STATE OF NORTH CAROLINA/BUNCOMBE COUNTY SCHOOLS
REQUEST FOR PROPOSAL RFP #29-12

PROJECT: **Building Envelope Repairs**

PROJECT DESIGNER: **Tim Fierle, AIA, Director of Facilities**

USING AGENCY: **Buncombe County Schools** **ISSUE DATE: October 10, 2012**

Sealed proposals subject to the conditions made a part hereof will be received until **4:00 p.m., Wednesday, October 31, 2012** for furnishing all labor, materials, equipment, and services incidental and implied, for completion of the project described herein.

PREBID CONFERENCE: **Thursday, October 18, at the three project locations,**
9:00am Enka Middle School, main office, 390 Asbury Rd., Candler, NC 28715.
10:00am Erwin High School, main office, 60 Lees Creek Rd., Ashevill,e NC 28806.
11:00am A.C. Reynolds Middle School, main office, 2 Rocket Drive, Asheville, NC 28803.

SEND ALL PROPOSALS DIRECTLY TO THE ADDRESS AS SHOWN BELOW:

Buncombe County Schools, Purchasing Division
175 Bingham Road
Asheville, NC 28806

NOTE: Indicate firm name and RFP number on the front of each sealed proposal envelope or package, along with the date for receipt of proposals specified above.

Direct inquiries concerning this RFP to: Tim Fierle, Director of Facilities Phone: 828-255-5916
Ron Venturella, Purchasing Officer Phone: 828-255-5891

THE PROCUREMENT PROCESS

The following is a general description of the process by which a firm will be selected to provide services.

1. Request for Proposals (RFP) is issued to prospective contractors.

2. A preproposal conference and/or deadline for written questions is five days prior to due date.

3. Proposals in one original will be received from each offeror in a sealed envelope or package. Each original shall be signed and dated by an official authorized to bind the firm. Unsigned proposals will not be considered.

4. All proposals must be received by the issuing agency not later than the date and time specified on the cover sheet of this RFP.

5. At that date and time the proposals from each responding firm will be opened. Interested parties are cautioned that these costs and their components are subject to further evaluation for completeness and correctness and therefore may not be an exact indicator of an offeror's pricing position. Informal proposals (less than $ 300,000) are confidential until such time that award has been made. Thereafter, the purchasing division will furnish bid tabs upon request.

6. At their option, the evaluators may request oral presentations or discussion with any or all offerors for the purpose of clarification or to amplify the materials presented in any part of the proposal. However, offerors are cautioned that the evaluators are not required to request clarification; therefore, all proposals should be complete and reflect the most favorable terms available from the offeror.

7. Proposals will be evaluated according to completeness, content, experience with similar projects, ability of the offeror and its staff, and cost. Award of a contract to one offeror does not mean that the other proposals lacked merit, but that, all factors considered, the selected proposal was deemed most advantageous to the State.

8. Offerors are cautioned that this is a request for offers, not a request to contract, and the State/Buncombe County Schools reserves the unqualified right to reject any and all offers when such rejection is deemed to be in the best interest of the State.

(NOTE: THE PROPOSAL FORM MUST BE FULLY EXECUTED AND RETURNED FOR CONSIDERATION)

PROPOSAL FORM
BUILDING ENVELOPE REPAIRS
RFP#29-12 DUE DATE: 10-31-12

By submitting this proposal, the potential contractor certifies the following:

** This proposal is signed by an authorized representative of the firm.
** It can obtain and submit to the Owner insurance certificates as required within 5 calendar days after notice of award.
** The cost and availability of all equipment, materials, and supplies associated with performing the services described herein have been determined and included in the proposed cost.
** All labor costs, direct and indirect, have been determined and included in the proposed cost.
** All taxes have been determined and included in the proposed cost.
** The offeror has attended the conference *(if applicable*) or conducted a site visit and is aware of prevailing conditions associated with performing these services.
** The potential contractor has read and understands the conditions set forth in this RFP and agrees to them with no exceptions.

Therefore, in compliance with this Request for Proposals, and subject to all conditions herein, the undersigned offers and agrees, if this proposal is accepted within 45 days (normally less) from the date of the opening, to furnish the subject services for a cost not to exceed:

PROJECT #1: ENKA MIDDLE SCHOOL ROOF & MASONRY REPAIRS PHASE II

Project Description:
Exterior brick masonry repairs, flashing repairs and sealing at the Enka MS gymnasium and auditorium as specified. Work shall be performed in coordination with school administration to avoid potential safety issues and to avoid disruption to instruction.

BASE BID:
$ _____ dollars and _____/100 $ _____

Unit Price #1: TUCK-POINTING PER LINEAL FT. $_____

Unit Price #2: MASONRY CLEANING, PREP AND SEALING PER SQUARE FT.$ _____ __

Unit Price #3: REGLET WALL FLASHING PER LINEAL FT. $ _____

PROJECT #2: ERWIN HIGH SCHOOL EXTERIOR REPAIRS PHASE III

Project Description:
Exterior precast concrete repairs and traffic topping application at Erwin HS as specified. Work shall be performed in coordination with school administration to avoid potential safety issues and to avoid disruption to instruction.

BASE BID:
$ _____ dollars and _____/100 $ _____

Unit Price #1: HORIZONTAL REPAIRS PER SQ. FT. $_____

CONTINUED ON NEXT PAGE

Unit Price #2: VERTICAL REPAIRS PER SQ. FT. **$ _____ __**

Unit Price #3: OVERHEAD REPAIRS PER SQUARE FT. **$ _____**

Unit Price #4: TRAFFIC COATING, HORIZONTAL SURFACE PER SQ. FT. **$ _____**

Unit Price #5: TRAFFIC COATING, VERTICAL SURFACE PER SQ. FT. **$ _____**

PROJECT #3: A.C. Reynolds Middle School Masonry Repairs

Project Description:
Exterior concrete repairs, at AC Reynolds MS as specified. Work shall be performed in coordination with school administration to avoid potential safety issues and to avoid disruption to instruction.

BASE BID:
$ _____ dollars and _____/100 $ _____

Unit Price #1: CONCRETE REPAIRS PER SQ. FT. **$_____**

Unit Price #2: BRICK EXPANSION JOINTS PER LINEAL FT. **$ _____ __**

Unit Price #3: NEW SEALANT JOINT PER LINEAL FT. **$ _____**

Attachment #1 received: _____ Attended prebid conference: _____

OFFEROR: _____

ADDRESS: _____

CITY, STATE, ZIP: _____

TELEPHONE NUMBER: _____ FAX: _____

FED ID No: _____ Type & License #: _____

E-MAIL: _____ MBE Status: _____
Principal Place of Business if different from above (See General Information on Submitting Proposals, Item 18.):_____

BY: (Signature) _____ TITLE: _____

DATE: _____ (Typed or printed name) _____

END OF PROPOSAL FORM

GENERAL INFORMATION ON SUBMITTING PROPOSALS

1. **EXCEPTIONS:** All proposals are subject to the terms and conditions outlined herein. All responses shall be controlled by such terms and conditions and the submission of other terms and conditions, price lists, catalogs, and/or other documents as part of an offeror's response will be waived and have no effect either on this Request for Proposals or on any contract that may be awarded resulting from this solicitation. Offeror specifically agrees to the conditions set forth in the above paragraph by signature to the proposal.

2. **CERTIFICATION:** By executing the proposal, the signer certifies that this proposal is submitted competitively and without collusion (G.S. 143-54), that none of our officers, directors, or owners of an unincorporated business entity has been convicted of any violations of Chapter 78A of the General Statutes, the Securities Act of 1933, or the Securities Exchange Act of 1934 (G.S. 143-59.2), and that we are not an ineligible vendor as set forth in G.S. 143-59.1. False certification is a Class I felony.

3. **ORAL EXPLANATIONS:** The State/Buncombe County Schools shall not be bound by oral explanations or instructions given at any time during the competitive process or after award.

4. **REFERENCE TO OTHER DATA:** Only information which is received in response to this RFP will be evaluated; reference to information previously submitted shall not be evaluated.

5. **ELABORATE PROPOSALS:** Elaborate proposals in the form of brochures or other presentations beyond that necessary to present a complete and effective proposal are not desired.

   In an effort to support the sustainability efforts of the State of North Carolina we solicit your cooperation in this effort.
   It is desirable that all responses meet the following requirements:

- All copies are printed **double sided**.
- All submittals and copies are printed on **recycled paper with a minimum post-consumer content of 30%** and indicate this information accordingly on the response.
- Unless absolutely necessary, all proposals and copies should **minimize or eliminate use of non-recyclable or non re-usable materials** such as plastic report covers, plastic dividers, vinyl sleeves, and GBC binding. Three-ringed binders, glued materials, paper clips, and staples are acceptable.
- Materials should be submitted in a format which allows for **easy removal and recycling** of paper materials.

6. **COST FOR PROPOSAL PREPARATION:** Any costs incurred by offerors in preparing or submitting offers are the offerors' sole responsibility; the State of North Carolina/Buncombe County Schools will not reimburse any offeror for any costs incurred.

7. **TIME FOR ACCEPTANCE:** Each proposal shall state that it is a firm offer which may be accepted within a period of 45 days. Although the contract is expected to be awarded prior to that time, the 45 day period is requested to allow for unforeseen delays.

8. **TITLES:** Titles and headings in this RFP and any subsequent contract are for convenience only and shall have no binding force or effect.

9. **CONFIDENTIALITY OF PROPOSALS:** In submitting its proposal the offeror agrees not to discuss or otherwise reveal the contents of the proposal to any source outside of the using or issuing agency, government or private, until after the award of the contract. Offerors not in compliance with this provision may be disqualified, at the option of the State/Buncombe County Schools, from contract award. Only discussions authorized by the issuing agency are exempt from this provision.

10. **RIGHT TO SUBMITTED MATERIAL:** All responses, inquiries, or correspondence relating to or in reference to the RFP, and all other reports, charts, displays, schedules, exhibits, and other documentation submitted by the offerors shall become the property of the State/Buncombe County Schools when received.

11. **OFFEROR'S REPRESENTATIVE:** Each offeror shall submit with its proposal the name, address, and telephone number of the person(s) with authority to bind the firm and answer questions or provide clarification concerning the firm's proposal.

12. **SUBCONTRACTING:** Offerors may propose to subcontract portions of the work provided that their proposals clearly indicate what work they plan to subcontract and to whom and that all information required about the prime contractor is also included for each proposed subcontractor.

13. **PROPRIETARY INFORMATION:** Trade secrets or similar proprietary data which the offeror does not wish disclosed to other than personnel involved in the evaluation or contract administration will be kept confidential to the extent permitted by NCAC T01:05B.1501 and G.S. 132-1.3 if identified as follows: Each page shall be identified in boldface at the top and bottom as "CONFIDENTIAL". Any section of the proposal which is to remain confidential shall also be so marked in boldface on the title

page of that section. Cost information may not be deemed confidential. In spite of what is labeled as confidential, the determination as to whether or not it is shall be determined by North Carolina law.

14. **HISTORICALLY UNDERUTILIZED BUSINESSES:** Pursuant to General Statute 143-48 and Executive Order #150, Buncombe County Schools invites and encourages participation in this procurement process by businesses owned by minorities, women, disabled, disabled business enterprises and non-profit work centers for the blind and severely disabled.

    The Contractor agrees in particular to maintain open hiring and employment practices and to receive applications for employment in compliance with all requirements of applicable federal, state and local laws and regulations issued pursuant thereto relating to nondiscriminatory hiring and employment practices. Each Prime Contractor shall undertake an affirmative action program to ensure that no person shall be excluded from participation in any employment activities because of age, sex, race, religion, color, national origin or handicap.

15. **PROTEST PROCEDURES**: If an offeror wants to protest a contract awarded pursuant to this solicitation, they must submit a written request to the Purchasing Officer, Buncombe County Schools, 175 Bingham Road, or PO Box 16771, Asheville, NC 28806. This request must be received by the Purchasing Division within thirty (30) consecutive calendar days from the date of the contract award, and must contain specific sound reasons and any supporting documentation for the protest. NOTE: Contract award notices are sent only to those actually awarded contracts, and not to every person or firm responding to this solicitation. Contract status and award notices are available through the purchasing division or the project designer with contact information as shown on the first page of this solicitation. Offeror's may call to obtain a verbal status of contract award. All protests will be handled pursuant to the North Carolina Administrative Code, Title 1, Department of Administration, Chapter 5, Purchase and Contract, Section 5B.1519.

16. **TABULATIONS:** Offeror's may call the purchasing division to obtain a verbal status of contract award.

17. **VENDOR REGISTRATION AND SOLICITATION NOTIFICATION SYSTEM:** Vendor Link NC allows vendors to electronically register free with the State to receive electronic notification of current procurement opportunities for goods and services available on the Interactive Purchasing System. Online registration and other purchasing information are available on the Internet web site: http://www.state.nc.us/pandc/.

18. **RECIPROCAL PREFERENCE:** G.S. 143-59 establishes a reciprocal preference law to discourage other states from applying in-state preferences against North Carolina's resident offerors. The "Principal Place of Business" is defined as the principal place from which the trade or business of the offeror is directed or managed.

NORTH CAROLINA GENERAL CONTRACT TERMS AND CONDITIONS
(Contractual and Consultant Services)

1. **GOVERNING LAW:** This contract is made under and shall be governed and construed in accordance with the laws of the State of North Carolina.

2. **SITUS:** The place of this contract, its situs and forum, shall be North Carolina , where all matters, whether sounding in contract or tort, relating to is validity, construction, interpretation and enforcement shall be determined

3. **INDEPENDENT CONTRACTOR:** The Contractor shall be considered to be an independent contractor and as such shall be wholly responsible for the work to be performed and for the supervision of its employees. The Contractor represents that it has, or will secure at its own expense, all personnel required in performing the services under this agreement. Such employees shall not be employees of, or have any individual contractual relationship with the Agency.

4. **KEY PERSONNEL:** The Contractor shall not substitute key personnel assigned to the performance of this contract without prior written approval by the Agency's Contract Administrator. The individuals designated as key personnel for purposes of this contract are those specified in the Contractor's proposal.

5. **SUBCONTRACTING:** Work proposed to be performed under this contract by the Contractor or its employees shall not be subcontracted without prior written approval of the Agency's Contract Administrator/Project Designer. Acceptance of an offeror's proposal shall include any subcontractor(s) specified therein.

6. **PERFORMANCE AND DEFAULT:** If, through any cause, the Contractor shall fail to fulfill in timely and proper manner the obligations under this agreement, the Agency shall thereupon have the right to terminate this contract by giving written notice to the Contractor and specifying the effective date thereof. In that event, all finished or unfinished deliverable items under this contract prepared by the Contractor shall, at the option of the Agency, become its property, and the Contractor shall be entitled to receive just and equitable compensation for any satisfactory work completed on such materials. Notwithstanding, the

Contractor shall not be relieved of liability to the Agency for damages sustained by the Agency by virtue of any breach of this agreement, and the Agency may withhold any payment due the Contractor for the purpose of setoff until such time as the exact amount of damages due the Agency from such breach can be determined.
In case of default by the Contractor, the State may procure the services from other sources and hold the Contractor responsible for any excess cost occasioned thereby. The State reserves the right to require performance bond or other acceptable alternative guarantees from successful offeror without expense to the State.

Upon the entering of a judgment of bankruptcy of insolvency by or against the Contractor, the Agency may terminate this contract for cause.

Neither party shall be deemed to be in default of its obligations hereunder if and so long as it is prevented from performing such obligations by any act of war, hostile foreign action, nuclear explosion, riot, strikes, civil insurrection, earthquake, hurricane, tornado, or other catastrophic natural event or act of God.

7. **TERMINATION:** The Agency may terminate this agreement at any time by *15 days* notice in writing from the Agency to the Contractor. In that event, all finished or unfinished deliverable items prepared by the Contractor under this contract shall, at the option of the Agency, become its property. If the contract is terminated by the Agency as provided herein, the Contractor shall be paid for services satisfactorily completed, less payment or compensation previously made.

8. **AVAILABILITY OF FUNDS:** Any and all payments to the Contractor are dependent upon and subject to the availability of funds to the Agency for the purpose set forth in this agreement.

9. **CONFIDENTIALITY:** Any information, data, instruments, documents, studies or reports given to or prepared or assembled by the Contractor under this agreement shall be kept as confidential and not divulged or made available to any individual or organization without the prior written approval of the Agency.

10. **CARE OF PROPERTY:** The Contractor agrees that it shall be responsible for the proper custody and care of any property furnished it for use in connection with the performance of this contract or purchased by it for this contract and will reimburse the State for loss of damage of such property.

11. **COPYRIGHT:** No deliverable items produced in whole or in part under this agreement shall be the subject of an application for copyright by or on behalf of the Contractor.

12. **ACCESS TO PERSONS AND RECORDS:** The State Auditor shall have access to persons and records as a result of all contracts or grants entered into by State agencies or political subdivisions in accordance with General Statute 147-64.7. The Contractor shall retain all records for a period of three years following completion of the contract.

13. **ASSIGNMENT:** No assignment of the Contractor's obligations nor the Contractor's right to receive payment hereunder shall be permitted. However, upon written request approved by the issuing purchasing authority , the State may:
    a. Forward the contractor's payment check(s) directly to any person or entity designated by the Contractor, or
    b. Include any person or entity designated by Contractor as a joint payee on the Contractor's payment check(s).

    In no event shall such approval and action obligate the State to anyone other than the Contractor and the Contractor shall remain responsible for fulfillment of all contract obligations.

14. **COMPLIANCE WITH LAWS:** The Contractor shall comply with all laws, ordinances, codes, rules, regulations, and licensing requirements (permits) that are applicable to the conduct of its business, including those of federal, state, and local agencies having jurisdiction and/or authority.

15. **AFFIRMATIVE ACTION:** The Contractor shall take affirmative action in complying with all Federal and State requirements concerning fair employment and employment of people with disabilities, and concerning the treatment of all employees without regard to discrimination by reason of race, color, religion, sex, national origin, or disability.

16. **INSURANCE:** During the term of the contract, the contractor at its sole cost and expense shall provide commercial insurance of such type and with such terms and limits as may be reasonably associated with the contract. As a minimum, the contractor shall provide and maintain the following coverage and limits:

    a. Worker's Compensation - The contractor shall provide and maintain Worker's Compensation Insurance, as well as employer's liability coverage with minimum limits of $150,000.00, covering all of Contractor's employees who are engaged in any work under the contract. If any work is subcontracted, the contractor shall require the subcontractor to provide the same coverage for any of its employees engaged in any work under the contract.

    b. Commercial General Liability - General Liability Coverage on a Comprehensive Broad Form on an occurrence basis in the minimum amount of $2,000,000.00 Combined Single Limit. (Defense cost shall be in excess of the limit of liability.

    c. Automobile - Automobile Liability Insurance, to include liability coverage, covering all owned, hired and

non-owned vehicles, used in connection with the contract. The minimum combined single limit shall be $500,000.00 bodily injury and property damage; $500,000.00 uninsured/under insured motorist; and $100,000.00 medical payment.

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, and all requirements of the insurer under any such insurance policies, except as they may conflict with existing North Carolina laws or this contract. The limits of coverage under each insurance policy maintained by the contractor shall not be interpreted as limiting the contractor's liability and obligations under the contract.

The Contractor shall furnish a Certificate of Insurance as proof of the above coverages. Certificate will contain provision that the insurance coverages cannot be canceled, reduced in amount or coverage eliminated without 30 days written notice to the Buncombe County Board of Education. Owner's Protective insurance must list the Buncombe County Board of Education as a "Named Insured" as it's interest may appear. Owner's approval of Certificate of Insurance does not decrease or relieve the contractor's responsibility for maintaining insurance coverage as required in this Request for Proposal.

17. **ADVERTISING:** Contractor agrees not to use the existence of this contract, the name of the agency, or the name of the State of North Carolina as part of any commercial advertising.

18. **ENTIRE AGREEMENT:** This contract and any documents incorporated specifically by reference represent the entire agreement between the parties and supersede all prior oral or written statements or agreements. This Request for Proposals, any addenda thereto, and the offeror's proposal are incorporated herein by reference as though set forth verbatim.

    All promises, requirements, terms, conditions, provisions, representations, guarantees, and warranties contained herein shall survive the contract expiration or termination date unless specifically provided otherwise herein, or unless superseded by applicable Federal or State statutes of limitation.

19. **AMENDMENTS:** This contract may be amended only by written amendments duly executed by the Agency and the Contractor.

20. **TAXES:** G.S. 143-59.1 bars the Secretary of Administration from entering into contracts with vendors if the vendor or its affiliates meet one of the conditions of G. S. 105-164.8(b) and refuse to collect use tax on sales of tangible personal property to purchasers in North Carolina. Conditions under G. S. 105-164.8(b) include: (1) Maintenance of a retail establishment or office, (2) Presence of representatives in the State that solicit sales or transact business on behalf of the vendor and (3) Systematic exploitation of the market by media-assisted, media-facilitated, or media-solicited means. By execution of the bid document the vendor certifies that it and all of its affiliates, (if it has affiliates), collect(s) the appropriate taxes.

21. **GENERAL INDEMNITY:** The contractor shall hold and save the State/Buncombe County Schools, its officers, agents, and employees, harmless from liability of any kind, including all claims and losses, with the exception of consequential damages, accruing or resulting to any other person, firm, or corporation furnishing or supplying work, services, materials, or supplies in connection with the performance of this contract, and from any and all claims and losses accruing or resulting to any person, firm, or corporation that may be injured or damaged by the contractor in the performance of this contract and that are attributable to the negligence or intentionally tortious acts of the contractor provided that the contractor is notified in writing within 30 days that the State/Buncombe County Schools has knowledge of such claims. The contractor represents and warrants that it shall make no claim of any kind or nature against the State's agents who are involved in the delivery or processing of contractor goods to the State. The representation and warranty in the preceding sentence shall survive the termination or expiration of this contract.

CONTRACTOR'S SALES TAX REPORT **Buncombe County Schools**

NC State and Local Sales Taxes Paid

CONTRACTOR:_____ **PO#/RFP#** _____

Address: _____**For Period:** _____

Invoice Date	Invoice #	Type of Property	NC Tax 4.75%	County Tax 2.00%	Name of County
		TOTAL	**$**	**$**	

I certify that the above figures do not include any tax paid on supplies, tools and equipment which were used to perform this contract and only includes those building materials, supplies, fixtures and equipment which actually became a part of or annexed to the building or structure. I certify that, to the best of my knowledge, the information provided here is true, correct, and complete.

Sworn to and subscribed before me,

This the _____ day of
_____, 20____

_____
Signed

_____
Notary Public

_____
Print or Type Name of Above & Title

My Commission Expires: _____

Seal

NOTE:
This certified statement may be subject to audit.

The North Carolina General Assembly has amended the Statute to provide refunds of sales and use tax to local school units in accordance with the provisions of G.S. 105-164. 14(c) effective with tax paid on or after July 1, 1998.

These refunds are to include the “sales and use taxes paid by contractors on building materials, supplies, fixtures and equipment that become a part of or annexed to a building or structure that is owned or leased by the governmental entity and is being erected, altered or repaired for use by the governmental entity (G.S. 1O5-164.14).”

Sales and Use Tax Technical Bulletin Section 18-2F specifies: “To substantiate a refund claim for sales or use taxes paid on purchases of building materials, supplies. fixtures and equipment by its contractor, the claimant must secure from such contractor certified statements setting forth all of the following information:

a. the date the property was purchased;
b. the type of property purchased :
c. the project for which the property was used:
d. if the property was purchased in this State, the county in which it was purchased;
e. if the property was not purchased in this State, the county in which the property was used; and
f. the amount of sales and use taxes paid.

In the event the contractor makes several purchases from the same vendor, such certified statement must indicate the invoice numbers, the inclusive dates of the invoices, the total amount of the invoices and the State and local sales and use taxes paid thereon. Such statement must also include the cost of any tangible personal property withdrawn from the contractor's warehouse stock and the amount of sales and use tax paid thereon by the contractor. Similar certified statements by his subcontractors must be obtained by the general contractor and furnished to the claimant. Any local sales or use taxes must be shown separately from the State sales or use taxes. The contractor’s statements must not contain sales or use taxes paid on purchases of tangible personal property purchased by such contractors for use in performing the contract which does not annex to, affix to or in some manner become a part of the building or structure that is owned or leased by a governmental agency and is being erected, altered or repaired for use by a governmental entity as defined by G.S. 105-164.14(c). Examples of property on which sales or use tax has been paid by the contractor and which shall not be included in the contractor's statement are scaffolding, forms for concrete, fuel for the operation of machinery and equipment, tools, repair parts and equipment rentals.

Please read entire specification package. You will be held accountable for all information. NO payment shall be made if specifications are not followed.

Scope: Work shall consists of three separate projects involving exterior concrete or brick masonry repairs, furnishing all labor, materials, equipment and services, incidental for the completion of work as described herein. All items not specifically mentioned in the specifications, but which obviously are required to make the job complete, shall be included automatically. Each project will be awarded independently.

Work Schedule: Work may be completed on good weather days as defined in the specifications and as coordinated with school testing schedule. **Work schedule begins the date the purchase order is issued**. Completion date is April 8, 2013 for a single project. If a bidder is awarded two or more projects, then completion date will be June 1, 2013.

Qualifications: All bidders must furnish a list of North Carolina Contractor Licenses, which they hold.

Contractor's Responsibility: The Contractor shall be responsible for the construction site during the performance of the work. The Contractor shall be responsible for any and all damages to persons and property during the performance of the work and shall further provide all necessary safety measures and shall fully comply with all federal state and local laws, building rules, rules and regulations to prevent accidents or injury to persons or property on or about the location of the work site. This is to include OSHA 1910, General Construction, or those regulations mandated by these specifications. Special attention will be made to proper barricading of the work areas due to the work progressing within an actively operating office atmosphere.

Safety Regulations: The Contractor shall adhere to the rules, regulations and interpretations of the North Carolina Department of Labor relating to Occupational Safety and Health Standards for the Construction Industry (Title 29, Code of Federal Regulations, Part 1926, published in Volume 39, Number 122, Part II, June 24, 1974 Federal Register) which is hereby incorporated in these specifications.

Codes: All work shall be done in accordance with the specifications and shall comply with North Carolina Building Code, Underwriters' Rules and Regulations and Federal, State and Local Regulations covering work of this nature. Whenever drawings or specifications are in excess of such laws, codes and regulations, the specifications shall hold. All equipment shall have U. L. labels attached.

Permits: **The Contractor must secure all permits required for the job completion**, obtain and deliver to Owner, all certification of inspection issued by the authorities having jurisdiction, with Contractor paying cost of same.

Workers on Job: All employees of the Contractor shall, while on Buncombe County Board of Education property, act in a professional and courteous manner. All workers shall be expected to wear long pants and shirts while on Board property. Also, all employees of the Contractor must "sign in" in the main office upon entering the facility and must "sign out" upon leaving the property. Any employee of the Contractor may be told to leave the property by either the Principal or the Assistant Director, if they do not follow the above procedure. The employee shall be replaced with another at no additional cost to the Buncombe County Board of Education.

In accordance with G.S. 14-208.18, all persons who (1) are required to register under the Sex Offender and Public Protection Program AND (2) have been convicted of certain sexually violent offenses or any offense where the victim was under the age of 16 years at the time of the offense are expressly forbidden to knowingly be present on any property owned or operated by the school system,

including school buildings, athletic fields, playgrounds, parking lots, school buses, activity buses or other property of any kind for any reason, including attendance at sporting events or other school related functions, whether before, during or after school hours. It is the responsibility of the contractor or vendor that their employees and sub-contractors are in accordance with G.S. 14-208.18.

Equipment and Tools: The Contractor shall use no equipment or tools that are owned by the Buncombe County Board of Education. Also, no employees of the Buncombe County Board of Education shall be utilized by the Contractor except for opening locked doors and giving directions.

Materials: No materials shall be stored on site and the Buncombe County Board of Education is not responsible for any materials, equipment or tools lost or stolen from the site.

Clean Up: The area of work shall be cleaned daily so that the Buncombe County Board of Education shall not incur any additional costs to make the area suitable for the work process. Also, the Contractor shall utilize no trash receptacles or dumpsters owned by the Buncombe County Board of Education. All trash and removed materials shall be properly disposed of off the property.

Performance of Work: All work shall be performed at the highest level of quality. The Owner shall be responsible for determining the quality of work, and may notify the Contractor of same. **ANY WORK COMPLETED THAT IS NOT SUITABLE TO THE OWNER SHALL BE REPEATED BY THE CONTRACTOR AT NO COST TO THE OWNER.** Any damage to existing area or utilities will be the responsibility of the Contractor. **NO EXCEPTIONS**.

ATTACHMENT #1: Specifications and drawings of all three projects.

The Buncombe County Board of Education reserves the right to reject any or all bids for any or no reason, and to waive informalities**.**

ALEXANDER design studio
ARCHITECTURE | CONSULTING | ANALYSIS
54 1/2 Broadway Street
Asheville, NC 28801
Tel: 828.619.0301
info@alexanderdesignstudio.com

August 7, 2012

SCOPE OF WORK

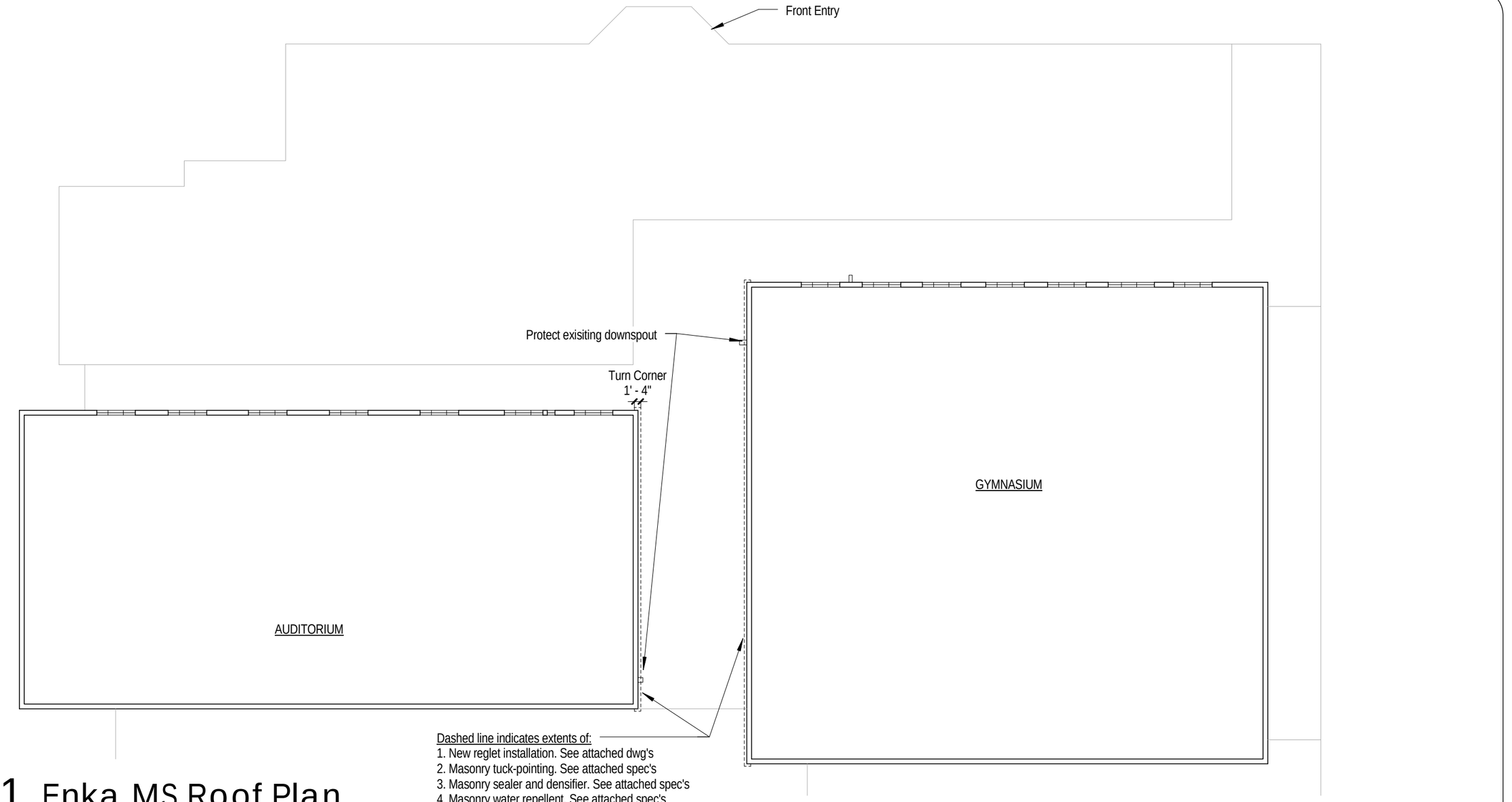
Project: Enka Middle School Roof and Masonry Repairs – Phase II
390 Asbury Road
Candler, NC

Drawing List: EnkaMS1
EnkaMS2

Specifications: 033540 – Masonry Sealer
049010 – Masonry Restoration and Cleaning
071750 – Water Repellant
079200 – Joint Sealers

Description of Work:
Work to take place on exterior of building only.

- Installation of new surface mounted galv. metal flashing above the existing termination bar. Turn corner 1'-4" with flashing.
- Tuck pointing of existing masonry as indicated.
- Masonry cleaning, sealing and application of water repellant as indicated.



1 Enka MS Roof Plan

EnkaMS1 3/64" = 1'-0"

Issue Date: 08.07.12

EnkaMS1

BCS01
Enka Middle Roof Repair

Buncombe County Public Schools
2011 Minor Projects

175 Bingham Road
Asheville, NC 28804

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MYLES S ALEXANDER
REGISTERED ARCHITECT
10220
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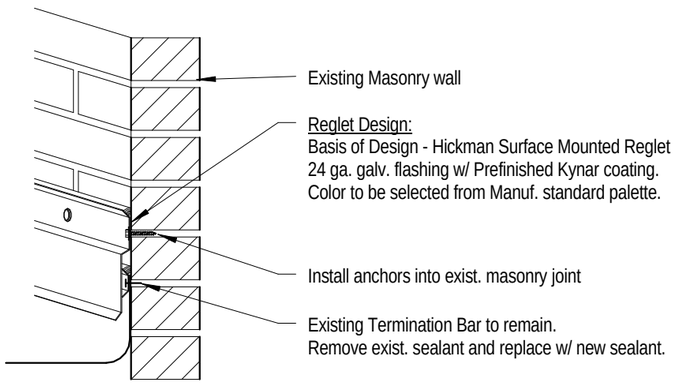
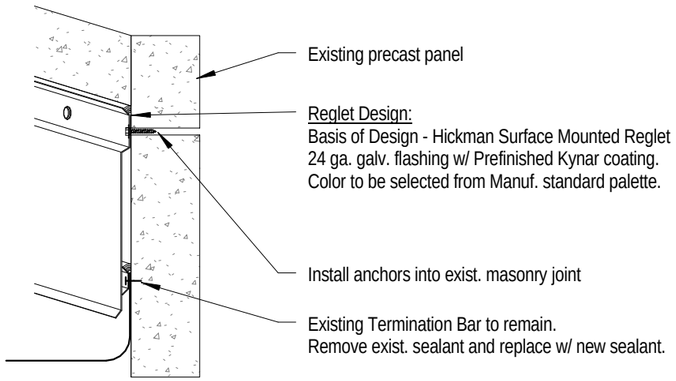
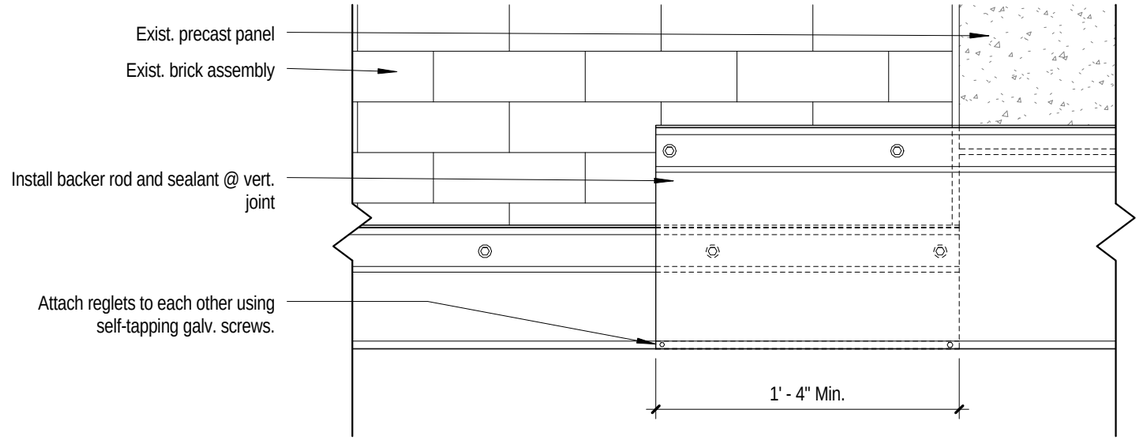
NORTH CAROLINA
ASHEVILLE NC



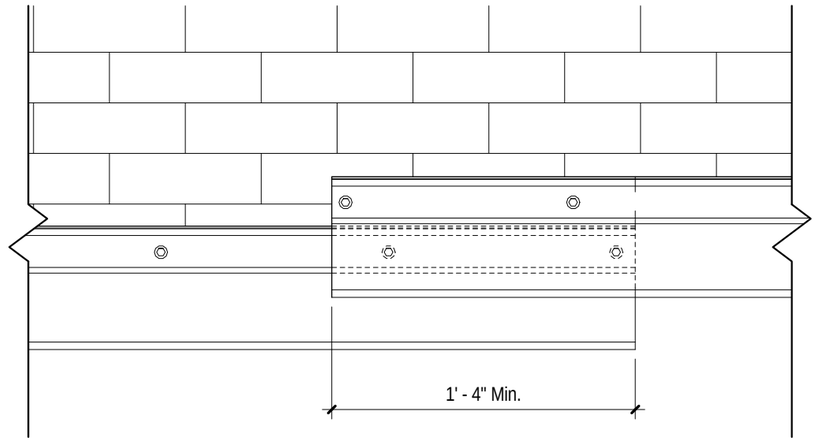
Reglet Detail @ Brick



Reglet Detail @ PreCast



Reglet Step Detail @ Precast Panel



Reglet Step Detail @ Brick

1 Reglet Details

EnkaMS2 1 1/2" = 1'-0"

Issue Date: 08.07.12

EnkaMS2

BCS01
Enka Middle Roof Repair

Buncombe County Public Schools
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SECTION 033540 - CONCRETE SEALER

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies clear penetrating concrete sealer for exterior and interior horizontal concrete flat work.

B. Related Sections:
1. Division 01 Section “Construction Waste Management and Disposal” for construction waste management and disposal requirements.
2. Division 01 Section “Sustainable Design Requirements – LEED for New Construction and Major Renovations” for additional sustainable design requirements.
3. Division 03 Section “Cast-In-Place Concrete”.

1.2 SUBMITTALS

A. Product Data: For type of manufactured material and product indicated.

B. Material Certificates: Signed by manufacturers certifying compliance of floor and slab treatments.

1.3 QUALITY ASSURANCE

A. Applicator Qualifications: Engage an experienced applicator who employs only persons trained and approved by concrete sealer manufacturer for application of manufacturer's products.

B. Regulatory Requirements: Comply with applicable rules of pollution-control regulatory agency having jurisdiction in Project locale regarding VOCs and use of hydrocarbon solvents.

1.4 WARRANTY

A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.

B. Special Warranty: Submit a written warranty, executed by the applicator and concrete sealer manufacturer, covering materials and labor, agreeing to repair or replace materials that fail to provide water repellency within the specified warranty period. Warranty does not include deterioration or failure of coating due to unusual weather phenomena, failure of prepared and treated substrate, formation of new joints and cracks in excess of 1/16 inch (1.5 mm) wide, fire, vandalism, or abuse by maintenance equipment.

1. Warranty Period: Interior Horizontal Concrete Flat Work: 5 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Foxfire Enterprises, Inc., PHONE: (254) 829-1943, EMAIL: foxfireusa@sbcglobal.net (Basis of Design)

2.2 MATERIALS

A. Water-Based, Sealer, Densifier and Hardener:

1. Foxfire S-1007 Sealer (Basis-of-Design).

PART 3 – EXECUTION

3.1 PREPARATION

A. Clean substrate of substances that might interfere with penetration or performance of concrete sealer. Test for moisture content, according to sealer manufacturer's written instructions, to ensure surface is sufficiently dry.

1. Formed Concrete: Remove oil, curing compounds, laitance, and other substances that could prevent adhesion or penetration of concrete sealers.

B. Protect adjoining work, including sealant bond surfaces, from spillage or blow-over of concrete sealer. Cover adjoining and nearby surfaces of aluminum and glass if there is the possibility of concrete sealer being deposited on surfaces. Cover live plants and grass.

C. Coordination with Sealants: Do not apply concrete sealer until sealants for joints adjacent to surfaces receiving water-repellent treatment have been installed and cured.

1. Water-repellent work may precede sealant application only if sealant adhesion and compatibility have been tested and verified using substrate, concrete sealer, and sealant materials identical to those used in the work.

3.2 WATER BASED ACRYLIC SEALER APPLICATION

A. Apply a moderate-saturation spray coating of concrete sealer on surfaces indicated for treatment using low-pressure spray equipment. Newly placed concrete should receive sealer as soon as bleed water has dissipated. Comply with manufacturer's written instructions for using airless spraying procedure, unless otherwise indicated.

1. Precast Work: At Contractor's option, first application of concrete sealer on precast concrete units may be completed before installing units. Mask sealant-bond surfaces to prevent concrete sealer from migrating onto joint surfaces.

B. Apply a second moderate-saturation spray coating, repeating first application. Comply with manufacturer's written instructions for limitations on drying time between coats and after rainstorm wetting of surfaces between coats. Consult manufacturer's technical representative if written instructions are not applicable to Project conditions.

3.3 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Provide services of a factory-authorized technical service representative to inspect and approve the substrate before application and to instruct the applicator on the product and application method to be used.

3.4 CLEANING

A. Protective Coverings: Remove protective coverings from adjacent surfaces and other protected areas.

B. Immediately clean concrete sealer from adjoining surfaces and surfaces soiled or damaged by water-repellent application as work progresses. Repair damage caused by water-repellent application. Comply with manufacturer's written cleaning instructions.

END OF SECTION 033540

SECTION 04901

MASONRY RESTORATION AND CLEANING
(Tuckpointing Specifications)

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings, photos and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.02 DESCRIPTION OF WORK

A. Extent of masonry restoration work as indicated on drawings and photos.

B. Masonry restoration work includes the following:
1. Retuckpointing of masonry joints.
2. Final cleaning of masonry.

1.03 QUALITY ASSURANCE

A. Restoration Specialist: Work must be performed by a firm having not less than 5 years successful experience in comparable masonry restoration projects and employing personnel skilled in the restoration processes and operations indicated.

B. Repointing: Prepare 2 separate sample areas of approximately 2 feet high by 2 feet wide for each type of repointing required, one for demonstrating methods and quality of workmanship expected in removal of mortar from joints and the other for demonstrating quality of materials and workmanship expected in pointing mortar joints appearance to adjacent existing joints. The intent of the new pointing work is to match cleaned existing mortar. Newly pointed areas should be consistent with existing adjacent mortar joints for color and texture.

1.04 SUBMITTALS

A. Product Data: Submit manufacturer's technical data for each product indicated including recommendations for their applications and use. Includes test reports and certifications substantiating that products comply with requirements.

B. Samples: Submit, for verification purposes, samples of the following:
1. Each new exposed masonry mortar to be used for replacing existing materials. Include in each set of samples the full range of colors and textures to be expected in completed work.
2. Each type of chemical cleaning material data.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to site in manufacturer's original and unopened containers and packaging bearing labels as to type and names of products and manufacturers.

B. Protect masonry restoration materials during storage and construction from wetting by rain, snow or ground water, and from staining or intermixture with earth or other types of materials.

C. Protect grout, mortar and other materials from deterioration by moisture and temperature. Store in a dry location or in waterproof

containers. Keep containers tightly closed and away from open flames. Protect liquid components from freezing. Comply with manufacturer's recommendations for minimum and maximum temperature requirements for storage.

1.06 PROJECT CONDITIONS

A. Do not repoint mortar joints or repair masonry unless air temperatures are between 40 deg.F and 90 deg.F and will remain so for at least 48 hours after completion of work.

B. Prevent mortar used in repointing and repair work from staining faces of surrounding masonry and other surfaces.

C. Protect sills, ledges, projections and pedestrians from mortar droppings.

1.07 SEQUENCING / SCHEDULING

A. Perform masonry restoration work in the following sequence:
1. Rake or cut out existing mortar joints from indicated to be repointed.
2. Repoint existing mortar joints of masonry indicated to be restored.

PART 2 PRODUCTS

2.01 MASONRY MATERIALS

A. Portland Cement: ASTM C 150, Type I or Type II.

B. Hydrated Lime: ASTM C 207, Type S, Type N or Type O.

C. Mortar Sand: ASTM C 144, unless otherwise indicated.
1. Color: Provide natural sand; of color necessary to produce required mortar color.
2. For the repointing mortar, provide sand with rounded edges.
3. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands, if necessary, to achieve suitable match.

D. Mortar Pigments: Natural and synthetic iron oxides, compounded for mortar mixes. Use only pigments with a record of satisfactory performance in masonry mortars.

E. Water: Potable.

2.02 TUCKPOINT MORTAR MIXES

A. General:
1. Measurement and Mixing: Measure cementitious and aggregate material in a dry condition by volume or equivalent weight. Do not measure by shovel, use known measure. Mix materials in a clean mechanical mortar mixer. If color is required, mix in with dry material.
2. Mixing Pointing Mortar: Thoroughly mix cementitious and aggregate, color if required, materials together before adding any water. Maintain mortar in the dampened condition for 1 to 2 hours. Add water in small portions until mortar of desired consistency is reached. Use mortar within 30 minutes of final mixing.

2.03 REPOINTING MASONRY

A. Rake or grind out mortar joints as follows:
1. Rake or grind out mortar joints not less than ½ inch in depth or less than that required to expose sound, unweathered

mortar.

a. Contractor shall show a satisfactory Quality Control Program and demonstrated ability of operators to use tools without damage to masonry, or widening of joints. Quality Control Program shall include provisions for supervising performance and preventing damage due to worker fatigue.

B. Rinse masonry joints as follows:

1. Rinse masonry joint surfaces with water to remove dust and mortar particles. Time application of rinsing so that at time of pointing, joint surfaces are damp but free of standing water. For best practices, if rinse water has dried, dampen masonry joint surfaces before pointing.

C. Tuckpoint mortar joints as follows:

1. Tuckpoint mortar joints starting at one end and working away from starting area (this will ensure mortar joints are fully packed and no voids, air pockets are in mortar).
2. Once area is complete, final tool (strike) mortar joints in opposite direction ensuring mortar joints are fully packed and tool (strike) to final appearance. Joints shall match existing joints as closely as possible. Unless otherwise directed by Architect or Owner.
3. Take care not to spread mortar over edges onto exposed masonry surfaces or to featheredge mortar. Remove excess mortar from edge of joint by brushing.

2.04 FINAL CLEANING

A. After mortar is fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or fiber brushes, and clean water, spray applied at low pressure.

1. Do not use metal scrapers.
2. Use appropriate products by FOXFIRE USA, Inc. or equivalent.

B. Wash adjacent woodwork and other non-masonry surfaces. Use detergent and soft brushes or cloths.

C. Clean masonry debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.

D. Sweep and rake adjacent pavement and grounds to remove masonry debris. Where necessary, pressure wash surfaces to remove mortar, dust, dirt and stains.

END OF SECTION

SECTION 071750-WATER REPELLENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

1. Water repellant coating for external masonry and concrete surfaces.

1.2 RELATED SECTIONS

1. Section 04300 - Unit Masonry System: Masonry surfaces.

2. Section 07900 - Joint Sealers.

1.3 REFERENCES

1. ASTM C666 - Test Methods for Freeze-Thaw Durability.

2. ASTM C672 - Scaling Resistance.

3. ASTM D-658-44 - Abrasion Resistance

1.4 SUBMITTALS

1. Product Data: Provide data for material description, physical properties, recommended storage conditions, shelf life, precautions, and joint and crack sealants, with temperature range for application of water-repellent impregnating agent.

2. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

1.5 QUALIFICATIONS

1. Applicator Qualifications: The applicator of the roofing material specified herein shall be an approved applicator by the manufacturer. Proof of this qualification shall be provided in written form from the manufacturer of the roofing system.

1.6 QUALITY CONTROL

1. Codes and Standards: The contractor shall make him / herself thoroughly familiar with all codes, regulations, and standards governing the specified work. Any contradiction between the manufacturer's requirements and these specifications shall be brought to the attention of the manufacturer and the specifier.

2. Deviations: There shall not be any deviations from these specifications unless the deviation is submitted in writing to the specifier. The request for deviation must have a letter from the roofing manufacturer's technical department approving the details of the deviation.

3. An Approved Applicator shall be on site during all applications of specified products.

4. Manufacturer's Technical Representative: An employee of the roofing material manufacturer shall be on site at least once every 7-calendar days during the work specified herein. Upon request the technical representative shall provide a written inspection report, during each site visit and submit the reports to the owner/owner's representative.

1.7 DELIVERY, STORAGE, AND HANDLING

1. Deliver materials to site in manufacturer's unopened and undamaged containers bearing the following information:

Name of manufacturer.
Name of contents and products code.
Net volume of contents.
Lot or batch number.
VOC content
Storage temperature limits.
Shelf life expiration date.
Mixing instructions and proportions of contents.
Safety information and instructions.

2. Store and protect materials from damage and weather in accordance with manufacturer's instructions.

3. Store materials at temperatures between 50-90 degrees F (10.0-32.2 degrees Celsius). Keep out of direct sunlight.

4. Support stored material containers on pallets and cover with tarpaulin tied to bottom of pallets.

1.8 ENVIRONMENTAL REQUIREMENTS

1. Do not apply if ambient temperatures are expected to fall below 40 degrees F (4.5 degrees Celsius) or if rain is expected before the application has time to cure.

1.9 WARRANTY

1. Provide ten-year manufacturer's warranty.

PART 2 PRODUCTS

2.1 MANUFACTURER

1. Basis of Design: Foxfire Enterprises, Inc., PHONE: (254) 829-1943, EMAIL: foxfireusa@sbcglobal.net

2.2 MATERIALS

1. Water-Repellent Coating: 5000WB Water Repellent

2.3 ACCESSORIES

1. Patching Mortar: Patching mortar for masonry repairs.

PART 3 EXECUTION

3.1 EXAMINATION

1. Verify substrate surfaces are durable; free of frozen matter, dampness, loose particles, cracks, pits, projections, or foreign matter detrimental to application of water-repellent system.

3.2 PREPARATION

1. Follow all manufacturers' standard guidelines for preparation.

2. Protect adjacent surfaces not designated to receive waterproofing.

As a minimum, clean and prepare surfaces to receive waterproofing by removing all loose and flaking particles, grease and laitance with the use of a stiff bristle push broom and or washing. Care should be taken not to inject water into the substrate during washing. In some cases additional drying time may be required after the cleaning process.

3. Make all necessary repairs to existing substrate.

4. Do not apply waterproofing to surfaces unacceptable to manufacturer.

5. Seal damaged mortar, cracks and joints with patching material in accordance with manufacturer's instructions.

3.3 APPLICATION

1. Follow all manufacturers' standard guidelines for application

2. Spray or brush-apply coating in accordance with manufacturer's instructions.

3. Thoroughly apply coating materials into joints, crevices, and open spaces.

4. Apply two coats of water-repellent coating at a total rate of 300 -400 sq. ft. /gal .

5. Vertical Application: Apply water repellant material by low pressure sprayer (40 psi) with a fan-type nozzle or with a roller with a minimum 3/8" nap. Flood surface until excess runs down 6 to 8 inches below spray pattern. For maximum coverage, a wet-on-wet repplication within 2 minutes is recommended.

6. Horizontal Application: Apply a flood coat using sufficient material so surface remains wet for 3 to 5 minutes. A wet-on-wet re-application within 2 minutes is recommended for maximum coverage.

7. Drying Time: Dry to touch in 2 to 6 hours depending upon temperature and humidity.

3.4 CLEANING

1. Immediately clean adjacent work not scheduled to receive water-repellent coating in accordance with manufacturer's instructions.

END OF SECTION

SECTION 079200 - JOINT SEALERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sealants and joint backing.

B. Precompressed foam sealers.

1.02 RELATED SECTIONS

A. Division 07 - Firestopping and 15145 - Plumbing Piping: Firestopping sealants.

B. Division 08 - Glazing: Glazing sealants and accessories.

C. Division 09 - Gypsum Board Assemblies: Acoustic sealant.

1.03 REFERENCES

A. ASTM C 834 - Standard Specification for Latex Sealants; 2000.

B. ASTM C 919 - Standard Practice for Use of Sealants in Acoustical Applications; 1998.

C. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants; 1998.

D. ASTM C 1193 - Standard Guide for Use of Joint Sealants; 2000.

E. ASTM D 1056 - Standard Specification for Flexible Cellular Materials--Sponge or Expanded Rubber; 2000.

F. ASTM D 1667 - Standard Specification for Flexible Cellular Materials--Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam); 1997.

1.04 SUBMITTALS

A. See Section 01300 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

C. Samples: Submit two samples, 3 in size illustrating sealant colors for selection.

D. Manufacturer's Installation Instructions: Indicate special procedures, surface preparation, and perimeter conditions requiring special attention.

1.05 QUALITY ASSURANCE

A. Maintain one copy of each referenced document covering installation requirements on site.

B. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum ten years documented experience.

C. Applicator Qualifications: Company specializing in performing the work of this section ten years documented experience and approved by manufacturer and approved by manufacturer.

1.06 MOCK-UP

A. Provide mock-up of sealant joints in conjunction with masonry under provisions of Section 01400.

B. Construct mock-up with specified sealant types and with other components noted.

C. Locate where directed.

D. Mock-up may remain as part of the Work.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.08 COORDINATION

A. Coordinate the work with all sections referencing this section.

1.09 WARRANTY

A. See Division 01 - Closeout Submittals, for additional warranty requirements.

B. Correct defective work within a five year period after Date of Project Acceptance.

C. Warranty: Include coverage for installed sealants and accessories which fail to achieve airtight seal and watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Silicone Sealants:
   1. Bostik: www.bostik.com.
   2. Dow Corning Corp: www.dowcorning.com.
   3. GE Plastics: www.geplastics.com.
   4. Pecora Corporation: www.pecora.com.
   5. Sonneborn Building Products, ChemRex, Inc: www.chemrex.com.
   6. Tremco, Inc: www.tremcosealants.com.
   7. Substitutions: See Division 01 - Product Requirements.

B. Polyurethane Sealants:
   1. Bostik: www.bostik.com.
   2. Pecora Corporation: www.pecora.com.
   3. Sonneborn Building Products, ChemRex, Inc: www.chemrex.com.
   4. Tremco, Inc: www.tremcosealants.com.
   5. Substitutions: See Division 01 - Product Requirements.

C. Acrylic Emulsion Latex Sealants:
   1. Bostik: www.bostik.com.
   2. Pecora Corporation: www.pecora.com.
   3. Sonneborn Building Products, ChemRex, Inc: www.chemrex.com.
   4. Tremco, Inc: www.tremcosealants.com.
   5. Substitutions: See Division 01 - Product Requirements.

D. Preformed Compressible Foam Sealers:
   1. Emseal Joint Systems, Ltd: www.emseal.com.
   2. Sandell Manufacturing Company, Inc: www.sandellmfg.com.
   3. Polytite Manufacturing Corporation: www.polytite.com.
   4. Substitutions: See Division 01 - Product Requirements.

2.02 SEALANTS

A. General Purpose Exterior Sealant: Polyurethane; ASTM C 920, Grade NS, Class 25, Uses M, G, and A; two part component.
   1. Color: Standard colors matching finished surfaces.
   2. Applications: Use for:
      a. Control, expansion, and soft joints in masonry.
      b. Joints between concrete and other materials.
      c. Joints between metal frames and other materials.
      d. Other exterior joints for which no other sealant is indicated.
      e. Joints between stone components.

B. Exterior Expansion Joint Sealer: Precompressed foam sealer; urethane with water-repellent;
   1. Face color: Match color of adjacent material.
   2. Size as required to provide watertight seal when installed.

3. Applications: Use for:
    a. Exterior wall expansion joints.

C. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C 834, Type OP, Grade NF single component, paintable.
1. Color: Standard colors matching finished surfaces.
2. Applications: Use for:
    a. Interior wall and ceiling control joints.
    b. Joints between door and window frames and wall surfaces.
    c. Other interior joints for which no other type of sealant is indicated.

D. Acoustical Sealant: Butyl or acrylic sealant; ASTM C 920, Grade NS, Class 12-1/2, Uses M and A; single component, solvent release curing, non-skinning.
1. Applications: Use for concealed locations only:
    a. Sealant bead between top stud runner and structure and between bottom stud track and floor.

E. Interior Floor Joint Sealant: Polyurethane, self-leveling; ASTM C 920, Grade P, Class 25, Uses T, M and A; single component.
1. Approved by manufacturer for wide joints up to 1-1/2 inches.
2. Color: Standard colors matching finished surfaces.
3. Applications: Use for:
    a. Expansion joints in floors.

F. Exterior sealants for metal panels: Mildew Resistant Silicone.

2.03 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing: Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces and joint openings are ready to receive work.

B. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION

A. Remove loose materials and foreign matter which might impair adhesion of sealant.

B. Clean and prime joints in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C 1193.

D. Protect elements surrounding the work of this section from damage or disfigurement.

3.03 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Perform installation in accordance with ASTM C 1193.

C. Perform acoustical sealant application work in accordance with ASTM C 919.

D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond

area as recommended by manufacturer, except where specific dimensions are indicated.

E. Install bond breaker where joint backing is not used.

F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

G. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

H. Tool joints concave.

I. Precompressed Foam Sealant: Do not stretch; avoid joints except at corners, ends, and intersections; install with face 1/8 to 1/4 inch below adjoining surface.

3.04 CLEANING

A. Clean adjacent soiled surfaces.

3.05 PROTECTION OF FINISHED WORK

A. Protect sealants until cured.

END OF SECTION 079200

October 4, 2012

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SCOPE OF WORK

Project: Erwin High School Exterior Repairs – Phase III
20 Erwin Hills Road
Asheville, NC

Drawing List: N/A

Specifications: Sikatop 122 Plus Specifications
Sikatop 123 Plus Specifications
098700 – Special Coatings for metal
Sika Flex Coat Specifications

Description of Work:
Work to take place on exterior of building only.

- Repair of existing spalled concrete areas:
  - Horizontal Repairs:
    - Use Sikatop 122 Plus repair system.
    - Contractor to include 20sf of horizontal repair in base bid. Reference unit rate for definition of square foot measurement.
  - Vertical and Overhead Repairs:
    - Use Sikatop 123 Plus repair system.
    - Contractor to include 50sf of vertical repair in base bid. Reference unit rate for definition of square foot measurement.
    - Contractor to include 20sf of overhead repair in base bid. Reference unit rate for definition of square foot measurement.
  - For all applications:
    - Apply Armatec 110 to existing rebar once it has been exposed and thoroughly cleaned.
- Cleaning of existing concrete balcony, prepping of surface for application of new traffic coating.
  - Traffic Coating:
    - Use Sika FlexCoat traffic coating system
    - Contractor to include 3,000sf of horizontal cleaning, prepping and application in base bid.
    - Contractor to include 500sf of vertical cleaning, prepping and application in the base bid.
    - Reference Unit rate for definition of square foot measurement.
- Each system is to be installed in strict accordance with manufacturer's instructions of removal, cleaning, prepping and installation.

- Unit Rate: Provide a unit rate for adjustment of contract sum as requested by Owner.
    - Masonry repair unit rates rate shall be based upon a 12"x12"x2" area of work and shall include all prep, installation labor, material and all other work required to provide a finished and installed product for:
        - Unit Rate #1: Masonry Repair, Horizontal surface
        - Unit Rate #2: Masonry Repair, Vertical surface
        - Unit Rate #3: Masonry Repair, Overhead surface
    - Traffic coating unit rates shall be based upon a 12"x12" area of work and shall include all cleaning, prep, installation labor, material and all other work required to provide a finished and installed product for:
        - Unit Rate #4: Traffic coating, horizontal surface
        - Unit Rate #5: Traffic coating, vertical surface

Spec Component: SC-025-03/10
SikaTop 122 Plus

DIVISION 3 - CONCRETE

Section 03550 - Concrete Toppings
Section 03720 - Concrete Resurfacing
Section 03730 - Concrete Rehabilitation

Part 1 – General

1.01 Summary

A. This specification describes the patching or overlay of interior and/or exterior horizontal surfaces with a polymer-modified, portland cement mortar/concrete.

1.02 Quality Assurance

A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.

B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative

C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.03 Delivery, Storage, and Handling

A. All materials must be delivered in original, unopened containers with the manufacturer’s name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.

B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.

C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 45ºF (7ºC) and rising.

B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.05 Submittals

A. Submit two copies of manufacturer’s literature, to include: Product Data Sheets, and appropriate Material Safety Data Sheets (MSDS).

1.06 Warranty

A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 - Products

2.01 Manufacturer

A. **SikaTop 122 Plus**, as manufactured by Sika Corporation, is considered to conform to the requirements of this specification.

2.02 Materials

A. Polymer-modified Portland cement mortar:

1. Component A shall be a liquid polymer emulsion of an acrylic copolymer base and additives.
    a. pH: 4.5-6.5
    b. Film Forming Temperature: 73°F max.
    c. Tear Strength: 950-psi min.
    d. Elongation at Break: 500% min.
    e. Particle Size: less than 0.1 micron
2. Component A shall contain an organic, penetrating corrosion inhibitor which has been independently proven to reduce corrosion in concrete via ASTM G3 (half-cell potential tests). The corrosion inhibitor shall not be calcium nitrite, and shall have a minimum of 5 years of independent field testing to document performance on actual construction projects.
3. Component B shall be a blend of selected portland cements, specially graded aggregates, admixtures for controlling setting time, water reducers for workability, and an organic accelerator.
4. The materials shall be non-combustible, both before and after cure.
5. The materials shall be supplied in a factory-proportioned unit.
6. The polymer-modified, portland cement mortar must be placeable from 1/8-in. to 1-in. in depth per lift for horizontal applications.

B. To prepare a polymer-modified portland cement concrete: aggregate shall conform to ASTM C-33. The factory-proportioned unit shall be extended with 42-lb. max. of a 3/8 in. (No.8 distribution per ASTM C-33, Table II) clean, well-graded, saturated surface dry aggregate, having low absorption and high density. Aggregate must be approved for use by the Engineer.

2.03 Performance Criteria

A. Typical Properties of the mixed polymer-modified, portland cement mortar:

1. Working Time: Approximately 30 minutes
2. Finishing Time: 50-120 minutes
3. Color: concrete gray when mixed

B. Typical Properties of the cured polymer-modified, portland cement mortar:

1. Compressive Strength (ASTM C-109 Modified)
    a. 1 day: 3000 psi min. (20.7 MPa)
    b. 7 day: 5500 psi min. (37.9 MPa)
    c. 28 day: 7000 psi min. (48.3 MPa)
2. Flexural Strength (ASTM C-293) @ 28 days: 2000 psi (13.8 MPa)
3. Splitting Tensile Strength (ASTM C-496) @ 28 days 750 psi (5.2 MPa)
4. Bond Strength (ASTM C-882 Modified) @ 28 days: 2200 psi (15.2 MPa)
5. The portland cement mortar shall not produce a vapor barrier.
6. Density(wet mix): 136 lbs. / cu. ft. (2.18 kg/l)
7. Permeability (AASHTO T-277 @ 28 days Approximately 500 Coulombs)

Note: Tests above were performed with the material and curing conditions @ 71°F – 75°F and 45-55% relative humidity.

Part 3 – Execution

3.01 Surface Preparation

A. Areas to be repaired must be clean, sound, and free of contaminants. All loose and deteriorated concrete shall be removed by mechanical means. Mechanically prepare the concrete substrate to obtain a surface profile of +/- 1/16" (CSP 5 or greater as per ICRI Guidelines) with a new exposed aggregate surface. Area to be patched shall not be less than 1/8" in depth.

B. Where reinforcing steel with active corrosion is encountered, sandblast the steel to a white metal finish to remove all contaminants and rust. Where corrosion has occurred due to the presence of chlorides, the steel shall be high pressure washed after mechanical cleaning. Prime steel with 2 coats of Sika Armatec 110 EpoCem as directed by manufacturer. (See Spec Component SC-201-0699)

3.02 Mixing and Application

A. Mechanically mix in appropriate sized mortar mixer or with a Sika jiffy paddle and low speed (400-600 rpm) drill. Pour approximately 4/5 gal Component A into the mixing container. Add Component B while continuing to mix. Mix to a uniform consistency for a maximum of three minutes. Add remaining Component A to mix if a more loose consistency is desired. Should smaller quantities be needed, be sure the components are measured in the correct ratio and that the Component B is uniformly blended before mixing the components together. Mix only that amount of material that can be placed in 30 minutes. Do not retemper material.

B. Mixing of the polymer-modified portland cement concrete: Pour all (1-gallon) of Component A into the mixing container. Add Component B while continuing to mix. Add correct amount of the pre-approved coarse aggregate, and continue mixing to a uniform consistency. Mixing time should be 3 minutes maximum.

C. Placement Procedure: At the time of application, the substrate should be saturated surface dry with no standing water. Mortar and/or concrete must be scrubbed into substrate filling all pores and voids. While the scrub coat is still plastic, force material against edge of repair, working toward center. If repair area is too large to fill while scrub coat is still wet use Sika Armatec 110 EpoCem in lieu of scrub coat (See Spec Component SC-200). After filling, consolidate, then screed. Allow mortar or concrete to set to desired stiffness, then finish with trowel, manual or power, for smooth surface. Broom or burlap drag for rough surface. Areas where the depth of the repair is less than 1-inch shall be repaired with polymer-modified portland cement mortar. In areas where the depth of the repair is greater than 1 inch, the repair shall be made with polymer-modified portland cement concrete.

D. As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water-based* compatible curing compound. Moist curing should commence immediately after finishing and continue for 48 hours. Protect newly applied material from rain, sun, and wind until compressive strength is 70% of the 28-day compressive strength. To prevent from freezing cover with insulating material. Setting time is dependent on temperature and humidity.

*Pretesting of curing compound is recommended.

E. Adhere to all procedures, limitations and cautions for the polymer-modified portland cement mortar in the manufacturers current printed technical data sheet and literature.

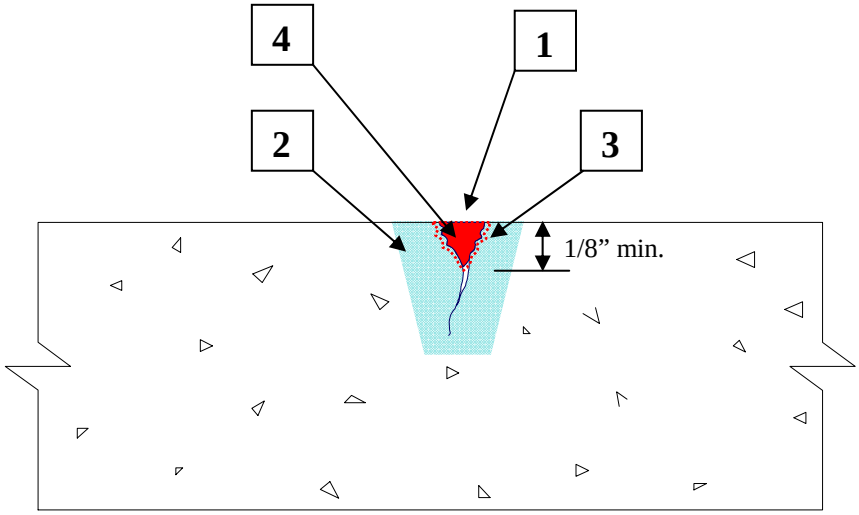
3.05 Cleaning

A. The uncured polymer-modified portland cement mortar can be cleaned from tools with water. The cured polymer - modified portland cement mortar can only be removed mechanically.

B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

SC-025

SikaTop® 122 Plus Crack Repair



1. Substrate shall be clean, sound and lattinance-free prior to repairing.

2. Pre-soak the substrate to provide saturated surface dry (SSD) condition prior to applying repair material.

3. Apply scrub coat of the repair material to the prepared substrate.

4. While scrub coat is wet place SikaTop 122 *Plus*, filling the entire cavity. Strike off and finish as required. Wet cure and protect as per the technical data sheet.

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SC-025

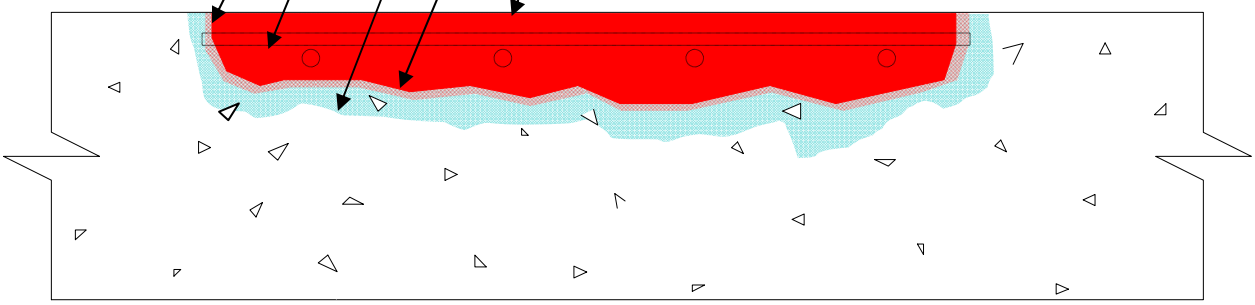
SikaTop® 122 Plus Hand-applied Repair

1. Substrate shall be clean, sound and lattinance-free prior to repairing. (Refer to ICRI Technical Guideline No. 03730.)

2. Pre-soak the substrate to provide saturated surface dry (SSD) condition prior to applying repair material.

3. Apply scrub coat of the repair material to the prepared substrate, filling all pours and voids.

4. While scrub coat is wet place SikaTop 122 *Plus*, filling the entire cavity. Strike off and finish as required. Wet cure and protect as per the technical data sheet.



Note:

1. If repair area is too large to fill while scrub coat is still wet, use Sika Armatec 110 EpoCem in lieu of the scrub coat. (See Spec Component SC-200)
2. If reinforcing steel is located within the repair location refer to Spec Component SC-201
3. For applications greater than 1” in depth, add 3/8” coarse aggregate in accordance to the technical data sheet.

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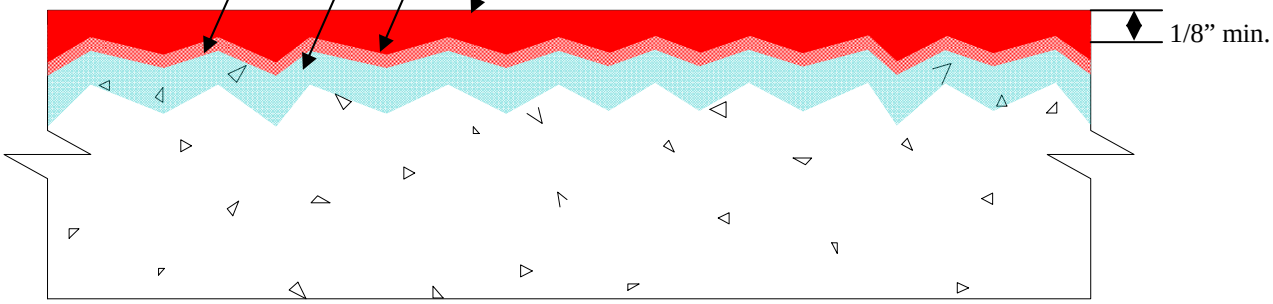
SC-025

SikaTop® 122 Plus Overlay

1. Substrate shall be clean, sound and lattinance-free prior to repairing. Surface profile shall be a CSP 5-8. (Refer to ICRI Technical Guideline No. 03730.)
2. Pre-soak the substrate to provide saturated surface dry (SSD) condition prior to applying repair material.
3. Apply scrub coat of the repair material to the prepared substrate, filling all pours and voids.
4. While scrub coat is wet place SikaTop 122 *Plus*, filling the entire cavity. Strike off and finish as required. Wet cure and protect as per the technical data sheet.



Note:

1. If repair area is too large to fill while scrub coat is still wet, use Sika Armatec 110 EpoCem in lieu of the scrub coat. (See Spec Component SC-200)
2. If reinforcing steel is located within the repair location refer to Spec Component SC-201
3. For applications greater than 1" in depth, add 3/8" coarse aggregate in accordance to the technical data sheet.

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Spec Component: SC-027-03/10
SikaTop 123 Plus

Distributed By:

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Cleveland 1-800-362-9267
Canton 1-877-258-7601
Toledo 1-800-860-3352
www.chasephipps.com

DIVISION 3 - CONCRETE

Section 03730 - Concrete Rehabilitation

Part 1 – General

1.01 Summary

A. This specification describes the patching of interior and/or exterior vertical or overhead surfaces with a polymer-modified, portland cement mortar.

1.02 Quality Assurance

A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.

B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have receivced product training by a manufacturer's representative.

C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.03 Delivery, Storage, and Handling

A. All materials must be delivered in original, unopened containers with the manufacturer’s name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.

B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.

C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 45ºF (5ºC) and rising.

B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.05 Submittals

A. Submit two copies of manufacturer’s literature, to include: Product Data Sheets, and appropriate Material Safety Data Sheets (MSDS).

1.06 Warranty

A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 - Products

2.01 Manufacturer

A. **SikaTop 123 Plus**, as manufactured by Sika Corporation, is considered to conform to the requirements of this specification.

2.02 Materials

A. Polymer-modified Portland cement mortar:

1. Component A shall be a liquid polymer emulsion of an acrylic copolymer base and additives.
    a. pH: 4.5-6.5
    b. Film Forming Temperature: 73°F max.
    c. Tear Strength: 950-psi min.
    d. Elongation at Break: 500% min.
    e. Particle Size: less than 0.1 micron
2. Component A shall contain an organic, penetrating corrosion inhibitor which has been independently proven to reduce corrosion in concrete via ASTM G3 (half-cell potential tests). The corrosion inhibitor shall not be calcium nitrite, and shall have a minimum of 5 years of independent field testing to document performance on actual construction projects.
3. Component B shall be a blend of selected portland cements, specially graded aggregates, admixtures for controlling setting time, water reducers for workability, and an organic accelerator.
4. The materials shall be non-combustible, both before and after cure.
5. The materials shall be supplied in a factory-proportioned unit.
6. The polymer-modified, portland cement mortar must be placeable from 1/8” to 1-1/2” in depth per lift for vertical applications and 1/8” to 1” in depth for overhead applications.

2.03 Performance Criteria

A. Typical Properties of the mixed polymer-modified, portland cement mortar:

1. Working Time: Approximately 15 minutes
2. Finishing Time: 20 - 60 minutes
3. Color: concrete gray

B. Typical Properties of the cured polymer-modified, portland cement mortar:

1. Compressive Strength (ASTM C-109 Modified)
    a. 1 day: 3500 psi min. (24.1 MPa)
    b. 7 day: 6000 psi min. (44.8 MPa)
    c. 28 day: 7000 psi min. (48.3 MPa)
2. Flexural Strength (ASTM C-293) @ 28 days: 2000 psi (13.8 MPa)
3. Splitting Tensile Strength (ASTM C-496) @ 28 days: 900 psi (6.2 MPa)
4. Bond Strength (ASTM C-882 Modified) @ 28 days: 2200 psi (15.2 MPa)
5. The portland cement mortar shall not produce a vapor barrier.
6. Density (wet mix): 132 lbs. / cu. ft. (2.2 kg/l)
7. Permeability - AASHTO T-277 @ 28 days Approximately 500 Coulombs

Note: Tests above were performed with the material and curing conditions @ 71°F – 75°F and 45-55% relative humidity.

Part 3 – Execution

3.01 Surface Preparation

A. Areas to be repaired must be clean, sound, and free of contaminants. All loose and deteriorated concrete shall be removed by mechanical means. Mechanically prepare concrete substrate to obtain a surface profile of +/- 1/16" (CSP 5 or greater as per ICRI Guidelines) with a new exposed aggregate surface. Area to be patched shall not be less than 1/8" in depth.

B. Where reinforcing steel with active corrosion is encountered, sandblast the steel to a white metal finish to remove all contaminants and rust. Where corrosion has occurred due to the presence of chlorides, the steel shall be high pressure washed after mechanical cleaning. Prime steel with 2 coats of Sika Armatec 110 EpoCem as per the technical data sheet. (See Spec Component SC-201-0699)

3.02 Mixing and Application

A. Mechanically mix in an appropriate sized mortar mixer or with a Sika mud paddle and low speed (400-600 rpm) drill. Pour approximately 4/5 gal Component A into the mixing container. Add Component B while continuing to mix. Mix to a uniform consistency for a maximum of three minutes. Add remaining Component A to mix for desired consistency. Should smaller quantities be needed, be sure the components are measured in the correct ratio and that the Component B is uniformly blended before mixing the components together. Mix only that amount of material that can be placed in 10 - 15 minutes. Do not retemper material.

B. Placement Procedure: At the time of application, the substrate shall be saturated surface dry with no standing water. Mortar must be scrubbed into substrate filling all pores and voids. While the scrub coat is still plastic, force material against edge of repair, working toward center. If repair area is too large to fill while scrub coat is still wet use Sika Armatec 110 EpoCem in lieu of scrub coat. (See spec component SC-200-0699) After filling, consolidate then screed. Allow mortar to set to desired stiffness then finish with trowel for smooth surface. Wood float or sponge float for a rough surface. Areas where the depth of the repair area to sound concrete is greater than 1-1/2", the repair shall be made in lifts of 1-1/2" maximum thickness. The top surface of each lift shall be scored to produce a rough surface for the next lift. The preceding lift shall be allowed to reach final set before applying fresh material. The fresh mortar must be scrubbed into the preceding lift.

D. As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water-based* compatible curing compound. Moist curing should commence immediately after finishing and continue for 48 hours. Protect newly applied material from rain, sun, and wind until compressive strength is 70% of the 28-day compressive strength. To prevent from freezing cover with insulating material. Setting time is dependent on temperature and humidity.

*Pretesting of curing compound is recommended.

E. Adhere to all procedures, limitations and cautions for the polymer-modified portland cement mortar in the manufacturers current printed technical data sheet and literature.

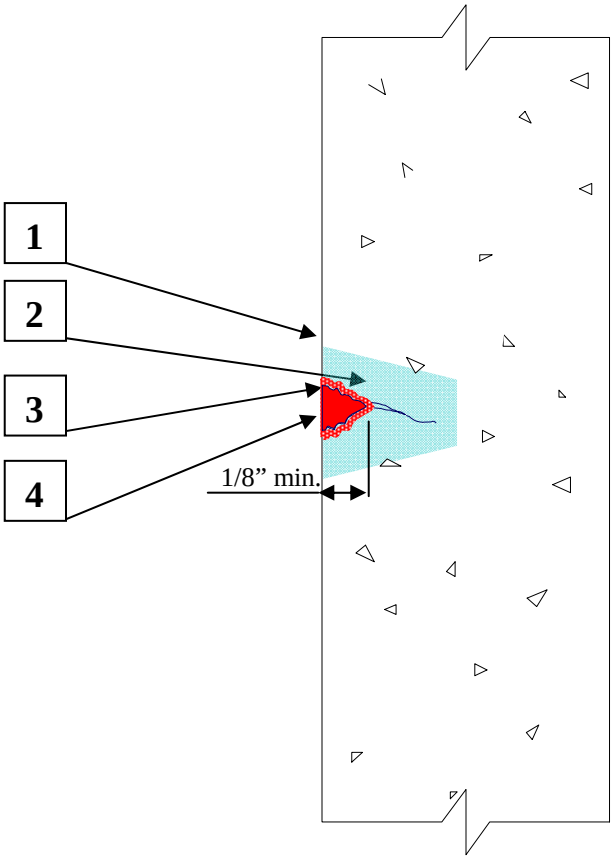
3.05 Cleaning

A. The uncured polymer-modified portland cement mortar can be cleaned from tools with water. The cured polymer - modified portland cement mortar can only be removed mechanically.

B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

SC-027

SikaTop® 123 Plus Crack Filler (Vertical / Overhead)



1. Substrate shall be clean, sound and lattinance-free prior to repairing.

2. Pre-soak the substrate to provide saturated surface dry (SSD) condition prior to applying repair material. (Exception: not applicable if Sikadur 32 Hi-Mod or Sikadur Patch-Fix is used as an epoxy agent)

3. Apply scrub coat of the repair material to the prepared substrate. (Exception: not applicable if Sikadur 32 Hi-Mod or Sikadur Patch-Fix is used as an epoxy agent)

4. While scrub coat is wet place SikaTop 122 *Plus*, filling the entire cavity. Strike off and finish as required. Wet cure or use Sikagard Curing Compound and protect as per the technical data sheet.

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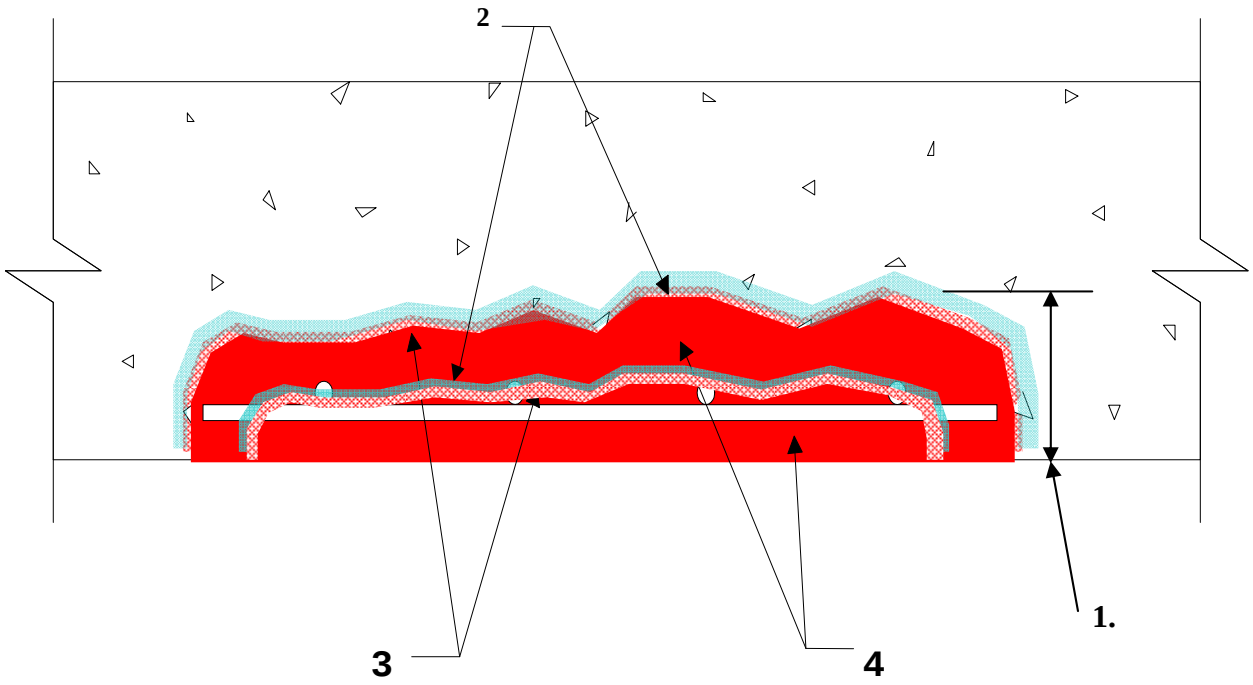
SC-027 SikaTop® 123 Plus Hand-applied (Vertical / Overhead)



1. Repair area should not be less than $^{1}/_{8}$" in depth.

2. Substrate should be saturated surface dry (SSD) with no standing water during application. (Exception: not applicable with Sikadur 32 Hi-Mod or Sikadur Patch-Fix as an epoxy bonding agent)

3. Apply scrub coat to the substrate, filling all pores and voids. (Exception: not applicable with Sikadur 32 Hi-Mod or Sikadur Patch-Fix as an epoxy bonding agent)

4. While scrub coat (or epoxy bonding agent) is still wet apply **SikaTop 123 *Plus***.

Note: If repair area is too large to fill while scrub coat is still wet, use Sika Armatec 110 EpoCem in lieu of the scrub coat. (See Spec Component SC-200)

For applications greater than 1-½" in depth, apply **SikaTop 123 *Plus*** in lifts. Score the top surface of each lift to produce a roughened surface for the next lift. Allow preceding lift to reach final set. Repeat from step 3.

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Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Technical Data Sheet, product label and Material Safety Data Sheet which are available at www.sikaconstruction.com or by calling (201) 933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instructions for each Sika product as set forth in the current Technical Data Sheet, product label and Material Safety Data Sheet prior to product use.

DIVISION 7-THERMAL & MOISTURE PROTECTION
Section 07160 - Cementitious & Reactive Waterproofing
DIVISION 9 - FINISHES
Section 09880 - Protective Coatings

Part 1 – General

1.01 Summary
1.02

A. This specification describes the coating of substrates with a non-vapor barrier, protective, decorative, waterproofing, two component polymer-modified, portland cement topping system over horizontal exterior slab surfaces as shown on the the project drawings and as outlined in this specification.
B. Follow all applicable manufacturer guidelines and applications shall be considered a requirement of this specification
C. Related specifications **(Specification writer shall add related specifications as deemed necessary.).**

1.02 Quality Assurance

A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.
B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by manufacturer's representative
C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.
D. Mock-up: Contractor shall install a 10’x10’ mockup for approval by the owner/architect prior to commencement of work.

1.03 Delivery, Storage, and Handling

A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.
B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.
C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 45ºF (5ºC) and rising, or above 95 ºF.
B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.05 Submittals

A. Submit two copies of manufacturer's literature, to include: Product Data Sheets, Standard Color charts and appropriate Material Safety Data Sheets (MSDS).
B. Submit copy of Certificate of Approved Contractor status by manufacturer.

1.06 Warranty

A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

1.2 REFERENCES (Specification writer shall add, delete or amend, as deemed necessary)
A. ASTM C109: Standard Test Method for Compressive Strength of Hydraulic Cement Mortars.
B. ASTM C190: Method of Test for Tensile Strength of Hydraulic Cement Mortars..
C. ASTM C580: Standard Test Method for Flexural and Modulus of Elasticity of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes.
D. ASTM D4263: Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Test

Method.
E. ASTM F1869-04: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
F. ICRI Technical Guideline No.03732: Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays.

Part 2 - Products

2.01 Manufacturer

A. **Sikagard Flexcoat**, **and Sikagard ATC Topcoat** as manufactured by Sika Corporation, is considered to conform to the requirements of this specification.

2.02 Materials

A. Polymer-modified portland cement coating:
Component "A" shall be a liquid polymer emulsion of an acrylic co-polymer base and additives.
Component "B" shall be a blend of selected portlandcements, specially graded aggregates, and admixtures to control setting time and workablity.
B. Topcoat shall be Sikagard Flexcoat ATC a single component Acrylate Copolymer finish coating

C. The material shall be non-combustible, either before or after cure.

2.03 Performance Criteria

A. Physical Properties of **Sikagard Flexcoat,** Polymerized Cementitious Protective Material:
Provide a two-component only, polymer-modified, cementitious system that meets or exceeds the listed minimum physical property requirements when tested in accordance with the referenced standard test method.

Two Component System	Liquid Polymer and Bagged Powder
Compressive Strength (ASTM C 109):	2,440 psi
Tensile Strength (ASTM C 190):	450 psi
Flexural Strength (ASTM C 580)	2,415 psi
Adhesion (MIL-D-3134, Para.4.7.14):	515 psi
Water Absorption (ASTM C 642)	1.61%
	volume of permeable voids 5.07%
Water Vapor Permeability (ASTM E 96)	1.96 perms/inch
Impact Resistance: (MIL-D-3134) Para. 4.7.3	No cracking or detachment
(2# steel ball dropped from 8' height onto coated steel plate)	

B. Properties of **Sikagard ATC** Topcoat
Provide Single component acrylic finish coating for two coat application to Sikagard Flexcoat.

Vehicle Type	Acrylate Copolymer in aqueous dispersion
Gloss 60 Gloss Meter	90+
Color Retention - Atlas Twin Arc Weatherometer	No fading or deleterious effect.
20 mins cycle, Dry 3 min –Wet 300 hrs	
Accellerated Ultraviolet Light Exposure	NO fading or visable deleterious effect under 10x
Desert Sunshine Exposure Test., Phoenix Az	Magnification
Procedure EMMA (mirror accelerated exposure)	

Part 3 – Execution

3.01 Surface Preparation

A. Substrate must be clean, sound, and free of surface contaminants. Remove dust, laitance, grease, oils, curing compounds, form release agents and all foreign particles by mechanical means. An open-textured, sandpaper-like substrate is ideal. Substrate shall be in accordance with ICRI Guideline No. 03732 for coatings and fall within CSP3-CSP4. All surfaces must be saturated surface dry (SSD), with no standing water at time of application.

3.02 Mixing and Application

3.02.1 Flexcoat

A. Mixing: Under normal circumstances, full quantities of both components are mixed together, a slurry consistency will result. Mix in a clean container by slowly adding the powder component to the liquid component and mixing with a slow speed (400-600rpm) drill and mixing paddle.

B. Coating Application: Apply with magic trowels, hand trowels, squeegees, roller, spray or other acceptable placement tools in two or more coats depending on traffic, exposure conditions. A wet edge shall be maintained at all times while placing the freshly mixed cementitious resurfacing material. The finished resurfacing material shall have a uniform thickness of 1/16 " to 3/32". Finish to specified texture.

C. When applying the **Sikagard Flexcoat** coating, never stop the application until the entire surface has been coated. Always stop application at an edge, corner, or joint. Never let a previously coated film dry; always coat into a wet film. Always apply the coating at a 45^{o} angle to an edge, corner, or joint.

C. Curing: Protect the **Sikagard Flexcoat** from direct sunlight, wind, rain and freezing

D. **Sikagard Flexcoa**t can be over coated with Flexcoat ATC after 24 hrs at 73 degrees F and 50% RH.

E. Adhere to all limitations and cautions for the polymer-modified cement coating in the manufacturer's printed literature.

3.02.2 **Flexcoat ATC**

A. Mixing: Stir thoroughly to ensure uniformity using a low speed mixer (400-600 rpm). If multiple batches (lots) are being used blend (box) the batches to ensure consistant colors.

B. Application: Follow manufacturers published installation guidelines
1. Mask or protect all areas not to be coated.
2. Recommended Application Temperatures are between 45 and 95 degrees F, RH humidity shall be below 90% or if rain is anticipated.
3. Apply by brush, roller or spray.
4. Maintain a wet edge to avoid cold joints
5. Apply second coat after 20-90 minutes depending on temperature and humidity.

C. Allow adequate drying time before allowing traffic (use). Consult manufacturerer.

3.03 Cleaning
A. The uncured polymer-modified portland cement coating can be cleaned from tools with water. The cured polymer modified portland cement coating can only be removed mechanically.
B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

The preceding specifications are provided by Sika Corporation as a guide for informational purposes only and are not intended to replace sound engineering practice and judgment and should not be relied upon for that purpose.

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August 15, 2012

ALEXANDER design studio
ARCHITECTURE | CONSULTING | ANALYSIS
54 1/2 Broadway Street
Asheville, NC 28801
Tel: 828.619.0301
info@alexanderdesignstudio.com

SCOPE OF WORK

Project: A.C. Reynolds Middle School Masonry Repairs
2 Rocket Drive
Asheville, NC 28803

Drawing List: ACR1

Specifications: Sikatop 122 Plus Specifications
Sikatop 123 Plus Specifications
098700 – Special Coatings for metal
049010 – Masonry Tuckpointing
079200 - Sealant

Description of Work:
Work to take place on exterior of building only.

Masonry Repair #1:

- Repair of existing spalled concrete areas:
  - Concrete Repairs:
    - Use Sikatop 123 Plus repair system.
  - For all applications:
    - Apply Armatec 110 to existing rebar once it has been exposed and thoroughly cleaned.
  - Each system is to be installed in strict accordance with manufacturer's instructions of removal, cleaning, prepping and installation.
- Horizontal crack at brick veneer and concrete beam
  - Sawcut ½" deep x ½" wide sealant joint at base of column.
  - Clean by abrasive blasting and install a bond breaker tape at bottom of joint.
  - Prime joint and seal using specified sealant. Tool to concave profile.
- Vertical Cracking in beams:
  - Route out to a ½" V-shaped groove, clean, prime and seal using specified sealant.
- At all beam to column instersections:
  - Sawcut ½" x ½" wide sealant joint at base of column.
  - Clean by abrasive blasting and install a bond breaker tape at bottom of joint.
  - Prime joint and seal using specified sealant. Tool to concave profile.

Masonry Repair #2 & #3 :

- Repair vertical cracking of brick façade and mortar @ location indicated on drawing.
  - Install new brick expansion control joints through outer wythe of brick @ 4 locations.
    - Place within 48" of corners of building
    - Extend 8" below grade
    - Clean and install specified sealant.
  - Remove sealant from existing brick expansions control joints in north and south walls. Clean and install specified sealant.

Masonry Repair #4:

- Repair masonry and steel lintel at existing door opening.

Masonry Repair #5:

- Repair vertical cracking of brick façade and mortar @ window.
  - Install new brick expansion control joints through outer wythe of brick @ each side of window.
    - Extend 8" below grade
    - Clean and install specified sealant.
  - Remove sealant from existing brick expansions control joints in north and south walls. Clean and install specified sealant.

Unit Rates:

- Unit Rate: Provide a unit rate for adjustment of contract sum as requested by Owner.
  - Unit Rate #1: Concrete Repair (Square Foot)
    - Concrete repair unit rates rate shall be based upon a 12"x12"x2" area of work and shall include all prep, installation labor, material and all other work required to provide a finished and installed product.
  - Unit Rate #2: Brick expansion control joints (Linear Foot)
    - Install new brick expansion control joints through outer wythe of bri
    - Extend 8" below grade
    - Clean and install specified sealant.
  - Unit Rate #3: New sealant joint (Linear Foot)
    - Sawcut ½" deep x ½" wide sealant joint
    - Prime joint and seal using specified sealant. Tool to concave profile.

Description of Work:

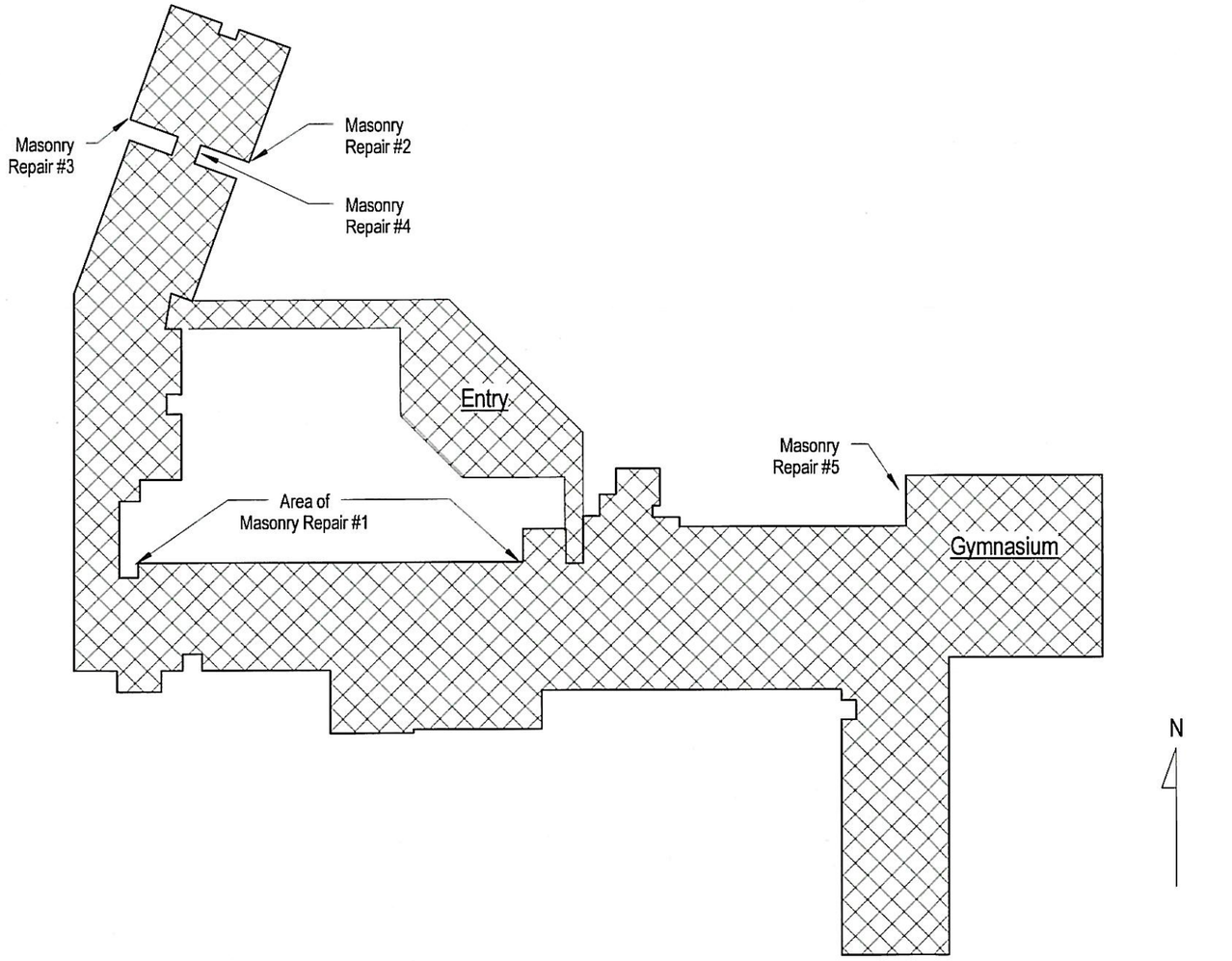
Masonry Repair #1 - Repair, patch and replacement of existing exterior concrete structure using specified products.

Masonry Repair #2 - Repair of vertical cracking in brick facade and mortar @ building corner.

Masonry Repair #3 - Repair of vertical cracking in brick facade and mortar @ building corner.

Masonry Repair #4 - Repair of masonry and steel lintel at door opening.

Masonry Repair #5 - Repair of vertical cracking in brick facade and mortar under existing window.



1 AC Reynolds MS Key Plan

ACR1 | 1" = 80'-0"

Issue Date: 08.15.2012

ACR1

BCS04
AC Reynolds MS Repairs

Buncombe County Public Schools
2012 Masonry Repairs

175 Bingham Road
Asheville, NC 28804

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ALEXANDER DESIGN STUDIO, PC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 52451 NORTH CAROLINA ASHEVILLE NC

MYLES S ALEXANDER REGISTERED ARCHITECT 10220 NORTH CAROLINA ASHEVILLE NC 8.15.12

Spec Component: SC-027-03/10
SikaTop 123 Plus

Distributed By:

The Chas. E. Phipps Company
Cleveland 1-800-362-9267
Canton 1-877-258-7601
Toledo 1-800-860-3352
www.chasephipps.com

DIVISION 3 - CONCRETE

Section 03730 - Concrete Rehabilitation

Part 1 – General

1.01 Summary

A. This specification describes the patching of interior and/or exterior vertical or overhead surfaces with a polymer-modified, portland cement mortar.

1.02 Quality Assurance

A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.

B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have receivced product training by a manufacturer's representative.

C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.03 Delivery, Storage, and Handling

A. All materials must be delivered in original, unopened containers with the manufacturer’s name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.

B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.

C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 45ºF (5ºC) and rising.

B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.05 Submittals

A. Submit two copies of manufacturer’s literature, to include: Product Data Sheets, and appropriate Material Safety Data Sheets (MSDS).

1.06 Warranty

A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 - Products

2.01 Manufacturer

A. **SikaTop 123 Plus**, as manufactured by Sika Corporation, is considered to conform to the requirements of this specification.

2.02 Materials

A. Polymer-modified Portland cement mortar:

1. Component A shall be a liquid polymer emulsion of an acrylic copolymer base and additives.
    a. pH: 4.5-6.5
    b. Film Forming Temperature: 73°F max.
    c. Tear Strength: 950-psi min.
    d. Elongation at Break: 500% min.
    e. Particle Size: less than 0.1 micron
2. Component A shall contain an organic, penetrating corrosion inhibitor which has been independently proven to reduce corrosion in concrete via ASTM G3 (half-cell potential tests). The corrosion inhibitor shall not be calcium nitrite, and shall have a minimum of 5 years of independent field testing to document performance on actual construction projects.
3. Component B shall be a blend of selected portland cements, specially graded aggregates, admixtures for controlling setting time, water reducers for workability, and an organic accelerator.
4. The materials shall be non-combustible, both before and after cure.
5. The materials shall be supplied in a factory-proportioned unit.
6. The polymer-modified, portland cement mortar must be placeable from 1/8" to 1-1/2" in depth per lift for vertical applications and 1/8" to 1" in depth for overhead applications.

2.03 Performance Criteria

A. Typical Properties of the mixed polymer-modified, portland cement mortar:

1. Working Time: Approximately 15 minutes
2. Finishing Time: 20 - 60 minutes
3. Color: concrete gray

B. Typical Properties of the cured polymer-modified, portland cement mortar:

1. Compressive Strength (ASTM C-109 Modified)
    a. 1 day: 3500 psi min. (24.1 MPa)
    b. 7 day: 6000 psi min. (44.8 MPa)
    c. 28 day: 7000 psi min. (48.3 MPa)
2. Flexural Strength (ASTM C-293) @ 28 days: 2000 psi (13.8 MPa)
3. Splitting Tensile Strength (ASTM C-496) @ 28 days: 900 psi (6.2 MPa)
4. Bond Strength (ASTM C-882 Modified) @ 28 days: 2200 psi (15.2 MPa)
5. The portland cement mortar shall not produce a vapor barrier.
6. Density (wet mix): 132 lbs. / cu. ft. (2.2 kg/l)
7. Permeability - AASHTO T-277 @ 28 days Approximately 500 Coulombs

Note: Tests above were performed with the material and curing conditions @ 71°F – 75°F and 45-55% relative humidity.

Part 3 – Execution

3.01 Surface Preparation

A. Areas to be repaired must be clean, sound, and free of contaminants. All loose and deteriorated concrete shall be removed by mechanical means. Mechanically prepare concrete substrate to obtain a surface profile of +/- 1/16" (CSP 5 or greater as per ICRI Guidelines) with a new exposed aggregate surface. Area to be patched shall not be less than 1/8" in depth.

B. Where reinforcing steel with active corrosion is encountered, sandblast the steel to a white metal finish to remove all contaminants and rust. Where corrosion has occurred due to the presence of chlorides, the steel shall be high pressure washed after mechanical cleaning. Prime steel with 2 coats of Sika Armatec 110 EpoCem as per the technical data sheet. (See Spec Component SC-201-0699)

3.02 Mixing and Application

A. Mechanically mix in an appropriate sized mortar mixer or with a Sika mud paddle and low speed (400-600 rpm) drill. Pour approximately 4/5 gal Component A into the mixing container. Add Component B while continuing to mix. Mix to a uniform consistency for a maximum of three minutes. Add remaining Component A to mix for desired consistency. Should smaller quantities be needed, be sure the components are measured in the correct ratio and that the Component B is uniformly blended before mixing the components together. Mix only that amount of material that can be placed in 10 - 15 minutes. Do not retemper material.

B. Placement Procedure: At the time of application, the substrate shall be saturated surface dry with no standing water. Mortar must be scrubbed into substrate filling all pores and voids. While the scrub coat is still plastic, force material against edge of repair, working toward center. If repair area is too large to fill while scrub coat is still wet use Sika Armatec 110 EpoCem in lieu of scrub coat. (See spec component SC-200-0699) After filling, consolidate then screed. Allow mortar to set to desired stiffness then finish with trowel for smooth surface. Wood float or sponge float for a rough surface. Areas where the depth of the repair area to sound concrete is greater than 1-1/2", the repair shall be made in lifts of 1-1/2" maximum thickness. The top surface of each lift shall be scored to produce a rough surface for the next lift. The preceding lift shall be allowed to reach final set before applying fresh material. The fresh mortar must be scrubbed into the preceding lift.

D. As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water-based* compatible curing compound. Moist curing should commence immediately after finishing and continue for 48 hours. Protect newly applied material from rain, sun, and wind until compressive strength is 70% of the 28-day compressive strength. To prevent from freezing cover with insulating material. Setting time is dependent on temperature and humidity.

*Pretesting of curing compound is recommended.

E. Adhere to all procedures, limitations and cautions for the polymer-modified portland cement mortar in the manufacturers current printed technical data sheet and literature.

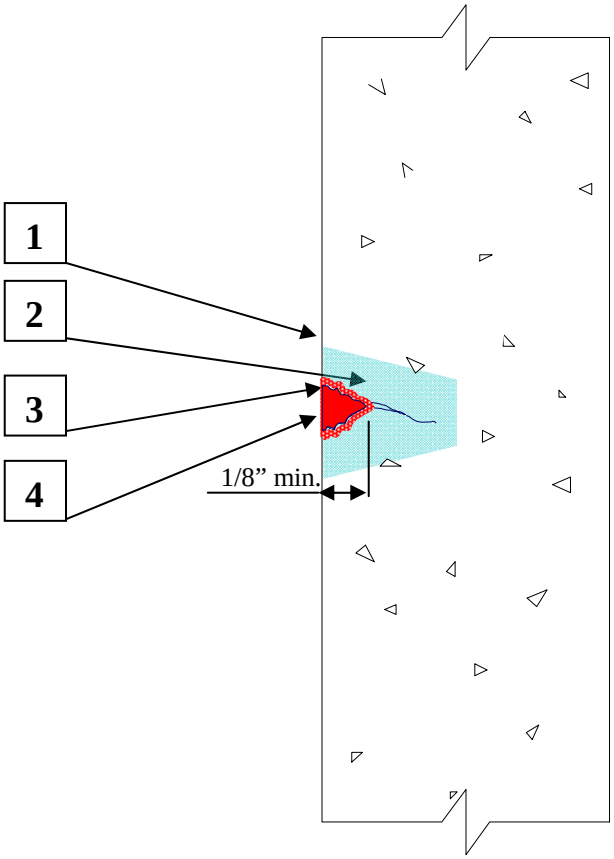
3.05 Cleaning

A. The uncured polymer-modified portland cement mortar can be cleaned from tools with water. The cured polymer - modified portland cement mortar can only be removed mechanically.

B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

SC-027

SikaTop® 123 Plus Crack Filler (Vertical / Overhead)



1. Substrate shall be clean, sound and lattinance-free prior to repairing.

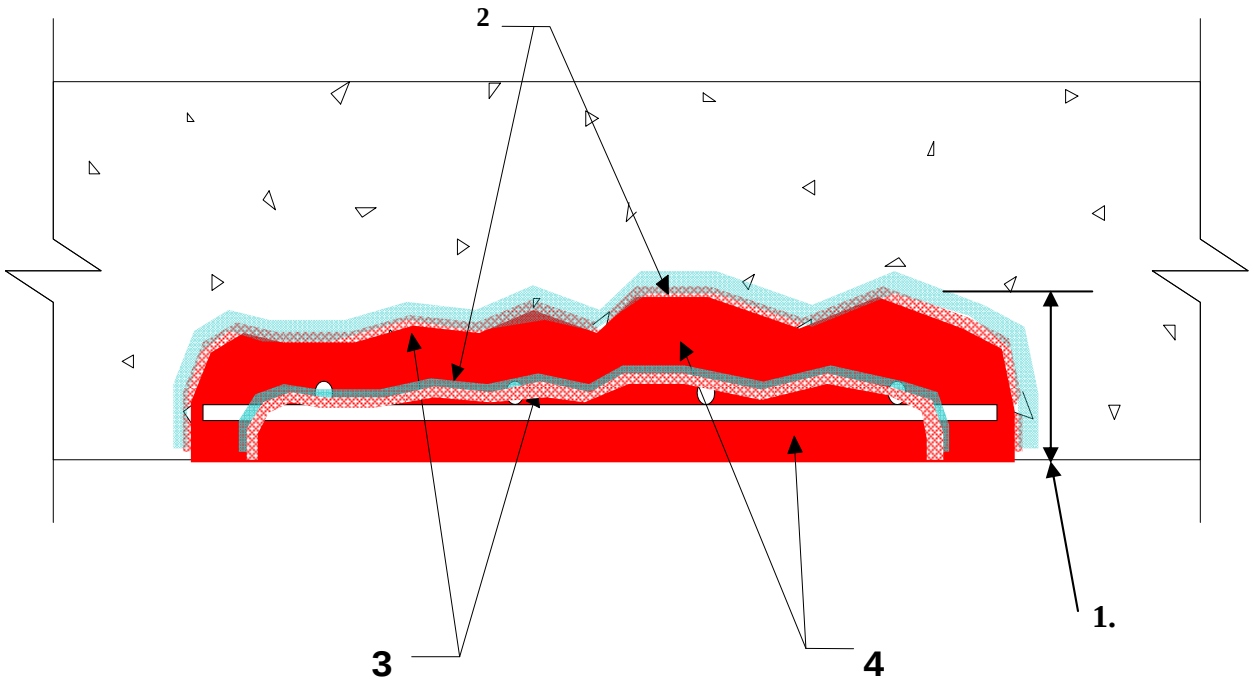
2. Pre-soak the substrate to provide saturated surface dry (SSD) condition prior to applying repair material. (Exception: not applicable if Sikadur 32 Hi-Mod or Sikadur Patch-Fix is used as an epoxy agent)

3. Apply scrub coat of the repair material to the prepared substrate. (Exception: not applicable if Sikadur 32 Hi-Mod or Sikadur Patch-Fix is used as an epoxy agent)

4. While scrub coat is wet place SikaTop 122 *Plus*, filling the entire cavity. Strike off and finish as required. Wet cure or use Sikagard Curing Compound and protect as per the technical data sheet.

Concrete Restoration Systems by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071

SC-027 SikaTop® 123 Plus Hand-applied (Vertical / Overhead)



1. Repair area should not be less than $^{1}/_{8}$" in depth.

2. Substrate should be saturated surface dry (SSD) with no standing water during application. (Exception: not applicable with Sikadur 32 Hi-Mod or Sikadur Patch-Fix as an epoxy bonding agent)

3. Apply scrub coat to the substrate, filling all pores and voids. (Exception: not applicable with Sikadur 32 Hi-Mod or Sikadur Patch-Fix as an epoxy bonding agent)

4. While scrub coat (or epoxy bonding agent) is still wet apply **SikaTop 123 *Plus***.

Note: If repair area is too large to fill while scrub coat is still wet, use Sika Armatec 110 EpoCem in lieu of the scrub coat. (See Spec Component SC-200)

For applications greater than 1-½" in depth, apply **SikaTop 123 *Plus*** in lifts. Score the top surface of each lift to produce a roughened surface for the next lift. Allow preceding lift to reach final set. Repeat from step 3.

Concrete Restoration Systems by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071

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Spec Component: SC-025-03/10
SikaTop 122 Plus

DIVISION 3 - CONCRETE

Section 03550 - Concrete Toppings
Section 03720 - Concrete Resurfacing
Section 03730 - Concrete Rehabilitation

Part 1 – General

1.01 Summary

A. This specification describes the patching or overlay of interior and/or exterior horizontal surfaces with a polymer-modified, portland cement mortar/concrete.

1.02 Quality Assurance

A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.

B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative

C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.03 Delivery, Storage, and Handling

A. All materials must be delivered in original, unopened containers with the manufacturer’s name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.

B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.

C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 45ºF (7ºC) and rising.

B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.05 Submittals

A. Submit two copies of manufacturer’s literature, to include: Product Data Sheets, and appropriate Material Safety Data Sheets (MSDS).

1.06 Warranty

A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 - Products

2.01 Manufacturer

A. **SikaTop 122 Plus**, as manufactured by Sika Corporation, is considered to conform to the requirements of this specification.

2.02 Materials

A. Polymer-modified Portland cement mortar:

1. Component A shall be a liquid polymer emulsion of an acrylic copolymer base and additives.
    a. pH: 4.5-6.5
    b. Film Forming Temperature: 73°F max.
    c. Tear Strength: 950-psi min.
    d. Elongation at Break: 500% min.
    e. Particle Size: less than 0.1 micron
2. Component A shall contain an organic, penetrating corrosion inhibitor which has been independently proven to reduce corrosion in concrete via ASTM G3 (half-cell potential tests). The corrosion inhibitor shall not be calcium nitrite, and shall have a minimum of 5 years of independent field testing to document performance on actual construction projects.
3. Component B shall be a blend of selected portland cements, specially graded aggregates, admixtures for controlling setting time, water reducers for workability, and an organic accelerator.
4. The materials shall be non-combustible, both before and after cure.
5. The materials shall be supplied in a factory-proportioned unit.
6. The polymer-modified, portland cement mortar must be placeable from 1/8-in. to 1-in. in depth per lift for horizontal applications.

B. To prepare a polymer-modified portland cement concrete: aggregate shall conform to ASTM C-33. The factory-proportioned unit shall be extended with 42-lb. max. of a 3/8 in. (No.8 distribution per ASTM C-33, Table II) clean, well-graded, saturated surface dry aggregate, having low absorption and high density. Aggregate must be approved for use by the Engineer.

2.03 Performance Criteria

A. Typical Properties of the mixed polymer-modified, portland cement mortar:

1. Working Time: Approximately 30 minutes
2. Finishing Time: 50-120 minutes
3. Color: concrete gray when mixed

B. Typical Properties of the cured polymer-modified, portland cement mortar:

1. Compressive Strength (ASTM C-109 Modified)
    a. 1 day: 3000 psi min. (20.7 MPa)
    b. 7 day: 5500 psi min. (37.9 MPa)
    c. 28 day: 7000 psi min. (48.3 MPa)
2. Flexural Strength (ASTM C-293) @ 28 days: 2000 psi (13.8 MPa)
3. Splitting Tensile Strength (ASTM C-496) @ 28 days 750 psi (5.2 MPa)
4. Bond Strength (ASTM C-882 Modified) @ 28 days: 2200 psi (15.2 MPa)
5. The portland cement mortar shall not produce a vapor barrier.
6. Density(wet mix): 136 lbs. / cu. ft. (2.18 kg/l)
7. Permeability (AASHTO T-277 @ 28 days Approximately 500 Coulombs)

Note: Tests above were performed with the material and curing conditions @ 71°F – 75°F and 45-55% relative humidity.

Part 3 – Execution

3.01 Surface Preparation

A. Areas to be repaired must be clean, sound, and free of contaminants. All loose and deteriorated concrete shall be removed by mechanical means. Mechanically prepare the concrete substrate to obtain a surface profile of +/- 1/16" (CSP 5 or greater as per ICRI Guidelines) with a new exposed aggregate surface. Area to be patched shall not be less than 1/8" in depth.

B. Where reinforcing steel with active corrosion is encountered, sandblast the steel to a white metal finish to remove all contaminants and rust. Where corrosion has occurred due to the presence of chlorides, the steel shall be high pressure washed after mechanical cleaning. Prime steel with 2 coats of Sika Armatec 110 EpoCem as directed by manufacturer. (See Spec Component SC-201-0699)

3.02 Mixing and Application

A. Mechanically mix in appropriate sized mortar mixer or with a Sika jiffy paddle and low speed (400-600 rpm) drill. Pour approximately 4/5 gal Component A into the mixing container. Add Component B while continuing to mix. Mix to a uniform consistency for a maximum of three minutes. Add remaining Component A to mix if a more loose consistency is desired. Should smaller quantities be needed, be sure the components are measured in the correct ratio and that the Component B is uniformly blended before mixing the components together. Mix only that amount of material that can be placed in 30 minutes. Do not retemper material.

B. Mixing of the polymer-modified portland cement concrete: Pour all (1-gallon) of Component A into the mixing container. Add Component B while continuing to mix. Add correct amount of the pre-approved coarse aggregate, and continue mixing to a uniform consistency. Mixing time should be 3 minutes maximum.

C. Placement Procedure: At the time of application, the substrate should be saturated surface dry with no standing water. Mortar and/or concrete must be scrubbed into substrate filling all pores and voids. While the scrub coat is still plastic, force material against edge of repair, working toward center. If repair area is too large to fill while scrub coat is still wet use Sika Armatec 110 EpoCem in lieu of scrub coat (See Spec Component SC-200). After filling, consolidate, then screed. Allow mortar or concrete to set to desired stiffness, then finish with trowel, manual or power, for smooth surface. Broom or burlap drag for rough surface. Areas where the depth of the repair is less than 1-inch shall be repaired with polymer-modified portland cement mortar. In areas where the depth of the repair is greater than 1 inch, the repair shall be made with polymer-modified portland cement concrete.

D. As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water-based* compatible curing compound. Moist curing should commence immediately after finishing and continue for 48 hours. Protect newly applied material from rain, sun, and wind until compressive strength is 70% of the 28-day compressive strength. To prevent from freezing cover with insulating material. Setting time is dependent on temperature and humidity.

*Pretesting of curing compound is recommended.

E. Adhere to all procedures, limitations and cautions for the polymer-modified portland cement mortar in the manufacturers current printed technical data sheet and literature.

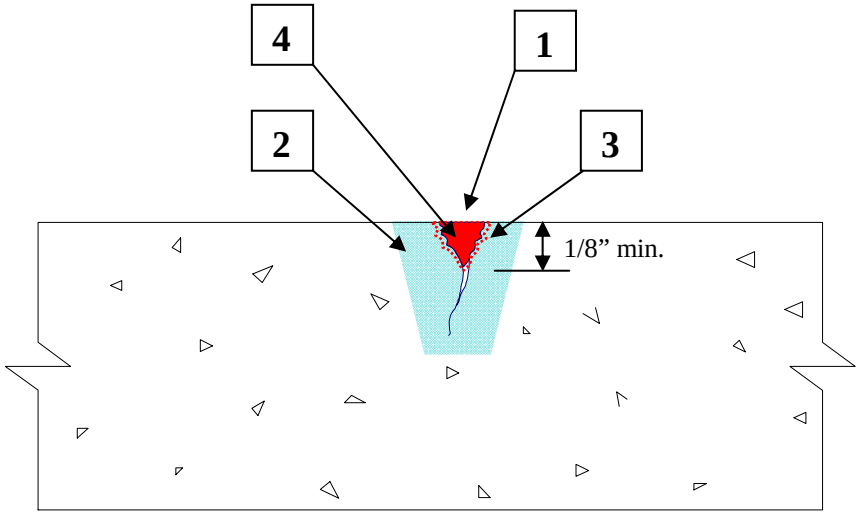
3.05 Cleaning

A. The uncured polymer-modified portland cement mortar can be cleaned from tools with water. The cured polymer - modified portland cement mortar can only be removed mechanically.

B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

SC-025

SikaTop® 122 Plus Crack Repair



1. Substrate shall be clean, sound and lattinance-free prior to repairing.

2. Pre-soak the substrate to provide saturated surface dry (SSD) condition prior to applying repair material.

3. Apply scrub coat of the repair material to the prepared substrate.

4. While scrub coat is wet place SikaTop 122 *Plus*, filling the entire cavity. Strike off and finish as required. Wet cure and protect as per the technical data sheet.

Concrete Restoration Systems by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071

SC-025

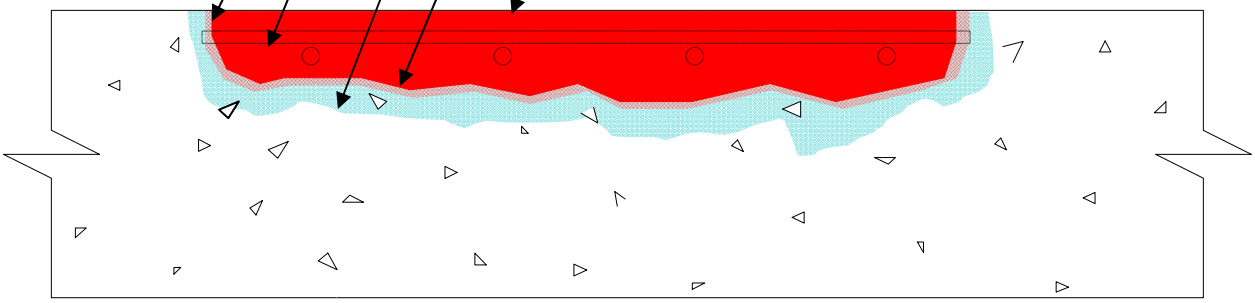
SikaTop® 122 Plus Hand-applied Repair

1. Substrate shall be clean, sound and lattinance-free prior to repairing. (Refer to ICRI Technical Guideline No. 03730.)

2. Pre-soak the substrate to provide saturated surface dry (SSD) condition prior to applying repair material.

3. Apply scrub coat of the repair material to the prepared substrate, filling all pours and voids.

4. While scrub coat is wet place SikaTop 122 *Plus*, filling the entire cavity. Strike off and finish as required. Wet cure and protect as per the technical data sheet.



Note:

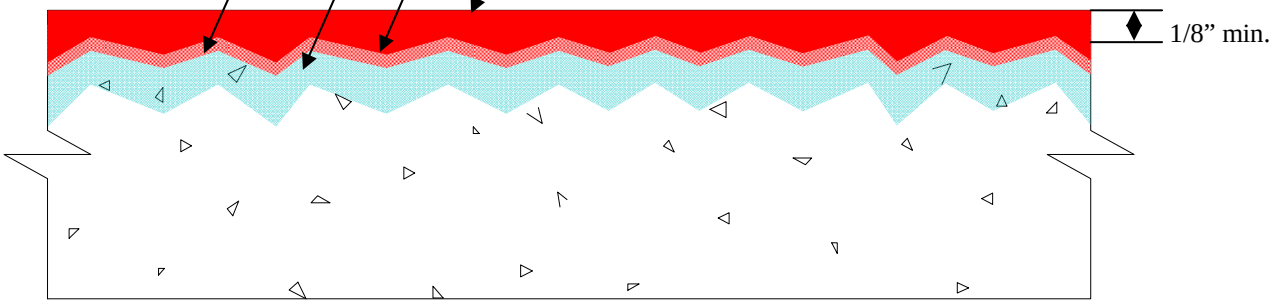
1. If repair area is too large to fill while scrub coat is still wet, use Sika Armatec 110 EpoCem in lieu of the scrub coat. (See Spec Component SC-200)
2. If reinforcing steel is located within the repair location refer to Spec Component SC-201
3. For applications greater than 1” in depth, add 3/8” coarse aggregate in accordance to the technical data sheet.

Concrete Restoration Systems by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071

SC-025

SikaTop® 122 Plus Overlay

1. Substrate shall be clean, sound and lattinance-free prior to repairing. Surface profile shall be a CSP 5-8. (Refer to ICRI Technical Guideline No. 03730.)
2. Pre-soak the substrate to provide saturated surface dry (SSD) condition prior to applying repair material.
3. Apply scrub coat of the repair material to the prepared substrate, filling all pours and voids.
4. While scrub coat is wet place SikaTop 122 *Plus*, filling the entire cavity. Strike off and finish as required. Wet cure and protect as per the technical data sheet.



Note:

1. If repair area is too large to fill while scrub coat is still wet, use Sika Armatec 110 EpoCem in lieu of the scrub coat. (See Spec Component SC-200)
2. If reinforcing steel is located within the repair location refer to Spec Component SC-201
3. For applications greater than 1" in depth, add 3/8" coarse aggregate in accordance to the technical data sheet.

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DIVISION 9 - FINISHES
Section 09800 - SPECIAL COATINGS
Section 09870 - Coating Systems for Steel

Part 1 - General

1.01 Summary

A. This specification describes the use of a 3-component, epoxy-modified, cementitious, anti-corrosion coating for reinforcing steel in concrete restoration.

1.02 Quality Assurance

A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.

B. Contractor qualifications: Contractor shall be qaulified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qaulified personnel who have receivced product training by a manufacturer's representative.

C. Install materials in accordance with all safety and weather conditions required by manufacturer, or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.03 Delivery, Storage, and Handling

A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.

B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.

C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 40ºF (5ºC) and rising.

B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified coating.

1.05 Submittals

A. Submit two copies of manufacturer's literature, to include: Product Data Sheets, and appropriate Material Safety Data Sheets (MSDS).

1.06 Warranty

A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 - Products

2.01 Manufacturers

A. **Sika Armatec 110 EpoCem**, as manufactured by Sika Corporation, is considered to conform to the requirements of this specification.

2.02 Materials

A. Epoxy resin/portland cement adhesive shall be **Sika Armatec 110 EpoCem**

1. Component “A” shall be an epoxy resin/water emulsion containing suitable viscosity control agents. It shall not contain butyl glycidyl ether.
2. Component “B” shall be primarily a water solution of a polyamine.
3. Component “C” shall be a blend of selected portland cements and sands.
4. The material shall not contain asbestos.

2.03 Performance Criteria

A. Properties of the mixed epoxy resin/portland cement adhesive.

1. Pot Life: 90 minutes @ 73° F
2. Contact Time: 95^{o}F (35^{o}C) 6 hours
   80-95F (26-35C) 6 Hours
   65-79F (18-26C) 12 Hours
   50-64F (10-17C) 16 Hours
   40-49F (4-9C) wet on wet
3. Color: dark gray

B. Properties of the cured epoxy resin/portland cement adhesive.

1. Compressive Strength (ASTM C-109)

   a 3 day: 4500 psi (31.0 MPa)
   b. 7 day: 6500 psi (44.8 MPa)
   c. 28 day: 8500 psi (58.6 MPa)
2. Splitting Tensile Strength (ASTM C-496)

   a. 28 days: 600 psi (4.1 MPa)
3. Flexural Strength (ASTM C-348)

   a. 1250 psi (8.6 MPa)
4. Bond Strength ASTM C-882 at 14 days

   a. Wet on Wet, 0-hr. open time: 2800 psi (19.3 MPa)
   b. 24-hr. open time: 2600 psi (17.9 MPa)

5. Bond of Steel Reinforcement to Concrete (Pullout Test)
   a. **Sika Armatec 110 EpoCem** coated 625-psi (4.3 MPa)
   b. Epoxy coated 508 psi(3.5 MPa)
   c. Plain Reinforcement 573 psi (3.95 Mpa)
6. The epoxy resin/portland cement adhesive shall not produce a vapor barrier.
7. Material must be proven to prevent corrosion of reinforcing steel when tested under the procedures as set forth by the Federal Highway Administration Program Report No. FHWA/RD86/193. Proof shall be in the form of an independent testing laboratory corrosion report showing prevention of corrosion of the reinforcing steel.

Note: Tests above were performed with material and curing conditions at 73°F and 45-55% relative humidity.

Part 3 - Execution

3.01 Mixing and Application

A. Mixing the epoxy resin: Shake contents of Components "A" and Component "B". Completely empty both components into a clean, dry mixing pail. Mix thoroughly for 30 seconds using a jiffy paddle with a low-speed (400-600 rpm) drill. Slowly add the entire contents of Component "C" while continuing to mix for 3 minutes until uniform with no lumps. Mix only that quantity that can be applied within its pot life.

B. Placement procedure:

   1. Apply to prepared steel surface with a stiff-bristle brush, or "hopper type" spray equipment at 20 mils minimum thickness. Properly coat the underside of the totally exposed steel. Allow to dry (approx. 2 - 3 hours) then apply a second coat at 20 mils minimum thickness. Allow drying again before placing repair mortar.

C. Adhere to all limitations and cautions for the epoxy resin/portland cement adhesive in the manufacturers current printed literature.

3.02 Cleaning

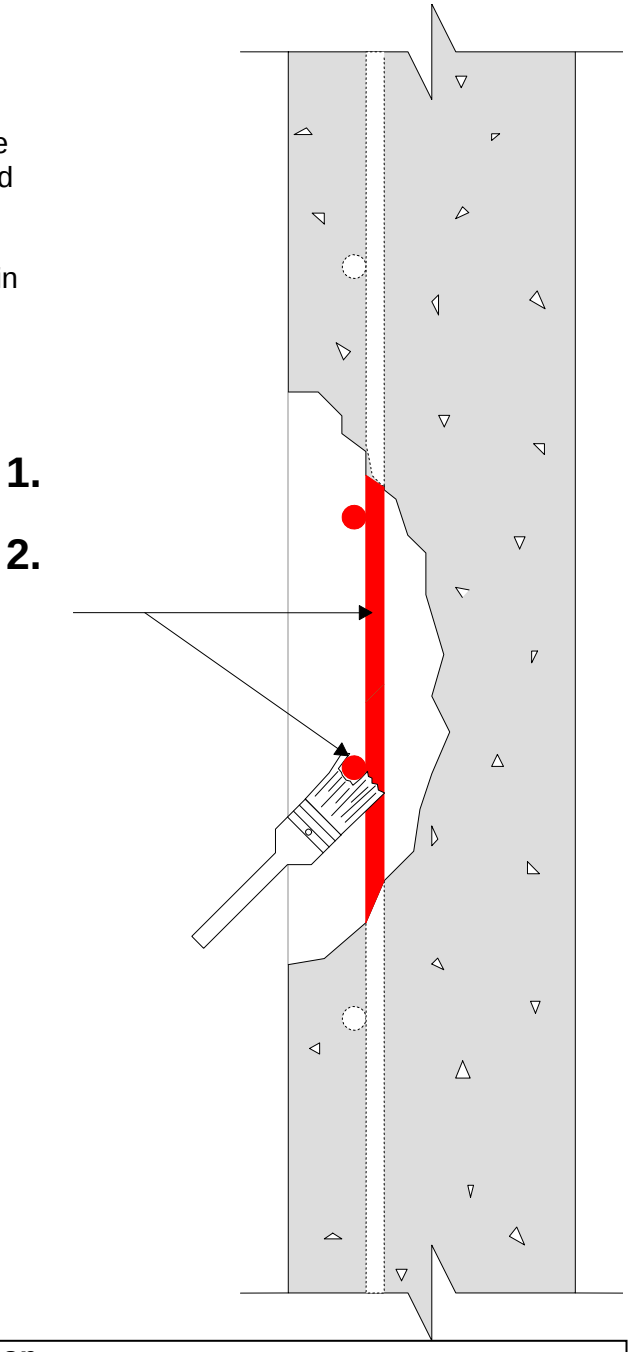
A. The uncured epoxy resin/portland cement adhesive can be cleaned from tools with water. The cured epoxy resin/portland cement adhesive can only be removed mechanically.

B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

SC-201 **Sika® Armatec 110 EpoCem**
Anti-corrosion

1. Apply Sika Armatec 110 EpoCem with stiff bristle brush or spray 20 mils thick, covering all exposed steel. Cure to tack-free 2-3 hours.

2. Apply a second coat at 20 mils. Allow to dry again before applying repair mortar or concrete.



Concrete Restoration Systems by Sika Corporation,
201 Polito Avenue, Lyndhurst, NJ 07071

SECTION 079200 - JOINT SEALERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sealants and joint backing.

B. Precompressed foam sealers.

1.02 RELATED SECTIONS

A. Division 07 - Firestopping and 15145 - Plumbing Piping: Firestopping sealants.

B. Division 08 - Glazing: Glazing sealants and accessories.

C. Division 09 - Gypsum Board Assemblies: Acoustic sealant.

1.03 REFERENCES

A. ASTM C 834 - Standard Specification for Latex Sealants; 2000.

B. ASTM C 919 - Standard Practice for Use of Sealants in Acoustical Applications; 1998.

C. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants; 1998.

D. ASTM C 1193 - Standard Guide for Use of Joint Sealants; 2000.

E. ASTM D 1056 - Standard Specification for Flexible Cellular Materials--Sponge or Expanded Rubber; 2000.

F. ASTM D 1667 - Standard Specification for Flexible Cellular Materials--Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam); 1997.

1.04 SUBMITTALS

A. See Section 01300 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

C. Samples: Submit two samples, 3 in size illustrating sealant colors for selection.

D. Manufacturer's Installation Instructions: Indicate special procedures, surface preparation, and perimeter conditions requiring special attention.

1.05 QUALITY ASSURANCE

A. Maintain one copy of each referenced document covering installation requirements on site.

B. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum ten years documented experience.

C. Applicator Qualifications: Company specializing in performing the work of this section ten years documented experience and approved by manufacturer and approved by manufacturer.

1.06 MOCK-UP

A. Provide mock-up of sealant joints in conjunction with masonry under provisions of Section 01400.

B. Construct mock-up with specified sealant types and with other components noted.

C. Locate where directed.

D. Mock-up may remain as part of the Work.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.08 COORDINATION

A. Coordinate the work with all sections referencing this section.

1.09 WARRANTY

A. See Division 01 - Closeout Submittals, for additional warranty requirements.

B. Correct defective work within a five year period after Date of Project Acceptance.

C. Warranty: Include coverage for installed sealants and accessories which fail to achieve airtight seal and watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Silicone Sealants:
   1. Bostik: www.bostik.com.
   2. Dow Corning Corp: www.dowcorning.com.
   3. GE Plastics: www.geplastics.com.
   4. Pecora Corporation: www.pecora.com.
   5. Sonneborn Building Products, ChemRex, Inc: www.chemrex.com.
   6. Tremco, Inc: www.tremcosealants.com.
   7. Substitutions: See Division 01 - Product Requirements.

B. Polyurethane Sealants:
   1. Bostik: www.bostik.com.
   2. Pecora Corporation: www.pecora.com.
   3. Sonneborn Building Products, ChemRex, Inc: www.chemrex.com.
   4. Tremco, Inc: www.tremcosealants.com.
   5. Substitutions: See Division 01 - Product Requirements.

C. Acrylic Emulsion Latex Sealants:
   1. Bostik: www.bostik.com.
   2. Pecora Corporation: www.pecora.com.
   3. Sonneborn Building Products, ChemRex, Inc: www.chemrex.com.
   4. Tremco, Inc: www.tremcosealants.com.
   5. Substitutions: See Division 01 - Product Requirements.

D. Preformed Compressible Foam Sealers:
   1. Emseal Joint Systems, Ltd: www.emseal.com.
   2. Sandell Manufacturing Company, Inc: www.sandellmfg.com.
   3. Polytite Manufacturing Corporation: www.polytite.com.
   4. Substitutions: See Division 01 - Product Requirements.

2.02 SEALANTS

A. General Purpose Exterior Sealant: Polyurethane; ASTM C 920, Grade NS, Class 25, Uses M, G, and A; two part component.
   1. Color: Standard colors matching finished surfaces.

2. Applications: Use for:
   a. Control, expansion, and soft joints in masonry.
   b. Joints between concrete and other materials.
   c. Joints between metal frames and other materials.
   d. Other exterior joints for which no other sealant is indicated.
   e. Joints between stone components.

B. Exterior Expansion Joint Sealer: Precompressed foam sealer; urethane with water-repellent;
   1. Face color: Match color of adjacent material.
   2. Size as required to provide watertight seal when installed.
   3. Applications: Use for:
      a. Exterior wall expansion joints.

C. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C 834, Type OP, Grade NF single component, paintable.
   1. Color: Standard colors matching finished surfaces.
   2. Applications: Use for:
      a. Interior wall and ceiling control joints.
      b. Joints between door and window frames and wall surfaces.
      c. Other interior joints for which no other type of sealant is indicated.

D. Acoustical Sealant: Butyl or acrylic sealant; ASTM C 920, Grade NS, Class 12-1/2, Uses M and A; single component, solvent release curing, non-skinning.
   1. Applications: Use for concealed locations only:
      a. Sealant bead between top stud runner and structure and between bottom stud track and floor.

E. Interior Floor Joint Sealant: Polyurethane, self-leveling; ASTM C 920, Grade P, Class 25, Uses T, M and A; single component.
   1. Approved by manufacturer for wide joints up to 1-1/2 inches.
   2. Color: Standard colors matching finished surfaces.
   3. Applications: Use for:
      a. Expansion joints in floors.

F. Exterior sealants for metal panels: Mildew Resistant Silicone.

2.03 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing: Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces and joint openings are ready to receive work.

B. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION

A. Remove loose materials and foreign matter which might impair adhesion of sealant.

B. Clean and prime joints in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C 1193.

D. Protect elements surrounding the work of this section from damage or disfigurement.

3.03 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Perform installation in accordance with ASTM C 1193.

C. Perform acoustical sealant application work in accordance with ASTM C 919.

D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.

E. Install bond breaker where joint backing is not used.

F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

G. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

H. Tool joints concave.

I. Precompressed Foam Sealant: Do not stretch; avoid joints except at corners, ends, and intersections; install with face 1/8 to 1/4 inch below adjoining surface.

3.04 CLEANING

A. Clean adjacent soiled surfaces.

3.05 PROTECTION OF FINISHED WORK

A. Protect sealants until cured.

END OF SECTION 079200

SECTION 04901

MASONRY RESTORATION AND CLEANING
(Tuckpointing Specifications)

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings, photos and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.02 DESCRIPTION OF WORK

A. Extent of masonry restoration work as indicated on drawings and photos.

B. Masonry restoration work includes the following:
1. Retuckpointing of masonry joints.
2. Final cleaning of masonry.

1.03 QUALITY ASSURANCE

A. Restoration Specialist: Work must be performed by a firm having not less than 5 years successful experience in comparable masonry restoration projects and employing personnel skilled in the restoration processes and operations indicated.

B. Repointing: Prepare 2 separate sample areas of approximately 2 feet high by 2 feet wide for each type of repointing required, one for demonstrating methods and quality of workmanship expected in removal of mortar from joints and the other for demonstrating quality of materials and workmanship expected in pointing mortar joints appearance to adjacent existing joints. The intent of the new pointing work is to match cleaned existing mortar. Newly pointed areas should be consistent with existing adjacent mortar joints for color and texture.

1.04 SUBMITTALS

A. Product Data: Submit manufacturer's technical data for each product indicated including recommendations for their applications and use. Includes test reports and certifications substantiating that products comply with requirements.

B. Samples: Submit, for verification purposes, samples of the following:
1. Each new exposed masonry mortar to be used for replacing existing materials. Include in each set of samples the full range of colors and textures to be expected in completed work.
2. Each type of chemical cleaning material data.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to site in manufacturer's original and unopened containers and packaging bearing labels as to type and names of products and manufacturers.

B. Protect masonry restoration materials during storage and construction from wetting by rain, snow or ground water, and from staining or intermixture with earth or other types of materials.

C. Protect grout, mortar and other materials from deterioration by moisture and temperature. Store in a dry location or in waterproof containers. Keep containers tightly closed and away from open flames. Protect liquid components from freezing. Comply with manufacturer's recommendations for minimum and maximum temperature requirements for storage.

1.06 PROJECT CONDITIONS

A. Do not repoint mortar joints or repair masonry unless air temperatures are between 40 deg.F and 90 deg.F and will remain so for at least 48 hours after completion of work.

B. Prevent mortar used in repointing and repair work from staining faces of surrounding masonry and other surfaces.

C. Protect sills, ledges, projections and pedestrians from mortar droppings.

1.07 SEQUENCING / SCHEDULING

A. Perform masonry restoration work in the following sequence:
1. Rake or cut out existing mortar joints from indicated to be repointed.
2. Repoint existing mortar joints of masonry indicated to be restored.

PART 2 PRODUCTS

2.01 MASONRY MATERIALS

A. Portland Cement: ASTM C 150, Type I or Type II.

B. Hydrated Lime: ASTM C 207, Type S, Type N or Type O.

C. Mortar Sand: ASTM C 144, unless otherwise indicated.
1. Color: Provide natural sand; of color necessary to produce required mortar color.
2. For the repointing mortar, provide sand with rounded edges.
3. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands, if necessary, to achieve suitable match.

D. Mortar Pigments: Natural and synthetic iron oxides, compounded for mortar mixes. Use only pigments with a record of satisfactory performance in masonry mortars.

E. Water: Potable.

2.02 TUCKPOINT MORTAR MIXES

A. General:
1. Measurement and Mixing: Measure cementitious and aggregate material in a dry condition by volume or equivalent weight. Do not measure by shovel, use known measure. Mix materials in a clean mechanical mortar mixer. If color is required, mix in with dry material.
2. Mixing Pointing Mortar: Thoroughly mix cementitious and aggregate, color if required, materials together before adding any water. Maintain mortar in the dampened condition for 1 to 2 hours. Add water in small portions until mortar of desired consistency is reached. Use mortar within 30 minutes of final mixing.

2.03 REPOINTING MASONRY

A. Rake or grind out mortar joints as follows:
   1. Rake or grind out mortar joints not less than ½ inch in depth or less than that required to expose sound, unweathered mortar.
      a. Contractor shall show a satisfactory Quality Control Program and demonstrated ability of operators to use tools without damage to masonry, or widening of joints. Quality Control Program shall include provisions for supervising performance and preventing damage due to worker fatigue.

B. Rinse masonry joints as follows:
   1. Rinse masonry joint surfaces with water to remove dust and mortar particles. Time application of rinsing so that at time of pointing, joint surfaces are damp but free of standing water. For best practices, if rinse water has dried, dampen masonry joint surfaces before pointing.

C. Tuckpoint mortar joints as follows:
   1. Tuckpoint mortar joints starting at one end and working away from starting area (this will ensure mortar joints are fully packed and no voids, air pockets are in mortar).
   2. Once area is complete, final tool (strike) mortar joints in opposite direction ensuring mortar joints are fully packed and tool (strike) to final appearance. Joints shall match existing joints as closely as possible. Unless otherwise directed by Architect or Owner.
   3. Take care not to spread mortar over edges onto exposed masonry surfaces or to featheredge mortar. Remove excess mortar from edge of joint by brushing.

2.04 FINAL CLEANING

A. After mortar is fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or fiber brushes, and clean water, spray applied at low pressure.
   1. Do not use metal scrapers.
   2. Use appropriate products by FOXFIRE USA, Inc. or equivalent.

B. Wash adjacent woodwork and other non-masonry surfaces. Use detergent and soft brushes or cloths.

C. Clean masonry debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.

D. Sweep and rake adjacent pavement and grounds to remove masonry debris. Where necessary, pressure wash surfaces to remove mortar, dust, dirt and stains.

END OF SECTION