ft²
- ASTM E-96-95 Water Vapor Trans.: 82% Reduction
- ASTM D-4541 400 PSI
- ASTM E-303 Skid Resistance: No Effect
- Depth of Penetration 192 mils avg.

4. ASPHALT REPAIR & PATCHING

4.1 PERMA-PATCH INC., PERMA-PATCH ASPHALT REPAIR or "Equal".

Perma-Patch has a unique formulation of special polymers, pressure sensitive plastics and blend of angular limestone designed to achieve optimum performance all year long in any weather condition with one product. It permanently repairs any holes in asphalt or concrete, in all types of weather even wet, freezing or extreme heat conditions. Formulation is premixed and ready to use, no primer required. Perma-Patch has the following physical properties:

- Asphalt Content: 5.2% ASTM D2172-92
- Shelf Life: 2 Year min.
- Coverage: 10 lbs/sf. @ 1" lift, 1.4 tons/cy
- Temperature: -15° F to 100° F
- Cure: Dynamic Pressure
- Aggregate: ¼ inch max. angular limestone
- VOC: 0.1% volume by weight

5. JOINT SEALANT

5.1 DOW CORNING® 888 SILICONE JOINT SEALANT or "Equal".

DOW CORNING® 888 silicone joint sealant is a one-part, cold applied silicone that cures to a durable flexible, low-modulus silicone rubber joint sealant for new and remedial joint sealing applications in Portland cement concrete. DOW CORNING® 888 has the following physical properties:

- Color: Gray
 - Specific Gravity: 1.450-1.515
 - Skin-Over Time: 10 min. @ 77° F
 - Tack-Free Time: 60 min. @ 77° F
 - Cure Time: 7-24 days @ 77° F
 - Full Adhesion: 14-21 days
- After 7 day cure @ 77° F & 50% RH**
- Elongation Minimum: 1200%
- Modulus @ 150%**
- Elongation Maximum: 43 psi
- Durometer Hardness**
- Shore A: 15-25 points
- Joint Movement Capability**
- +100/-50%, 10 Cycles: No Failure
- Adhesion to Concrete**
- Minimum Elongation: +500%

5.2 DOW CORNING® 890-SL SILICONE JOINT SEALANT or "Equal".

DOW CORNING® 890-SL Self-Leveling Silicone Joint Sealant is a one-part, cold applied, self-leveling silicone material that cures to an ultra-low-modulus silicone rubber upon exposure to atmospheric moisture. Sealant can be used for new and remedial joint sealing applications in Portland cement concrete and asphalt. DOW CORNING® 890-SL has the following physical properties:

- Color: Dark Gray
 - Flow, Sag, Slump: Self-Leveling
 - Percent Solids: 96% min
 - Specific Gravity: 1.26-1.34
 - Skin-Over Time: 60 min. @ 77° F
 - Cure Time: 14 days @ 77° F
 - Full Adhesion: 14-21 days
- After 21 day cure @ 77° F & 50% RH**
- Elongation Minimum: 1400%

Modulus @ 50%	
• Elongation Maximum:	7 psi
Modulus @ 100%	
• Elongation Maximum:	8 psi
Modulus @ 150%	
• Elongation Maximum:	9 psi
Durometer Hardness	
Shore A:	15-25 points
Joint Movement Capability	
• +100/-50%, 10 Cycles:	No Failure
Adhesion to Concrete	
• Minimum Elongation:	+600%
Adhesion to Asphalt	
• Minimum Elongation:	+600%

6. BRIDGE DECK WATERPROOFING MEMBRANE

6.1 SOPRALENE FLAM 180 or "Equal".

Sopralene Flam 180 is a two ply composed of selected SBS modified bitumen applied onto non-woven polyester reinforcement with a film on both the top and bottom surfaces. Sopralene Flam 180 is adhered to the substrate by the heat welding application method. Sopralene Flam 180 has the following physical properties per ASTM D-6164 Type 1, Grade S, values are before and after heat conditioning:

	Before	After
• Tensile-Max Load at $0 \pm 3.6^\circ$ lbf/in	117	83
• Elongation at $0 \pm 3.6^\circ$ F	29	22
• Tensile – Max Load at $73.4 \pm 3.6^\circ$ F lbf/in	70	70
• Elongation at $73.4 \pm 3.6^\circ$ F %	56	61
• Tear Strength at $73.4 \pm 3.6^\circ$ F lbf	120	87
• Low Temperature Flex $^\circ$ F max	-15	-15
• Dimensional Stability % max	<0.5	<0.5
• Compound Stability Temp F	250	250

6.2 SOPRALENE FLAM ANTIROCK or "Equal".

Sopralene Flam Antirock is composed of selected SBS modified bitumen applied onto non-woven polyester reinforcement with a plastic burn-off film on bottom side and colored granules on the top surfaces. Sopralene Flam Antirock is applied as the finish ply in a heat welded waterproofing assembly. Sopralene Flam Antirock has the following physical properties per ASTM D-6164 Type 1, Grade G, values are before and after heat conditioning:

	Before	After
• Tensile-Max Load at $0 \pm 3.6^\circ$ lbf/in	117	83
• Elongation at $0 \pm 3.6^\circ$ F	29	22
• Tensile – Max Load at $73.4 \pm 3.6^\circ$ F lbf/in	70	70
• Elongation at $73.4 \pm 3.6^\circ$ F %	56	61
• Tear Strength at $73.4 \pm 3.6^\circ$ F lbf	120	87
• Low Temperature Flex $^\circ$ F max	-15	-15
• Dimensional Stability % max	<0.5	<0.5
• Compound Stability Temp F	230	230

- Granule Embedment g/max 0.8 0.8

6.3 ELASTOCOL 500 or "Equal".

Elastocol 500 Primer is a blend of elastomeric bitumen/solvents that will increase adhesion of the membrane when applied to dry clean concrete substrate. Elastocol 500 Primer meets ASTM D-41 and can be applied by brush, roller or spray at an application rate of 100 – 150 ft².

6.4 ALSAN FLASHING or "Equal".

Alsan Flashing is a polyurethane/bitumen resin, moisture-cured, single-component compound that is low solvent and UV resistant. Alsan Flashing is compatible with Soprema SBS modified bitumen membranes. Alsan Flashing can be applied with a brush or roller in two to three layers and has the following as installed physical properties:

- | | | |
|----------------------------------|------------|-------------|
| • Tensile Strength | 368 psi | ASTM D-412 |
| • Elongation | 672 % | ASTM D-412 |
| • Peel Strength of Adhesive Bond | 23.0 | ASTM D-903 |
| • Shore A Hardness | 74 | ASTM D-2240 |
| • Dry Time | 2-12 hours | |

6.5 ALSAN POLYFLEECE or "Equal".

ALSAN PolyFleece is a high-performance, flexible, non-woven, spun-laced polyester fabric reinforcement with excellent coating saturation capabilities into elastomeric coatings and epoxy primers. When used in combination with ALSAN Flashing or other ALSAN Liquid Membrane Systems, a watertight, puncture & UV resistant liquid flashing or membrane is formed. ALSAN PolyFleece has the following physical properties:

- | | |
|---------------------|---------------------|
| • Color | White |
| • Fiber Content | 100% Polyester |
| • Construction | Stitch Bond |
| • Weight | 2.4 oz./square yard |
| • Nominal Thickness | 30 mils |
| • Mullen Burst psi | 70 lbs. |

7. CONTRACT REQUIREMENTS

The purpose of this contract is to establish unit prices for Items 1 thru 31, which are to be used as the basis for requisition of materials for the repair and maintenance of silicone, asphalt, and concrete. All components bid as equal, must prove they are equal, through supporting research and analysis of composition to the satisfaction of the West Virginia Department of Transportation, Division of Highways. At the discretion of the West Virginia Department of Transportation, Division of Highways, items bid as equal may be required to undergo a performance evaluation, under field conditions, to assure performance before being accepted as equal. Any item bid that is part of a system that forms a final manufacturers product, the equal item must also be part of a system of products that form a equal final manufacturers product.

Bid price for Items 1 thru 31 shall be "F.O.B." Division of Highways storage sites as indicated on the Approved Release Order (SCO). Refer to bid schedule for a listing of the Division of Highways storage sites.

Vendor may bid any or all items on the bid schedule. However, the amount bid on any one item may be conditioned on the total bid for all items necessary to make a complete system.

Any qualification of bids or modification of the specification or conditions governing the bid may be cause to reject bids.

Any vendor bidding on items in this contract shall supply technical support and on site instructional training in the proper use and application of their products. The vendor shall also provide on site evaluation of all products bid in the event of product failure or performance problems to ascertain the cause and recommend remedial action. The vendor shall provide this support to all Districts and Maintenance Division when requested, in a timely manner (within three working days) from time of request.

8. **CONTRACT AWARD**

Contract shall be awarded on any individual item basis.

In the event a Vendor fails to conform to the requirements of this contract document or the governing specifications the contract may be canceled and re-awarded to the next lowest bidder.

9. **DELIVERY**

Upon receipt of a Release Order the requested item(s) shall be delivered or available for Division of Highways pick-up within fifteen (15) calendar days.

10. **VENDOR'S INVOICE**

Vendor's invoice must be submitted in original and one (1) copy and contain the following:

- a. Division of Highways' Release Order Number and this contract number.
- b. Total quantity and unit price with the extended total cost of each item purchased.

Under no circumstances will the West Virginia Division of Highways accept, or pay for quantities in excess of the quantities stated on the Release Order.

Item No.	Description	Estimated Quantity	Unit/Description	Unit Price	Amount	Estimated Quantity	Unit/Description	Unit Price	Amount
1	SSI Flexpatch Polymer Patching or "Equal"	1	per Unit			5	per 30 Unit Lot		
2	SSI Winter Grade Flexpatch Polymer Patching or "Equal"	1	per Unit			3	per 30 Unit Lot		
3	SSI Deckseal Polymer Deck Sealant or "Equal"	24	per 2 gal			10	per 10 gal		
4	SSI Re-Deck Skid Resistant Overlay or "Equal"	10	per 2 gal			13	per 12 Lot-10 gal each		
5	IMCO® MG-KRETE™ Regular or Fine or "Equal"	32	per Kit			105	per 36 Kit Lot		
6	IMCO® MG-KRETE™ Part B Liquid System or "Equal"	128	per gal						
7	IMCO® MG-KRETE™ Flex Regular System or "Equal"	1	per Kit			1	per 36 Kit Lot		
8	IMCO® High Temp. Retarder Regular or "Equal"	1	per gal			30	per 5 gal		
9	IMCO® Low Temp. Accelerator Regular or "Equal"	1	per gal			10	per 5 gal		
10	IMCO® D-Tech 470 Sealer System or "Equal"	1	per 5 gal			8	per 12 Lot-5 gal each		
11	Perma-Patch or "Equal"	7000	per 50-60 lb bag lot			20	per Truck 16 Lots		
12	CERATECH Pavemend SLQ Very Rapid Repair Mortar or "Equal" ** Exact product bid - data sheet attached **	1	per 5 gal	** Minimum order quantity of 36 units **		1	per 36 lot-5 gal each	\$55/Each or \$1980 per 36 Lot	\$1980.00
13	CERATECH Pavemend 15.0 Rapid Repair Mortar or "Equal" ** Exact product bid - data sheet attached **	1	per 5 gal	** Minimum order quantity of 36 units **		1	per 36 lot-5 gal each	\$55/Each or \$1980 per 36 Lot	\$1980.00
14	CERATECH Pavemend VR Repair Mortar or "Equal" ** Exact product bid - data sheet attached **	5	per 2 gal	** Minimum order quantity of 80 units **		1	per 80 lot-2 gal each	\$27/Each or \$2160 per 80 Lot	\$2160.00
15	CERATECH Pavemend SL Repair Concrete or "Equal" ** Exact product bid - data sheet attached **	1	per 5 gal	** Minimum order quantity of 36 units **		3	per 36 lot-5 gal each	\$34/Each or \$1224 per 36 Lot	\$3672.00
16	CERATECH Pavemend SL Repair Concrete or "Equal" ** Exact product bid - data sheet attached **	1	per 51.8 lb bag	** Minimum order quantity of 54 units **		1	per 54 bag lot	\$29/Each or \$1566 per 54 Lot	\$1566.00

* Unit equal 1 cubic foot

** Kit equals 50 lb (45 lb Fine) pail Part A, 1 gal Part

Mdb

11. BID SCHEDULE (Continued)
 Division of Highways Storage Sites
 Districts 1-10 & Maintenance Division

Item No.	Description	Estimated Quantity	Unit/Description	Unit Price Amount	Estimated Quantity	Unit/Description	Unit Price	Amount
17	CERATECH D.O.T. Line Repair Concrete or "Equal" ** Exact product bid - data sheet attached **	1	per 54 bag lot	Minimum order quantity of 54 units **	2	per 54 bag lot	\$29/Each or \$1566 per 54 lot	\$3132.00
18	CERATECH Mainline Repair Concrete or "Equal" ** Exact product bid - data sheet attached **	1	per 54 bag lot	Minimum order quantity of 54 units **	2	per 54 bag lot	\$29/Each or \$1566 per 54 lot	\$3132.00
19	AQUAFIN, INC. Aquafin-IC Admix or "Equal"	10	per 6 gal		1	per 12 lot-6 gal each		
20	Kansas Blend Flint for SSI Re-Deck or "Equal"	1	per 80 lb bag		40	per 35 bag lot		
21	DOW CORNING®888 Silicone Joint Sealant or "Equal"	40	per box (6-29 fl oz disposable cartridges)		1	per 36 kit lot		
22	DOW CORNING® 890 Silicone Joint Sealant or "Equal"	40	per box (6-29 fl oz disposable cartridges)					
23	CHEM-CRETE PAVIX CCC100 or "Equal"	80	per 5 gal		10	per 36 Lot 5 gal each		
24	CHEM-CRETE PAVIX CCC100 or "Equal"	4	per 55 gal drum		8	per 4-55 gal drum lot		
25	CHEM-CRETE YUFIX CCC100 or "Equal"	20	per 5 gal		5	per 36 Lot 5 gal each		
26	CHEM-CRETE Sofix CCC100 or "Equal"	10	per 5 gal		5	per 36 Lot 5 gal each		
27	Sopralene Flan 180 (33"x39") or "Equal"	30	per roll					
28	Sopralene Flan AntiRock (33"x39") or "Equal"	150	per roll		5	per 20 roll lot		
29	Elastocol 500 (Primer) or "Equal"	30	per 5 gal pail					
30	Alsac Flashing or "Equal"	25	per 5 gal pail					
31	Alsac Polyfleece Reinforcing Fabric (6"x50' Roll) or "Equal"	50	per roll					

TOTAL \$17,622.00

Division of Highways Storage Sites

District One
1334 Smith Street
Charleston, WV 25301

District Two
P.O. Box 880
Huntington, WV 25712

District Three
624 Depot Street
Parkersburg, WV 26101

District Four
P. O. Box 4220
Clarksburg, WV 26302-4220

District Five
P.O. Box 99 (US Route 50)
Burlington, WV 26710

District Six
1 DOT Drive
Moundsville, WV 26041

District Seven
P.O. Box 1228
Weston, WV 26452

District Eight
US Route 219 North
P.O. Box 1516
Elkins, WV 26241

District Nine
103 1/2 Church Street
Lewisburg, WV 24901

District Ten
270 Hardwood Lane
Princeton, WV 24740

Maintenance Division
I-79 Exit 57
Coon Knob, WV 26601

GSA P/N: C300 5 Gallon
 GSA P/N: C350 2 Gallon

 ITEM NO: 12

Product Data Sheet

Updated 2.3.11



1 General Characteristics

Pavement SLQ™ is a cementitious, very rapid setting, *semi-leveling* structural repair mortar with a gel state consistency sufficient for troweling up minor sloped grades and for aggregate extension. It is a single component powder that is water activated. **Pavement SLQ™** has 4 to 6 minutes of working time and will reach compressive strengths of more than 3,000 psi within 60 minutes of final set; *making it the premier choice for critical infrastructure repair scenarios where a one hour return to service is of paramount importance!* Designed for use in horizontal and sloped applications, **Pavement SLQ™** can be applied in ambient temperature ranges from minus 20 to 90 degrees Fahrenheit without special mixing or curing equipment.

RECOMMENDED USES: **Pavement SLQ™** is ideal for moderate to cold weather repairs of roads and bridges, airport runways, warehouse or manufacturing facility floors, post-tension cable repairs and form and pour projects.

2 Additional Physical Properties

UNIT WEIGHT (NEAT)

115 lb/ft³ (1842 kg/m³)

SETTING TIME

Set Times at 72°F/22°C at 1" (2.54 cm) material depth

Initial set: 4 - 6 minutes

Final set: 6 - 8 minutes

VOLUME YIELD

NEAT:

0.42 ft³ (0.012 m³) per 46 lb. (20.9 kg) unit

0.12 ft³ (0.003 m³) per 11 lb (4.99 kg) unit

Extended 50% w 3/8" or 1/2" fractured aggregate:

0.60 ft³ (0.017 m³) per 46 lb. (20.9 kg) unit

0.15 ft³ (0.004 m³) per 11 lb (4.99 kg) unit

Extended 75% w 3/8" or 1/2" fractured aggregate:

0.72 ft³ (0.02 m³) per 46 lb. (20.9 kg) unit

0.18 ft³ (0.005 m³) per 11 lb (4.99 kg) unit

3 Specifications

Results provided by licensed engineering test laboratory and represent typical results from production materials. Actual results may vary from third party testing results; however, CERATECH's materials meet and/or exceed established internal quality control standards, (available upon request) . All samples were air cured.

Property	NEAT 2" Cubes	Extended 3/8" pea gravel 4" Dia. x 8" Cylinders	Test Method
Compressive Strengths, psi (MPa)			
1 hour	3453 (23.8)	2656 (18.3)	ASTM C 109 / ASTM C 39
3 hours	3966 (27.3)	3841 (26.5)	ASTM C 109 / ASTM C 39
24 hours	4090 (28.2)	4524 (31.2)	ASTM C 109 / ASTM C 39
7 days	5630 (38.8)	*TBD	ASTM C 109 / ASTM C 39
28 days	7483 (51.6)	*TBD	ASTM C 109 / ASTM C 39
Flexural Strength, psi (MPa)			
7 days	600 (4.1)	*TBD	ASTM C 78
28 days	930 (6.4)	*TBD	ASTM C 78
Splitting Tensile Strength, psi (MPa)			
7 days	195 (1.3)	*TBD	ASTM C 496
28 days	386 (2.7)	*TBD	ASTM C 496
Bond Strength, psi (MPa)			
24 hours	2646 (18.3)	*TBD	ASTM C 882
7 days	2866 (19.8)	*TBD	ASTM C 882
Rapid Freeze Thaw Resistance (Durability Factor - Retained percentage of Dynamic Modulus)			
300 cycles	99.6%	*NTBT	ASTM C 666A
Scaling Resistance, lbs/ft² (kg/m²)			
25 cycles	0 (0)	*NTBT	ASTM C 672
Modulus of Elasticity, msi (GPa)			
28 days	1.70 (12.0)	*TBD	ASTM C 469
Coefficient of Thermal Expansion, in/in/°F			
28 days	2.95	*NTBT	AASHTO TP 60
Length Change, % of total length			
28 days soak / 28 days dry	0.0085 / -0.0460	*NTBT	ASTM C 157

1 3rd party test results

2 Internal test results

* NTBT - Not to be tested

* To be determined

CERATECH Inc.
 1500 North Beauregard St.
 Suite 320
 Alexandria, VA 22311
 Phone: (800)-581-8397 Fax: (703)-894-1068
 Technical Support: (888)-341-2600





4 Site Preparation

Surfaces should be prepared in accordance with ICRI 03730, "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion." and / or ACI 546R-96 "Concrete Repair Guide". Concrete surfaces should be prepared by appropriate mechanical methods to obtain an exposed aggregate surface with a minimum surface profile of +/- 1/16" (1.5 mm) in accordance with ICRI 03732. Pre-existing coatings or surface treatments should be completely removed. Dry, clean, stable surfaces are required. Remove all standing water. Reinforcing steel should have no loose scale. **Surfaces of host concrete must be damp.**

5 Mixing Instructions

Standard NEAT Procedures (Bucket Mixing with Drill & Paddle)

- Loosen material by tumbling bucket & dry mixing **before** adding water.
- To ensure product performance, **DO NOT divide or separate individual units into smaller portions. MIX ENTIRE CONTENTS AT ONE TIME.**
- A drill (6 amp minimum) with a mixer blade turning at least 500 to 800 rpm is required. Drills with speeds greater than 800 RPMs may entrain air in the mix.
- **DO NOT HAND MIX**
- To begin the mixing process, add the proper amount of water:

For Each:	Add:
46 lb (20.9 kg) 5 gallon (18.9 L) bucket	1 U.S. gallon (3.8 L) of water
11lb (4.99 kg) 2 gallon (7.6 L) bucket	1 U.S. quart (.95 L) of water

- In extremely warm conditions, add up to 1 cup of additional water to 5 gallon units, add 1/2 cup to 2 gallon units.
- Ideal water temperature is between 65°F/18°C and 75°F/24°C.
- **After adding the water, it is very important to rapidly incorporate all of the dry Pavement SLQ™ powders into water to achieve a uniform wet mixture within the first 30 seconds of mixing.**
- If ambient temperatures are above 85°F/29°C, **mix material for 2 minutes and use cold water at approximately 55°F/13°C.** If temperatures are below 72°F/22°C mix until **Critical Mix Temperature of 85°F/29°C** is reached, **but not less than 2 minutes.** It is recommended that a thermal gun or temperature probe be used to ensure that the **Critical Mix Temperature** has been achieved. Place material into repair area and spread with a trowel, straightedge or squeegee, filling voids and edges.

For Aggregate Extension: (Bucket Mixing with Drill & Paddle)

- Use only 3/8" (1 cm) or 1/2"(1.3cm) #7 clean washed fractured stone up to 100% maximum by weight (For best finishing characteristics, extend by no more than 75%)
- **Add aggregate to material and water slurry after mixing for 30 seconds.**
- See mixing times for NEAT application above.

Mixing Notes:

1. Pavement SLQ™ undergoes an exothermic chemical reaction during blending. Heat, the by-product of the reaction, is the best indication that the reaction is complete and that the product is ready to be poured. **Pavement SLQ™ has a Critical Mix Temperature of 85°F/29°C which MUST BE REACHED before placing to obtain optimum performance.**

Mixing Notes: (Continued)

(In cold weather, it may be impossible to reach the Critical Mix Temperature, therefore a 40°F/22°C rise in material temperature is mandatory to ensure that the necessary chemical reactions have taken place to deliver the desired performance characteristics); Mixing time to reach the **Critical Mix Temperature** will vary with ambient air and mix water temperatures, however, **never mix Pavement SLQ™ for less than 2 minutes regardless of ambient temperatures.** It is recommended that a thermal gun or temperature probe be used to ensure that the **Critical Mix Temperature** has been achieved.

6 Packaging & Shelf Life

PACKAGING

46 lb (20.9 kg) 5 gallon (18.9 L) bucket
11lb (4.99 kg) 2 gallon (7.6 L) bucket

SHELF LIFE

Buckets - 3 years (when stored in original unopened bucket)

STORAGE

Buckets are environmentally sealed and require no special storage requirements

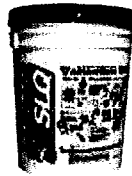
7 Limitations

- Not recommended for surface temperatures above 110°F/43°C or below -20°F/-28°C.
- Will not bond to polymers.
- Cannot be pumped.
- Must be mixed with drill and paddle - **Pavement SLQ™** cannot be mixed in grout mixer or rotating drum concrete mixers due to rapid set times.

8 Application & Finish

- Working times are influenced by surface temperature and repair profile. **Working time can be extended by adding CERATECH's Set Retarder Admixture to mix water. (See Set Retardant product data sheet for more information)**
- Minimum NEAT profile thickness is 0.06" (1.5mm). There are no restrictions to the depth of the repair profile.
- For best results, CERATECH recommends monolithic placement of repair materials. Maintain a minimum thickness of 1.00 inch if repair material must be layered.
- Upon initial set, a broom finish can be applied. Upon final set, the material can be saw-cut, drilled, sanded and/or polished.
- Do not re-temper. The addition of water to the surface of the repair will negatively affect the materials final properties.
- **General loading in 1.0 hour for wheeled traffic and 20 minutes for foot traffic.** For applications 0.5" thick and greater, in ambient and/or surface temperatures below 50°F/10°C, extend the loading time by 30 minutes for each 10° below 50°F/10°C. For applications 1.00" thick and greater, in ambient and/or surface temperatures below 40°F/4°C extend the loading time by 30 minutes for each 10° below 40°F/4°C.
- **All previously existing joints must be re-established within 1-3 hours of final set.**
- **Self-curing**
- Clean all tools and equipment with water prior to the material reaching final set.

pavement
SLQ
Semi Leveling / Trowelable / Extendable
VERY RAPID
REPAIR MORTAR



Updated 2.3.11

8 Safety

- See **Material Safety Data Sheet (MSDS)**.
- This document does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.
- Dispose of water and materials in accordance with Federal, State and Local regulations.
- The use of a dust mask, safety goggles and gloves is recommended.
- Keep out of the reach of children.

To Ensure Performance **Attention!** Read All *pavement* Mixing Instructions Prior To Using!

Drill & Paddle Mixing Instructions

Repair Area Must Be Clean & Mechanically Sound

1 Attach Mixing Paddle to Drill
Heavy Duty Drill (Min. 500 rpm) (Max. 800 rpm)

2 Tumble *pavement* Bucket Several Times Prior To Opening To Break Up & Loosen Material

3 Loosen Dry Powder with Drill Paddle.
For best results, mix water temperatures should be between 65° F/18° C & 75° F/24° C

4 Add Specified Amount of Water and Mix Immediately

5 If extending with aggregate! After mixing SLQ and water for 30 seconds, Add in no more than 46 lbs. (20.9 kg) of 3/8" (1 cm) or 1/2" (1.3 cm) #7 clean washed fractured stone
Mix to Critical Mix Temperature or Mix Time as shown in chart

6 Mix until Critical Mix Temperature is reached **BUT NEVER LESS THAN 2 minutes**

7 Place *pavement* when Critical Mix Temperature is reached.
DO NOT Finish with Water

8 Promptly Rinse All Tools Before *pavement* Hardens On Tools

When Utilizing Forms, A Bond Release Agent Must Be Used

Temperature Chart:
In ambient temperatures under 72° F / 22° C
For Ambient Temperatures Over 72° F:
72° F - 80° F (22° C - 27° C) | 80° F - 90° F (27° C - 32° C) | 90° F & above (32° C & above)
Mix times: 2 Minutes | 2 Minutes (Use cold water) | 55° F
Mix to Critical Mix Temperature (Use Thermal Gun or Other Temperature Measurement Device) 85° F / 29° C

Notes:
• *pavement* Generates Heat Through a Chemical Reaction. Optimum Performance is Dependent Upon Reaching Critical Mix Temperature
• CERATECH Inc. Highly Recommends Use Of Thermal Measuring Gun To Optimize Material Performance

WARRANTY:

CERATECH, Inc. ("CERATECH") warrants that its products are free from defects in materials and workmanship. If any CERATECH product fails to conform to this warranty, CERATECH will replace the product at no cost to the buyer or refund the purchase price, at CERATECH's election. Any warranty claim must be made within one (1) year from the date of the shipment of the product to the buyer. In no event shall CERATECH be liable to the buyer for any consequential or incidental damages of any nature. CERATECH MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, WRITTEN OR ORAL AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF ITS PRODUCTS AND EXCLUDES THE SAME. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

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CERATECH
.....Rapid Cements

GSA P/N: C500 5 gallon
 GSA P/N: C550 2 gallon

 ITEM NO: 13

Product Data Sheet

pavemend
15.0 Self Leveling
RAPID REPAIR MORTAR



Updated 6.8.10

1 General Characteristics

Pavemend 15.0™ is a cementitious, rapid setting, *self-leveling* structural repair mortar. It is a single component powder that is water activated. **Pavemend 15.0™** has 7 to 9 minutes of working time and will reach compressive strengths of more than 3,000 psi within two hours and more than 6,000 psi at 28 days. Designed for use in horizontal repair applications, **Pavemend 15.0™** can be applied in ambient temperature ranges from 30 to 110 degrees Fahrenheit. Rapid strength development and low initial viscosity make **Pavemend 15.0™** an ideal product solution for most *pre-cast grouting applications*.

RECOMMENDED USES: **Pavemend 15.0™** is an ideal repair material for roads and bridges, airport runways, warehouse or manufacturing facility floors, post-tension cable repairs and form and pour projects.

2 Additional Physical Properties

UNIT WEIGHT (NEAT)

115 lb/ft³ (1842 kg/m³)

SETTING TIME

Set Times at 72°F/22°C at 1" (2.54 cm) material depth

Initial set: 7 - 9 minutes

Final set: 12 - 15 minutes

VOLUME YIELD

0.42 ft³ (0.012 m³) per 45 lb. (20.4 kg) unit

0.12 ft³ (0.003 m³) per 11 lb (4.99 kg) unit

3 Specifications

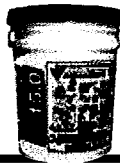
Results provided by licensed engineering test laboratory and represent typical results from production materials. Actual results may vary from third party testing results; however, CERATECH's materials meet and/or exceed established internal quality control standards, (available upon request) . All samples were air cured.

Property	Results (2" cubes)	Test Method
Compressive Strengths, psi (MPa)		
2 hour	2700 (18.6)	ASTM C 109
3 hours	3870 (26.7)	ASTM C 109
1 day - 24 hours	4230 (29.2)	ASTM C 109
7 days	5570 (38.4)	ASTM C 109
28 days	6300 (43.4)	ASTM C 109
Flexural Strength, psi (MPa)		
7 days	680 (4.7)	ASTM C 78
28 days	910 (6.3)	ASTM C 78
Splitting Tensile Strength, psi (MPa)		
7 days	240 (1.7)	ASTM C 496
28 days	345 (2.4)	ASTM C 496
Bond Strength, psi (MPa)		
1 day - 24 hours	1100 (7.6)	ASTM C 882
7 days	2000 (13.8)	ASTM C 882
Scaling Resistance, lbs/ft² (kg/m²)		
25 cycles	0	ASTM C 672
Modulus of Elasticity, msi (GPa)		
28 days	3.3 (23.0)	ASTM C 469
Coefficient of Thermal Expansion, (millionth) in/in/°F		
28 days	2.82	AASHTO TP 60
Length Change, % of total length		
28 days soak / 28 days dry	0.0085 / -0.0595	ASTM C 157

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Self Leveling
RAPID REPAIR MORTAR



Updated 6.8.10

4 Site Preparation

Surfaces should be prepared in accordance with ICRI 03730, "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion." and / or ACI 546R-96 "Concrete Repair Guide". Concrete surfaces should be prepared by appropriate mechanical methods to obtain an exposed aggregate surface with a minimum surface profile of +/- 1/16" (1.5 mm) in accordance with ICRI 03732. Pre-existing coatings or surface treatments should be completely removed. Dry, clean, stable surfaces are required. Remove all standing water. Reinforcing steel should have no loose scale. **Surfaces of host concrete must be damp.**

5 Mixing Instructions

Standard NEAT Procedures (Bucket Mixing with Drill & Paddle) Pavement 15.0™ cannot be extended

- Loosen material by tumbling bucket & dry mixing *before* adding water.
- To ensure product performance, **DO NOT divide or separate individual units into smaller portions. MIX ENTIRE CONTENTS AT ONE TIME.**
- A drill (6 amp minimum) with a mixer blade turning at least 500 to 800 rpm is required. Drills with speeds greater than 800 RPMs may entrain air in the mix.
- **DO NOT HAND MIX**
- To begin the mixing process, add the proper amount of water:

For Each	Add
45 lb (20.4 kg) 5 gallon (18.9 L) bucket or	1 U.S. gallon (3.8 of water)
45lb (20.4 kg) bag	
11lb (4.99 kg) 2 gallon (7.6 L) bucket	1 U.S. quart (.95 L) of water

- Ideal water temperature is between 65°F/18°C and 75°F/24°C.
- **After adding the water, it is very important to rapidly incorporate all of the dry Pavement 15.0™ powders into water to achieve a uniform wet mixture within the first 30 seconds of mixing.**
- In ambient temperatures under 72°F/22°C, CERATECH highly recommends the use of a thermal gun or temperature probe to verify that a **Critical Mix Temperature of 95°F/35°C has been reached.** Place material into repair area when this temperature has been achieved.
- In ambient temperatures over 72°F/22°C and without using a thermal measuring gun or temperature probe, mix material for 6 minutes in ambient temperatures of 72°F/22°C to 80°F/27°C, mix for 4 1/2 minutes in ambient temperatures of 80°F/27°C to 90°F/32°C, mix for 4 minutes in ambient temperatures above 90°F/32°C and place.

Standard NEAT Procedures (Grout Mixer) Pavement 15.0™ cannot be extended

- With grout mixer turning, **add 1 gallon of water for each 45 lb. 5 gallon unit of Pavement 15.0™**
- Add in **Pavement 15.0™** (brush all extraneous material into slurry mix)
- In ambient temperatures under 72°F/22°C, CERATECH highly recommends the use of a thermal gun or temperature probe to verify that a **Critical Mix Temperature of 95°F/35°C has been reached.** Place material into repair area when this temperature has been achieved.
- In ambient temperatures over 72°F/22°C and without using a thermal measuring gun or temperature probe, mix material for 6 minutes in ambient temperatures of 72°F/22°C to 80°F/27°C, mix for 4 1/2 minutes in ambient temperatures of 80°F/27°C to 90°F/32°C, mix for 4 minutes in ambient temperatures above 90°F/32°C and place.

Mixing Notes: Pavement 15.0™ undergoes an exothermic chemical reaction during blending. Heat, the by-product of the reaction, is the best indication that the reaction is complete and that the product is ready to be poured. **Pavement 15.0™ has a Critical Mix Temperature of 95°F/35°C which MUST BE REACHED before pouring to obtain optimum performance.** (In cold weather, it may be impossible to reach the Critical Mix Temperature, therefore a 40°F/22°C rise in material temperature is mandatory to ensure that the necessary chemical reactions have taken place to deliver the desired performance characteristics); Mixing time to reach the **Critical Mix Temperature** will vary with ambient air and mix water temperatures, however, **never mix Pavement 15.0™ for less than 2.5 minutes** It is recommended that a thermal gun or temperature probe be used to ensure that the **Critical Mix Temperature** has been achieved.

6 Packaging & Shelf Life

PACKAGING

45 lb (20.4 kg) 5 gallon (18.9 L) bucket
11lb (4.99 kg) 2 gallon (7.6 L) bucket

SHELF LIFE

Buckets - 3 years (when stored in original unopened bucket)

STORAGE

Buckets are environmentally sealed and require no special storage requirements

7 Limitations

- Not recommended for surface temperatures above 120°F/49°C or below 30°F/-1°C.
- Will not bond to polymers.
- Cannot be pumped.
- Can be mixed with drill and paddle or in a grout mixer (care should be taken to wash out grout mixer before material hardens (7-10 minutes), **DO NOT MIX IN A ROTATING DRUM CONCRETE MIXER.**

8 Application & Finish

- Working times are influenced by surface temperature and repair profile. **Working time can be extended by adding CERATECH's Set Retarder Admixture to mix water. (See Set Retardant product data sheet for more information)**
- Minimum NEAT profile thickness is 0.06" (1.5mm). There are no restrictions to the depth of the repair profile.
- For best results, CERATECH recommends monolithic placement of repair materials. Maintain a minimum thickness of 1.00 inch if repair material must be layered.
- Upon initial set, a broom finish can be applied. Upon final set, the material can be saw-cut, drilled, sanded and/or polished.
- Do not re-temper. The addition of water to the surface of the repair will negatively affect the materials final properties.
- **General loading in 2.0 hours for wheeled traffic and 60 minutes for foot traffic.** For applications 0.5" thick and greater, in ambient and/or surface temperatures below 50°F/10°C, extend the loading time by 30 minutes for each 10° below 50°F/10°C. For applications 1.00" thick and greater, in ambient and/or surface temperatures below 40°F/4°C extend the loading time by 30 minutes for each 10° below 40°F/4°C.
- **All previously existing joints must be re-established within 1-3 hours of final set.**
- **Self-curing**
- Clean all tools and equipment with water prior to the material reaching final set.

pavement
15.0 Self Leveling
RAPID REPAIR MORTAR



Updated 6.8.10

8 Safety

- See **Material Safety Data Sheet (MSDS)**.
- This document does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.
- Dispose of water and materials in accordance with Federal, State and Local regulations.
- The use of a dust mask, safety goggles and gloves is recommended.
- Keep out of the reach of children.

Attention! To Ensure Performance **Read All pavement Mixing Instructions Prior To Using!**

Drill & Paddle Mixing Instructions

Repair Area Must Be Clean & Mechanically Sound

1 Attach Mixing Paddle to Drill
Heavy Duty Drill (Min. 500 rpm) (Max. 800 rpm)
**Use this style paddle only!*

2 Tumble *pavement* Bucket Several Times Prior To Opening To Break Up & Loosen Material

3 Loosen Dry Powder with Drill Paddle.
For best results, mix water temperatures should be between 65°F/18°C & 75°F/24°C

4 Add Specified Amount of Water and Mix Immediately

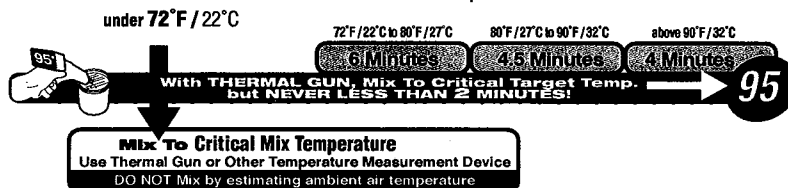
5 Mix To Critical Mix Temp.
Use Thermal Measuring Gun To Verify Mix Temp.
Without A Thermal Gun Match Ambient Temp To Mix Time (See Chart Below)

6 Mix until Critical Mix Temperature is reached BUT NEVER LESS THAN 4 minutes

7 Place *pavement* when Critical Mix Temperature is reached.
DO NOT Finish with Water

8 Promptly Rinse All Tools Before *pavement* Hardens On Tools

pavement Generates Heat Through a Chemical Reaction. Optimum Performance is Dependent Upon Reaching Critical Mix Temperature



CERATECH Inc. Highly Recommends Use Of Thermal Measuring Gun To Optimize Material Performance

WARRANTY:

CERATECH, Inc. ("CERATECH") warrants that its products are free from defects in materials and workmanship. If any CERATECH product fails to conform to this warranty, CERATECH will replace the product at no cost to the buyer or refund the purchase price, at CERATECH's election. Any warranty claim must be made within one (1) year from the date of the shipment of the product to the buyer. In no event shall CERATECH be liable to the buyer for any consequential or incidental damages of any nature. CERATECH MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, WRITTEN OR ORAL AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF ITS PRODUCTS AND EXCLUDES THE SAME. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

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Vertical, Overhead & Precast
 REPAIR MORTAR



Updated 8.5.10

1 General Characteristics

Pavemend VR™ is a cementitious, rapid setting, *one step* vertical and overhead structural repair mortar with parging mortar consistency. It is a single component powder that is water activated. **Pavemend VR™** has 15 to 20 minutes of working time **plus an additional 10 to 15 minutes to shape and shave the repair to match the existing contours of the host concrete.** Pavemend VR™ will exceed **2,500 psi in 3 hours from final set** and 6,000 psi at 28 days. **Pavemend VR™ can be applied in a single lifts from 1/16" to over 4 inches without bonding agents or special application techniques and can be easily sculpted and shaved to match contours of host concrete.** Pavemend VR™ can be applied in ambient temperature ranges from 40 to 100 degrees Fahrenheit and **can be re-animated repeatedly to a gel state prior to final set without additional water for reduced material waste and ease of use.**

RECOMMENDED USES: Pavemend VR™ has been designed specifically for use in vertical and overhead applications such as spall repair and impact damage on beams, columns, pile and pile caps, tendon grouting, pressure bearing pre-cast pipe, curbs, steps, pre-stressed panels, tunnels, sewers, loading docks, silos, retaining walls, culverts, catch basins, decorative moldings, parapet walls, septic tanks, cold storage vaults and other pre-cast product repair applications.

2 Additional Physical Properties

UNIT WEIGHT (NEAT)
 115 lb/ft³ (1842 kg/m³)

SETTING TIME
 Set Times at 72°F/22°C at 1" (2.54 cm) material depth
 Initial set: 15 - 20 minutes
 Final set: 25 - 35 minutes

VOLUME YIELD
 0.14ft³ (0.004 m³) per 17 lb (7.7 kg) 2 gallon unit
 0.43ft³ (0.012 m³) per 51 lb (23 kg) 5 gallon unit

COVERAGE (Approximate / 2 gallon bucket)
 1/16" (1.5mm) 26.9 ft²
 1/8" (3.0 mm) 13.4 ft²
 1/4" (6.0 mm) 6.7 ft²
 1/2" (12.0 mm) 3.7 ft²
 3/4" (19 mm) 2.2 ft²

3 Specifications

Results provided by licensed engineering test laboratory and represent typical results from production materials. Actual results may vary from third party testing results; however, CERATECH's materials meet and/or exceed established internal quality control standards, (available upon request) . All samples were air cured.

Property	Results 2" cubes	Test Method
Compressive Strengths, psi (MPa)		
3 hours	2516 (17.4)	ASTM C 109
1 day - 24 hours	3136 (21.6)	ASTM C 109
7 days	4226 (29.1)	ASTM C 109
28 days	7606 (52.5)	ASTM C 109
Flexural Strength, psi (MPa)		
7 days	665 (4.6)	ASTM C 78
28 days	685 (4.7)	ASTM C 78
Splitting Tensile Strength, psi (MPa)		
28 days	380 (2.6)	ASTM C 496
Direct Tension Strength, psi (MPa)		
7 days	319 (2.2)	ASTM C 496
28 days	TBD	ASTM C 496
Bond Strength, psi (MPa)		
1 day - 24 hours	1590 (11.0)	ASTM C 882
7 days	1610 (11.0)	ASTM C 882
Scaling Resistance, lbs/ft² (kg/m²)		
25 cycles	0	ASTM C 672
Modulus of Elasticity, msi (GPa)		
28 days	3.17 (21.8)	ASTM C 469
Coefficient of Thermal Expansion, in/in/°F		
28 days	2.01	AASHTO TP 60
Length Change, % of total length		
28 days soak / 28 days dry	-0.001 / 0.001	ASTM C 157

TBD - To be determined



4 Site Preparation

Surfaces should be prepared in accordance with ICRI 03730, "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion." and / or ACI 546R-96 "Concrete Repair Guide". Concrete surfaces should be prepared by appropriate mechanical methods to obtain an exposed aggregate surface with a minimum surface profile of +/- 1/16" (1.5 mm) in accordance with ICRI 03732. Pre-existing coatings or surface treatments should be completely removed. Dry, clean, stable surfaces are required. Remove all standing water. Reinforcing steel should have no loose scale. **Surfaces of host concrete must be damp.**

5 Mixing Instructions

Standard NEAT Procedures (Bucket Mixing with Drill & Paddle)

- Loosen material by tumbling bucket & dry mixing *before* adding water.
- To ensure product performance, **DO NOT divide or separate individual units into smaller portions. MIX ENTIRE CONTENTS AT ONE TIME.**
- A drill (6 amp minimum) with a mixer blade turning at least 500 to 800 rpm is required. Drills with speeds greater than 800 RPMs may entrain air in the mix.
- **DO NOT HAND MIX**
- To begin the mixing process, add the proper amount of water:

For Each	Add
17lb (7.7 kg) - 2 gal. (7.6 L) bucket	1 U.S. quart (.95L) of water
51lb (23 kg) - 5 gal. (19.8 L) bucket	3 U.S. quarts (2.8L) of water

- The desired water temperature is between 65°F/18°C and 75°F/24°C.
- **After adding the water, it is very important to rapidly incorporate all of the dry Pavement VR™ powders to achieve a uniform wet mixture within the first 30 seconds of mixing.**
- In ambient temperatures under 72°F/22°C, CERATECH highly recommends the use of a thermal gun or temperature probe to verify that a **Critical Mix Temperature of 80°F/27°C has been reached.** Place material into repair area when this temperature has been achieved.
- In ambient temperatures over 72°F/22°C and without using a thermal measuring gun or temperature probe, mix material for 4 1/2 minutes in ambient temperatures of 72°F/22°C to 80°F/27°C, mix for 3 1/2 minutes in ambient temperatures of 80°F/27°C to 90°F/32°C, mix for 3 minutes in ambient temperatures above 90°F/32°C and place.

Mixing Notes:

1. Pavement VR™ undergoes an exothermic chemical reaction during blending. Heat, the by-product of the reaction, is the best indication that the reaction is complete and that the product is ready to be poured. **Pavement VR™ has a Critical Mix Temperature of 80°F/27°C which MUST BE REACHED before pouring to obtain optimum performance.** (In cold weather, it may be impossible to reach the Critical Mix Temperature, therefore a 20°F rise in material temperature is mandatory to ensure that the necessary chemical reactions have taken place to deliver the desired performance characteristics); Mixing time to reach the Critical Mix Temperature will vary with ambient air and mix water temperatures, however, **never mix Pavement VR™ for less than 3 minutes.** It is recommended that a thermal gun or temperature probe be used to ensure that the **Critical Mix Temperature** has been achieved.

2. Special Instructions for cold weather mixing: (Under 50°F)

- At temperatures of approximately 40°F, add a single unit of Pavement VR Cold Weather Accelerant directly to material within bucket before adding mix water. Mix for 5 minutes (If Pavement VR Cold Weather Accelerant is not available, mix material for approximately 10 minutes or achieve a 20°F rise in material temperature)
- At temperatures of approximately 50°F, add a single unit of Pavement VR Cold Weather Accelerant directly to material within bucket before adding mix water. Mix for 4 minutes (If Pavement VR Cold Weather Accelerant is not available, mix material for approximately 8 - 9 minutes or achieve a 20°F rise in material temperature)

6 Packaging & Shelf Life

PACKAGING

17 lb (7.7 kg) 2 gallon (7.6 L) bucket

SHELF LIFE

Buckets - 3 years (when stored in original unopened bucket)

STORAGE

Buckets are environmentally sealed and require no special storage requirements

7 Limitations

- Not recommended for surface temperatures above 120°F/49°C or below 40°F/10°C.
- Will not bond to polymers.
- Pumping not recommended.

8 Application & Finish

- Working times are influenced by surface temperature and repair profile. **Working time can be extended by adding CERATECH's Set Retarder Admixture to mix water. (See Set Retardant product data sheet for more information)**
- Minimum profile thickness is 0.06" (1.5mm).
- Maximum profile thickness is not limited. When placing profiles greater than 4.00" (10 cm) layering is required to minimize sag.
- Scrub coats can be utilized when the host concrete is excessively dry or when very thin cosmetic applications are desired.
- **All existing control joints must be honored and re-established if necessary 1 - 3 hours from final set.**
- Finish the repair to the desired texture and / or to match the surrounding concrete. **DO NOT use additional water during the finishing process.**
- **Self-curing**
- Clean all tools and equipment with water prior to the material reaching final set.



8 Safety

- See **Material Safety Data Sheet (MSDS)**.
- This document does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.
- Dispose of water and materials in accordance with Federal, State and Local regulations.
- The use of a dust mask, safety goggles and gloves is recommended.
- Keep out of the reach of children.

Attention!

To Ensure Performance **Read All *pavement* Mixing Instructions Prior To Using!**

Drill & Paddle Mixing Instructions

Repair Area Must Be Clean & Mechanically Sound

- 1 Attach Mixing Paddle to Drill**
Use this size paddle only!
Heavy Duty Drill
(Min. 500 rpm)
(Max. 800 rpm)
- 2 Tumble *pavement* Bucket Several Times Prior To Opening To Break Up & Loosen Material**
- 3 Loosen Dry Powder with Drill Paddle.**
For best results, mix water temperatures should be between 65°F/18°C & 75°F/24°C
- 4 Add 1 quart of water per 17 lb. unit or 3 quarts of water per 51 lb. unit of VR**
- 5 Mix To Critical Mix Temp.**
Use Thermal Measuring Gun To Verify Mix Temp.
Without A Thermal Gun Match Ambient Temp To Mix Time (See Chart Below)
- 6 Mix until Critical Mix Temperature is reached BUT NEVER LESS THAN 3 minutes**
- 7 Place *pavement* when Critical Mix Temperature is reached.**
(For thicker applications, allow material to slake / thicken to the desired consistency)
DO NOT Finish with Water
- 8 Promptly Rinse All Tools Before *pavement* Hardens On Tools.**

Within first 30 seconds, aggressively mix ALL material into water

When Utilizing Forms, A Bond Release Agent Must Be Used



*CERATECH Inc. Highly Recommends Use Of Thermal Measuring Gun To Optimize Material Performance

For temperatures less than or equal to 50°F, see Special Cold Weather Mixing Instructions on page 2 of 3

WARRANTY:

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GSA P/N: C600 5 Gallon Bucket
 GSA P/N: C650 51.8 lb. Bag

 ITEM NO: 15 & 16

Product Data Sheet



Updated 9.10.10

1 General Characteristics

SL® is a cementitious, rapid setting, *semi-leveling* versatile structural repair concrete. It is a single component powder that is water activated. **SL**® has 15 to 20 minutes of working time and will reach compressive strengths of 2,000 psi within one and a half hours and more than 8,500 psi at 28 days. Designed for use in horizontal and near horizontal repair applications, **SL**® can be applied in ambient temperature ranges from 40 to 110 degrees Fahrenheit.

RECOMMENDED USES: **SL**® is an ideal rapid repair material for roads and bridges, airport runways, warehouse or manufacturing facility floors, post-tension cable repairs and form and pour projects.

2 Additional Physical Properties

UNIT WEIGHT (With water, sand & aggregate)

138 lb/ft³

SETTING TIME

Set Times at 72°F/22°C at 1" (2.54 cm) material depth

Initial set: 15 - 20 minutes

Final set: 25 - 35 minutes

VOLUME YIELD

0.38 ft³ (0.010 m³) per 51.8 lb. (23.2 kg) unit

3 Specifications

Results provided by licensed engineering test laboratory and represent typical results from production materials. Actual results may vary from third party testing results; however, CERATECH's materials meet and/or exceed established internal quality control standards, (available upon request) . All samples were air cured.

Property	As Packaged 4 in. x 8 in. cylinders	Test Method
Compressive Strengths, psi (MPa)		
1.5 hour	2,000 (13.7)	ASTM C 39
2 hours	3,090 (21.3)	ASTM C 39
1 day - 24 hours	6,040 (41.7)	ASTM C 39
7 days	7,900 (54.5)	ASTM C 39
28 days	9,300 (64.1)	ASTM C 39
Flexural Strength, psi (MPa)		
1 day- 24 hours	1,170 (8.1)	ASTM C 78
7 days	1,220 (8.4)	ASTM C 78
28 days	1,270 (8.8)	ASTM C 78
Splitting Tensile Strength, psi (MPa)		
28 days	515	ASTM C 496
Bond Strength, psi (MPa)		
1 day- 24 hours	2,265 (15.6)	ASTM C 882
7 days	3,010 (20.8)	ASTM C 882
28 days	4,380 (30.2)	ASTM C 882
Rapid Freeze Thaw Resistance (Durability Factor - Retained percentage of Dynamic Modulus)		
300 cycles	100%	ASTM C 672
Scaling Resistance, lbs/ft² (kg/m²)		
50 cycles	0	ASTM C 672
Modulus of Elasticity, msi (GPa)		
28 days	4.02	ASTM C 469
Coefficient of Thermal Expansion, in/in/°F		
28 days	1.43	AASHTO TP 60
Length Change, % of total length		
28 days soak / 28 days dry	-0.024 / -0.042	ASTM C 157

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**Semi-Leveling
RAPID REPAIR CONCRETE**



Updated 9.10.10

4 Site Preparation

Surfaces should be prepared in accordance with ICRI 03730, "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion." and / or ACI 546R-96 "Concrete Repair Guide". Concrete surfaces should be prepared by appropriate mechanical methods to obtain an exposed aggregate surface with a minimum surface profile of +/- 1/16" (1.5 mm) in accordance with ICRI 03732. Pre-existing coatings or surface treatments should be completely removed. Dry, clean, stable surfaces are required. Remove all standing water. Reinforcing steel should have no loose scale. **Surfaces of host concrete must be damp.**

5 Mixing Instructions

Standard Mixing Procedures (Bucket Mixing with Drill & Paddle)

- Loosen material by tumbling bucket & dry mixing *before* adding water.
- To ensure product performance, **DO NOT divide or separate individual units into smaller portions. MIX ENTIRE CONTENTS AT ONE TIME.**
- A drill (6 amp minimum) with a mixer blade turning at least 500 to 800 rpm is required. Drills with speeds greater than 800 RPMs may entrain air in the mix.
- **DO NOT HAND MIX**
- To begin the mixing process, add the proper amount of water:

For Each:	Add:
51 lb (23.2 kg) 5 gallon (18.9 L) bucket or bag	2 U.S. quarts (1.9 L) of water

- For application temps near 72°F/22°C, the ideal water temperature is between 65°F/18°C and 75°F/24°C.
- **After adding the water, it is very important to rapidly incorporate all of the dry SL® powders into water to achieve a uniform wet mixture within the first 30 seconds of mixing. Mix for 3 1/2 to 4 minutes**

Standard Mixing Procedures for: Rotating Drum Concrete Mixer or Mortar Mixer

- Pre-wet cement mixer with water then drain all water from mixer (away from repair area)
- **Start mixer - SL® requires a total of 2 quarts of water per 51 lb. unit. Initially, add 50% of total mix water to concrete mixer**
- Add pre-determined units of SL®
- Add in remaining mix water
- Mix for 5 minutes total
- Pour all contents into repair area
- Clean mixer or repeat process for next batch

NOTES:

1. In ambient temperatures, < 50°F / 10°C, use warm water from 70°F/22°C to 85°F/29°C
2. In ambient temperatures > 85°F/ 29°C, use cooler water from 50°F/ 10°C to 60°F/16°C
3. Working times will vary when mix water temperature's are outside of these recommendations
4. **Minimum recommended batch size is 2 units (Use 4 quarts of water for 2 bag batches)**

6 Packaging & Shelf Life

PACKAGING

- 51.8 lb (23.2 kg) 5 gallon (18.9 L) bucket
- 51.8 lb (23.2 kg) bag

SHELF LIFE

- Buckets - 3 years (when stored in original unopened bucket)
- Bags - 1 year

STORAGE

- Buckets are environmentally sealed and require no special storage requirements

7 Limitations

- Not recommended for surface temperatures above 110°F/43°C or below 40°F/10°C.
(Contact CERATECH Tech support for temperatures below 50°F)
- Cannot be pumped.
- Can be mixed with drill and paddle, rotating drum concrete mixer or mortar mixer.

8 Application & Finish

- **Surfaces of host concrete must be damp with no standing water.**
- Working times are influenced by surface temperature and repair profile. **Working time can be extended by adding CERATECH's Set Retarder Admixture to mix water. (See Set Retardant product data sheet for more information)**
- Minimum profile thickness is 0.38" (0.9 cm) as packaged. There are no restrictions to the depth of the repair profile.
- For best results, CERATECH recommends monolithic placement of repair materials. Maintain a minimum thickness of 1.00 inch if repair material must be layered. Subsequent placements must be placed before final set of underlying layer has been reached.
- Upon initial set, a broom finish can be applied. Upon final set, the material can be saw-cut, drilled, sanded and/or polished
- Do not re-temper. The addition of water to the surface of the repair will negatively affect the materials final properties.
- **General loading in 1.5 hours for wheeled traffic and 45 minutes for foot traffic after addition of water @70°F ! Add 30 minutes for every 10°F drop in temperature. Contact CERATECH Field Engineering for Cold Weather Applications (50°F / 10°C and below)**
- **All previously existing joints must be re-established within 2-3 hours of final set.**
- Clean all tools and equipment with water prior to the material reaching final set.



**Semi-Leveling
RAPID REPAIR CONCRETE**



Updated 9.10.10

8 Safety

- See **Material Safety Data Sheet (MSDS)**.
- This document does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.
- Dispose of water and materials in accordance with Federal, State and Local regulations.
- The use of a dust mask, safety goggles and gloves is recommended.
- Keep out of the reach of children.

To Ensure Performance **Read All Mixing Instructions**
Attention! **Prior To Using!**

Drill & Paddle Mixing Instructions **Repair Area Must Be Clean & Mechanically Sound**

- 1 Attach Mixing Paddle to Drill**
Heavy Duty Drill (Min. 500 rpm) (Max. 800 rpm)
- 2 Tumble SL Bag or Bucket Several Times Prior To Opening To Break Up & Loosen Material**
- 3 Loosen Dry Powder with Drill Paddle.**
For best results, mix water temperatures should be between 65°F/18°C & 75°F/24°C
- 4 Add 2 quarts of water to 5 gallon bucket**
Within first 30 seconds, aggressively mix ALL material into water
- 5 Mix for 3 1/2 - 4 minutes with drill and paddle**
- 6 Place SL after mixing for specified time**
DO NOT Finish with Water
- 7 Promptly Rinse All Tools Before Powerwash Hardens On Tools**
When Utilizing Forms, A Bond Release Agent Must Be Used

For Optimum Material Performance, Lower Mix Drum Angle As Low As Possible Without Material Spilling Out.



Rotating Drum Portable Concrete Mixer A Minimum Two Bag Batch Is Recommended

- Step 1**
Pre-wet mixer with water.
Humedézame previamente con agua la mezcladora.
- Step 2**
Drain rinse water away from area to be repaired as shown and start mixer.
Vacié el agua de enjuague lejos de la zona que se va a reparar, como se muestra, y encienda la mezcladora.
- Step 3**
SL™ requires 2 quarts of water total per 51 pound bag. Initially, add only 1 quart of water for each unit of SL™ to be mixed.
SL™ requiere un total de 2 cuartos de galón de agua por cada bolsa de 51 libras. Al principio, agregue sólo 1 cuarto de galón de agua por cada unidad de SL™ que se va a mezclar.
- Step 4**
With mixer turning, add pre-determined units of SL™.
Con la mezcladora en funcionamiento, agregue unidades predeterminadas de S011™. Mezcle durante un minuto.
- Step 5**
Add in remaining 1 quart of water per bag of SL™.
+Agregue 1 cuarto de galón de agua restante por unidad de SL™
- Step 6**
Mix for at least 8 minutes and place.
Scrub and finish. **DO NOT RE-TEMPER WITH WATER.**
Mezcle durante 8 minutos más y coloque. Para la regla y acabe. **NO RECALIENTE A TEMPERATURA AGUA.**
- Step 7**
Clean mixer or add water for next batch.
Limpie la mezcladora o agregue agua para el próximo lote.

Mix water temps should be between 60°F/16°C - 70°F/21°C.
La temperatura para la mezcla debe estar entre 60°F/16°C y 70°F/21°C.

In ambient temperatures less than 50°F/10°C, use warm water from 70°F/22°C to 90°F/32°C.
En temperaturas ambiente inferiores a 50°F/10°C, use agua tibia de entre 70°F/22°C y 90°F/32°C.

In ambient temperatures greater than 85°F/29°C, use cool water from 50°F/10°C to 70°F/22°C.
En temperaturas ambiente superiores a 85°F/29°C, use agua fría de entre 50°F/10°C y 70°F/22°C.

SL™ is a water to binder sensitive cement. NEVER use less than 2 quarts of water nor MORE THAN 2 1/4 quarts of water per 51 pound unit of SL™.
SL™ es un cemento sensible a la proporción entre agua y aglomerante. NUNCA utilice menos de 2 cuartos de galón de agua ni MÁS DE 2 1/4 cuartos de galón de agua por cada unidad de 51 libras.

WARRANTY:

CERATECH, Inc. ("CERATECH") warrants that its products are free from defects in materials and workmanship. If any CERATECH product fails to conform to this warranty, CERATECH will replace the product at no cost to the buyer or refund the purchase price, at CERATECH's election. Any warranty claim must be made within one (1) year from the date of the shipment of the product to the buyer. In no event shall CERATECH be liable to the buyer for any consequential or incidental damages of any nature. CERATECH MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, WRITTEN OR ORAL AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF ITS PRODUCTS AND EXCLUDES THE SAME. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

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Pre-extended,
**RAPID
REPAIR CONCRETE**



ITEM NO: 17

Updated 6.8.10

1 General Characteristics

D.O.T.Line™ is an extremely versatile, cementitious, rapid setting, semi-leveling structural repair concrete. It is a single component powder that is water activated. **D.O.T.Line™** has 25 minutes of working time and will reach compressive strengths of more than 2,500 psi within 2 hours from the addition of water. **D.O.T.Line™** can be applied in ambient temperature ranges from 50 to 120 degrees Fahrenheit.

D.O.T.Line™ finishes like traditional Portland based concrete and cleans up easily with water. **D.O.T.Line™** rapid repair concrete offers high performance and ease of use in a cost effective, turn-key, pre-extended package.

RECOMMENDED USES: **D.O.T.Line™** has been designed for horizontal applications providing for cost effective structural repair of roads and bridges.

2 Additional Physical Properties

UNIT WEIGHT (with water, sand & aggregate)

152 lb/ft³ (2434 kg/m³)

SETTING TIME

Set Times at 72°F/22°C at 2" (5 cm) material depth

Initial set: 20 - 25 minutes

Final set: 30 - 40 minutes

VOLUME YIELD (#8 - 3/8" fractured stone- Included)

0.40ft³ (.011m³)

3 Specifications

Results provided by licensed engineering test laboratory and represent typical results from production materials. Actual results may vary from third party testing results; however, CERATECH's materials meet and/or exceed established internal quality control standards, (available upon request) . All samples were air cured.

Property	As Packaged 4 in. x 8 in. cylinders	Test Method
Compressive Strengths, psi (MPa)		
2 hours	2820 (19.4)	ASTM C 39
1 day - 24 hours	6115 (42.2)	ASTM C 39
7 days	9345 (64.4)	ASTM C 39
28 days	10,510 (72.5)	ASTM C 39
Flexural Strength, psi (MPa)		
1 day - 24 hours	690 (4.8)	ASTM C 78
7 days	945 (6.5)	ASTM C 78
28 days	1405 (9.7)	ASTM C 78
Splitting Tensile Strength, psi (MPa)		
28 days	590 (4.0)	ASTM C 496
Bond Strength, psi (MPa)		
1 day - 24 hours	1960 (13.6)	ASTM C 882
7 days	2745 (18.9)	ASTM C 882
Rapid Freeze Thaw Resistance (Durability Factor - Retained percentage of Dynamic Modulus)		
300 cycles	100%	ASTM C 666A
Scaling Resistance, lbs/ft² (kg/m²)		
50 cycles	0	ASTM C 672
Modulus of Elasticity, msi (GPa)		
28 days	5.2 (35.1)	ASTM C 469
Coefficient of Thermal Expansion, in/in/°F		
28 days	1.32	AASHTO TP 60
Length Change, % of total length		
28 days soak / 28 days dry	-0.052 / -0.041	ASTM C 157



Pre-extended, Packaged
**RAPID
REPAIR CONCRETE**



Updated 6.8.10

4 Site Preparation

Surfaces should be prepared in accordance with ICRI 03730, "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion." and / or ACI 546R-96 "Concrete Repair Guide". Concrete surfaces should be prepared by appropriate mechanical methods to obtain an exposed aggregate surface with a minimum surface profile of +/- 1/16" (1.5 mm) in accordance with ICRI 03732. Pre-existing coatings or surface treatments should be completely removed. Dry, clean, stable surfaces are required. Remove all standing water. Reinforcing steel should have no loose scale. **Surfaces of host concrete must be damp.**

5 Mixing Instructions

Standard Mixing Procedures (Rotating Drum Concrete Mixer)

- Pre-wet cement mixer with water then drain all water from mixer (away from repair area)
- Start mixer - **D.O.T.Line™** requires a total of 2 quarts of water per 53.5 lb. unit. Initially, add only 1 quart of water to concrete mixer per 53.5 lb unit of **D.O.T.Line™** to be used.
- Add pre-determined units of **D.O.T.Line™**, mix for 1 minute
- Add in remaining quart of water per unit of **D.O.T.Line™**
- Mix for 6 additional minutes or 7 minutes total
- Pour all contents into repair area
- Clean mixer or repeat process for next batch

! D.O.T.Line™ is a water to binder sensitive cement. NEVER use less than 2 quarts of water nor MORE THAN 2 1/8 quarts of water per 53.5 lb. unit of **D.O.T.Line™**)

NOTES:

1. In ambient temperatures, < 50°F / 10°C, use warm water from 70°F/22°C to 90°F/32°C
2. In ambient temperatures > 85°F/ 29°C, use cooler water from 50°F/ 10°C to 60°F/16°C
3. Working times will vary when mix water temperature's are outside of these recommendations
4. Minimum recommended batch size is 2 units (Use 4 quarts of water for 2 bag batches)

6 Packaging & Shelf Life

PACKAGING

53.5lb (24.3 kg) Bag

SHELF LIFE

1 year

STORAGE

Bags must be kept dry

7 Limitations

- Not recommended for surface temperatures above 120°F/49°C or below 50°F/10°C.
(Contact CERATECH Tech Support for temperatures below 50°F)
- Pumping not recommended.

8 Application & Finish

- **Surfaces of host concrete must be damp with no standing water.**
- Working times based on ambient temperature, types of aggregate and total amount of water. Working times are influenced by surface temperature and repair profile. **Working time can be extended by adding CERATECH's Set Retarder Admixture to mix water. (See Set Retardant product data sheet for more information)**
- Minimum profile thickness is 1.25" (3.2 cm). There are no restrictions to the depth of the repair profile.
- For best results, CERATECH recommends monolithic placement of repair materials. Maintain a minimum thickness of 1.00 inch if repair material must be layered. Material must also be layered before final set has been reached.
- Upon initial set, a broom finish can be applied. Upon final set, the material can be saw-cut, drilled, sanded and/or polished
- Do not re-temper. The addition of water to the surface of the repair will negatively affect the materials final properties.
- **General loading in 2 hours for wheeled traffic and 1 hour for foot traffic after addition of water.** In ambient and/or surface temperatures below 32°F/0°C, extend the loading time by 60 minutes for each 10° below 32°F/0°C.
- **All previously existing joints must be re-established within 2-3 hours of final set.**
- Self-curing, (Protect with blankets or equivalent in ambient temperatures below freezing (32°F / 0°F).
- Clean all tools and equipment with water prior to the material reaching final set.



Pre-extended, Packaged
**RAPID
REPAIR CONCRETE**



Updated 6.8.10

8 Safety

- See **Material Safety Data Sheet (MSDS)**.
- This document does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.
- Dispose of water and materials in accordance with Federal, State and Local regulations.
- The use of a dust mask, safety goggles and gloves is recommended.
- Keep out of the reach of children.

For Optimum Material Performance, Lower Mix Drum Angle As Low As Possible Without Material Spilling Out.



To Ensure Performance **Attention!**

Read All **DOTline™**
RAPID REPAIR CONCRETE
**Mixing Instructions
Prior To Using!**

Step by Step - Concrete Mixer & Placement Instructions
! A Minimum 2 bag batch is recommended

Repair Area Must Be Clean & Mechanically Sound

! Surfaces of host concrete must be damp



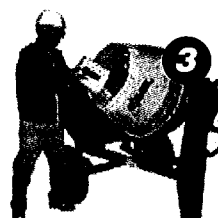
1 Pre-wet mixer with water then drain as shown



2 DO NOT drain into repair site!



3 Start mixer turning



* Use 4 Quarts of water for 2 bag batches

DOTline™ requires 2 quarts of water total per 53.5 lb. bag unit. Initially, add only 1 quart of water for each unit of **DOTline™** to be mixed

* Mix water temps should be between 60°F/16°C - 70°F/21°C

* In ambient temperatures less than 50°F/10°C, use warm water from 70°F/22°C to 90°F/32°C

* In ambient temperatures greater than 85°F/29°C, use cool water from 50°F/10°C to 70°F/22°C



4 With mixer still turning, add pre-determined units of **DOTline™**. Mix for 1 minute. Add in remaining 1 quart of water per each unit of **DOTline™** used.



5 Mix for 6 additional minutes (7 minutes total) and place. Pour **DOTline™** into repair site. Screenshot and finish. DO NOT RE-TEMPER.



6 Clean mixer or add water for next batch

! D.O.T.Line™ is a water to binder sensitive cement. NEVER use less than 2 quarts of water nor MORE THAN 2 1/8 quarts of water per 53.5 lb. unit of DOTline™.)

! A Bond release agent should be utilized on any forms should they be used

V1

WARRANTY:

CERATECH, Inc. ("CERATECH") warrants that its products are free from defects in materials and workmanship. If any CERATECH product fails to conform to this warranty, CERATECH will replace the product at no cost to the buyer or refund the purchase price, at CERATECH's election. Any warranty claim must be made within one (1) year from the date of the shipment of the product to the buyer. In no event shall CERATECH be liable to the buyer for any consequential or incidental damages of any nature. CERATECH MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, WRITTEN OR ORAL AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF ITS PRODUCTS AND EXCLUDES THE SAME. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

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Granite extended,
Packaged
**RAPID
REPAIR CONCRETE**



ITEM NO: 18

Updated 6.8.10

1 General Characteristics

Mainline™ is an extremely versatile, cementitious, rapid setting, semi-leveling structural repair concrete. It is a single component powder that is water activated. **Mainline™** has 20 - 45 minutes of working time and will reach compressive strengths of more than 2,500 psi within 4 hours from the addition of water. **Mainline™** can be applied in ambient temperature ranges from 50 to 120 degrees Fahrenheit.

Mainline™ finishes like traditional Portland based concrete and cleans up easily with water. **Mainline™** rapid repair concrete offers all of the performance and ease of use characteristics associated with CERATECH's **Pavement™** High Performance Repair Products, in a low cost, turn-key, aggregate extended package.

RECOMMENDED USES: **Mainline™** has been designed for horizontal applications providing for **low cost structural repair** of building restoration/balcony projects, loading dock ramps, parking garages, and form and pour projects.

2 Additional Physical Properties

UNIT WEIGHT (with water, sand & aggregate)

152 lb/ft³ (2434 kg/m³)

SETTING TIME

Set Times at 72°F/22°C at 2" (5 cm) material depth

Initial set: 30 - 35 minutes

Final set: 45 - 60 minutes

VOLUME YIELD (#8 - 3/8" fractured stone- Included)

Concrete (binder + sand + coarse agg. + H₂O) =
0.40ft³ (.011m³)

3 Specifications

Results provided by licensed engineering test laboratory and represent typical results from production materials. Actual results may vary from third party testing results; however, CERATECH's materials meet and/or exceed established internal quality control standards, (available upon request). All samples were air cured.

Property	As Packaged 4 in. x 8 in. cylinders	Test Method
Compressive Strengths, psi (MPa)		
4 hours	3010 (20.8)	ASTM C 39
24 hours	4905 (33.8)	ASTM C 39
7 days	7415 (51.1)	ASTM C 39
28 days	9730 (67.1)	ASTM C 39
Flexural Strength, psi (MPa)		
24 hours	490 (3.4)	ASTM C 78
7 days	1030 (7.1)	ASTM C 78
28 days	1105 (7.6)	ASTM C 78
Splitting Tensile Strength, psi (MPa)		
28 days	590 (4.0)	ASTM C 496
Bond Strength, psi (MPa)		
24 hours	2503 (17.6)	ASTM C 882
7 days	3056 (21.0)	ASTM C 882
Rapid Freeze Thaw Resistance (Durability Factor - Retained percentage of Dynamic Modulus)		
300 cycles	100%	ASTM C 666A
Scaling Resistance, lbs/ft² (kg/m²)		
50 cycles	0	ASTM C 672
Modulus of Elasticity, msi (GPa)		
28 days	4.7 (31.8)	ASTM C 469
Coefficient of Thermal Expansion, in/in/°F		
28 days	1.37	AASHTO TP 60
Length Change, % of total length		
28 days soak / 28 days dry	-0.052 / -0.057	ASTM C 157

V1

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Granite extended,
Packaged
**RAPID
REPAIR CONCRETE**



Updated 6.8.10

4 Site Preparation

Surfaces should be prepared in accordance with ICRI 03730, "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion." and / or ACI 546R-96 "Concrete Repair Guide". Concrete surfaces should be prepared by appropriate mechanical methods to obtain an exposed aggregate surface with a minimum surface profile of +/- 1/16" (1.5 mm) in accordance with ICRI 03732. Pre-existing coatings or surface treatments should be completely removed. Dry, clean, stable surfaces are required. Remove all standing water. Reinforcing steel should have no loose scale. **Surfaces of host concrete must be damp.**

5 Mixing Instructions

Standard Mixing Procedures (Rotating Drum Concrete Mixer)

- Pre-wet cement mixer with water then drain all water from mixer (away from repair area)
- Start mixer - Add Water - **Mainline™** requires a total of 2 quarts of water per 53.5 lb.unit. Initially, add-in only 1 quart of water. (**Mainline™** is a water to binder sensitive cement. NEVER use less than 2 quarts of water nor MORE THAN 2 1/8 quarts of water per 53.5 lb. unit of **Mainline™**.)
- Add pre-determined units of **Mainline™** Mix for 1 minute
- Add - in remaining quart of water per 53.5 lb. unit of **Mainline™**
- Mix for 6 additional minutes or 7 minutes total
- Pour all contents into repair area
- Clean mixer or repeat process for next batch

NOTES:

1. In ambient temperatures, < 50°F / 10°C, use warm water between 70°F/22°C and 90°F/32°C
2. In ambient temperatures > 85°F/ 29°C, use cooler water between 50°F/ 10°C and 70°F/22°C
3. Working times will vary when mix water temperature's are outside of these recommendations
4. Minimum recommended batch size is 2 units (Use 4 quarts of water for 2 bag batches)

6 Packaging & Shelf Life

PACKAGING

53.5lb (24.3 kg) Bag

SHELF LIFE

1 year

STORAGE

Bags must be kept dry

7 Limitations

- Not recommended for temperatures below 50°F/10°C and above 120°F/49°C. (Contact CERATECH Tech Support For applications below 50°F)
- Pumping not recommended.

8 Application & Finish

- **Surfaces of host concrete must be damp (SSD) with no standing water.**
- Working times are influenced by surface temperature and repair profile. **Working time can be extended by adding CERATECH's Set Retarder Admixture to mix water. (See Set Retardant product data sheet for more information)**
- **Minimum profile thickness is 1.25"** (3.2 cm). There are no restrictions to the depth of the repair profile.
- For best results, CERATECH recommends monolithic placement of repair materials. Maintain a minimum thickness of 1.00 inch if repair material must be layered. Material must also be layered before final set has been reached.
- Upon initial set, a broom finish can be applied. Upon final set, the material can be saw-cut, drilled, sanded and/or polished
- Do not re-temper. The addition of water to the surface of the repair will negatively affect the materials final properties.
- **General loading in 4 hours for wheeled traffic and 2 hours for foot traffic after addition of water.**
- **All previously existing joints must be re-established within 4 hours of final set.**
- **Self-curing**, (Protect with blankets or equivalent in ambient temperatures below freezing (32°F / 0°F).
- Clean all tools and equipment with water prior





Granite extended,
Packaged
**RAPID
REPAIR CONCRETE**



Updated 6.8.10

8 Safety

- See **Material Safety Data Sheet (MSDS)**.
- This document does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.
- Dispose of water and materials in accordance with Federal, State and Local regulations.
- The use of a dust mask, safety goggles and gloves is recommended.
- Keep out of the reach of children.

To Ensure Performance **Attention!**

**Read All
Mixing Instructions
Prior To Using!**

Step by Step - Concrete Mixer & Placement Instructions

**Repair Area Must Be
Clean & Mechanically
Sound**

! A Minimum 2 bag batch is recommended ! Surfaces of host concrete must be damp



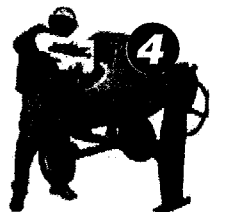
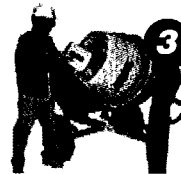
1
Pre-wet mixer with water then drain as shown



2
DO NOT drain into repair site!



3
Start mixer turning



4
With mixer still turning, add pre-determined units of Mainline™

Mix for 1 minute

Add-in remaining quart of water per 53.5 Mainline™ unit



5
Mix for 6 additional minutes and place.

Pour Mainline™ into repair site. Screed and finish DO NOT RE-TEMPER WITH WATER.



6
Clean mixer or add water for next batch

! Use 4 quarts of water for 2 bag batches

One 53.5 lb. unit of Mainline requires a total of 2 quarts of water. Add water - initially, add in only 1 quart of water per 53.5 unit of Mainline to be used.

! (Mainline™ is a water to binder sensitive cement. NEVER use less than 2 quarts of water nor MORE THAN 2 1/8 quarts of water per 53.5 lb. unit of Mainline™.)

Increase water towards 2 1/8 quarts in temperatures above 85°F / 29°C.

! In ambient temperatures less than 50°F / 10°C, use warm water between 70°F / 22°C and 90°F / 32°C. In ambient temperatures greater than 85°F / 29°C, use cool water between 50°F / 10°C and 70°F / 22°C. Working times will vary when mix water temperatures are outside of these recommendations.

! A Bond release agent should be utilized on any forms should they be used

WARRANTY:

CERATECH, Inc. ("CERATECH") warrants that its products are free from defects in materials and workmanship. If any CERATECH product fails to conform to this warranty, CERATECH will replace the product at no cost to the buyer or refund the purchase price, at CERATECH's election. Any warranty claim must be made within one (1) year from the date of the shipment of the product to the buyer. In no event shall CERATECH be liable to the buyer for any consequential or incidental damages of any nature. CERATECH MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, WRITTEN OR ORAL AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF ITS PRODUCTS AND EXCLUDES THE SAME. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

CERATECH Inc.
1500 North Beauregard St.
Suite 320
Alexandria, VA 22311
Phone: (800)-581-8397 Fax: (703)-894-1068
Technical Support: (888)-341-2600

Please use this document for technical questions, posing in question format.

Technical Questions for RFQ: _____

Vendor Name: _____

Questions:

1. Specifications

2 Delivery

3 Invoicing

4 Award

Other:

State of West Virginia VENDOR PREFERENCE CERTIFICATE

Certification and application* is hereby made for Preference in accordance with *West Virginia Code*, §5A-3-37. (Does not apply to construction contracts). *West Virginia Code*, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the *West Virginia Code*. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.


1. **Application is made for 2.5% resident vendor preference for the reason checked:**
 Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or**,
 Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or**,
 Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; **or**,
2. **Application is made for 2.5% resident vendor preference for the reason checked:**
 Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or**,
3. **Application is made for 2.5% resident vendor preference for the reason checked:**
 Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or**,
4. **Application is made for 5% resident vendor preference for the reason checked:**
 Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; **or**,
5. **Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**
 Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; **or**,
6. **Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**
 Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: By: Tres Swann
Specialty Products, Inc.

Signed: 

Date: April 14, 2011

Title: President

*Check any combination of preference consideration(s) indicated above, which you are entitled to receive

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (*West Virginia Code §61-5-3*), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: Specialty Products, Inc., 5660 E. VA Beach Blvd., Norfolk, VA 23502

Authorized Signature: by: *[Signature]* Date: 04/14/2011

State of VA

County of Norfolk, to-wit:

Taken, subscribed, and sworn to before me this 14 day of April, 2011.

My Commission expires August 31, 2014.

AFFIX SEAL HERE

NOTARY PUBLIC Catelyn Whaley
By: Catelyn Whaley
7361241

