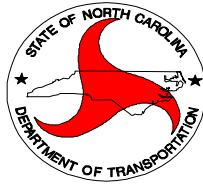


STATE OF NORTH CAROLINA  
**DEPARTMENT OF TRANSPORTATION**



DIVISION 2  
BRIDGE MAINTENANCE

**CONTRACT PROPOSAL**  
**SMALL BUSINESS ENTERPRISE**

WORK ORDER NUMBER: 2SP.10254.1, 2SP.10694.1, and 2B.102511

ROUTE: US 70 COUNTY: Craven

DESCRIPTION: Placement of deck epoxy, replacement of bridge joints and foam injections at various bridge sites.

BID OPENING: 105 Pactolus (Hwy 33) Greenville North Carolina, Tuesday, June 2 at 10:00 a.m.

NAME OF BIDDER

N.C. CONTRACTOR'S LICENSE NUMBER

ADDRESS OF BIDDER

RETURN BIDS TO: Gerard Mombaerts  
Division 2 Staff Engineer  
NC Department of Transportation  
105 Pactolus (Hwy 33)

**Greenville North Carolina, 27835**

## **INSTRUCTIONS TO BIDDERS**

### **PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE PREPARING AND SUBMITTING YOUR BID.**

**All bids shall be prepared and submitted in accordance with the following requirements. Failure to comply with any requirement shall cause the bid to be considered irregular and shall be grounds for rejection of the bid.**

1. The bid sheet furnished by NCDOT with the proposal shall be used and shall not be altered in any manner. **DO NOT SEPARATE THE BID SHEET FROM THE PROPOSAL!**
2. All entries on the bid sheet, including signatures, shall be written in ink.
3. The Bidder shall submit a unit price for every item on the bid form. The unit prices for the various contract items shall be written in figures.
4. An amount bid shall be entered on the bid sheet for every item. The amount bid for each item shall be determined by multiplying each unit bid by the quantity for that item, and shall be written in figures in the "Amount Bid" column of the sheet.
5. The total amount bid shall be written in figures in the proper place on the bid sheet. The total amount shall be determined by adding the amounts bid for each item.
6. Changes in any entry shall be made by marking through the entry in ink and making the correct entry adjacent thereto in ink. A representative of the Bidder shall initial the change in ink.
7. The bid shall be properly executed. All bids shall show the following information:
  - a. Name of individual, firm, corporation, partnership, or joint venture submitting bid.
  - b. Name and signature of individual or representative submitting bid and position or title.
  - c. Name, signature, and position or title of witness.
  - d. Federal Identification Number (or Social Security Number of Individual)
  - e. Contractor's License Number (if Applicable)
8. Bids submitted by corporations shall bear the seal of the corporation.
9. The bid shall not contain any unauthorized additions, deletions, or conditional bids.
10. The bidder shall not add any provision reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.

**THE PROPOSAL WITH THE BID SHEET STILL ATTACHED SHALL BE PLACED IN A SEALED ENVELOPE AND SHALL HAVE BEEN DELIVERED TO AND RECEIVED IN THE NC Department of Transportation Division Office Located at 105 Pactolus (Hwy 33) Greenville North Carolina, 27835 BY 10:00 A.M. ON TUESDAY, JUNE 2, 2009.**

11. The sealed bid must display the following statement on the front of the sealed envelope:

**QUOTATION FOR WORK ORDER (2B.102511) – PLACEMENT OF DECK EPOXY,  
REPAIR AND REPLACEMENT OF BRIDGE DECK JOINTS AND FOAM  
INJECTIONS AT VARIOUS BRIDGE SITES IN CRAVEN COUNTY TO BE OPENED  
AT 10:00 A.M., TUESDAY, JUNE 2, 2009.**

13. If delivered by mail, the sealed envelope shall be placed in another sealed envelope and the outer envelope shall be addressed as follows:

**Gerard Mombaerts, Division 2 Staff Engineer  
NC Department of Transportation  
105 Pactolus (Hwy 33)  
Greenville North Carolina, 27835**

## AWARD OF CONTRACT

**The award of the contract, if it be awarded, will be made to the lowest responsible Bidder in accordance with Section 102 (*excluding 102-2 and 102-11*) of the Standard Specifications for Roads and Structures 2006. The lowest responsible will be notified that his bid has been accepted and that he has been awarded the contract. NCDOT reserves the right to reject all bids.**

# **SMALL BUSINESS ENTERPRISE PURCHASE ORDER CONTRACT**

## **Standard Provisions**

### **GENERAL**

This contract is for the placement of deck epoxy, repairing or replacing bridge deck expansion joints and installing foam injections at various bridge sites in Craven County.

All work and materials shall be in accordance with the provisions of the general guidelines of this Contract, the Project Special Provisions, the North Carolina Department of Transportation Standard Specifications for Roads and Structures 2006, the North Carolina Department of Transportation Roadway Standards Drawings, and the current edition of the Manual of Uniform Traffic Control Devices (MUTCD).

The Contractor shall keep himself fully informed of all Federal, State, and local laws, ordinances, and regulations, and shall comply with the provisions of Section 107 of the Standard Specifications.

### **PRE-BID CONFERENCE**

**There will be a Mandatory Pre-Bid Conference at 10 :00 AM on Wednesday, May 20, 2009 at the Division Bridge Maintenance Engineer's Office at 255 South Glenburnie Road, New Bern, NC, 28560. All potential bidders must attend this conference in order to be considered.**

### **SMALL BUSINESS ENTERPRISE PROGRAM**

This is a **Small Business Enterprise Program** project, and as such, will be restricted to businesses with a gross income of not more than 1.5 million during the previous calendar year. The Department's normal bonding and Contractor license requirements will be waived. The attached self-certification form must be submitted with your bid proposal. Since general liability insurance is required, a copy of a certificate of insurance must also be submitted. Proof of small business status will be the previous year's income tax return. A copy of this return does not have to be submitted with this bid proposal, but may be requested at a later date.

### **CONTRACT TIME AND LIQUIDATED DAMAGES**

1. **Availability Date**- Upon receipt of a Purchase Order Contract. No work will be permitted and no purchase order will be issued until all prerequisite conditions and certifications have been satisfied.
2. **Completion Date**- One calendar year after receipt of a Purchase Order Contract.
3. **Liquidated Damages**- One hundred dollars (\$100) per calendar day.

### **TERM OF CONTRACT**

The contractor shall submit a bid for one year. At the option of the Department, this contract may be extended for two additional periods of one year each for a maximum period of three years total. The unit bid prices will be increased by three (3) percent for each one-year extension. No changes in terms, conditions, etc. of this contract

will be made when an extension to the contract is implemented. The Engineer will notify the contractor in writing if the contract may be extended. The contractor must notify the Engineer in writing within fifteen calendar days of his/her acceptance or rejection of this offer. Failure on the part of the contractor to reply will be considered as a rejection of the contract extension.

## **WARRANTY – MATERIALS AND WORKMANSHIP**

All materials and workmanship to be warranted for a period of two years from the date of installation.

## **AUTHORITY OF THE ENGINEER**

The Engineer for this project shall be the Division Engineer, Division 2, Division of Highways, North Carolina Department of Transportation, acting directly or through his duly authorized representatives.

The Engineer will decide all questions which may arise as to the quality and acceptability of work performed and as to the rate of progress of the work; all questions which may arise as to the interpretation of the contract; and all questions as to the acceptable fulfillment of the contract on the part of the Contractor. His decision shall be final and he shall have executive authority to enforce and make effective such decisions and orders as the Contractor fails to carry out promptly.

## **SUBLETTING OF CONTRACT**

The Contractor shall not sublet, sell, transfer, assign or otherwise dispose of this contract or any portion thereof; or his right, title, or interest therein; without written consent of the Engineer. Subletting of this contract or any portion of the contract shall conform to the requirements of Article of 108-6 of the Standard Specifications.

## **DEFAULT OF CONTRACT**

The Department of Transportation shall have the right to declare a default of contract for breach by the Contractor of any material term or condition of the contract. Default of contract shall be in accordance with the terms, conditions, and procedures of Article 108-9 of the Standard Specifications.

## **CLAIMS FOR ADDITIONAL COMPENSATION OR EXTENSION OF TIME**

Any claims for additional compensation and/or extensions of the completion date shall be submitted to the Division Engineer with detailed justification within thirty (30) days after receipt of the final invoice payment. The failure of the Contractor to submit the claim(s) within thirty days shall be a bar to recovery.

### **LIABILITY INSURANCE:**

(11-18-08)

SP1 G80

**Page 1-68, Article 107-16 is amended to include the following as the first, second, third and fourth paragraphs:**

The Contractor shall be liable for any losses resulting from a breach of the terms of this contract. The Contractor shall be liable for any losses due to the negligence or willful misconduct of its agents, assigns and employees including any sub-contractors which causes damage to others for which the Department is

found liable under the Torts Claims Act, or in the General Courts of Justice, provided the Department provides prompt notice to the Contractor and that the Contractor has an opportunity to defend against such claims. The Contractor shall not be responsible for punitive damages.

The Contractor shall at its sole cost and expense obtain and furnish to the Department an original standard ACORD form certificate of insurance evidencing commercial general liability with a limit for bodily injury and property damage in the amount of \$5,000,000.00 per occurrence and general aggregate, covering the Contractor from claims or damages for bodily injury, personal injury, or for property damages which may arise from operating under the contract by the employees and agents of the Contractor. The required limit of insurance may be obtained by a single general liability policy or the combination of a general liability and excess liability or umbrella policy. The State of North Carolina shall be named as an additional insured on this commercial general liability policy. The policy may contain the following language as relates to the State as an additional insured: "This insurance with respect to the additional insured applies only to the extent that the additional insured is held liable for your or your agent's acts or omissions arising out of and in the course of operations performed for the additional insured."

The Contractor shall maintain all legally required insurance coverage, including without limitation, worker's compensation and vehicle liability, in the amounts required by law. Providing and maintaining adequate insurance coverage is a material obligation of the contractor and is of the essence of this contract. All such insurance shall meet all laws of the State of North Carolina. Such insurance coverage shall be obtained from companies that are authorized to provide such coverage and that are authorized by the Commissioner of Insurance to do business in North Carolina. The Contractor shall at all times comply with the terms of such insurance policies.

Upon execution of the contract, provide evidence of the above insurance requirements to the Engineer.

#### **WORKER'S COMPENSATION INSURANCE:**

Pursuant to N.C.G.S. § 97-19, all contractors of the Department of Transportation are required, prior to beginning services, to show proof of coverage issued by a workers' compensation insurance carrier, or a certificate of compliance issued by the Department of Insurance for self-insured subcontractors stating that it has complied with N.C.G.S. § 97-93 irrespective of whether subcontractors have regularly in service fewer than three employees in the same business within the State of North Carolina, and subcontractors shall be hereinafter liable under the Workers' Compensation Act for payment of compensation and other benefits to its employees for any injury or death due to an accident arising out of and in the course of performance of the work insured by the subcontractor.

## **PAYMENT**

The Contractor may submit a request for partial payment on a monthly basis, or other interval as approved by the Engineer. Compensation for all pay items shall be in accordance with the Standard Specifications. The amount of partial payments will be based on the work accomplished and accepted as the last day of the approved pay period. Minority Business (MB) and Women's Business (WB) participation shall be listed in the appropriate spaces on all requests for payment. If there is no participation the word "None" or the figure "0" shall be entered. The invoices will show the requisition number and purchase order number and should state "Terms Net Ten (10) Days."

## **PROSECUTION AND PROGRESS**

The Contractor shall pursue the work diligently with workmen in sufficient numbers, abilities, and supervision, and with equipment, materials, and methods of construction as may be required to complete the work described in the contract by the completion date and in accordance with Section 108 of the Standard Specifications.

Work shall only be performed when weather and visibility conditions allow safe operations.

The Contractor shall temporarily remove his equipment from the travelway for emergency vehicles and school buses as directed by the Engineer.

## **MATERIALS AND TESTING**

The Engineer reserves the right to perform all sampling and testing deemed appropriate. The Contractor shall furnish the applicable certifications and documentation for all materials as required by the Standard Specifications and the Engineer. Material, which is not properly certified, will not be accepted. **All materials and workmanship shall be warranted for a period of two (2) years.**

## **CONTRACT BID QUANTITIES**

Contractor shall note that the contract quantities are used for figuring the lowest responsible bidder only. No minimum amount of work is guaranteed under this contract.

**SMALL BUSINESS ENTERPRISE**  
**PURCHASE ORDER CONTRACT**

**Special Provisions**

**GENERAL**

**EPOXY PLACEMENT**

Epoxy to be used shall be the Superstick 510 or a NCDOT approved equal on the following bridge decks in Pitt County:

- Bridge No. 1
- Bridge No. 36
- Bridge No. 69

This contract is for the placement of epoxy to concrete bridge decks. All decks shall be cleaned according to the material specifications. Two layers of epoxy (20 – 25 mills first layer and 15 – 20 mills second layer) and approved aggregate shall be applied in accordance with the material specifications. These specifications are included in this proposal.

No debris shall be removed in such a manner that it comes into contact with the traveling public or any rivers or streams.

The Contractor shall notify the Bridge Supervisor at the beginning of each week of his intended schedule. This will allow the supervisor to schedule his inspections accordingly.

The entire cost for the cleaning of the decks and the placement of epoxy including but not limited to labor, maintenance, equipment, tools, and incidentals will be included in the unit price for Placement of Epoxy.

Payments shall be made under:

Placement of Epoxy. . . . . Square Foot

The Contractor shall begin work within 60 days of notification. Failure to respond within the designated time frame may result in liquidated damages or cancellation of this contract.

**EXPANSION JOINT REPAIRS/REPLACEMENT**

Deck Expansion Joints to be repaired and replaced shall be on Bridge No. 1 in Pitt County at the south end. The area of spalling along the joint shall be repaired with elastomeric concrete and the expansion joint shall be replaced with evazote. The Contractor shall begin work within 60 days of notification. Failure to respond within the designated time frame may result in liquidated damages or cancellation of this contract.

**FOAM INJECTIONS**

All areas of foam injections shall be designated by the Engineer. The concrete approach slabs to be lifted shall be lifted using a NCDOT approved foam. All areas to be stabilized shall be stabilized using Prime Flex 910 foam or equal.

The Contractor shall begin work within 60 days of notification. Failure to respond within the designated time frame may result in liquidated damages or cancellation of this contract.

## **MOBILIZATION**

Payment for mobilization will be made for each occurrence of mobilization.

The contractor shall notify the Bridge Engineer/Technician/Supervisor at the beginning of each week of his intended schedule of work. This will allow the DOT to schedule inspections accordingly.

All existing joint material, concrete and asphalt removed shall become the property of the Contractor and shall be disposed of properly.

## **TRAFFIC CONTROL**

All traffic control shall be maintained by NCDOT.

### **CONTRACTOR CLAIM SUBMITTAL FORM:**

(9-16-08)

SP1G140

If the Contractor elects to file a written claim or requests an extension of contract time, it shall be submitted on the *Contractor Claim Submittal Form (CCSF)* available through the Construction Unit or [http://ncdot.org/doh/operations/dp\\_chief\\_eng/constructionunit/formsmanuals/](http://ncdot.org/doh/operations/dp_chief_eng/constructionunit/formsmanuals/).

### **ACT OF GOD:**

(12-19-06)

SP 1 G151

Revise the *2006 Standard Specifications* as follows:

Page 1-69, 107-18 Contractor's Responsibility for Work, in the first paragraph, last sentence, replace the word *legally* with the word *contractually*. DIVISION CONTRACT

### **AVAILABILITY OF FUNDS – TERMINATION OF CONTRACTS**

(5-20-08)

Z-2

*General Statute 143C-6-11. (h) Highway Appropriation* is hereby incorporated verbatim in this contract as follows:

- (h) Amounts Encumbered. – Transportation project appropriations may be encumbered in the amount of allotments made to the Department of Transportation by the Director for the estimated payments for transportation project contract work to be performed in the appropriation fiscal year. The allotments shall be multiyear allotments and shall be based on estimated revenues and shall be subject to the maximum contract authority contained in *General Statute 143C-6-11*©. Payment for transportation project work performed pursuant to contract in any fiscal year other than the current fiscal year is subject to appropriations by the General Assembly. Transportation project contracts shall contain a schedule of estimated completion progress, and any acceleration of this progress shall be subject to the approval of the Department of Transportation provided funds are available. The State reserves the right to terminate or suspend any transportation project contract, and any transportation project contract shall be so terminated or suspended if funds will not be available for payment of the work to be performed during that fiscal year pursuant to the contract. In the event of termination of any contract, the contractor shall be given a written notice of termination at least 60 days before completion of scheduled work for which funds are available. In

the event of termination, the contractor shall be paid for the work already performed in accordance with the contract specifications.

Payment will be made on any contract terminated pursuant to the special provision in accordance with Article 108-13(E), of the *North Carolina Department of Transportation Standard Specifications for Roads and Structures*, dated July 1, 2006.

## **TEMPORARY SUSPENSION OF WORK**

In accordance with Article 108-7 of the Standard Specifications, the Engineer will have the authority to suspend the work wholly or in part, any written order for such periods as he may deem necessary for any of the following reasons.

1. Conditions considered unfavorable for the suitable prosecution of the work, or
2. The Contractor's failure for correct conditions unsafe for workmen or the general public, or
3. The Contractor has not carried out orders given to him by the Engineer, or
4. The Contractor's failure to perform any provisions of the contract.

No extension of the completion date will be allowed for the above suspensions except as may be provided for in Article 108-10.

## **MINORITY AND FEMALE EMPLOYMENT REQUIREMENTS**

Z-7

### **NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE NUMBER 11246)**

1. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, see as shown on the attached sheet entitled "Employment Goals for Minority and Female participation".

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in *41 CFR Part 60-4* shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in *41 CFR 60-4.3(a)*, and its effort to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project or the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the executive Order and the regulations in *41 CFR Part 60-4*. Compliance with the goals will be measured against the total work hours performed.

2. As used in this Notice and in the contract resulting from this solicitation, the "covered area" is the county or counties shown on the cover sheet of the proposal form and contract.

**EMPLOYMENT GOALS FOR MINORITY  
AND FEMALE PARTICIPATION**

Economic Areas

**Area 023 29.7%**

Bertie County  
Camden County  
Chowan County  
Gates County  
Hertford County  
Pasquotank County  
Perquimans County

**Area 024 31.7%**

Beaufort County  
Carteret County  
Craven County  
Dare County  
Edgecombe County  
Green County  
Halifax County  
Hyde County  
Jones County  
Lenoir County  
Martin County  
Nash County  
Northampton County  
Pamlico County  
Pitt County  
Tyrrell County  
Washington County  
Wayne County  
Wilson County

**Area 025 23.5%**

Columbus County  
Duplin County  
Onslow County  
Pender County

**Area 026 33.5%**

Bladen County  
Hoke County  
Richmond County  
Robeson County  
Sampson County  
Scotland County

**Area 027 24.7%**

Chatham County  
Franklin County  
Granville County  
Harnett County  
Johnston County  
Lee County  
Person County  
Vance County  
Warren County

**Area 028 15.5%**

Alleghany County  
Ashe County  
Caswell County  
Davie County  
Montgomery County  
Moore County  
Rockingham County  
Surry County  
Watauga County  
Wilkes County

**Area 029 15.7%**

Alexander County  
Anson County  
Burke County  
Cabarrus County  
Caldwell County  
Catawba County  
Cleveland County  
Iredell County  
Lincoln County  
Polk County  
Rowan County  
Rutherford County  
Stanly County

**Area 0480 8.5%**

Buncombe County  
Madison County

**Area 030 6.3%**

Avery County  
Cherokee County  
Clay County  
Graham County  
Haywood County  
Henderson County  
Jackson County  
McDowell County  
Macon County  
Mitchell County  
Swain County  
Transylvania County  
Yancey County

SMSA AreasArea 5720 26.6%

Currituck County

Area 9200 20.7%

Brunswick County

New Hanover County

Area 2560 24.2%

Cumberland County

Area 6640 22.8%

Durham County

Orange County

Wake County

Area 1300 16.2%

Alamance County

Area 3120 16.4%

Davidson County

Forsyth County

Guilford County

Randolph County

Stokes County

Yadkin County

Area 1520 18.3%

Gaston County

Mecklenburg County

Union County

Goals for FemaleParticipation in Each Trade

(Statewide) 6.9%

## PLACEMENT OF EPOXY

### TWO COMPONENT SYSTEM

# Superstick

## #520

### MOISTURE- INSENSITIVE

#### Damp Cure Formulation

**PACKAGING:** Available in 3 gallon and 15 gallon units.

**COVERAGE:** 1 Gallon of E-Bond 520 LO-MOD LV contains 231 cubic inches. 1 Gallon of E-Bond 520 when mixed with 4 - 4½ gallons of loose kiln-dried aggregate yields approx. 800 cu. in. of epoxy mortar. As a primer for epoxy concrete/mortar, apply at a rate of 80 – 100 sq. ft. per gallon depending on porosity.

#### CAUTION:

- Do not thin. Solvents will prevent proper cure.
- Use only oven-dried aggregate.
- Material is a vapor barrier after cure.
- Minimum age of concrete should be 28 days prior to application of mortar or sealer on slabs.
- Test for moisture vapor transmission prior to application of mortar or sealing slabs. Moisture passing through substrate by pressure during application and curing will cause bond failure.
- Not for injection of cracks under hydrostatic pressure.
- Do not inject cracks greater than ¼ inch without consulting Technical Service.
- Due to many variables in bonding damp or wet surfaces, be certain to test application under same conditions as full-scale work.

**TEMPERATURES:** Will cure at temperatures as low as 40° F., providing the temperature will be 40° F. and rising during the next 72 hours. Epoxy materials and aggregate should be stored at least 24 hours prior to use at 60° F., or higher. Epoxies stored below 60° F., will cause the epoxy to thicken substantially, making it difficult to properly blend the two materials and obtain a proper mating of resin and hardener.

**Protect from inclement weather and freezing.** If product temperature falls below 50° F. it is recommended that a product temperature of 70° F. be obtained prior to using.

**Store dry at 40°F - 95°F. Condition to 65°F - 85°F before using.**

#### DESCRIPTION

SUPERSTICK #520 LO-MOD LV is a 100% solids, solvent-free two-component **MOISTURE INSENSITIVE** epoxy resin system. It has a unique **Lo- Modulus Of Elasticity**, which allows for variations in stress and temperature. With proper aggregate loading, E-Bond 520 provides an epoxy mortar/concrete with a co-efficient very close to that of Portland-Cement concrete.

**ADVANTAGES:** Easy mix ratio of 2 Parts A to 1 Part B by Volume Fast Setting and provides a high early strength within 24 hours Insensitive to moisture before, during and after cure

Exterior epoxy mortar/concrete repairs resist thermal movement Excellent adhesion to most structural materials Low temperature cures – As low as 40°F (4°C)

**E-BOND 520 Lo-Mod conforms to ASTM-C-881, Type III, Grade 1, Class B & C, AASHTO-M235-91**

#### PHYSICAL PROPERTIES

**Type:** Moisture Insensitive & Low temperature cure Low Modulus, Low Viscosity Epoxy

**Viscosity:** ASTM-D-2393

Part A Resin 13 poises max. (1.3 Pa.S)

Part B Hardener 7 poises max. (.7 Pa.S)

Ad-Mix 9 poises max. (.9 Pa.S)

**Pot Life:** Neat 35 – 55 minutes @ 75°F (24°C)

**Tack Free Time:** Thin Film 4 - 6 hours @ 75°F (24°C)

**Final Cure:** (75°F(24°C)) 75% ultimate strength / ASTM-695 modified 5 days

Physical properties after cure of 14 days @ 75°F & 50% R.H.

**Color:** Part A Resin Light Straw

Part B Hardener Red Brown  
Ad-Mix Red Brown

## EPOXY MORTAR

1 Part Mixed Epoxy to 3½ Parts loose aggregate by volume  
Compressive Strength, PSI (Mpa) ASTM C-579 Method B  
24 Hrs 3 Days 7 Days  
3000 min. (21) 7000 min. (48) 750,000 max. (5172)  
Values may vary with temperature and humidity  
Tensile Strength, PSI (Mpa) ASTM D-638 2500 (17) – 3500 (24)  
Tensile Elongation, % ASTM D-638 Modified 10 - 20  
Compressive Strength, PSI (Mpa) ASTM D-695 6500 min. (45)  
Compressive Modulus, PSI (Mpa) ASTM D-695 120,000 (828)

## NEAT BINDER

**Mixing Ratio:** 2A to 1B by volume  
E-Bond/Prod. Data Sheets/ 520 2

## HOW TO USE

### SURFACE PREPARATION:

All surfaces must be structurally sound, clean and free of dirt, dust, oil, grease or any contaminant that would adversely affect the bond. Surfaces maybe dry or damp, but free of standing water.

Epoxy concretes and mortar generally bond very well to properly prepared concrete, It is essential that the surface to which the epoxy is to be applied be sound and clean. Dirt, oil, grease, laitance or other surface deposit can interfere with the bond of the epoxy to the substrate.

It is necessary to determine the surface preparation requirements prior to the application of the epoxy.

Chain drags, hammer sounding, infrared thermography, radar, cores, ultra sound, and other evaluation methods may be used to determine the extent of the deteriorated concrete that must be removed and replaced. This evaluation should determine the presence of laitance, curing compound, patching compounds, sealers, etc., that must be removed.

Weak, delaminated areas should be removed using chipping hammers, scarifiers, scabblers, hydrodemolition, other techniques may be used especially where more extensive concrete removal is necessary. The method used to remove deteriorated concrete should not weaken or crack the surrounding sound concrete. A saw cut around the area to be removed is recommended to reduce edge spalling and provide a sound surface in which to place the patching material.

Additional cleaning is necessary to remove any debris remaining after the removal of unsound concrete. Sandblasting, shotblasting, a scabber, grinding or high pressure water jet can be used to clean surface contaminates from the deck before the epoxy is placed.

Oil-free compressed air may be used to remove any dust or debris immediately prior to the application of the epoxy.

**STEEL:** Sandblast to white metal finish.

### MIXING:

Pre-mix each component separately. Place in a clean container, 2 parts by volume of Component A (Resin) and then add 1 part of Component B (Hardener). Container should have a flat wall and flat bottom. Stir and mix until material is thoroughly blended.

Mixing should be completed after 2 minutes of thorough blending. The importance of thorough mixing and blending cannot be over emphasized. The two components must be thoroughly mixed and mated. If you are mixing correctly, bubbles will be whipped into the mixture. Do not be concerned; this is a sign that you are mixing well. Improper mixing can result in soft or sticky spots.

It is recommended, to eliminate problems of improper mixing, that you use two mixing containers. Mix thoroughly in one container.

After you feel it is thoroughly mixed, scrape all the material from one container to the second container. After material has been placed in the second clean container, thoroughly mix for an additional 1 to 1½ minutes.

With this double type of mixing, any material that might not have been thoroughly mixed from the sides or the bottom of the first container will be easily placed in the second container and thus will receive thorough mixing at that time. Mix only that quantity that can be used within its working time.

## **APPLICATION:**

**BROADCAST OVERLAY:** Spread the properly mixed E-Bond #520 LV on the surface using squeegees at the rate of 40 to 50 sq. ft. per gallon. A pre-marked area will serve as a guide to obtain the recommended coverage. Allow materials to level: At temperatures above 70° F (21 °C) materials should level immediately. At cooler temperatures a waiting period will be required. Broadcast aggregate, while epoxy is still wet and tacky, in such a manner as to permit the aggregate to fall vertically into the wet epoxy. Aggregate should be broadcast **UNIFORMLY** to completely cover the epoxy surface. No wet spots should be visible. Apply a slight excess amount. Aggregate is usually broadcast at the rate of 1 to 1 1/2 Ibs. per sq. ft. (A hand held lateral type mechanical fertilizer may be used.) After initial set of the epoxy, **EXCESS AGGREGATE MUST BE REMOVED**. Brooming or a high powered vacuum is recommended.

E-Bond/Prod. Data Sheets/ 520 3

For TOUGH INDUSTRIAL AREAS a second coat is recommended.

Apply SECOND APPLICATION of mixed E-BOND 520 LV at the rate of 20-30 sq. ft. per gallon (depending on aggregate size). Broadcast at the rate of 1 1/2 - 1 3/4 Ibs. per sq. ft.

**Aggregate should be angular grain silica minimum MOH hardness of 7, washed, kiln dried and free of dirt, clay, asphalt and other organic materials. For TOUGH INDUSTRIAL applications consider emery aggregate with a high % of aluminum oxide.**

**AGGREGATE SIZE:** For light wear, with a minimum anti-skid properties consider an aggregate size of 40-90 sieve. For decorative finish apply a thin pigmented coating of a high solids epoxy or urethane to the properly cured epoxy. Check compatibility of finish coat with E-Bond 520 LV.

For TOUGH INDUSTRIAL applications and bridge decks to obtain best skid resistance consider using a blend of aggregate from 100% passing a #4 sieve to a minimum % passing a #16 sieve.

## **GUIDE FOR USE OF E-BOND 520 LV AT VARIOUS SUBSTRATE TEMPERATURES**

**NOTE:** For best performance epoxy product and aggregate temperature should be a minimum of 75° F (24° C). Product and aggregate temperature of 75° F (24° C) was used for the following guide.

**MAX. TIME ALLOWED MAX. TIME ALLOWED TIME TO OPEN BETWEEN MIXING & BETWEEN APPLICATION TO LIGHT TEMP. RANGE °F APPLICATION & BROADCAST TRAFFIC**

90° (32° C) 8 Minutes 10 Minutes 3-4 Hrs.

80° (27° C) 10 Minutes 15 Minutes 4-5 Hrs.

75° (24° C) 12 Minutes 20 Minutes 5-6 Hrs.

70° (21 ° C) 13 Minutes 20 Minutes 5-6 Hrs.

65° (18° C) 15 Minutes 30 Minutes 6-8 Hrs.

60° (15° C) 20 Minutes 30 Minutes 10-15 Hrs.

55° (13° C) 25 Minutes 40 Minutes 24+ Hrs.

50° (10° C) 25 Minutes 50 Minutes 24+ Hrs.

## **EPOXY MORTAR/CONCRETE:**

**MIXING EPOXY/MORTAR:** To properly mix E-Bond 520 add the required amount of round grain silica washed, kiln dried and free of dirt, clay, asphalt, and other organic materials. Mix thoroughly for a minimum of 3 to 5 minutes with a paddle on slow speed drill (400 to 800 rpm) until all aggregate is thoroughly mixed and a uniform consistency is obtained.

**EPOXY MORTAR/CONCRETE PATCHING & OVERLAYS:** To properly mixed E-Bond 520, add the required amount of round angular grained silica (fine aggregate) and coarse aggregate, washed, kiln dried and free of dirt, clay, asphalt and other organic materials. Mix thoroughly for a minimum of 3-5 minutes with a paddle or slow speed drill until all the aggregate is

thoroughly mixed and uniform consistency is obtained. Prime surface with properly mixed E-Bond 520 at the approximate rate of 80 to 100 sq. ft. per gallon depending on porosity. Apply with stiff bristle brush and work into surface. Apply PROPERLY mixed epoxy mortar while epoxy primer is still tacky (usually within 15 minutes @ 75° F (24°C). Finish with steel trowels and screeds. Wipe trowel lightly with

a damp rag for a smooth finish. On applications where the patch must resemble that of the adjacent concrete, is recommended to lightly sprinkle water on the tacky epoxy patch; sprinkle Portland Cement onto the wet epoxy surface. Slightly dampen trowel with water and trowel to a smooth finish.

### **EPOXY MORTAR/CONCRETE BLENDS:**

The following suggestions for aggregate loading with E-Bond 520 are to produce an epoxy mortar/concrete with a COEFFICIENT OF EXPANSION similar to PORTLAND CEMENT CONCRETE.

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The epoxy Mortar/Concrete must have a uniform consistency, not dry, not overly wet (should not have a resin float on the surface of the patch or overlay) If the epoxy patch or overlay is not dense (is porous), a sealer coat of 540 or 520 is recommended after cure. Types of aggregate will vary from source to source. The percentage of loading of aggregate with E-Bond 520 will also vary for the individual requirements and the source of aggregate. Recommended ratio and size of aggregate are suggested as a starting mix and guideline only. The mix must be verified by the applicator in the field for this application and conditions. CONSULT E-BOND TECHNICAL SERVICES FOR MIX DESIGN AND PROCEDURES.

### **EPOXY MORTAR AT A THICKNESS OF 1/4" to 3/4"**

1 gallon of E-Bond 520 will require approximately 3 1/2 to 4 gallons of proper aggregate sieve size of 20 to 30.

### **EPOXY MORTAR/CONCRETE AT A THICKNESS OF 3/4" TO 1 3/4"**

#### **SIEVE DESIGNATION CUMULATIVE % BY WEIGHT**

#### **U.S. STANDARD SQ. MESH PASSING INDIVIDUAL SIEVE**

3/8 INCH 100

NO. 4 94-90

NO. 8 80-90

NO. 16 60-80

NO. 30 30-60

NO. 50 5-10

SIEVE SIZE #50 TO 1/4"

A three gallon mix of E-Bond 520 LV will require approximately 140 to 170 lbs. of aggregate of the above sizes to produce approximately 1.10 to 1.25 cu. ft. (**see note 1**)

### **EPOXY MORTAR/CONCRETE AT A THICKNESS OF 1 3/4" +**

#### **SIEVE DESIGNATION CUMULATIVE % BY WEIGHT**

#### **U.S. STANDARD SQ. MESH PASSING INDIVIDUAL SIEVE**

3/4 INCH 100

1 /2 INCH 80-100

3/8 INCH 40-70

NO. 4 60-80

NO. 12 40-60

NO. 20 10-30

A three gallon mix of E-Bond 520 LV will require approximately 150 to 180 lbs of the above size aggregate to produce approximately 1.12 to 1.27 cu. ft. (**see note 1**)

**NOTE:** When using a coarse aggregate a greater % by weight of aggregate to epoxy is used. Ratio is normally 8-10 to 1 by wt. The sieve sizes are to be blended to obtain a dense and uniform consistency.

**ADDITIONAL MIXING INSTRUCTIONS:** Add coarse aggregate to mixer and then add the correctly mixed epoxy resin.

When coarse aggregate has been coated, add fine aggregate and mix until uniformly blended. When using coarse aggregate with epoxy at a ratio of 8 or greater to 1 of aggregate to resin epoxy lifts of 4-5 inches may be done in one installation.

**Impregnation Sealer or Primer:** Due to the limited work life of this product it is wise to dump the material from the mixing container on the surface, allow to penetrate. Squeegee off excess while still a liquid. For priming apply with broom, brush or long-handled 1/4" nap roller. If desired, broadcast a slight excess of fine granules into wet epoxy to create a non-slip surface.

**Injection:** Ideal for grouting of non-moving cracks in concrete. Recommended that the resin and hardener be maintained at 90° (32°C) prior to mixing for lowest possible viscosity. Cooler temperatures have a tendency of thickening the resin mix rapidly. Mix only that amount of LV you can use in the limited working time of the elevated temperatures.

**Gravity:** "Vee" out cracks. Blow and clean out thoroughly with oil-free compressor air. Pour pre-mix LO-MOD LV until cracks are filled. More than one application may be required.

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**Pressure:** 520 LV may be forced into cracks by polyethylene one-way valves, copper tubing or black iron bushings with alemite fitting. Drill holes and place fittings every 6": to 2' along length of crack. WEE" out cracks, fill and seal surface and anchor fittings with Rapid Set Epoxy Gel. Allow to cure. Force mixed 520 LV into lowest fitting with caulking or alemite gun with slow, steady pressure until epoxy reaches next fitting. Crimp fitting and move to next fitting using same procedure along length of crack. If epoxy penetrates through slab, seal other side. After cure, apply direct flame to fittings and remove. Patch holes with epoxy gel.

### **CLEAN UP:**

Clean all equipment and tools prior to initial set up of the epoxy system. A lacquer solvent or xylene can be used for this purpose. (Lacquer solvents and xylene are highly flammable, use caution as required by the manufacturer of these solvents.) Mortar mixers and tools often can be cleaned up with hot water and soap prior to the epoxy becoming tacky. Add hot water and soap to mixer, add pea rock and allow the mixer to turn permitting the pea rock and hot water to remove the epoxy resin.

**DO NOT THIN E-BOND 520 LO-MOD- SOLVENTS WILL PREVENT PROPER CURE.**

**NOTE:** For bonding fresh plastic Portland Cement - Concrete to Hardened Concrete, use E-Bond 580 HI-MOD.

**DISCLAIMER OF WARRANTIES AND LIMITATION OF LIABILITY:** E-Bond Epoxies, Inc. ("Seller") warrants its products to be free of defects in material and workmanship for a period of ONE (1) YEAR from the date of purchase. Under this Warranty and limitation of liability, E-Bond will provide, at no charge, product and containers to replace any product. E-Bond's obligation hereunder, is limited solely to such replacement and is subject to receipt by E-bond of a written notice of any alleged defects, promptly after discovery thereof, within the warranty period. Absence of such notice in writing during the warranty period constitutes a waiver of all claims with respect to such product. This Warranty excludes discoloration or change in visual appearance of the product due to

the accumulation of or streaking of dirt or other airborne materials deposited on the surface from the atmosphere. E-Bond does not warrant the colorfastness of any product unless specifically stated otherwise. Before application, the Buyer shall determine the suitability of the product for the intended use and Buyer assumes all risks and liabilities whatsoever in connection therewith. THIS WARRANTY IS MADE IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND/ OR FITNESS WHICH ARE HEREBY DISCLAIMED. IT IS UNDERSTOOD AND AGREED THAT BUYER'S SOLE REMEDY, AND THEREFORE SELLER'S LIABILITY, WHETHER IN CONTRACT,

TORT, WARRANTY, IN NEGLIGENCE, OR OTHERWISE SHALL BE LIMITED TO THE RETURN OF THE PURCHASE PRICE PAID BY PURCHASER OR REPLACEMENT OF ANY DEFECTIVE GOODS SOLD BY SELLER AND UNDER NO CIRCUMSTANCES SHALL SELLER BE LIABLE FOR SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES. THE PRICE STATED FOR THE GOODS IS A CONSIDERATION IN LIMITING SELLER'S LIABILITY. The terms of this paragraph may not be orally modified. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE FACE HEREOF.

**CAUTION-FOR INDUSTRIAL USE ONLY:** E-BOND SUPERSTICK epoxies contain alkaline amines. Strong sensitizer MAY CAUSE SKIN SENSITIZATION or allergic response ranging from a mild wheezing to a severe asthmatic type attack. Avoid contact with skin or eyes. IN CASE OF CONTACT immediately wash skin with soap and water. Flush eyes with water and obtain medical attention. Wear protective clothing, goggles and barrier cream on all exposed skin. Provide adequate ventilation.

## **EVAZOTE EXPANSION JOINT REPLACEMENT**

Contractor shall remove the existing expansion joint, clean the area in accordance with the manufacturer's recommendations, and place the evazote expansion joint in accordance with the manufacturer's recommendations. Contractor shall have a manufacturer's representative present during the installation of the first evazote expansion joint of the project. The expansion joint shall be replaced with the materials stated in this contract.

All materials shall be delivered unopened in their original containers bearing the manufacturer's label, date of manufacture, batch number, trade name brand, and quantity. Sufficient material to perform the entire expansion joint shall be "on hand" prior to removing the existing expansion joint. Stored materials may be inspected prior to their use and shall meet the requirements of these provisions. Each shipment of repair material shall be accompanied by Material Safety Data Sheets (MSDS) and a certificate of compliance certifying that the materials conform to the requirements of these provisions.

### Evazote Joint Seal Specifications

Use preformed seals compatible with concrete and resistant to abrasion, oxidation, oils, gasoline, salt and other materials that are spilled on or applied to the surface. Use a low-density closed cell, cross-linked ethylene vinyl acetate polyethylene copolymer nitrogen blown material for the seal. Use seals manufactured with grooves 1/8" (3 mm) ± wide by 1/8" (3 mm) ± deep and spaced between 1/4 (6 mm) and 1/2 inch (13 mm) apart along the bond surface running the length of the joint. Use seals sized so that the depth of the seal meets the manufacturer's recommendation, but is not less than 70% of the uncompressed width. Provide a seal designed so that, when compressed, the center portion of the top does not extend upward above the original height of the seal by more than 1/4 inch (6 mm). Splice the seal using the heat welding method by placing the joint material ends against a Teflon heating iron of 350°F (177°C) for 7 - 10 seconds, then pressing the ends together tightly. Do not test the welding until the material has completely cooled. Use material that resists weathering and ultraviolet rays. Provide a seal that has a working range of 30% tension and 60% compression and is watertight along its entire length including the ends. Have the top of the evazote seal clearly shop marked. Inspect the evazote seals upon receipt to ensure that the marks are clearly visible upon installation.

Provide seals that meet the requirements given below:

TEST	TEST METHOD	REQUIREMENT
Elongation at break	ASTM D3575	210 ± 15%
Tensile strength, psi (kPa)	ASTM D3575	110 ± 15 (755 ± 100)
Compression Recovery (% of original width)	AASHTO T42 50% compr. for 22 hr. @ 73°F (23°C) 1/2 hr. recovery	87 ± 3
Weather/Deterioration	AASHTO T42 Accelerated Weathering	No deterioration for 10 years min.
Compression/Deflection	@ 50% deflection of original width  @ 50% deflection of original width	10 psi (69 kPa) min.  60 psi (414 kPa) max.
Tear Strength, psi (kPa)	ASTM D624	16 ± 3 (110 ± 20)
Density	ASTM D545	2.8 to 3.4
Water Absorption (% vol/vol)	ASTM D3575 Total immersion for 3 months	3

Adhesives

Use a two component, 100% solid, modified epoxy adhesive with the seal that meets the requirements of ASTM C881, Type 1, Grade 3, Class B & C and has the following physical properties:

- Tensile strength 3500 psi (24.1 MPa) min.
- Compressive strength 7000 psi (48.3 MPa) min.
- Shore D Hardness 75 psi (0.5 MPa) min.
- Water Absorption 0.25% by weight

Use an adhesive that is workable to 40°F (4°C). When installing in temperatures below 40°F (4°C) or for application on moist, difficult to dry concrete surfaces, use an adhesive specified by the manufacturer of the joint material.

Joint Preparation

After removal of existing joint, area must be sand-blasted immediately prior to installation of the new joint. Blasting medium shall be a non-silica product. Blasting medium shall be swept up and removed from the project. Traffic shall be protected from blasting operations. Joint shall be re-cleaned (and re-blasted if necessary), if joint installation is delayed and joint is determined to be unsuitable due to dirt, oils, etc.

Exact size of joint seals to be used where joints have been repaired with elastomeric concrete shall be determined after the elastomeric concrete work is completed.

Seal Installation

Do not install the joint seal if the ambient air temperature is below 45°F (7°C).

Begin installation at the low end of the joint after applying the mixed epoxy to the sides of both the joint material and both sides of the joint, making certain to completely fill the grooves with epoxy. With gloved hands, compress the material and with the help of a blunt probe, push it down into the joint until it is recessed approximately 1/4 inch (6 mm) below the surface. Do not push the seal at an angle that would stretch the material. Once work on a joint begins, do not stop until it is completed. Clean the excess epoxy off the surface of the joint material *quickly* and *thoroughly*. Do not use solvents to remove excess epoxy. Remove excess epoxy in accordance with the joint manufacturer’s recommendations.

The entire cost for the Evazote expansion joint replacement including but not limited to labor, maintenance, equipment, tools, and incidentals will be included in the unit prices for Evazote Joint Replacement.

Payments shall be made under:

Evazote Joint Replacement. . . . . Linear Feet

**ELASTOMERIC CONCRETE PLACEMENT**

Contractor shall repair damaged concrete adjacent to expansion joints as directed by the Engineer with elastomeric concrete.

Contractor shall submit falsework plans for approval. Falsework plans shall take into account expansion of the bridge deck due to changes in temperature.

Do not place elastomeric concrete if the ambient air temperature is below 45°F (7°C). Prepare and apply a primer, as per manufacturer’s recommendations, to all vertical concrete faces, all steel components to be in contact with elastomeric concrete, and to areas specified by the manufacturer. Align the angles with the joint opening.

Prepare, batch, and place the elastomeric concrete in accordance with the manufacturer’s instructions. Place the elastomeric concrete while the primer is still tacky and within 2 hours after applying the primer. Pay careful attention to properly consolidate the elastomeric concrete around the steel and anchors.

Tarps are to be utilized under the mixing areas, and the bridge deck joint shall be taped off to protect the bridge deck from spills during elastomeric concrete installation.

Provide materials that comply with the following minimum requirements at 14 days.

CONCRETE PROPERTIES	TEST METHOD	MINIMUM REQUIREMENT
Bond, psi (Strength to Concrete MPa)	ASTM D638 (D638M)	450 (3.1)
Brittleness by Impact, ft-lb (kg-m)	Ball Drop	7 (0.97)
Compressive Strength, psi (MPa)	ASTM D695 (D695M)	2800 (19.3)

BINDER PROPERTIES (without aggregate)	TEST METHOD	MINIMUM REQUIREMENT
Tensile Strength, psi (MPa)	ASTM D638 (D638M)	800 (5.5)
Ultimate Elongation	ASTM D638 (D638M)	150%
Tear Resistance, lb/in (kN/m)	ASTM D624	90 (15.7)

In addition to the requirements above, use elastomeric concrete that also resists water, chemical, UV, and ozone exposure and withstands extreme temperature (freeze-thaw) changes.

Furnish a manufacturer’s certification verifying that the materials satisfy the above requirements. Provide samples of elastomeric concrete to the Engineer, if requested, to independently verify conformance with the above requirements.

The entire cost for joint repair using elastomeric concrete including but not limited to labor, maintenance, equipment, tools, and incidentals will be included in the unit prices for Joint Repair using Elastomeric Concrete. Linear feet measurement will include both sides of the joint to be repaired.

Payments shall be made under:

Joint Repair using Elastomeric Concrete . . . . . Cubic Feet

## **HDPF (High Density Polyurethane Foam) Processes – General and Slab Leveling, Undersealing and Voidfilling**

### **Material**

The medium used for Slab Leveling, Undersealing and Voidfilling shall be a blown high-density polyurethane. The material shall be hydrophobic.

The high-density, closed cell, polyurethane system shall exhibit the following physical characteristics and properties:

<b>DENSITY, Lbs/Ft</b> ASTM 1622	<b>COMPRESSIVE STRENGTH</b> ASTM 1621
<b>3.0</b>	<b>40 psi</b>
<b>3.5</b>	<b>50 psi</b>
<b>4.0</b>	<b>60 psi</b>
<b>6.0</b>	<b>110 psi</b>

The polyurethane foam system will have a free rise density of 3.0 – 4.2 lb/ft, with a minimum compressive strength of 40 psi. The expansion of the polyurethane foam under pressure increases the foam density above the original free rise density value. The compressive strength is a function of density of the tested material; therefore the foam produced during the lifting process will normally have a higher compressive strength than foam produced without restriction (free rise).

### **Equipment**

A listing of lifting and under sealing equipment shall be submitted to the Engineering Department for review. The minimum list of equipment required shall be as listed below. The listing is a minimum and shall not preclude the use of additional equipment.

- A. A pneumatic drill and an electric drill capable of drilling 5/8"- 3/4" dia. holes.
- B. A dynamic penetrometer.
- C. A truck-mounted pumping unit capable of injecting the high-density polyurethane formulation below the concrete slab or asphalt pavement into the sub-surface soils. This pumping unit will be capable of controlling the rate of rise of the pavement and densifying the sub-surface soils.
- D. A laser level or dial indicator devices capable of monitoring and verifying that the concrete slab or asphalt pavement is raised to the required elevation.

### **Contractor Pre-Qualification Requirements**

The contractor shall have a minimum of three years of experience in performing this type of work and a minimum of 10 projects on which the contractor has successfully completed this type of work. Prior to beginning work, the contractor shall submit certification to the engineer that the contractor meets the minimum required experience. The certification shall include a listing of previous clients with contact name and phone numbers.

Prior to being approved for performing this type of work, the following documents shall be supplied by the contractor to the engineer and found to be acceptable:

- (a) A report from an industrial hygienist who has conducted a personnel, production vehicle and typical jobsite safety review of the contractor's implementation procedures involving the polyurethane material.
- (b) A copy of the contractor's Employee Safety Manual specific to polyurethane pavement raising and undersealing work.

**Construction Methods**

Final elevations shall be within 1/4” of the elevations proposed by profile, to the extent permitted by the structure, existing construction and site conditions. A tight string line may be used to monitor and verify elevations for slab lengths of 50 foot or less. For longer sections, a laser level will be used to monitor and verify elevations. Elevations can also be verified by flooding the area to confirm that the paving has been realigned properly. The Contractor shall be responsible for any pavement blowouts or excessive pavement lifting which may result from process and shall repair the damaged area to the satisfaction of the Engineer without additional cost.

The HDPF shall reach 90% of the full compressive strength in 15 minutes after injection.

**I. HDPF Slab Leveling, Undersealing and Voidfilling**

For leveling and undersealing, the Contractor shall prepare concrete to be leveled by profiling existing pavement and determining where the pavement needs to be raised. Voidfilling shall be in areas as indicated and as directed by the engineer. A series of 5/8” holes shall be drilled into the pavement 6-8 foot O.C. (exact location and spacing to be determined in the field). The expanding HDPF material shall then be injected under the slab. The amount of rise shall be controlled by regulating the rate of HDPF injected. Injection holes shall be sealed with non-expansive cementitious grout once leveling is complete.

**Measurement**

The polyurethane material shall be paid for by the pound, which will include furnishing and injecting material.

*Double Verification of Actual Pounds pumped will be accomplished as follows:*

- 1. A conversion from pump counters to pounds will be provided with a manufacturer’s certification of the accurate conversion factor.*
- 2. A visual measurement conversion on the actual totes/barrels of pounds per inches pumped.*

**Basis of Payment**

The quantity of material to be paid for shall be the quantity actual used, based on the contract unit price shown on the bid form. Only those items shown on the bid sheet shall be paid for directly. All other labor, tool, equipment, and incidentals necessary for the completion of the project shall be considered incidental to the contract bid items. Payment shall be made as follows:

**“HDPF Slab Leveling, Undersealing and Voidfilling.....Lbs”**



# 910

## DESCRIPTION AND USES:

Prime-Flex 910 is a low viscosity, hydrophobic polyurethane injection resin designed to stabilize soil. When mixed with catalyst and injected, it migrates through loose soil and into below-grade voids. As it comes into contact with ground water, the Prime-Flex 910 begins to react and expands to form a rigid foam. The foam encapsulates loose soil, fills voids, and forms a solid, water-tight barrier. Prime-Flex 910 is used to:

- Stabilize Soil Prior to Excavation
- Stabilize and Strengthen Seawalls
- Stabilize and Stop Water Migration Through Earthen Dams
- Seal Leaks in Below-Grade Walls
- Strengthen Soil for Tie Back Anchors

The uses for the Prime-Flex family of resins are limited only by the imagination of the designer or contractor.

## ADVANTAGES:

- Contains No Solvents
- Very Low Viscosity for Good Penetration
- Cure Time Controlled by Catalyst Ratio
- Expands Up to 2,900% to Seal Cracks and Fill Voids
- Encapsulates and Strengthens Loose Soil
- Forms a Water-tight Curtain to Stop Water Migration
- Good Resistance to Chemicals

## PACKAGING:

- 5 Gallon Units
- 50 Gallon Units
- 66 ounces Prime-Kat Clear

## **Important Notice**

The information contained herein related to material selection, installation techniques and instruction is general in nature and may not be applicable to a particular project. Specific installation procedures, material requirements, and measuring techniques should be determined after careful analysis of the conditions and desired results of the actual project. We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, expressed or implied, and we assume no responsibility for any loss, damage, or expense, direct or consequential, arising out of their use.

**Specification describes pressure injection of soils to stabilize weak and loose soils and stop water migration through injected soils using a hydrophobic polyurethane injection resin.**

### **Part 1 General**

#### **1.01 Purpose**

- A. Furnish all materials, labor, tools and equipment to stabilize soils as indicated on drawings or in contract documents.

#### **1.02 Related Work**

- A. None

#### **1.03 Quality Assurance**

- A. Manufacturer of polyurethane material shall have been in existence for a period of not less than 15 (fifteen) years.
  - 1. The contractor must provide the engineer with job references where they successfully used hydrophobic polyurethane resins for soil stabilization.

#### **1.04 Delivery, Storage, and Handling**

- A. Deliver the specified products in original, unopened containers with manufacturer's name, labels, product identification, and batch numbers intact.
- B. Store and condition the specified product as recommended by the manufacturer.

#### **1.05 Job Conditions**

- A. Do not apply the material if it is or it appears that it will be raining or snowing unless precautions are taken to protect the material from moisture. If temperature is or will be below 34 degrees F protect grout from freezing. Ice or the formation of ice can prevent grout penetration and travel.
- B. Contractor will take all precautions necessary to insure that no damage will occur to any work zone due to handling or pumping of the polyurethane resin.

## **SITE INVESTIGATION AND REPRESENTATION**

The contractor acknowledges that he has satisfied himself as to the nature of the work, and general and local conditions; particularly those bearing on transportation, availability of labor, and State Regulations for safety required for the prosecution of the work and all matters which can in any way affect the work or cost thereof under this contract. Any failure by the Contractor to acquaint himself with all the available information concerning these conditions will not relieve him from the responsibility for estimating properly the difficulty or cost of successfully performing the work.

## **MINORITY AND WOMEN BUSINESS ENTERPRISES**

### **Policy**

It is the policy of the North Carolina Department of Transportation that minority and women business enterprises shall have the maximum opportunity to participate in the performance of contracts financed by Non-Federal Funds.

### **Obligation**

The Contractor and any subsequent Subcontractor shall ensure that minority and women business enterprises have the maximum opportunity to participate in the performance of the work included in this contract. The Contractor and any subsequent contractor shall take all necessary and reasonable steps to ensure that minority and business enterprises have the maximum opportunity to compete for and perform a portion of the work included in the contract. Failure on the part of the Contractor to carry out the requirements set forth herein shall constitute a breach of contract and after proper notification, may result in award disqualification, termination of the contract, disqualification from bidding, or other appropriate remedy.

### **Goals**

Due to the nature of work in this contract, specific goals for participation by Minority and Women Businesses are not established.

### **Reports**

The Contractor shall submit a statement with the final invoice to report all MB and WB participation on the project. In the event the Contractor had no MB and WB participation on the project, he is still required to submit a statement with the final invoice reporting no participation. Where participation is from MB and WB Material Suppliers or Manufacturers, the statement shall indicate the appropriate percentage (60% for regular dealers, and 100% for manufacturers) of expenditures to be reported.

**THE CONTRACTORS STATEMENT OF MB AND WB PARTICIPATION MUST BE DELIVERED TO THE DEPARTMENT IN ORDER FOR THE FINAL INVOICE TO BE PROCESSED FOR PAYMENT.**

# North Carolina Department of Transportation PURCHASE ORDER CONTRACT BID FORM

WBS Element: 2SP.10254.1 and 2B.102511

Placement of deck epoxy, repairing and replacing bridge expansion joints and foam injections.

Pitt County

ITEM	SECT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT BID
1		Mobilization	4	EA		
2		Placement of Deck Epoxy	30,000	SQ. FT.		
3		Evazote Joint Replacement	68	LF		
4		Joint Repair using Elastomeric Concrete	10	CF		
5		Approach Slab Leveling using Foam Injections	2,700	LB		
6		Approach Slab Stabilization using Foam Injections	720	Gallons		

***TOTAL BID FOR PROJECT:*** \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

ADDRESS \_\_\_\_\_

Federal Identification Number \_\_\_\_\_ Contractors License Number \_\_\_\_\_

Authorized Agent \_\_\_\_\_ Title \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Witness \_\_\_\_\_ Title \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_



# NON-COLLUSION AFFADAVIT

(To be Executed and Returned with Quotation)

The person executing this bid solemnly swears (or affirms) that neither he, nor any official, agent, or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with this bid.

**NAME OF CONTRACTOR**

\_\_\_\_\_

**SIGNATURE OF CONTRACTOR**

\_\_\_\_\_

***NOTE - AFFIDAVIT MUST BE NOTARIZED***

Subscribed and sworn to me, this the \_\_\_\_\_  
day of \_\_\_\_\_, 20\_\_\_\_.

**NOTARY SEAL**

\_\_\_\_\_  
(SIGNATURE OF NOTARY PUBLIC)

Of \_\_\_\_\_ County

State of \_\_\_\_\_

My Commission Expires \_\_\_\_\_



TITLE :	TITLE:
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INSTRUCTIONS ON BACK

**INSTRUCTIONS FOR COMPLETING**  
**“DBE/MB/WB SUBCONTRACT CERTIFICATION” (FORMS RS-1-D)**  
**RACE CONSCIOUS / GOALS REQUIRED**

1. Fill out the blank portions of the “DBE/MB/WB Subcontract Certification” (Form RS-1-D).
2. The negotiated unit or lump sum price must be the actual price agreed upon between the Contractor and the Subcontractor.
3. This form shall be completed and attached to the “Request for Subcontract” (Form RS-1-A) or “Request for Second Tier Subcontract” (Form RS-1-B), whenever the proposed Subcontractor is certified DBE, MB, or WB Subcontractor.
4. In lieu of attaching “DBE/MB/WB Subcontract Certification” (Form RS-1-D), a copy of the actual subcontract agreement between the Contractor and the Subcontractor can be submitted.
5. Signatures are required.