

CONTRACT DOCUMENTS
FOR
ISLAND PARK BRIDGE & GREEK REVIVAL BUILDING
CONCRETE RESTORATION



Due: Thursday, September 29, 2011

ITB-4185

PARKS AND RECREATION SERVICES
Administering Department

CITY OF ANN ARBOR
301 East Huron
Ann Arbor, Michigan 48104

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ADVERTISEMENT FOR
ISLAND PARK BRIDGE AND GREEK REVIVAL CONCRETE RESTORATION
CITY OF ANN ARBOR, MICHIGAN

BID NO. 4185

Sealed Bids that include an original bid document and one additional proposal section copy will be received by the **Procurement Office, Finance Services, located on the 5th floor of the Guy Larcom Municipal Building, Ann Arbor, Michigan on or before Thursday, September 29, 2011 at 10:00 a.m** local time for Island Park Greek Revival Building Restoration and all associated work as specified and detailed. Bids will be publicly opened and read aloud at this time. Prospective submitters are responsible for timely receipt of their proposal. Late proposals will not be considered.

Work to be done trim replacement, beam replacement, painting, stucco repair, plaster repair.

Bid documents entirely downloadable on the Michigan Governmental Trade/BidNet (MITN) website at www.govbids.org and on the Purchasing page of the City of Ann Arbor's website at www.a2gov.org on or after Monday, September 12, 2011. The City will not be distributing paper copies of the plan or specifications.

Each proposal shall be accompanied by a certified check, or Bid Bond by a recognized surety, in the amount of 5% of the total of the bid price. A proposal, once submitted, becomes the property of the City. In the sole discretion of the City, the City reserves the right to allow a bidder to reclaim submitted documents provided the documents are requested and retrieved no later than 48 hours prior to the scheduled bid opening.

The successful Bidder will be required to furnish satisfactory performance and labor and material bonds in the amount of 100% of the bid price and satisfactory insurance coverage.

Precondition for entering into a contract with the City of Ann Arbor is compliance with Chapter 112 of Title IX of the Code of the City of Ann Arbor. The successful Bidder may also be required to comply with Chapter 23 of Title I of the Code of the City of Ann Arbor. Further information is outlined in the contract documents.

After the time of opening, no Bid may be withdrawn for a period of 45 days. The City reserves the right to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the City believes to be in its best interest.

Any further information on bid documents may be obtained from the Procurement Office, (734) 794-6500 ext.42506.

CITY OF ANN ARBOR, MICHIGAN

**City of Ann Arbor
LIVING WAGE ORDINANCE
DECLARATION OF COMPLIANCE**

The Ann Arbor Living Wage Ordinance (Section 1:811-1:821 of Chapter 23 of Title I of the Code) requires that employers providing services to the City or recipients of grants for financial assistance (in amounts greater than \$10,000 in a twelve-month period of time) pay their employees who are working on the City project or grant, a minimum level of compensation known as the **Living Wage**. This wage must be paid to the employees for the length of the contract/project.

Companies employing fewer than 5 persons and non-profits employing fewer than 10 persons are exempt from the Ordinance. If this exemption applies to your firm, please check below:

- _____ This company is exempt due to the fact that we employ or contract with fewer than 5 individuals.
- _____ This non-profit agency is exempt due to the fact that we employ or contract with fewer than 10 employees.

The Ordinance requires that all contractors/vendors and/or grantees agree to the following terms:

a) To pay each of its employees performing work on any covered contract or grant with the City, no less than the living wage, which is defined as \$11.83/hour when health care is provided, or no less than \$13.19/hour for those employers that do *not* provide health care. It is understood that the Living Wage will be adjusted upward each year on April 30, and covered employers will be required to pay the adjusted amount thereafter. The rates stated above include the adjustment for 2011/12.

b) Please check the boxes below which apply to your workforce:

Employees who are assigned to *any covered* City project or grant will be paid at or above the applicable living wage without health benefits Yes _____ No _____

OR

Employees who are assigned to *any covered* City project or grant will be paid at or above the applicable living wage with health benefits Yes _____ No _____

- c) To post a notice approved by the City regarding the Living Wage Ordinance in every work place or other location in which employees or other persons contracting for employment are working.
- d) To provide the City payroll records or other documentation as requested; and,
- e) To permit access to work sites to City representatives for the purposes of monitoring compliance, investigating complaints or non-compliance.

The undersigned authorized representative hereby obligates the contractor/vendor or grantee to the above stated conditions under penalty of perjury and violation of the Ordinance.

Company Name

Address City State Zip

Signature of Authorized Representative

Phone (area code)

Type or Print Name and Title

Email address

Date signed

Questions about this form? Please contact:
Procurement Office City of Ann Arbor - 734/794-6500 fax: 734/994-1795

→ *New rate effective April 30, 2011* ←

\$11.83 per hour

if the employer provides health care benefits*

\$13.19 per hour

if the employer does **NOT** provide health care benefits*

Employers providing services to or for the City of Ann Arbor or recipients of grants or financial assistance from the City of Ann Arbor for a value of more than \$10,000 in a twelve-month period of time **must pay those employees performing work on a City of Ann Arbor contract or grant, the above living wage.**

ENFORCEMENT

The City of Ann Arbor may recover back wages either administratively or through court action for the employees that have been underpaid in violation of the law. Persons denied payment of the living wage have the right to bring a civil action for damages in addition to any action taken by the City.

Violations of this Ordinance is punishable by fines of not more than \$500/violation plus costs, with each day being considered a separate violation. Additionally, the City of Ann Arbor has the right to modify, terminate, cancel or suspend a contract in the event of a violation of the Ordinance.

For Additional Information or to File a Complaint

Contact:

734/794-6576

*

Health Care benefits includes those paid for by the employer or making an employer contribution toward the purchase of health care. The employee contribution must not exceed \$.50 an hour for an average work week; and the employer cost or contribution must equal no less than \$1/hr for the average work week.

The law requires employers to display this poster where employees can readily see it.

CITY OF ANN ARBOR PROCUREMENT OFFICE
CONTRACT COMPLIANCE FORM
Entire Organization (Totals for All Locations where applicable)

Form #1

Name of Company/Organization _____ Date Form Completed _____

Name and Title of Person Completing this Form _____ \Name of President _____

Address _____ County _____ Phone # _____
 (Street address) (City) (State) (Zip) (Area Code)

Fax# _____ Email Address _____
 (Area Code)

EMPLOYMENT DATA

Job Categories	Number of Employees												
	Male						Female						TOTAL COLUMNS A-M
	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other	American Indian or Alaska Native	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other Pacific	American Indian or Alaskan	
A	B	C	D	F	G	H	I	J	K	L	M		
Exec/Sr. Level Officials													
Supervisors													
Professionals													
Technicians													
Sales													
Admin. Support													
Craftspeople													
Operatives													
Service Workers													
Laborers/Helper													
Apprentices													
Other													
TOTAL													
PREVIOUS YEAR TOTAL													

CITY OF ANN ARBOR PROCUREMENT OFFICE
CONTRACT COMPLIANCE FORM

Form #2

Local Office (Only those employees that will do local or on-site work, if applicable)

Name of Company/Organization _____ Date Form Completed _____

Name and Title of Person Completing this Form _____

Fax# _____ Email Address _____
 (Area Code)

EMPLOYMENT DATA

Job Categories	Number of Employees												
	Male						Female						TOTAL COLUMNS A-M
	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other Pacific	American Indian or Alaska Native	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other Pacific	American Indian or Alaskan Native	
	A	B	C	D	F	G	H	I	J	K	L	M	
Exec/Sr. Level Officials													
Supervisors													
Professionals													
Technicians													
Sales													
Admin. Support													
Craftspeople													
Operatives													
Service Workers													
Laborers/Helper													
Apprentices													
Other													
TOTAL													
PREVIOUS YEAR TOTAL													

NOTICE OF PRE-BID CONFERENCE

A pre-bid meeting will be held at Island Park on Thursday, September 22 at 9:00 a.m. The park address is 1450 Island Drive, Ann Arbor, 48105, and the structure is on the south part of the island, over the historic concrete bridge. This meeting is being held at the same time as ITB-4184 as there may be some overlap with contractors.

Questions may be emailed to Amy Kuras at akuras@a2gov.org. If any questions arise whose answers constitute modifications to the bid documents, an addendum will be issued.

INSTRUCTIONS TO BIDDERS

General

Work to be done under this Contract is generally described through the detailed specifications and must be completed fully in accordance with the contract documents. All work to be done under this Contract is located in or near the City of Ann Arbor.

The City shall make available to all prospective Bidders, prior to receipt of the Bids, access to the area in which the work is to be performed. Advance notice should be given to the Administering Department in cases where access to the site must be arranged by the City.

Any proposal which does not fully conform with these instructions may be rejected.

Proposals

Proposals must be submitted on the "Proposal Forms" and "Bid Forms" provided, with each blank properly filled in. **Sealed Bids that include a complete original bid document and one additional proposal section copy must be received** by the City of Ann Arbor Procurement Office, Fifth Floor, City Hall, Ann Arbor, Michigan, at the time stipulated in the Advertisement, which promptly thereafter proposals will be publicly opened and read aloud. Each proposal must be enclosed in a sealed envelope, endorsed across one end:

BID #4185 Proposal for Island Park Bridge and Greek Revival Concrete Restoration

The City intends to award a Contract(s) to the lowest responsible Bidder(s). On multi-divisional contracts, separate divisions may be awarded to separate Bidders. The City may also utilize discounts offered in the Bid Forms, if any, to determine the lowest responsible Bidder on each division, and award multiple divisions to a single Bidder, so that the lowest total cost is achieved for the City. For unit price bids, the contract will be awarded based upon the lump sum and unit prices stated by the bidder for the work items specified in the bid documents, with consideration given to any alternates selected by the City. If the City determines that the unit price for any item is materially different for the work item bid than either other bidders or the general market, the City, in its sole discretion, in addition to any other right it may have, may reject the bid as not responsible or non-conforming.

The acceptability of major subcontractors will be considered in determining if a Bidder is responsible. In comparing proposals, the City will give consideration to alternate proposals for items listed in the forms, or other alternates which the Bidder may wish to submit, but preference will be given to Base Bid Proposals.

The City reserves the right to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the City believes to be in its best interest.

Bid Security

Each proposal must be accompanied by a certified check, or Bid Bond by a surety licensed and authorized to do business within the State of Michigan, in the amount of 5% of the total of the bid price.

Withdrawal of Bids

After the time of opening, no Bid may be withdrawn for the period of days specified in the Advertisement.

Contract Time

Time is of the essence in the performance of the work under this Contract. The available time for work under this Contract is indicated on page C-1, Article III of the Contract. If these time requirements can not be met, the Bidder must stipulate on Bid Form Section 3 - Time Alternate its schedule for performance of the work. Consideration will be given to time in evaluating bids.

Liquidated Damages

A liquidated damages clause, as given on page C-2, Article III of the Contract, provides that the Contractor shall pay the City as liquidated damages, and not as a penalty, a sum certain per day for each and every day that the Contractor may be in default of completion of the specified work, within the time(s) stated in the Contract, or written extensions.

Liquidated damages clauses, as given in the General Conditions, provide further that the City shall be entitled to impose and recover liquidated damages for breach of the obligations under Chapter 112 of the City Code.

The liquidated damages are for the non-quantifiable aspects of any of the previously identified events and do not cover actual damages that can be shown or quantified nor are they intended to preclude recovery of actual damages in addition to the recovery of liquidated damages.

Human Rights Information

Section 5, beginning at page GC-3, outlines the requirements for fair employment practices under City of Ann Arbor Contracts. To establish compliance with this Ordinance, the Bidder must complete and return with its bid completed copies of the two pages of Human Rights Division Contract Compliance Forms (copy attached) or an acceptable equivalent.

Wage Requirements

Section 4, beginning at page GC-1, outlines the requirements for payment of prevailing wages or of a living wage to employees providing service to the City under this contract. The successful bidder must comply with all applicable requirements and may be required to provide documentary proof of compliance when requested.

Major Subcontractors

The Bidder shall identify each major subcontractor it expects to engage for this Contract if the work to be subcontracted is 15% or more of the bid sum or over \$50,000, whichever is less. The Bidder also shall identify the work to be subcontracted to each major subcontractor.

PROPOSAL

City of Ann Arbor
Guy C. Larcom Municipal Building
Ann Arbor, Michigan 48107

Ladies and Gentlemen:

The undersigned, as Bidder, declares that this Bid is made in good faith, without fraud or collusion with any person or persons bidding on the same Contract; that this Bidder has carefully read and examined the bid documents, including Advertisement, Human Rights Division Contract Compliance Forms, Notice of Pre-Bid Conference, Instructions to Bidders, Proposal, Bid Forms, Contract, Bond Forms, General Conditions, Standard Specifications, Detailed Specifications, all Addenda, and the Plans and understands them. The Bidder declares that it conducted a full investigation at the site and of the work proposed and is fully informed as to the nature of the work and the conditions relating to the work's performance. The Bidder also declares that it has extensive experience in successfully completing projects similar to this one.

The Bidder acknowledges that it has not received or relied upon any representations or warrants of any nature whatsoever from the City of Ann Arbor, its agents or employees, and that this Bid is based solely upon the Bidder's own independent business judgment.

The undersigned proposes to perform all work shown on the plans or described in the bid documents, including any addenda issued, and to furnish all necessary machinery, tools, apparatus, and other means of construction to do all the work, furnish all the materials, and complete the work in strict accordance with all terms of the Contract of which this proposal is one part.

In accordance with these bid documents, and Addenda numbered _____, the undersigned, as Bidder, proposes to perform at the sites in and/or around Ann Arbor, Michigan, all the work included herein for the amounts set forth in the Bid Forms.

The Bidder declares that it has become fully familiar with the liquidated damage clauses for completion times and for compliance with City Code Chapter 112, understands and agrees that the liquidated damages are for the non-quantifiable aspects of non-compliance and do not cover actual damages that may be shown and agrees that if awarded the Contract, all liquidated damage clauses form part of the Contract.

The Bidder declares that it has become fully familiar with the provisions of Chapter 14, Section 1:319 (Prevailing wages) and Chapter 23 (Living Wage) of the Code of the City of Ann Arbor and that it understands and agrees to comply, to the extent applicable to employees providing services to the City under this Contract, with the wage and reporting requirements stated in the City Code provisions cited. Bidder further agrees that the cited provisions of Chapter 14 and Chapter 23 form a part of this Contract.

The Bidder encloses a certified check or Bid Bond in the amount of 5% of the total of the Bid Price.

The Bidder agrees both to contract for the work and to furnish the necessary Bonds and insurance documentation within 10 days after being notified of the acceptance of the Bid.

If this Bid is accepted by the City and the Bidder fails to contract and furnish the required Bonds and insurance documentation within 10 days after being notified of the acceptance of this Bid, then the Bidder shall be considered to have abandoned the Contract and the certified check or Bid Bond accompanying this Proposal shall become due and payable to the City.

If the Bidder enters into the Contract in accordance with this Proposal, or if this Proposal is rejected, then the accompanying check or Bid Bond shall be returned to the Bidder.

In submitting this Bid, it is understood that the right is reserved by the City to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the City believes to be in its best interest.

SIGNED THIS _____ DAY OF _____, 2011.

Bidder's/Contractor Name

Official Address

Authorized Signature of Bidder

Telephone Number

(Print Name of Signer Above)

LEGAL STATUS OF BIDDER

(The Bidder shall fill out the appropriate form and strike out the other two.)

Bidder declares that it is:

* A corporation organized and doing business under the laws of the state of _____, for whom _____, bearing the office title of _____, whose signature is affixed to this proposal is authorized to execute contracts.

* A partnership, list all members and the street and mailing address of each:

Also identify the County and State where partnership papers are filed:

County of _____, State of _____

* An individual, whose signature with address, is affixed to this proposal: _____
(initial here)

BID FORMS
ISLAND PARK BRIDGE AND GREEK REVIVAL CONCRETE RESTORATION
BID #4185

Section 1 - Schedule of Prices

Base Bid

For the entire work outlined in these documents, complete as specified, using equipment and materials only of the type and manufacturers where specifically named.

_____ Dollars (\$_____)

Informative Unit Prices:

1. Provide a unit price per lineal foot for additional crack repair in addition to the 185 l.f. included in the base bid.
\$ _____ /l.f.

2. Provide a unit price per square foot for additional surface repair in addition to the 230 s.f. included in the base bid.
\$ _____ /s.f.

Signature of Authorized Representative of Bidder

Section 2 - Material and Equipment Alternates

The Base Bid proposal price shall include materials and equipment selected from the designated items and manufacturers listed in the bidding documents. This is done to establish uniformity in bidding and to establish standards of quality for the items named.

If the Contractor wishes to quote alternate items for consideration by the City, it may do so under this Section. A complete description of the item and the proposed price differential must be provided. Unless approved at the time of award, substitutions where items are specifically named will be considered only as a negotiated change in Contract Sum.

<u>Item Number</u>	<u>Description</u>	<u>Add/Deduct Amount</u>
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If the Bidder does not suggest any material or equipment alternate, the Bidder **MUST** complete the following statement:

For the work outlined in this request for bid, the bidder does NOT propose any material or equipment alternate under the contract.

Signature of Authorized Representative of Bidder

BID FORM

Section 3 - Time Alternate

If the Bidder takes exception to the time stipulated in Article III of the Contract, Time of Completion, page C-1, it is requested to stipulate below its proposed time for performance of the work. Consideration will be given to time in evaluating bids.

If the Bidder does not suggest any time alternate, the Bidder **MUST** complete the following statement:

For the work outlined in this request for bid, the bidder does NOT propose any time alternate under the contract.

Signature of Authorized Representative of Bidder

BID FORM

Section 4 - Major Subcontractors

For purposes of this contract, a Subcontractor is anyone (other than the Contractor) who performs work (other than or in addition to the furnishing of materials, plans or equipment) at or about the construction site, directly or indirectly for or on behalf of the Contractor (and whether or not in privity of contract with the Contractor), but shall not include any individual who furnishes merely the individual's own personal labor or services.

For the work outlined in these documents the Bidder expects to engage the following major subcontractors to perform the work identified:

<u>Subcontractor (Name and Address)</u>	<u>Work</u>	<u>Amount</u>
---	-------------	---------------

If the Bidder does not expect to engage any major subcontractor, the Bidder **MUST** complete the following statement:

For the work outlined in this request for bid, the bidder does NOT expect to engage any major subcontractor to perform work under the contract.

Signature of Authorized Representative of Bidder

CONTRACT

THIS AGREEMENT is made on the ____ day of _____, 2011, between the CITY OF ANN ARBOR, a Michigan Municipal Corporation, 301 E. Huron, Ann Arbor, Michigan 48104 (“City”) and _____.

Based upon the mutual promises below, the Contractor and the City agree as follows:

ARTICLE I - Scope of Work

The Contractor agrees to furnish all of the materials, equipment and labor necessary; and to abide by all the duties and responsibilities applicable to it for the project titled “ISLAND PARK BRIDGE AND GREEK REVIVAL CONCRETE RESTORATION” in accordance with the requirements and provisions of the following documents, including all written modifications incorporated into any of the documents, which are incorporated as part of this Contract:

Human Rights Division Contract	General Conditions
Compliance Forms	Standard Specifications
Living Wage Declaration of	Detailed Specifications
Compliance Forms	Plans
(if applicable)	Addenda
Bid Forms	
Proposal	
Contract and Exhibits	
Bonds	

ARTICLE II - Definitions

Administering Service area means Parks and Recreation Services

Supervising Professional means Sumedh Bahl or other persons acting under the authorization of the Director of the Administering Department.

Project means **Island Park Bridge and Greek Revival Concrete Restoration - Bid No. 4185**

ARTICLE III - Time of Completion

- (A) The work to be completed under this Contract shall begin immediately after the Contractor’s receipt of a fully executed Contract.
- (B) The entire work for this Contract shall be completed within 45 consecutive calendar days.
- (C) Failure to complete all the work within the time specified above, including any extension granted in writing by the Supervising Professional, shall obligate the Contractor to pay the City, as liquidated damages and not as a penalty, an amount equal to \$100.00 for each calendar day of delay in the completion of all the work. If

any liquidated damages are unpaid by the Contractor, the City shall be entitled to deduct these unpaid liquidated damages from the monies due the Contractor.

As an independent requirement, where the Detailed Specifications identify certain portions of the work to be completed within a shorter period of time and the Contractor fails to complete each portion within the shorter period specified for each portion, including any extension granted in writing by the Project Supervisor, the City is entitled to deduct from the monies due the Contractor, as liquidated damages and not as a penalty, the amount identified in the Detailed Specifications for each portion of the work not timely completed for each calendar day of delay in completion of each portion of the work.

The liquidated damages are for the non-quantifiable aspects of any of the previously identified events and do not cover actual damages that can be shown or quantified nor are they intended to preclude recovery of actual damages in addition to the recovery of liquidated damages.

Liquidated damages under this section are in addition to any liquidated damages due under Section 5 of the General Conditions.

ARTICLE IV - The Contract Sum

- (A) The City shall pay to the Contractor for the performance of the Contract, the unit prices as given in the Bid Forms for the estimated total of:

dollars

Use words

(\$ _____)

Use numbers

- (B) The amount paid shall be equitably adjusted to cover changes in the work ordered by the Supervising Professional but not required by the contract documents.

ARTICLE V - Assignment

This Contract may not be assigned or subcontracted without the written consent of the City.

ARTICLE VI - Choice of Law

This Contract shall be construed, governed, and enforced in accordance with the laws of the State of Michigan. By executing this agreement, the Contractor and the City agree to venue in a court of appropriate jurisdiction sitting within Washtenaw County for purposes of any action arising under this Contract.

Whenever possible, each provision of the contract will be interpreted in a manner as to be effective and valid under applicable law. The prohibition or invalidity, under applicable law, of any provision will not invalidate the remainder of the contract.

ARTICLE VII - Relationship of the Parties

The parties of the Contract agree that it is not a contract of employment but is a contract to accomplish a specific result. Contractor is an independent contractor performing services for the City. Nothing contained in this Contract shall be deemed to constitute any other relationship between the City and the Contractor.

Contractor certifies that it has no personal or financial interest in the project other than the compensation it is to receive under the Contract. Contractor certifies that it is not, and shall not become, overdue or in default to the City for any contract, debt, or any other obligation to the City including real or personal property taxes. City shall have the right to set off any such debt against compensation awarded for services under this agreement.

ARTICLE VIII - Notice

All notices given under this contract shall be in writing, and shall be by personal delivery or by certified mail with return receipt requested to the parties at their respective addresses as specified in the contract documents or other address the Contractor may specify in writing..

ARTICLE IX - Indemnification

To the fullest extent permitted by law, for any loss not covered by insurance under this contract, Contractor shall indemnify, defend and hold harmless the City, its officers, employees and agents harmless from all suits, claims, judgments and expenses including attorney's fees resulting or alleged to result, in whole or in part, from any act or omission, which is in any way connected or associated with this contract, by the Contractor or anyone acting on the Contractor's behalf under this contract. Contractor shall not be responsible to indemnify the City for losses or damages caused by or resulting from the City's sole negligence.

ARTICLE X - Entire Agreement

This Contract represents the entire understanding between the City and the Contractor and it supersedes all prior representations or agreements whether written or oral. Neither party has relied on any prior representations in entering into this Contract. This Contract may be altered, amended or modified only by written amendment signed by the City and the Contractor.

FOR CONTRACTOR

By: _____

Its: _____

FOR THE CITY OF ANN ARBOR

By _____
John Hieftje, Mayor

By _____
Jacqueline Beaudry, City Clerk

Approved as to substance

By _____
Steve Powers, City Administrator

By _____
Sumedh Bahl, Community Services
Area Administrator

Approved as to form and content

Stephen K. Postema, City Attorney

PERFORMANCE BOND

- (1) _____ of _____ (referred to as "Principal"), and _____, a corporation duly authorized to do business in the State of Michigan (referred to as "Surety"), are bound to the City of Ann Arbor, Michigan (referred to as "City"), for \$_____, the payment of which Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, by this bond.
- (2) The Principal has entered a written contract with the City dated _____, for: _____ and this bond is given for that contract in compliance with Act No. 213 of the Michigan Public Acts of 1963, as amended, being MCL 129.201 et seq.
- (3) Whenever the Principal is declared by the City to be in default under the contract, the Surety may promptly remedy the default or shall promptly:
- (a) complete the contract in accordance with its terms and conditions; or
 - (b) obtain a bid or bids for submission to the City for completing the contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, arrange for a contract between such bidder and the City, and make available, as work progresses, sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which Surety may be liable hereunder, the amount set forth in paragraph 1.
- (4) Surety shall have no obligation to the City if the Principal fully and promptly performs under the contract.
- (5) Surety agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder, or the specifications accompanying it shall in any way affect its obligations on this bond, and waives notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work, or to the specifications.

SIGNED AND SEALED this _____ day of _____, 2011.

(Name of Surety Company)

(Name of Principal)

By

By

(Signature)

(Signature)

Its

Its

(Title of Office)

(Title of Office)

Name and address of agent:

Approved as to form:

Stephen K. Postema, City Attorney

LABOR AND MATERIAL BOND

- (1) _____ of _____, (referred to as "Principal"), and _____, a corporation duly authorized to do business in the State of Michigan, (referred to as "Surety"), are bound to the City of Ann Arbor, Michigan (referred to as "City"), for the use and benefit of claimants as defined in Act 213 of Michigan Public Acts of 1963, as amended, being MCL 129.201 et seq., in the amount of \$ _____, for the payment of which Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, by this bond.
- (2) The Principal has entered a written contract with the City, dated _____, for: _____; and this bond is given for that contract in compliance with Act No. 213 of the Michigan Public Acts of 1963 as amended;
- (3) If the Principal fails to promptly and fully repay claimants for labor and material reasonably required under the contract, the Surety shall pay those claimants.
- (4) Surety's obligations shall not exceed the amount stated in paragraph 1, and Surety shall have no obligation if the Principal promptly and fully pays the claimants.

SIGNED AND SEALED this _____ day of _____, 2011.

(Name of Surety Company)	(Name of Principal)
By	By
(Signature)	(Signature)
Its	Its
(Title of Office)	(Title of Office)

Approved as to form:

Name and address of agent:

Stephen K. Postema, City Attorney

GENERAL CONDITIONS

Section 1 - Execution, Correlation and Intent of Documents

The contract documents shall be signed in 2 copies by the City and the Contractor.

The contract documents are complementary and what is called for by any one shall be binding. The intention of the documents is to include all labor and materials, equipment and transportation necessary for the proper execution of the work. Materials or work described in words which so applied have a well-known technical or trade meaning have the meaning of those recognized standards.

In case of a conflict among the contract documents listed below in any requirement(s), the requirement(s) of the document listed first shall prevail over any conflicting requirement(s) of a document listed later.

(1) Addenda in reverse chronological order; (2) Detailed Specifications; (3) Standard Specifications; (4) Drawings/Plans; (5) General Conditions; (6) Contract; (7) Bid Forms; (8) Bond Forms; (9) Proposal.

Section 2 - Order of Completion

The Contractor shall submit with each invoice, and at other times reasonably requested by the Supervising Professional, schedules showing the order in which the Contractor proposes to carry on the work. They shall include the dates at which the Contractor will start the several parts of the work, the estimated dates of completion of the several parts, and important milestones within the several parts.

Section 3 - Familiarity with Work

The Bidder or its representative shall make personal investigations of the site of the work and of existing structures and shall determine to its own satisfaction the conditions to be encountered, the nature of the ground, the difficulties involved, and all other factors affecting the work proposed under this Contract. The Bidder to whom this Contract is awarded will not be entitled to any additional compensation unless conditions are clearly different from those which could reasonably have been anticipated by a person making diligent and thorough investigation of the site.

The Bidder shall immediately notify the City upon discovery, and in every case prior to submitting its Bid, of every error or omission in the bidding documents that would be identified by a reasonably competent, diligent Bidder. In no case will a Bidder be allowed the benefit of extra compensation or time to complete the work under this Contract for extra expenses or time spent as a result of the error or omission.

Section 4 - Wage Requirements

Under this Contract, the Contractor shall conform to Chapter 14 of Title I of the Code of the City of Ann Arbor as amended; which in part states "...that all craftsmen, mechanics and laborers employed directly on the site in connection with said improvements, including said employees of subcontractors, shall receive the prevailing wage for the corresponding classes of craftsmen, mechanics and laborers, as determined by statistics for the Ann Arbor area compiled by the United States Department of Labor. At the request of the City, any contractor or subcontractor shall provide satisfactory proof of compliance with the contract provisions required by the Section."

Where the Contract and the Ann Arbor City Ordinance are silent as to definitions of terms required in determining contract compliance with regard to prevailing wages, the definitions provided in the Davis-Bacon Act as amended (40 U.S.C. 278-a to 276-a-7) for the terms shall be used.

1:814. Applicability.

- (1) This Chapter shall apply to any person that is a contractor/vendor or grantee as defined in Section 1:813 that employs or contracts with five (5) or more individuals; provided, however, that this Chapter shall not apply to a non-profit contractor/vendor or non-profit grantee unless it employs or contracts with ten (10) or more individuals.
- (2) This Chapter shall apply to any grant, contract, or subcontract or other form of financial assistance awarded to or entered into with a contractor/vendor or grantee after the effective date of this Chapter and to the extension or renewal after the effective date of this Chapter of any grant, contract, or subcontract or other form of financial assistance with a contractor/vendor or grantee.

1:815. Living Wages Required.

- (1) Every contractor/vendor or grantee, as defined in Section 1:813, shall pay its covered employees a living wage as established in this Section.
 - (a) For a covered employer that provides employee health care to its employees, the living wage shall be \$11.71 an hour, or the adjusted amount hereafter established under Section 1:815(3).
 - (b) For a covered employer that does not provide health care to its employees, the living wage shall be \$13.06 an hour, or the adjusted amount hereafter established under Section 1:815(3).
- (2) In order to qualify to pay the living wage rate for covered employers providing employee health care under subsection 1:815(1)(a), a covered employer shall furnish proof of said health care coverage and payment therefor to the City Administrator or his/her designee.
- (3) The amount of the living wage established in this Section shall be adjusted upward no later than April 30, 2011, and every year thereafter by a percentage equal to the percentage increase, if any, in the federal poverty guidelines as published by the United States Department of Health and Human Services for the year 2011. Subsequent annual adjustments shall be based upon the percentage increase, if any, in the United States Department of Health and Human Services poverty guidelines when comparing the prior

calendar year's poverty guidelines to the present calendar year's guidelines. The applicable percentage amount will be converted to an amount in cents by multiplying the existing wage under Section 1.815(1)(b) by said percentage, rounding upward to the next cent, and adding this amount of cents to the existing living wage levels established under Sections 1:815(1)(a) and 1:815(1)(b). Prior to April 1 of each calendar year, the City will notify any covered employer of this adjustment by posting a written notice in a prominent place in City Hall, and, in the case of a covered employer that has provided an address of record to the City, by a written letter to each such covered employer.

Section 5 - Non-Discrimination

The Contractor agrees to comply with the nondiscrimination provisions of Chapter 112 of the Ann Arbor City Code and to take affirmative action to assure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity and tends to eliminate any inequality based upon race, national origin or sex. The Contractor agrees to comply with the provisions of Section 9:161 of Chapter 112 of the Ann Arbor City Code and in particular the following excerpts:

9:161 NONDISCRIMINATION BY CITY CONTRACTORS

- (1) All contractors proposing to do business with the City of Ann Arbor shall satisfy the nondiscrimination administrative policy adopted by the City Administrator in accordance with the guidelines of this section. All contractors shall receive approval from the Director prior to entering into a contract with the City, unless specifically exempted by administrative policy. All City contractors shall take affirmative action to insure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity and tends to eliminate inequality based upon race, national origin or sex.
- (2) Each prospective contractor shall submit to the City data showing current total employment by occupational category, sex and minority group. If, after verifying this data, the Director concludes that it indicates total minority and female employment commensurate with their availability within the contractor's labor recruitment area, i.e., the area from which the contractor can reasonably be expected to recruit, said contractor shall be accepted by the Director as having fulfilled affirmative action requirements for a period of one year at which time the Director shall conduct another review. Other contractors shall develop an affirmative action program in conjunction with the Director. Said program shall include specific goals and timetables for the hiring and promotion of minorities and females. Said goals shall reflect the availability of minorities and females within the contractor's labor recruitment area. In the case of construction contractors, the Director shall use for employment verification the labor recruitment area of the Ann Arbor-Ypsilanti standard metropolitan statistical area. Construction contractors determined to be in compliance shall be accepted by the Director as having fulfilled affirmative action requirements for a period of six (6) months at which time the Director shall conduct another review.
- (3) In hiring for construction projects, contractors shall make good faith efforts to employ local persons, so as to enhance the local economy.
- (4) All contracts shall include provisions through which the contractor agrees, in addition to any other applicable Federal or State labor laws:

- (a) To set goals, in conference with the Human Resources Director, for each job category or division of the work force used in the completion of the City work;
 - (b) To provide periodic reports concerning the progress the contractor has made in meeting the affirmative action goals it has agreed to;
 - (c) To permit the Director access to all books, records and accounts pertaining to its employment practices for the purpose of determining compliance with the affirmative action requirements.
- (5) The Director shall monitor the compliance of each contractor with the nondiscrimination provisions of each contract. The Director shall develop procedures and regulations consistent with the administrative policy adopted by the City Administrator for notice and enforcement of non-compliance. Such procedures and regulations shall include a provision for the posting of contractors not in compliance.
- (6) All City contracts shall provide further that breach of the obligation not to discriminate shall be a material breach of the contract for which the City shall be entitled, at its option, to do any or all of the following:
- (a) To cancel, terminate, or suspend the contract in whole or part and/or refuse to make any required periodic payments under the contract;
 - (b) Declare the contractor ineligible for the award of any future contracts with the City for a specified length of time;
 - (c) To recover liquidated damages of a specified sum, said sum to be that percentage of the labor expenditure for the time period involved which would have accrued to minority group members had the affirmative action not been breached;
 - (d) Impose for each day of non-compliance, liquidated damages of a specified sum, based upon the following schedule:

<u>Contract Amount</u>	<u>Assessed Damages Per Day of Non-Compliance</u>
\$ 10,000 - 24,999	\$ 25.00
25,000 - 99,999	50.00
100,000 - 199,999	100.00
200,000 - 499,999	150.00
500,000 - 1,499,999	200.00
1,500,000 - 2,999,999	250.00
3,000,000 - 4,999,999	300.00
5,000,000 - and above	500.00

- (e) In addition the contractor shall be liable for any costs or expenses incurred by the City of Ann Arbor in obtaining from other sources the work and services to be rendered or

performed or the goods or properties to be furnished or delivered to the City under this contract.

Section 6 - Materials, Appliances, Employees

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation, and other facilities necessary or used for the execution and completion of the work. Unless otherwise specified, all materials incorporated in the permanent work shall be new, and both workmanship and materials shall be of the highest quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

The Contractor shall at all times enforce strict discipline and good order among its employees, and shall seek to avoid employing on the work any unfit person or anyone not skilled in the work assigned.

Adequate sanitary facilities shall be provided by the Contractor.

Section 7 - Qualifications for Employment

The Contractor shall employ competent laborers and mechanics for the work under this Contract. For work performed under this Contract, employment preference shall be given to qualified local residents.

Section 8 - Royalties and Patents

The Contractor shall pay all royalties and license fees. It shall defend all suits or claims for infringements of any patent rights and shall hold the City harmless from loss on account of infringement except that the City shall be responsible for all infringement loss when a particular process or the product of a particular manufacturer or manufacturers is specified, unless the City has notified the Contractor prior to the signing of the Contract that the particular process or product is patented or is believed to be patented.

Section 9 - Permits and Regulations

The Contractor must secure and pay for all permits, permit or plan review fees and licenses necessary for the prosecution of the work. These include but are not limited to City building permits, right-of-way permits, lane closure permits, right-of-way occupancy permits, and the like. The City shall secure and pay for easements shown on the plans unless otherwise specified.

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the contract documents are at variance with those requirements, it shall promptly notify the Supervising Professional in writing, and any necessary changes shall be adjusted as provided in the Contract for changes in the work.

Section 10 - Protection of the Public and of Work and Property

The Contractor is responsible for the means, methods, sequences, techniques and procedures of construction and safety programs associated with the work contemplated by this contract. The Contractor, its agents or sub-contractors, shall comply with the "General Rules and Regulations for the Construction Industry" as published by the Construction Safety Commission of the State of Michigan and to all other local, State and National laws, ordinances, rules and regulations pertaining to safety of persons and property.

The Contractor shall take all necessary and reasonable precautions to protect the safety of the public. It shall continuously maintain adequate protection of all work from damage, and shall take all necessary and reasonable precautions to adequately protect all public and private property from injury or loss arising in connection with this Contract. It shall make good any damage, injury or loss to its work and to public and private property resulting from lack of reasonable protective precautions, except as may be due to errors in the contract documents, or caused by agents or employees of the City. The Contractor shall obtain and maintain sufficient insurance to cover damage to any City property at the site by any cause.

In an emergency affecting the safety of life, or the work, or of adjoining property, the Contractor is, without special instructions or authorization from the Supervising Professional, permitted to act at its discretion to prevent the threatened loss or injury. It shall also so act, without appeal, if authorized or instructed by the Supervising Professional.

Any compensation claimed by the Contractor for emergency work shall be determined by agreement or in accordance with the terms of Claims for Extra Cost - Section 15.

Section 11 - Inspection of Work

The City shall provide sufficient competent personnel for the inspection of the work.

The Supervising Professional shall at all times have access to the work whenever it is in preparation or progress, and the Contractor shall provide proper facilities for access and for inspection.

If the specifications, the Supervising Professional's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Supervising Professional timely notice of its readiness for inspection, and if the inspection is by an authority other than the Supervising Professional, of the date fixed for the inspection. Inspections by the Supervising Professional shall be made promptly, and where practicable at the source of supply. If any work should be covered up without approval or consent of the Supervising Professional, it must, if required by the Supervising Professional, be uncovered for examination and properly restored at the Contractor's expense.

Re-examination of any work may be ordered by the Supervising Professional, and, if so ordered, the work must be uncovered by the Contractor. If the work is found to be in accordance with the contract documents, the City shall pay the cost of re-examination and replacement. If the work is not in accordance with the contract documents, the Contractor shall pay the cost.

Section 12 - Superintendence

The Contractor shall keep on the work site, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Supervising Professional. The superintendent will be responsible to perform all on-site project management for the Contractor. The superintendent shall be experienced in the work required for this Contract. The superintendent shall represent the Contractor and all direction given to the superintendent shall be binding as if given to the Contractor. Important directions shall immediately be confirmed in writing to the Contractor. Other directions will be confirmed on written request. The Contractor shall give efficient superintendence to the work, using its best skill and attention.

Section 13 - Changes in the Work

The City may make changes to the quantities of work within the general scope of the Contract at any time by a written order and without notice to the sureties. If the changes add to or deduct from the extent of the work, the Contract Sum shall be adjusted accordingly. All the changes shall be executed under the conditions of the original Contract except that any claim for extension of time caused by the change shall be adjusted at the time of ordering the change.

In giving instructions, the Supervising Professional shall have authority to make minor changes in the work not involving extra cost and not inconsistent with the purposes of the work, but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order by the Supervising Professional, and no claim for an addition to the Contract Sum shall be valid unless the additional work was ordered in writing.

The Contractor shall proceed with the work as changed and the value of the work shall be determined as provided in Claims for Extra Cost - Section 15.

Section 14 - Extension of Time

Extension of time stipulated in the Contract for completion of the work will be made if and as the Supervising Professional may deem proper under any of the following circumstances:

- (1) When work under an extra work order is added to the work under this Contract;
- (2) When the work is suspended as provided in Section 20;
- (3) When the work of the Contractor is delayed on account of conditions which could not have been foreseen, or which were beyond the control of the Contractor, and which were not the result of its fault or negligence;
- (4) Delays in the progress of the work caused by any act or neglect of the City or of its employees or by other Contractors employed by the City;
- (5) Delay due to an act of Government;
- (6) Delay by the Supervising Professional in the furnishing of plans and necessary information;
- (7) Other cause which in the opinion of the Supervising Professional entitles the Contractor to an extension of time.

The Contractor shall notify the Supervising Professional within 7 days of an occurrence or conditions which, in the Contractor's opinion, entitle it to an extension of time. The notice shall be in writing and submitted in ample time to permit full investigation and evaluation of the Contractor's claim. The Supervising Professional shall acknowledge receipt of the Contractor's notice within 7 days of its receipt. Failure to timely provide the written notice shall constitute a waiver by the Contractor of any claim.

In situations where an extension of time in contract completion is appropriate under this or any other section of the contract, the Contractor understands and agrees that the only available adjustment for events that cause any delays in contract completion shall be extension of the required time for contract completion and that there shall be no adjustments in the money due the Contractor on account of the delay.

Section 15 - Claims for Extra Cost

If the Contractor claims that any instructions by drawings or other media issued after the date of the Contract involved extra cost under this Contract, it shall give the Supervising Professional written notice within 7 days after the receipt of the instructions, and in any event before proceeding to execute the work, except in emergency endangering life or property. The procedure shall then be as provided for Changes in the Work-Section 13. No claim shall be valid unless so made.

If the Supervising Professional orders, in writing, the performance of any work not covered by the contract documents, and for which no item of work is provided in the Contract, and for which no unit price or lump sum basis can be agreed upon, then the extra work shall be done on a Cost-Plus-Percentage basis of payment as follows:

- (1) The Contractor shall be reimbursed for all reasonable costs incurred in doing the work, and shall receive an additional payment of 15% of all the reasonable costs to cover both its indirect overhead costs and profit;
- (2) The term "Cost" shall cover all payroll charges for employees and supervision required under the specific order, together with all worker's compensation, Social Security, pension and retirement allowances and social insurance, or other regular payroll charges on same; the cost of all material and supplies required of either temporary or permanent character; rental of all power-driven equipment at agreed upon rates, together with cost of fuel and supply charges for the equipment; and any costs incurred by the Contractor as a direct result of executing the order, if approved by the Supervising Professional;
- (3) If the extra is performed under subcontract, the subcontractor shall be allowed to compute its charges as described above. The Contractor shall be permitted to add an additional charge of 5% percent to that of the subcontractor for the Contractor's supervision and contractual responsibility;
- (4) The quantities and items of work done each day shall be submitted to the Supervising Professional in a satisfactory form on the succeeding day, and shall be approved by the Supervising Professional and the Contractor or adjusted at once;
- (5) Payments of all charges for work under this Section in any one month shall be made along with normal progress payments. Retainage shall be in accordance with Progress Payments-Section 16.

No additional compensation will be provided for additional equipment, materials, personnel, overtime or special charges required to perform the work within the time requirements of the Contract.

When extra work is required and no suitable price for machinery and equipment can be determined in accordance with this Section, the hourly rate paid shall be 1/40 of the basic weekly rate listed in the Rental Rate Blue Book published by Dataquest Incorporated and applicable to the time period the equipment was first used for the extra work. The hourly rate will be deemed to include all costs of operation such as bucket or blade, fuel, maintenance, "regional factors", insurance, taxes, and the like, but not the costs of the operator.

Section 16 - Progress Payments

The Contractor shall submit each month, or at longer intervals, if it so desires, an invoice covering work performed for which it believes payment, under the Contract terms, is due. The submission shall be to the City's Finance Department - Accounting Division. The Supervising Professional will, within 10 days following submission of the invoice, prepare a certificate for payment for the work in an amount to be determined by the Supervising Professional as fairly representing the acceptable work performed during the period covered by the Contractor's invoice. To insure the proper performance of this Contract, the City will retain a percentage of the estimate in accordance with Act 524, Public Acts of 1980. The City will then, following the receipt of the Supervising Professional's Certificate, make payment to the Contractor as soon as feasible, which is anticipated will be within 15 days.

An allowance may be made in progress payments if substantial quantities of permanent material have been delivered to the site but not incorporated in the completed work if the Contractor, in the opinion of the Supervising Professional, is diligently pursuing the work under this Contract. Such materials shall be properly stored and adequately protected. Allowance in the estimate shall be at the invoice price value of the items. Notwithstanding any payment of any allowance, all risk of loss due to vandalism or any damages to the stored materials remains with the Contractor.

In the case of Contracts which include only the Furnishing and Delivering of Equipment, the payments shall be; 60% of the Contract Sum upon the delivery of all equipment to be furnished, or in the case of delivery of a usable portion of the equipment in advance of the total equipment delivery, 60% of the estimated value of the portion of the equipment may be paid upon its delivery in advance of the time of the remainder of the equipment to be furnished; 30% of the Contract Sum upon completion of erection of all equipment furnished, but not later than 60 days after the date of delivery of all of the equipment to be furnished; and payment of the final 10% on final completion of erection, testing and acceptance of all the equipment to be furnished; but not later than 180 days after the date of delivery of all of the equipment to be furnished, unless testing has been completed and shows the equipment to be unacceptable.

With each invoice for periodic payment, the Contractor shall enclose a Contractor's Declaration - Section 43, and an updated project schedule per Order of Completion - Section 2.

Section 17 - Deductions for Uncorrected Work

If the Supervising Professional decides it is inexpedient to correct work that has been damaged or that was not done in accordance with the Contract, an equitable deduction from the Contract price

shall be made.

Section 18 - Correction of Work Before Final Payment

The Contractor shall promptly remove from the premises all materials condemned by the Supervising Professional as failing to meet Contract requirements, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute the work in accordance with the Contract and without expense to the City and shall bear the expense of making good all work of other contractors destroyed or damaged by the removal or replacement.

If the Contractor does not remove the condemned work and materials within 10 days after written notice, the City may remove them and, if the removed material has value, may store the material at the expense of the Contractor. If the Contractor does not pay the expense of the removal within 10 days thereafter, the City may, upon 10 days written notice, sell the removed materials at auction or private sale and shall pay to the Contractor the net proceeds, after deducting all costs and expenses that should have been borne by the Contractor. If the removed material has no value, the Contractor must pay the City the expenses for disposal within 10 days of invoice for the disposal costs.

The inspection or lack of inspection of any material or work pertaining to this Contract shall not relieve the Contractor of its obligation to fulfill this Contract and defective work shall be made good. Unsuitable materials may be rejected by the Supervising Professional notwithstanding that the work and materials have been previously overlooked by the Supervising Professional and accepted or estimated for payment or paid for. If the work or any part shall be found defective at any time before the final acceptance of the whole work, the Contractor shall forthwith make good the defect in a manner satisfactory to the Supervising Professional. The judgment and the decision of the Supervising Professional as to whether the materials supplied and the work done under this Contract comply with the requirements of the Contract shall be conclusive and final.

Section 19 - Acceptance and Final Payment

Upon receipt of written notice that the work is ready for final inspection and acceptance, the Supervising Professional will promptly make the inspection. When the Supervising Professional finds the work acceptable under the Contract and the Contract fully performed, the Supervising Professional will promptly sign and issue a final certificate stating that the work required by this Contract has been completed and is accepted by the City under the terms and conditions of the Contract. The entire balance found to be due the Contractor, including the retained percentage, shall be paid to the Contractor by the City within 30 days after the date of the final certificate.

Before issuance of final certificates, the Contractor shall file with the City:

- (1) The consent of the surety to payment of the final estimate;
- (2) The Contractor's Affidavit in the form required by Section 44.

In case the Affidavit or consent is not furnished, the City may retain out of any amount due the Contractor, sums sufficient to cover all lienable claims.

The making and acceptance of the final payment shall constitute a waiver of all claims by the City except those arising from:

- (1) unsettled liens;

- (2) faulty work appearing within 12 months after final payment;
- (3) hidden defects in meeting the requirements of the plans and specifications;
- (4) manufacturer's guarantees.

It shall also constitute a waiver of all claims by the Contractor, except those previously made and still unsettled.

Section 20 - Suspension of Work

The City may at any time suspend the work, or any part by giving 5 days notice to the Contractor in writing. The work shall be resumed by the Contractor within 10 days after the date fixed in the written notice from the City to the Contractor to do so. The City shall reimburse the Contractor for expense incurred by the Contractor in connection with the work under this Contract as a result of the suspension.

If the work, or any part, shall be stopped by the notice in writing, and if the City does not give notice in writing to the Contractor to resume work at a date within 90 days of the date fixed in the written notice to suspend, then the Contractor may abandon that portion of the work suspended and will be entitled to the estimates and payments for all work done on the portions abandoned, if any, plus 10% of the value of the work abandoned, to compensate for loss of overhead, plant expense, and anticipated profit.

Section 21 - Delays and The City's Right to Terminate Contract

If the Contractor refuses or fails to prosecute the work, or any separate part of it, with the diligence required to insure completion, ready for operation, within the allowable number of consecutive calendar days specified plus extensions, or fails to complete the work within the required time, the City may, by written notice to the Contractor, terminate its right to proceed with the work or any part of the work as to which there has been delay. After providing the notice the City may take over the work and prosecute it to completion, by contract or otherwise, and the Contractor and its sureties shall be liable to the City for any excess cost to the City. If the Contractor's right to proceed is terminated, the City may take possession of and utilize in completing the work, any materials, appliances and plant as may be on the site of the work and useful for completing the work. The right of the Contractor to proceed shall not be terminated or the Contractor charged with liquidated damages where an extension of time is granted under Extension of Time - Section 14.

If the Contractor is adjudged a bankrupt, or if it makes a general assignment for the benefit of creditors, or if a receiver is appointed on account of its insolvency, or if it persistently or repeatedly refuses or fails except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or if it fails to make prompt payments to subcontractors or for material or labor, or persistently disregards laws, ordinances or the instructions of the Supervising Professional, or otherwise is guilty of a substantial violation of any provision of the Contract, then the City, upon the certificate of the Supervising Professional that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor 3 days written notice, terminate this Contract. The City may then take possession of the premises and of all materials, tools and appliances thereon and without prejudice to any other remedy it may have, make good the deficiencies or finish the work by whatever method it may deem expedient, and deduct the cost from the payment due the Contractor. The Contractor shall not be entitled to receive any further payment until the work is finished. If the expense of finishing the work, including compensation for additional managerial and administrative services exceeds the unpaid balance of the Contract Sum, the Contractor and its surety are liable to the City for any excess cost incurred.

The expense incurred by the City, and the damage incurred through the Contractor's default, shall be certified by the Supervising Professional.

Section 22 - Contractor's Right to Terminate Contract

If the work should be stopped under an order of any court, or other public authority, for a period of 3 months, through no act or fault of the Contractor or of anyone employed by it, then the Contractor may, upon 7 days written notice to the City, terminate this Contract and recover from the City payment for all acceptable work executed plus reasonable profit.

Section 23 - City's Right To Do Work

If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this Contract, the City, 3 days after giving written notice to the Contractor and its surety may, without prejudice to any other remedy the City may have, make good the deficiencies and may deduct the cost from the payment due to the Contractor.

Section 24 - Removal of Equipment and Supplies

In case of termination of this Contract before completion, from any or no cause, the Contractor, if notified to do so by the City, shall promptly remove any part or all of its equipment and supplies from the property of the City, failing which the City shall have the right to remove the equipment and supplies at the expense of the Contractor.

The removed equipment and supplies may be stored by the City and, if all costs of removal and storage are not paid by the Contractor within 10 days of invoicing, the City upon 10 days written notice may sell the equipment and supplies at auction or private sale, and shall pay the Contractor the net proceeds after deducting all costs and expenses that should have been borne by the Contractor and after deducting all amounts claimed due by any lien holder of the equipment or supplies.

Section 25 - Responsibility for Work and Warranties

The Contractor assumes full responsibility for any and all materials and equipment used in the construction of the work and may not make claims against the City for damages to materials and equipment from any cause except negligence or willful act of the City. Until its final acceptance, the Contractor shall be responsible for damage to or destruction of the project (except for any part covered by Partial Completion and Acceptance - Section 26). The Contractor shall make good all work damaged or destroyed before acceptance. All risk of loss remains with the Contractor until final acceptance of the work (Section 19) or partial acceptance (Section 26). The Contractor is advised to investigate obtaining its own builders risk insurance.

The Contractor shall guarantee the quality of the work for a period of one year. The Contractor shall also unconditionally guarantee the quality of all equipment and materials that are furnished and installed under the contract for a period of one year. At the end of one year after the Contractor's receipt of final payment, the complete work, including equipment and materials furnished and installed under the contract, shall be inspected by the Contractor and the Supervising Professional. Any defects shall be corrected by the Contractor at its expense as soon as practicable but in all cases within 60 days. Any defects that are identified prior to the end of one year shall also be inspected by the Contractor and the Supervising Professional and shall be corrected by the Contractor at its

expense as soon as practicable but in all cases within 60 days.

The Contractor shall assign all manufacturer or material supplier warranties to the City prior to final payment. The assignment shall not relieve the Contractor of its obligations under this paragraph to correct defects.

Section 26 - Partial Completion and Acceptance

If at any time prior to the issuance of the final certificate referred to in Acceptance and Final Payment - Section 19, any portion of the permanent construction has been satisfactorily completed, and if the Supervising Professional determines that portion of the permanent construction is not required for the operations of the Contractor but is needed by the City, the Supervising Professional shall issue to the Contractor a certificate of partial completion, and immediately the City may take over and use the portion of the permanent construction described in the certificate, and exclude the Contractor from that portion.

The issuance of a certificate of partial completion shall not constitute an extension of the Contractor's time to complete the portion of the permanent construction to which it relates if the Contractor has failed to complete it in accordance with the terms of this Contract. The issuance of the certificate shall not release the Contractor or its sureties from any obligations under this Contract including bonds.

If prior use increases the cost of, or delays the work, the Contractor shall be entitled to extra compensation, or extension of time, or both, as the Supervising Professional may determine.

Section 27 - Payments Withheld Prior to Final Acceptance of Work

The City may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any certificate to the extent reasonably appropriate to protect the City from loss on account of:

- (1) Defective work not remedied;
- (2) Claims filed or reasonable evidence indicating probable filing of claims by other parties against the Contractor;
- (3) Failure of the Contractor to make payments properly to subcontractors or for material or labor;
- (4) Damage to another Contractor.

When the above grounds are removed or the Contractor provides a Surety Bond satisfactory to the City which will protect the City in the amount withheld, payment shall be made for amounts withheld under this section.

Section 28 - Contractor's Insurance

- A. The Contractor shall procure and maintain during the life of this Contract, including the guarantee period and during any warranty work, such insurance policies, including those set forth below, as will protect itself from all claims for bodily injuries, death or property

damage which may arise under this Contract; whether the acts were made by the Contractor or by any subcontractor or anyone employed by them directly or indirectly. The following insurance policies are required:

1. Worker's Compensation Insurance in accordance with all applicable state and federal statutes. Further, Employers Liability Coverage shall be obtained in the following minimum amounts:

Bodily Injury by Accident - \$500,000 each accident

Bodily Injury by Disease - \$500,000 each employee

Bodily Injury by Disease - \$500,000 each policy limit

2. Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 07 98. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements including, but not limited to: Products and Completed Operations, Explosion, Collapse and Underground coverage or Pollution. Further, the following minimum limits of liability are required:

\$1,000,000 Each occurrence as respect Bodily Injury Liability or Property Damage Liability, or both combined.

\$2,000,000 Per Job General Aggregate

\$1,000,000 Personal and Advertising Injury

\$2,000,000 Products and Completed Operations Aggregate

3. Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 07 97. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. Further, the limits of liability shall be \$1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.

4. Umbrella/Excess Liability Insurance shall be provided to apply excess of the Commercial General Liability, Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of \$1,000,000.

B. Insurance required under Section A.2 and A.3 of this Contract shall be considered primary as respects any other valid or collectible insurance that the City may possess, including any self-insured retentions the City may have; and any other insurance the City does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Further, the Contractor agrees to waive any right of recovery by its insurer against the City.

C. In the case of all Contracts involving on-site work, the Contractor shall provide to the City before the commencement of any work under this Contract documentation demonstrating it has obtained the above mentioned policies. Documentation must provide and demonstrate an unconditional 30 day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number; name

of insurance company; name and address of the agent or authorized representative; name and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which shall be approved by the City, in its sole discretion; (c) that the policy conforms to the requirements specified. An original certificate of insurance may be provided as an initial indication of the required insurance, provided that no later than 21 calendar days after commencement of any work the Contractor supplies a copy of the endorsements required on the policies. Upon request, the Contractor shall provide within 30 days a copy of the policy(ies) to the City. If any of the above coverages expire by their terms during the term of this Contract, the Contractor shall deliver proof of renewal and/or new policies to the Administering Department at least ten days prior to the expiration date.

- D. Any Insurance provider of Contractor shall be admitted and authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company 's Key Rating Guide of 'A' Overall and a minimum Financial Size Category of 'V'. Insurance policies and certificates issued by non-admitted insurance companies are not acceptable unless approved in writing by the City.

Section 29 - Surety Bonds

Bonds will be required from the successful bidder as follows:

- (1) A Performance Bond to the City of Ann Arbor for the amount of the bid(s) accepted;
- (2) A Labor and Material Bond to the City of Ann Arbor for the amount of the bid(s) accepted.

Bonds shall be executed on forms supplied by the City in a manner and by a Surety Company satisfactory to the City Attorney.

Section 30 - Damage Claims

The Contractor shall be held responsible for all damages to property of the City or others, caused by or resulting from the negligence of the Contractor, its employees, or agents during the progress of or connected with the prosecution of the work, whether within the limits of the work or elsewhere. The Contractor must restore all property injured including sidewalks, curbing, sodding, pipes, conduit, sewers or other public or private property to not less than its original condition with new work.

Section 31 - Refusal to Obey Instructions

If the Contractor refuses to obey the instructions of the Supervising Professional, the Supervising Professional shall withdraw inspection from the work, and no payments will be made for work performed thereafter nor may work be performed thereafter until the Supervising Professional shall have again authorized the work to proceed.

Section 32 - Assignment

Neither party to the Contract shall assign the Contract without the written consent of the other. The Contractor may assign any monies due to it to a third party acceptable to the City.

Section 33 - Rights of Various Interests

Whenever work being done by the City's forces or by other contractors is contiguous to work covered by this Contract, the respective rights of the various interests involved shall be established by the Supervising Professional, to secure the completion of the various portions of the work in general harmony.

The Contractor is responsible to coordinate all aspects of the work, including coordination of, and with, utility companies and other contractors whose work impacts this project.

Section 34 - Subcontracts

The Contractor shall not award any work to any subcontractor without prior written approval of the City. The approval will not be given until the Contractor submits to the City a written statement concerning the proposed award to the subcontractor. The statement shall contain all information the City may require.

The Contractor shall be as fully responsible to the City for the acts and omissions of its subcontractors, and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons directly employed by it.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and all other contract documents applicable to the work of the subcontractors and to give the Contractor the same power to terminate any subcontract that the City may exercise over the Contractor under any provision of the contract documents.

Nothing contained in the contract documents shall create any contractual relation between any subcontractor and the City.

Section 35 - Supervising Professional's Status

The Supervising Professional has the right to inspect any or all work. The Supervising Professional has authority to stop the work whenever stoppage may be appropriate to insure the proper execution of the Contract. The Supervising Professional has the authority to reject all work and materials which do not conform to the Contract and to decide questions which arise in the execution of the work.

The Supervising Professional shall make all measurements and determinations of quantities. Those measurements and determinations are final and conclusive between the parties.

Section 36 - Supervising Professional's Decisions

The Supervising Professional shall, within a reasonable time after their presentation to the Supervising Professional, make decisions in writing on all claims of the City or the Contractor and on all other matters relating to the execution and progress of the work or the interpretation of the contract documents.

Section 37 - Storing Materials and Supplies

Materials and supplies may be stored at the site of the work at locations agreeable to the City unless specific exception is listed elsewhere in these documents. Ample way for foot traffic and drainage must be provided, and gutters must, at all times, be kept free from obstruction. Traffic on streets shall be interfered with as little as possible. The Contractor may not enter or occupy with agents, employees, tools, or material any private property without first obtaining written permission from its owner. A copy of the permission shall be furnished to the Supervising Professional.

Section 38 - Lands for Work

The Contractor shall provide, at its own expense and without liability to the City, any additional land and access that may be required for temporary construction facilities or for storage of materials.

Section 39 - Cleaning Up

The Contractor shall, as directed by the Supervising Professional, remove at its own expense from the City's property and from all public and private property all temporary structures, rubbish and waste materials resulting from its operations unless otherwise specifically approved, in writing, by the Supervising Professional.

Section 40 - Salvage

The Supervising Professional may designate for salvage any materials from existing structures or underground services. Materials so designated remain City property and shall be transported or stored at a location as the Supervising Professional may direct.

Section 41 - Night, Saturday or Sunday Work

No night or Sunday work (without prior written City approval) will be permitted except in the case of an emergency and then only to the extent absolutely necessary. The City may allow night work which, in the opinion of the Supervising Professional, can be satisfactorily performed at night. Night work is any work between 8:00 p.m. and 7:00 a.m. No Saturday work will be permitted unless the Contractor gives the Supervising Professional at least 48 hours but not more than 5 days notice of the Contractor's intention to work the upcoming Saturday.

Section 42 - Sales Taxes

Under State law the City is exempt from the assessment of State Sales Tax on its direct purchases. Contractors who acquire materials, equipment, supplies, etc. for incorporation in City projects are not likewise exempt. State Law shall prevail. The Bidder shall familiarize itself with the State Law and prepare its Bid accordingly. No extra payment will be allowed under this Contract for failure of the Contractor to make proper allowance in this bid for taxes it must pay.

Section 43

CONTRACTOR'S DECLARATION

I hereby declare that I have not, during the period _____, 201____, to
_____, 20___, performed any work, furnished any materials, sustained any loss, damage or
delay, or otherwise done anything in addition to the regular items (or executed change orders) set
forth _____ in _____ the _____ Contract _____ titled

_____,
for which I shall ask, demand, sue for, or claim compensation or extension of time from the City,
except as I hereby make claim for additional compensation or extension of time as set forth on the
attached itemized statement. I further declare that I have paid all payroll obligations related to this
Contract that have become due during the above period and that all invoices related to this Contract
received more than 30 days prior to this declaration have been paid in full except as listed below.

There is/is not (Contractor please circle one and strike one as appropriate) an itemized statement
attached regarding a request for additional compensation or extension of time.

Contractor _____ Date

By
(Signature)

Its
(Title of Office)

Past due invoices, if any, are listed below.

Section 44

CONTRACTOR'S AFFIDAVIT

The undersigned Contractor, _____, represents that on
, 20_____, it was awarded a contract by the City of Ann Arbor, Michigan to
_____ under the terms and conditions of a Contract titled
_____.

The Contractor represents that all work has now been accomplished and the Contract is complete.

The Contractor warrants and certifies that all of its indebtedness arising by reason of the Contract has been fully paid or satisfactorily secured; and that all claims from subcontractors and others for labor and material used in accomplishing the project, as well as all other claims arising from the performance of the Contract, have been fully paid or satisfactorily settled. The Contractor agrees that, if any claim should hereafter arise, it shall assume responsibility for it immediately upon request to do so by the City of Ann Arbor.

The Contractor, for valuable consideration received, does further waive, release and relinquish any and all claims or right of lien which the Contractor now has or may acquire upon the subject premises for labor and material used in the project owned by the City of Ann Arbor.

This affidavit is freely and voluntarily given with full knowledge of the facts.

Contractor
By
(Signature)
Its
(Title of Office)

Subscribed and sworn to before me, on this _____ day of _____, 201_
_____, _____ County, Michigan

Notary Public
My commission expires on:

STANDARD SPECIFICATIONS

All work under this contract shall be performed in accordance with the Public Services Department Standard Specifications in effect at the date of availability of the contract documents stipulated in the Advertisement. All work under this Contract which is not included in these Standard Specifications, or which is performed using modifications to these Standard Specifications, shall be performed in accordance with the Detailed Specifications included in these contract documents.

A copy of the Public Services Department Standard Specifications may be purchased from the Engineering Division, (Fourth Floor, City Hall, Ann Arbor, Michigan), for \$35.00 per copy. In addition, a copy of these Standard Specifications is available for public viewing at the Engineering Division office, for review Monday through Friday between the hours of 8:30 a.m. and 4:00 p.m. In addition, a copy of these Standard Specifications is available for public viewing on the City of Ann Arbor Website:
www.a2gov.org/government/publicservices/project_management/privatedev/Pages/Standardspecificationbook.aspx

SECTION 02207 AGGREGATE MATERIALS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Aggregate materials.

1.2 RELATED SECTIONS

- A. Section 02275 – RipRap.

1.3 REFERENCES

- A. ANSI/ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.

1.4 SUBMITTALS

- A. Not Used

PART 2 PRODUCTS

2.1 AGGREGATE MATERIALS

- A. Course Aggregate: Conforming to MDOT standards, 21AA or crushed concrete.

PART 3 EXECUTION

3.1 STOCKPILING

- A. Stockpile materials on site at locations as directed.
- B. Stockpile in sufficient quantities to meet project schedule and requirements.
- C. Separate differing materials with dividers or stockpile apart to prevent mixing.
- D. Direct surface water away from stockpile site so as to prevent erosion or deterioration of materials.

3.2 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in a clean and neat condition. Grade site surface to prevent free standing surface water.

END OF SECTION

SECTION 02275 RIPRAP

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Riprap.

1.2 RELATED SECTIONS

- A. Section 02207 - Aggregate Materials.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with MDEQ requirements.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Riprap: Field stone; 6 inch minimum size, 24 inch maximum size, with majority 12 inches to 24 inches.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not place riprap over frozen or spongy subgrade surfaces.

3.2 PLACEMENT

- A. Place geotextile fabric over substrate, lap edges and ends.
- B. Place riprap at at embankment slopes adjacent to bridge foundation as indicated on drawings.

END OF SECTION

SECTION 03732 CONCRETE REPAIR

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Preparation of concrete and application of repair materials.
- B. Restoration of concrete surfaces.

1.2 RELATED SECTIONS

- A. Section 09900: Applied finish to repaired concrete surface.

1.3 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Repair Surface:
 - 1. Basis of Measurement: By the square foot.
 - 2. Basis of Payment: Includes surface preparation, repair, finishing.

1.4 REFERENCES

- A. ASTM C109 – Compressive Strength
- B. ASTM C150 - Portland Cement.
- B. ASTM C404 - Aggregates for Masonry Grouts.
- C. ASTM C882 - Bond Strength of Epoxy Resin Systems Used with Concrete.
- D. ASTM D638 - Test Method for Tensile Properties of Plastics.
- E. ASTM D695 - Compressive Properties of Rigid Plastics.
- F. ASTM D790 - Flexural Properties of Plastics and Electrical Insulating Materials.

1.5 SUBMITTALS

- A. Product Data: Indicate product standards, physical and chemical characteristics, technical specifications, limitations, maintenance instructions, and general recommendations regarding each material.

1.6 QUALITY ASSURANCE

- A. Perform welding work in accordance with manufacturer's instructions.

1.7 QUALIFICATIONS

- A. Materials Manufacturer: Company specializing in manufacturing the products specified in this inFORM studio, p.c.

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Section with minimum five years documented experience.

- B. Applicator: Company specializing in concrete repair with minimum five years documented experience and approved by manufacturer.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site in accordance with manufacturer’s instructions.
- B. Comply with instructions for storage, shelf life limitations, and handling.

PART 2 PRODUCTS

2.1 PATCHING MATERIALS

- A. Epoxy System: Two-part epoxy adhesive, meeting the following minimum characteristics:
Basis of Design: EUCO #452 as manufactured by The Euclid Chemical Company.

<u>Characteristic</u>	<u>Test Method</u>	<u>Results</u>
Bond Strength	ASTM C882	2,500 psi
Water Absorption		0.081%
Compressive Modulus		321,664 psi
Compressive Strength	ASTM D695	11,360 psi

- B. Rapid Setting Repair Material: cement based concrete of blended Portland cements, finely graded aggregates and specific chemical additives which undergoes a chemical “hyper hydration” to produce a stable, low permeability, cementitious matrix.

Basis of Design: SPEED CRETE RED LINE as manufactured by The Euclid Chemical Company.

<u>Characteristic</u>	<u>Test Method</u>	<u>Results</u>
Compressive Strength	ASTM C109	2,500 psi (24 Hrs) - 5,900 (28 days)
Split Tensile Strength	ASTM C496	500 psi (28 days)
Flexural Strength	ASTM C348	918 psi (28 days)
Shrinkage (50% RH)	ASTM C157	0.069%
Expansion (100% RH)	ASTM C157	0.077%

- C. Bonding Agent: DURALPREP AC as manufactured by The Euclid Chemical Company.
- D. Portland Cement: ASTM C150, Type S, grey color.
- E. Sand: ASTM C33; uniformly graded, clean.
- F. Water: Clean and potable.
- G. Cleaning Agent: as recommended by manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces are ready to receive work.
- B. Beginning of installation means acceptance of existing surfaces.

3.2 PREPARATION

- A. Clean concrete surfaces of dirt, laitance, corrosion, or other contamination; wire brush using water; rinse surface and allow to dry.
- B. Flush out cracks and voids with chemical solvent to remove laitance and dirt. Chemically neutralize by rinsing with water.
- C. For areas patched with epoxy mortar, remove broken and soft concrete ¼ inch minimum depth. Remove corrosion from steel. Clean surfaces mechanically; wash in accordance with manufacturer's recommendations; rinse with water.

3.3 REPAIR WORK

- A. Repair exposed structural, shrinkage, and settlement cracks of concrete as indicated on Drawings by the epoxy injection method.
- B. Repair spalling, fill voids flush with surface and apply surface finish.

3.4 INJECTION - EPOXY RESIN ADHESIVE

- A. Inject adhesive into prepared ports under pressure using equipment appropriate for particular application.
- B. Begin injection at lower entry port and continue until adhesive appears in adjacent entry port. Continue from port to port until entire crack is filled.
- C. Remove temporary seal and excess adhesive.
- D. Clean surfaces adjacent to repair and blend finish.

3.5 APPLICATION - CEMENTITIOUS MORTAR

- A. Apply spray or brush coating of bonding agent to dry concrete surfaces. Provide full surface coverage.
- B. Apply cementitious mortar by steel trowel to an average thickness of 1/4 inches. Tamp into place filling voids at spalled areas. Work mix into honeycomb.
- C. Damp cure cementitious mortar as recommended by manufacturer.

3.6 SCHEDULE

- A. Bridge Surfaces: Rapid Setting Repair Material, trowel finish – match texture and finish of adjacent surfaces.
- B. Cracks in Bridge Wall: Epoxy resin injection, roughened surface finish to match adjacent work.
- C. Greek Revival Building Steps & Foundation Wall: Rapid Setting Repair Material, trowel finish – match texture and finish of adjacent surfaces.
- D. Cracks in Greek Revival Foundation Wall: Epoxy resin injection, roughened surface finish to match adjacent work.

END OF SECTION

SECTION 09900 PAINTING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Exterior paint and coating systems.

1.2 REFERENCES

- A. SSPC-SP 1 - Solvent Cleaning
- B. SSPC-SP 2 - Hand Tool Cleaning
- C. SSPC-SP 3 - Power Tool Cleaning
- D. SSPC-SP 13 / NACE No. 6 Surface Preparation for Concrete
- E. EPA-Method 24
- F. GS-11, GC-03
- G. LEED-CI USGBC version 2.0

1.3 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each paint and coating product should include:
 - 1. Product characteristics
 - 2. Surface preparation instructions and recommendations
 - 3. Primer requirements and finish specification
 - 4. Storage and handling requirements and recommendations
 - 5. Application methods
- B. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's color samples available.
- C. Verification Samples: For each finish product specified, submit samples that represent actual product, color, and sheen.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information:
 - 1. Product name, and type (description)
 - 2. Application & use instructions
 - 3. Surface preparation
 - 4. Environmental issues
 - 5. Batch date
 - 6. Color number/ name
- B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.

- C. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

1.5 PROJECT CONDITIONS

Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not apply coatings under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: PPG Protective & Marine Coatings
- B. Substitutions: Requests for substitutions will be considered. When submitting request for substitution, provide complete product data specified above under Submittals, for each substitute product.

2.2 APPLICATIONS/SCOPE

- A. Surfaces To Be Coated; as indicated on drawings and schedules
 - 1. Cement – Poured, cast-in-place

2.3 MATERIALS - GENERAL REQUIREMENTS

- A. Paints and Coatings - General:
 - 1. Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such a procedure is specifically described in manufacturer's product instructions. VOC numbers need to be confirmed by using the products MSDS sheets.

2.4 ACCESSORIES:

- A. Coating Application Accessories:
 - 1 Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required per manufacturer's specifications.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin application of coatings until substrates have been properly prepared. Notify Architect of unsatisfactory conditions before proceeding
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Proceed with work only after conditions have been corrected, and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.

3.2 SURFACE PREPARATION:

- A. Painting Contractor shall be responsible to carefully remove all loose paint from concrete surfaces. Repair minor cracks, hole and imperfections prior to painting.

- B. Proper product selection, surface preparation, and application affect coating performance. Coating integrity and service life will be reduced because of improperly prepared surfaces. Selection and implementation of proper surface preparation ensures coating adhesion to the substrate and prolongs the service life of the coating system.
- C. Selection of the proper method of surface preparation depends on the substrate, the environment, and the expected service life of the coating system. Economics, surface contamination, and the effect on the substrate will also influence the selection of surface preparation methods.
- D. Previously coated surfaces: Glossy paint surfaces must be clean and dull before painting. Thorough washing with an abrasive cleaner may clean and dull in one operation, or wash thoroughly and dull by sanding.
- E. The surface must be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion.
- F. Remove mildew before painting by washing with a solution of 1 part liquid household bleach and 3 parts of warm water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with clean water and allow the surface to dry 48 hours before painting. Wear protective glasses or goggles, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.
- G. No exterior painting should be done immediately after a rain, during foggy weather, when rain is predicted, or when the temperature is below 50°F, unless products are designed specifically for these conditions. On large expanses of metal siding, the air, surface and material temperatures must be 50°F or higher to use low temperature products.
- H. Methods:
 - 1. Concrete, SSPC-SP13 or NACE 6
This standard gives requirements for surface preparation of concrete by mechanical, chemical, or thermal methods prior to the application of bonded protective coating or lining systems. The requirements of this standard are applicable to all types of cementitious surfaces including cast-in-place concrete floors and walls, precast slabs, masonry walls, and shotcrete surfaces. An acceptable prepared concrete surface should be free of contaminants, laitance, loosely adhering concrete, and dust, and should provide a sound, uniform substrate suitable for the application of protective coating or lining systems.
 - 2. Solvent Cleaning, SSPC-SP1
Solvent cleaning is a method for removing all visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants. Solvent cleaning does not remove rust or mill scale. Change rags and cleaning solution frequently so that deposits of oil and grease are not spread over additional areas in the cleaning process. Be sure to allow adequate ventilation.
 - 3. Hand Tool Cleaning, SSPC-SP2
Hand Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Before hand tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.
 - 4. Power Tool Cleaning, SSPC-SP3
Power Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Before power tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.

WARNING! Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority.

3.3 INSTALLATION

- A. Apply all coatings and materials with manufacturer's specifications in mind. Mix and thin coatings according to manufacturer's recommendation.
- B. Do not apply to wet or damp surfaces.
 - 1 Wait at least 30 days before applying to new concrete or masonry. Or follow manufacturer's procedures to apply appropriate coatings prior to 30 days.
 - 2 Test new concrete for moisture content.
 - 3 Wait until wood is fully dry after rain or morning fog or dew.
- C. Apply coatings using methods recommended by manufacturer.
- D. Uniformly apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen.
- E. Apply coatings at spreading rate required to achieve the manufacturer's recommended dry film thickness.
- F. Regardless of number of coats specified, apply as many coats as necessary for complete hide and uniform appearance.
- G. Inspection: The coated surface must be inspected and approved by the Architect or Engineer just prior to each coat.

3.4 PROTECTION

- A. Protect finished coatings from damage until completion of project.
- B. Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.
- C. Provide protection of the river water from debris, overspray or contaminates entering the ecological system. Provide an Owner and MDEQ approved protection system consisting of tarps and/or other approved devices to prevent debris, overspray or contaminates from entering the river.

3.5 EXTERIOR PAINTING SCHEDULES

- A. Concrete - (Stucco, and Poured-in-place Cement)
 - 1st Coat: Primer: Amerlock Sealer 100% solids Epoxy Sealer 1.5 – 3.0 mils dft.
 - 2nd Coat: Primer 2: Amercaot 114a Epoxy Filler compound
 - 3rd Coat: Intermediate: Amercoat 385 Multi-purpose epoxy 4.0 – 8.0 mils dft.
(broadcast silica sand into wet epoxy at walking surfaces for slip resistance)
 - 4th Coat: Finish: Amershield Aliphatic polyurethane coating 4.0 – 6.0 mils dft

END OF SECTION

Amerlock[®] Sealer

100% solids epoxy sealer

Product Data/ Application Instructions

- Solventless sealer and tiecoat
- Penetrates rust and adheres to aged coatings
- Compatible with aged coatings
- Accepts broad range of topcoats
- Compatible with damp substrates
- Resists high humidity and moisture
- Primer for concrete surfaces
- Curing compound for new concrete

Typical Uses

Amerlock Sealer is a penetrating sealer for marginally prepared steel and aged coatings. Its low viscosity and excellent wetting properties allow it to penetrate rust and discontinuities in existing coatings which in turn improves adhesion of subsequent topcoats. Amerlock Sealer has excellent resistance to corrosive environments.

Amerlock Sealer is also used as a concrete primer/sealer and as a concrete curing compound. When used as a concrete curing compound, Amerlock Sealer is applied to concrete slabs immediately after pouring and finishing, or to formed concrete surfaces as soon as the forms are removed (three days after initial pour). Concrete must cure a minimum of 14 days (total) prior to topcoating with epoxy surfacers or coatings.

Typical Systems Using Amerlock Sealer

First Coat	Second Coat	Third Coat
Amerlock Sealer	Amercoat 370, 385, or Amerlock 2, 400	Amercoat 450 Series, Amershield, or none
Amerlock Sealer	Amercoat 100A, 110C, 120A, or PSX 758	Amerlock 2, 400 Amershield, or none

Physical Data

Finish	Gloss	
Color	Clear	
Components	2	
Curing mechanism	Chemical reaction	
Volume solids (calculated)	100%	
Dry film thickness per coat	1.5 mils (38 microns)	
Coats	1 or 2	
Theoretical coverage 1.5 mils (38 microns)	ft ² /gal 1069	m ² /L 27.1
VOC (theoretical) mixed	lb/gal 0.0	g/L 0.0
Temperature resistance, dry continuous	°F 200	°C 93
intermittent	250	121
Flash point (SETA)	°F	°C
Amerlock Sealer resin	>212	>100
Amerlock Sealer cure	>212	>100
Amercoat 12	2	-17
Amercoat 65	81	27

Formerly Amercoat 3431

Surface Preparation

Coating performance is, in general, proportional to the degree of surface preparation. All surfaces must be clean, dry and free of all contaminants.

Amerlock Sealer is intended for less than ideal surfaces. Amerlock Sealer may be used over most types of properly prepared and tightly adhering coatings. A test patch is recommended for use over existing coatings to insure compatibility.

Steel – Remove all loose rust, dirt, moisture, grease or other contaminants from surface. Power-tool clean SSPC-SP3 or hand-tool clean SSPC-SP2. For more severe environments, dry abrasive blast SSPC-SP7. Water jetting is also acceptable.

Aluminum – Remove oil, grease or soap film with neutral detergent or emulsion cleaner. Treat with Alodine® 1200, Alumiprep® or equivalent, or power tool clean or blast lightly with fine abrasive.

Galvanizing – Remove oil or soap film with detergent or emulsion cleaner, then use zinc treatment such as Galvaprep® or equivalent or power tool clean or blast lightly with fine abrasive.

Concrete – All surfaces to be coated must be strong and sound, contain no additives or hardeners, and should not be treated with sealers or conventional curing compounds containing waxes, silicones, or silicates. New slabs (horizontal surfaces) should have a float finish or broom finish as described in ACI Specification 301. Finishing shall be within Class A tolerance, when using Amerlock Sealer as a concrete curing compound and applying epoxy surfacing. For existing slabs with a trowelled finish, see ‘Primer’ below.

Primer – Water-cured concrete or existing structures must be cured a minimum of 14 days and have attained 80 percent of its final strength. When cured, surface must either be prepared per ASTM D4259 or ASTM D4260 with muriatic acid using equal parts of acid to water by volume.

A suitably finished surface must have a uniform surface texture exposing fine aggregate resembling coarse sandpaper. If required, repeat acid etching or abrasive blasting until the surface texture is uniform.

Concrete surfaces cured with conventional curing compounds or contaminated with form oils must be completely cleaned by ASTM D4259. Acid etching is not acceptable, as it will not normally remove these contaminants.

Curing compound – Formed surfaces should be adequately vibrated to minimize air pockets and holes. Suitable form facing material should be used to produce a smooth form finish as described in ACI Specification 301. Do not use form release agents based on oils, which will deposit a residue on the concrete. When Amerlock Sealer is used as a curing compound the forms should be removed within three days and the Amerlock Sealer applied immediately. New concrete which will be cured with Amerlock Sealer does not require blasting or etching. Remove fins and projections from formed concrete, and ensure that all surfaces are free from oil or contaminants. Cure concrete a minimum of 14 days prior to applying epoxy surfacing. When applying epoxy surfacing the Amerlock Sealer must be roughened when maximum topcoat time is exceeded.

Apply as soon as possible after pouring and finishing the concrete.

Application Equipment

The following is a guide; suitable equipment from other manufacturers may be used. Changes in pressure, hose and tip size may be needed for proper spray characteristics.

Airless spray – Standard equipment such as Graco Bulldog Hydra-Spray or larger with a 0.13- to 0.021-in. (0.38 to 0.53 mm) fluid tip.

Conventional spray – Industrial equipment such as DeVilbiss MBC or JGA spray gun with 78 or 765 air cap and “E” fluid tip, or Binks No. 18 or 62 gun with a 66 x 63 PB nozzle set up. Separate air and fluid pressure regulators, and a moisture and oil trap in the main air supply line are recommended.

Power mixer – Jiffy Mixer powered by an air or an explosion-proof electric motor.

Brush – Natural bristle. Maintain wet edge.

Roller – Use industrial roller. Level any air bubbles with bristle brush.

Application Data

Applied over	Prepared steel, or concrete, galvanizing, aluminum or aged coatings			
Method	Airless or conventional spray, brush or roller			
Mixing ratio (by volume)	1 part resin to 1 part cure			
Pot life (minutes)	°F/°C			
	90/32	70/21	50/10	
	35	60	100	
Environmental conditions				
Temperature	°F		°C	
air	32 to 120		0 to 49	
surface	32 to 120		0 to 49	
Drying time (ASTM D1640) (hours)	°F/°C			
	90/32	70/21	50/10	32/0
touch	8	12	18	28
hard	22	28	36	52
Recoat/topcoat time (hours)	°F/°C			
	90/32	70/21	50/10	32/0
minimum	18	24	30	38
maximum ^{***}	1 month			

^{***}Roughen surface if max recoat/topcoat time exceeded.

Drying times are dependent on air and surface temperatures as well as film thickness, ventilation and relative humidity. Maximum recoating time is highly dependent upon actual surface temperatures - not simply ambient air temperatures. Surface temperatures should be monitored, especially with sun-exposed or otherwise heated surfaces. Higher surface temperatures shorten the maximum recoat window.

Thinner Amercoat 65

Equipment cleaner Thinner or Amercoat 12

Application Procedure

1. Flush equipment with thinner or Amercoat 12.
2. Add Amerlock Sealer cure to Amerlock Sealer resin. Mix thoroughly until uniformly blended.

Pot life (minutes)	°F/°C		
2 gal unit	90/32	70/21	50/10
	35	60	100

3. Thinning is not normally recommended. If needed for workability add Amercoat 65 up to ¼ pint per gallon of mixed Amerlock Sealer.
4. Apply wet coat in even parallel passes, overlapping each pass by 50%.
5. Amerlock Sealer is low in viscosity. Apply one coat at 1.5 mils or sufficient thickness to completely cover and penetrate steel. Porous surfaces may require an additional coat of Amerlock Sealer.
6. Clean all equipment with thinner or Amercoat 12 immediately after use.

On slabs, puddled areas of water must not remain. On formed surfaces no running water may be evident.

Primer - When used over acid-etched concrete apply immediately after water rinsing. Abrasive blasted concrete must be thoroughly cleaned to remove all loose material, then may be moistened with water. A damp surface aids in primer/sealer penetration into the surface.

Brush out any primer/sealer which puddles in low areas on slabs (horizontals) or runs or sags on formed surfaces (verticals) during application.

After overnight curing, coated surface may vary in appearance. Areas which appear to have no evidence of primer/sealer indicate a high porosity. In these areas, a second application is recommended. Surfaces not properly primed or sealed may result in bubbling of surfacer. Avoid thick glossy areas of Amerlock Sealer. Roughen these areas prior to topcoating.

Curing compound - When used as a curing compound, Amerlock Sealer must be applied to slabs (horizontals) immediately after the final finishing operation or upon disappearance of the "sheen" of surface moisture. On formed surfaces (verticals), apply immediately after form removal. (Forms should be removed within three days after concrete is poured.) If there is any drying or appreciable loss of moisture, spray the surface with water and allow to reach a uniform damp condition with no excess water on the surface.

Immediately after use, clean all application equipment with Amercoat 12.

Safety Precautions

Read each component's material safety data sheet before use. Mixed material has hazards of each component. Safety precautions must be strictly followed during storage, handling and use.

CAUTION - Improper use and handling of this product can be hazardous to health and cause fire or explosion.

Do not use this product without first taking all appropriate safety measures to prevent property damage and injuries. These measures may include, without limitation: implementation of proper ventilation, use of proper lamps, wearing of proper protective clothing and masks, tenting and proper separation of application areas. Consult your supervisor. Proper ventilation and protective measures must be provided during application and drying to keep spray mists and vapor concentrations within safe limits and to protect against toxic hazards. Necessary safety equipment must be used and ventilation requirements carefully observed, especially in confined or enclosed spaces, such as tank interiors and buildings.

This product is to be used by those knowledgeable about proper application methods. PPG makes no recommendation about the types of safety measures that may need to be adopted because these depend on application environment and space, of which PPG is unaware and over which it has no control.

If you do not fully understand these warnings and instructions or if you cannot strictly comply with them, do not use the product.

Note: Consult Code of Federal Regulations Title 29, Labor, parts 1910 and 1915 concerning occupational safety and health standards and regulations, as well as any other applicable federal, state and local regulations on safe practices in coating operations.

This product is for industrial use only. Not for residential use.

Shipping Data

Packaging unit	2-gal	
Amerlock Sealer resin	1 gal in 3-gal can	
Amerlock Sealer cure	1 gal in 1-gal can	
Shipping weight (approx)	lb	kg
2-gal unit		
Amerlock Sealer resin	13.5	6.1
Amerlock Sealer cure	11.0	5.0

Shelf life when stored indoors at 40 to 100°F (4 to 38°C)
resin and cure 1 year from shipment date

Numerical values are subject to normal manufacturing tolerances, colors and testing variances. Allow for application losses and surface irregularities.



**PPG Protective &
Marine Coatings**
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Amercoat® 114A

Epoxy filler compound

Product Data/ Application Instructions

• Filler for steel, formed concrete or concrete block
Amercoat 114A is a 100% solids epoxy filler compound to fill holes, voids and surface discontinuities in steel, formed concrete or concrete block up to one inch across as measured in their largest dimension. A single application will fill or seal most air bubbles and holes. On concrete block surfaces, Amercoat 114A provides a smooth surface in a single application for applying coatings.

• Amercoat 114A may be used to fill pits, voids, or seams in steel or concrete water tanks. For potable water tanks, topcoat with an ANSI/NSF Standard 61 - approved potable water tank lining.

Typical Uses

Steel and concrete surfaces in :

- Nuclear facilities
- Plants – fossil fuel, sewage and waste treatment, food and beverage, chemical processing
- Mills – pulp and paper, textile, steel
- Mining and metal finishing operations
- Water tanks

Typical Properties – after 7 days @ 70°F (21°C)

Mechanical

Density (ASTM D71 modified)	88.6 lbs/ft ³
Tensile strength (ASTM D412)	3000 psi
Compressive strength (ASTM C579)	12549 psi
Modulus of elasticity (ASTM C580)	9.4 x 10 ⁵ psi

Qualifications

ANSI/NSF Standard 61 - for use in drinking water

- Maximum Surface Area / Volume - 0.033 in²/L or maximum 1% of a 4000 gallon tank or larger
- Maximum Use Temperature - 23°C



Physical Data

Color	Off-white	
Components	2	
Curing mechanism	Chemical reaction between components	
Volume solids	100%	
Theoretical coverage	ft ² /unit	
1 mil (25 microns)		
3 lb unit	406	
20 lb unit	2709	
VOC	lb/gal	g/L
mixed	0.0	0.0
Flash point (SETA)	°F	°C
114A cure	>200	93
114A resin	>200	93
Amercoat 12	2	-17
Amercoat 928	175	79

Application Data

Applied over	Prepared or primed steel, concrete, masonry block		
Surface preparation			
steel	Abrasive blast		
concrete	ASTM D4258, 4259 or 4260		
masonry	ASTM D4261		
Primer	Amerlock Sealer		
Method	Squeegee, roller, trowel, spatula		
Mixing ratio (by volume)	1.84 parts resin to 1 part cure		
	90/32	70/21	50/10
Working time (hours)	1	2 ^{1/2}	4
Initial setting	9	18	36
Curing time before topcoating			
minimum	9	18	36
maximum			
with 114A	36	72	144
with 100A	72	168	336
with Amercoat 90HS	1 month		

If maximum recoat time exceeded, roughen surfaces.

Environmental conditions

Temperature	°F	°C
material and surface	50 to 120	10 to 27

Below 65°F (18°C) workability is reduced and application more difficult. Above 80°F (27°C) working time decreases.

Amercoat 114A can be applied to surfaces as low as 50°F (10°C); although curing retarded, typical properties of cured material will not be affected.

Application under direct sunlight and rising surface temperatures can result in bubbling of filler compound by release of air or moisture from concrete. Prior to application of Amercoat 114A shade for 24 hours any concrete exposed to direct sunlight and keep shaded until after initial set. With rising surface temperatures it may be necessary to postpone application.

Equipment cleaner Amercoat 12 or 928

Surface Preparation

Coating performance, in general, is proportional to the degree of surface preparation. Prior to coating, all surfaces must be clean, undamaged, dry and free of all contaminants, including salt deposits.

Steel – Abrasive blast SSPC-SP10. Prepare surface in accordance with Application Instructions for specific primer being used.

Concrete – Cure concrete a minimum of 14 days and until 80 percent of its physical properties have been attained before applying Amercoat 114A. Prepare surfaces according to ASTM D4258, surface cleaning; D4259, abrading; or D4260, acid etching.

Concrete block – Walls must be laid plumb and square with flush joints. Do not rake joints. All surfaces must be clean and dry following ASTM D4261.

Amerlock Sealer applied over water-cured concrete – Cure to a tack-free condition [6 hours at 70°F (21°C)] before application of Amercoat 114A.

Apply Amercoat 114A over prepared concrete surfaces or surfaces primed with Amerlock Sealer. See primer literature.

Mixing

Amercoat 114A supplied in the correct proportions of resin and cure which must be mixed together before use. Mix only full units. Make no additions or deletions. Any deviations will inhibit curing and alter final physical properties. Do not mix more material than can be used within working time: 2½ hours at 70°F (21°C). Material which has begun to set must be discarded.

Application

Apply Amercoat 114A to the surface using a short nap paint roller or trowel. Spread and work the filler compound across surface filling voids using the American Olean KR Groutmaster epoxy floor trowel or wide bladed putty knives. Continue working filler compound across surface, applying pressure to achieve a smooth finish. Leave only a slight film above the surface plane. Filler compound should appear somewhat transparent allowing the concrete surface or concrete block texture to remain visible.

A single application will provide a suitable surface to receive Amercoat 100A epoxy surfacer or for application of a coating over concrete block. A second application may be required for complete filling and sealing of formed concrete surfaces receiving Amercoat protective coatings. Allow overnight curing at 70°F (21°C), or until first application is firm.

Do not exceed 3 days at 70°F (21°C) before second application. When making second application, use only reasonable pressure to build film thickness to approximately 5 to 10 mils above the surface plane, at the same time remove ridges left during spreading of filler compound by the application tool. Repair all holidays with Amercoat 114A before applying coating.

Cleanup

Clean all mixing equipment and application tools immediately with Amercoat 12 or Amercoat 928.

Coverage

Coverage depends upon the number and size of air bubbles or holes to be filled. The theoretical coverage per 20 pound unit on a smooth, pore-free surface is 2709 ft².

Curing Time Before Topcoating

	°F/°C		
	90/32	70/21	50/10
Curing time before topcoating			
minimum (hours)	9	18	36
maximum (hours)			
with 114A	36	72	144
with 100A	72	168	336
with Amercoat 90HS	1 month		

If maximum recoat time exceeded, roughen surfaces.

Shipping Data

Packaging units	3 lb	20 lb
cure	1-pt can	½-gal can
resin	1-qt can	2½-gal can
Shipping weight (approx)	3 lb	20 lb
cure	.79	5.28
resin	2.21	14.72

Shelf life when stored indoors at 40 to 100°F (4 to 38°C)
1 year from shipment date

Numerical values are subject to normal manufacturing tolerances and testing variances. Allow for application losses and surface irregularities.

This mixed product is nonphotochemically reactive as defined by the South Coast Air Quality Management District's Rule 102 or equivalent regulations.

Safety Precautions

Read each component's material safety data sheet before use. Mixed material has hazards of each component. Safety precautions must be strictly followed during storage, handling and use.

CAUTION – Improper use and handling of this product can be hazardous to health.

Do not use this product without first taking all appropriate safety measures to prevent property damage and injuries. These measures may include, without limitation: implementation of proper ventilation, use of proper lamps, wearing of proper protective clothing and masks, tenting and proper separation of application areas. Consult your supervisor. Proper ventilation and protective measures must be provided during application and drying to keep spray mists and vapor concentrations within safe limits and to protect against toxic hazards. Necessary safety equipment must be used and ventilation requirements carefully observed, especially in confined or enclosed spaces, such as tank interiors and buildings.

This product is to be used by those knowledgeable about proper application methods. PPG makes no recommendation about the types of safety measures that may need to be adopted because these depend on application environment and space, of which PPG is unaware and over which it has no control.

If you do not fully understand these warnings and instructions or if you cannot strictly comply with them, do not use the product.

Note: Consult Code of Federal Regulations Title 29, Labor, parts 1910 and 1915 concerning occupational safety and health standards and regulations, as well as any other applicable federal, state and local regulations on safe practices in coating operations.

This product is for professional use only. Not for residential use.



PPG Protective & Marine Coatings

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Amercoat® 385

385 Series

Multi-purpose epoxy

Product Data/ Application Instructions

- Multi-purpose high build epoxy
- High solids high build epoxy intermediate
- Primer for durable systems with wide range of topcoats, including polyurethanes and acrylics
- Ballast water tanklining
- High build anti-corrosive coating for ship hulls
- Excellent shop primer for corrosive service
- Suitable for immersion service
- Outstanding chemical and weather resistance
- Excellent adhesion to inorganic zinc silicate
- Easy application
- Contains no lead or chromate pigments
- Low VOC
- Wide film build range
- Compatible with a variety of substrates and surface preparations

Amercoat 385 is a high-performance epoxy coating forming a tough, abrasion-resistant, durable film. It adheres strongly to bare steel, coated steel and inorganic zinc silicate primed surfaces on new construction, repair and field maintenance projects. Amercoat 385 will also adhere to intact painted surfaces and tight rust and may be used to repair itself or inorganic zinc silicate primers.

Amercoat 385 provides an excellent barrier to corrosion; its inhibitive pigment version (385PA) affords corrosion inhibition at damaged areas. It has good chemical resistance, making it suitable for use in aggressive environments. Amercoat 385 is user-friendly and can be applied by a variety of methods to produce a smooth, fast-drying film. It is suitable for immersion in both salt and fresh water at temperatures up to 140°F, continuous and can be used as a tank lining for alkaline and salt solutions, petroleum fuels, and certain chemicals.

Amercoat 385 may also be applied over aluminum, stainless steel, galvanizing, concrete and previously coated surfaces in addition to carbon steel.

Amercoat 880 glassflake may be added to increase film build and lower moisture vapor permeability. For additional information see Amercoat 880 Product Data Sheet or contact your PPG representative.

Typical Uses

- Decks, hulls and superstructures of ships, barges and work boats.
- Piers, offshore platforms and related structures.
- Tank exteriors in oil refineries, paper mills, chemical processing facilities and waste water treatment plants.
- Tank lining.
- Industrial structural steel, machinery and piping.

Physical Data

Finish	Flat	
Color	PPG standard colors See color card	
Amercoat 385	Oxide red, buff	
Amercoat 385PA Inhibitive pigment		
Components	2	
385 or 385PA		
Curing mechanism	Solvent release and chemical reaction between components	
Volume solids (ASTM D2697 modified)	68% ± 3%	
385 or 385PA		
Dry film thickness per coat	4 to 8 mils (100 to 200 microns)	
385 or 385PA with 880 glassflake	6 to 14 mils (150 to 350 microns)	
Coats	1 or 2	
Theoretical coverage	ft ² /gal	m ² /L
385 or 385PA		
1 mil (25 microns)	1090	26.7
4 mils (100 microns)	272	6.6
<i>385 with 880 at 6 mils (150 microns) will be 185 ft² per gallon.</i>		
VOC	lb/gal	g/L
(EPA method 24)		
385 mixed	2.3	276
385 mixed/thinned	2.6	311
Temperature	Wet	Dry
	°F	°C
continuous	140	60
intermittent	175	79
	°F	°C
Flash point (SETA)		
385 cure	118	48
385 resin	128	53
Amercoat 861	300	149
Amercoat 65	81	27
Amercoat 101	145	63
Amercoat 12	2	-17

Qualifications

Military Sealift Command	Underwater hulls, topside and salt water ballast tank service.
NAVSEA	Chapter 631 for aluminum hull use
USDA	Incidental Food Contact
MIL-P-23236C	Dedicated Sea Water Ballast only.

Typical Properties

Physical

Abrasion (ASTM D4060) 108 mg weight loss
1 kg load/1000 cycles
CS-17 wheel

Adhesion, Elcometer (ASTM D4541) >1000 psi

Performance

Salt spray – 1 coat @ 6 mils 5000 hours exposure
face corrosion (ASTM B117) None
face blistering (ASTM B117) None

Humidity (condensation) (ASTM D4585)
3000 hours exposure
face corrosion None

Steam cleanable Yes

Chemical resistance – Condition after 1 year immersion
caustic 30%, 50% up to 140°F Excellent
fuel (MSC recipe) Excellent
salt water Excellent
DI water up to 140°F Excellent

Amercoat 385 Chemical Resistance Guide

Environment	Splash and Spillage	Fumes and Weather	
Acidic	F	G	
Alkaline	E	E	
Solvents	E	E	
Salt solutions			
Acidic	G	VG	
Neutral	E	E	
Alkaline	E	E	
Water	E	E	
F-Fair	G-Good	E-Excellent	VG-Very Good

This chart shows typical resistance of Amercoat 385. Contact your PPG representative for your specific requirements.

Systems Using Amercoat 385

1st Coat	2nd Coat	3rd Coat
Amercoat 385 or 385PA	–	–
Amercoat 385 or 385PA	Amershield™	–
Amercoat 385 or 385PA	450 Series	–
Dimetcote® 9 Series	385	Amershield, 450 Series
Amercoat 68 Series	385	Amershield, 450 Series
Amercoat 385	385	ABC 3, ABC 4

Confirm compliance with VOC regulations before using coating systems. For immersion service, apply 2 coats at a minimum of 8 mils total DFT.

Over Dimetcote, and Amercoat 68 Series primers, a mist coat/full coat and thinning with Amercoat 101 may be required to prevent application bubbling.

Use Amercoat 385PA primer when inhibitive pigmented primer is specified as the first coat.

Use Amercoat 385PA oxide red when MIO pigment is specified.

Application Data

Applied over substrates Steel, concrete, masonry block, aluminum, galvanizing, coated surfaces
Primer/s See Systems Table
Method Airless, conventional spray, brush or roller

Mixing ratio (by volume)
385 or 385PA 1 part resin to 1 part cure
385 with 880 glassflake 1-gal 880 per mixed 2-gal 385 5 gal 880 per mixed 10-gal 385

Pot life (hours)

°F/°C	90/32	70/21	50/10
385 or 385PA	1½	3	5
385 with 880 glassflake	1½	2½	4

Environmental conditions

Temperature °F °C
air and surface 32 to 120 0 to 49

Surface temperatures must be at least 5°F (3°C) above dew point to prevent condensation.

Drying time (ASTM D1640) @ 6 mils, DFT (hours)

	°F/°C			
	90/32	70/21	50/10	32/0
touch	1	2	3	6
through	10	16	24	168
with 880 glassflake	12	18	26	192

Topcoat or recoat time

minimum 6 8 10 72

Addition of 861 Accelerator does not change dry-to-touch or dry-through times but does accelerate cure for service.

Topcoat or recoat time

(days) (maximum) °F/°C
90/32 70/21 50/10

Product

450 Series or Amershield™	14	30	42
385 or 385PA non-immersion*	No maximum*		
immersion*	6 months – high pressure water wash and roughen surface if exceeded		

**When surface is cleaned with Prep 88 according to the instructions.*

Drying times are dependent on air and surface temperatures as well as film thickness, ventilation and relative humidity. Maximum recoating time is highly dependent upon actual surface temperatures - not simply ambient air temperatures. Surface temperatures should be monitored, especially with sun-exposed or otherwise heated surfaces. Higher surface temperatures shorten the maximum recoat window.

ABC® 3, or ABC 4, Apply while 385 is soft to thumb pressure

Failure to apply antifouling while coating is still soft to thumb pressure may result in poor adhesion and eventual delamination.

Time before service @ 8 mils (hours) °F/°C

	90/32	70/21	50/10	32/0
385 or 385PA immersion				
ambient	24	48	72	240
hot	72	168	336	NR
non-immersion	12	24	36	168

Thinners (up to ½ pt)

above 70°F (21°C) Amercoat 101
below 70°F (21°C) Amercoat 65

In confined areas thin with Amercoat 101

Equipment cleaner Thinner or Amercoat 12

Adhere to all application instructions, precautions, conditions and limitations to obtain the maximum performance. When used over recommended primers, refer to application instructions for the specific primer being used for surface preparation data and application and drying procedures. For conditions outside the requirements or limitations described, contact your PPG representative.

Surface Preparation

Coating performance is proportional to the degree of surface preparation. Refer to specifications for the specific primer being used. Prior to coating, primed surface must be clean, dry, undamaged and free of all contaminants including salt deposits. Round off all rough welds and remove all weld spatter.

Steel – Remove all loose rust, dirt, grease or other contaminants by one of the following depending on the degree of cleanliness required: SSPC-SP2, 3, 6 or 7. For more severe service and immersion, clean to SSPC-SP10. SSPC-SP12 (WJ-2L) is also acceptable over a previously blasted surface. The maximum soluble salt content for saltwater immersion should be 3 µg/cm². For freshwater immersion, the limit is 2 µg/cm². For atmospheric exposure, it can be as high as 10 µg/cm². The choice of surface preparation will depend on the system selected and end-use service conditions.

Blast to achieve a dense, angular anchor profile of 1-2 mils (25-50 microns) as indicated by a Keane-Tator Surface Profile Comparator or Testex Tape. Increase coating thickness if profile greater than 3 mils.

Galvanizing – Remove oil or soap film with neutral detergent or emulsion cleaner; then use zinc treatment such as Galvaprep® or equivalent or blast lightly with fine abrasive.

Aluminum – Remove oil, grease or soap film with neutral detergent or emulsion cleaner; treat with Alodine® 1200, Alumiprep® or equivalent or blast lightly with fine abrasive.

Concrete/masonry – Surface must be cured, clean, dry, free of contamination and disintegrated or chalky materials. Clean concrete surface; abrasive blast (ASTM D4259) or acid etch (ASTM D4260). Fill concrete voids with Amercoat 965 or 114A to achieve a smooth surface. Clean masonry surface by ASTM D4261. Fill masonry block with Amerlock® 400BF Block Filler.

Aged coatings – All surfaces must be clean, dry, tightly bonded and free of all loose paint, corrosion products or chalky residue. Clean by low pressure water cleaning (1000 psi, min.), SSPC-SP1, 2, 3 or 7. Amercoat 385 is compatible over most types of properly applied and tightly adhering coatings. However, a test patch is recommended to confirm compatibility.

Repair – Prepare damaged areas to original surface preparation specifications, feathering edges of intact coating. Thoroughly remove dust or abrasive residue before touch up.

Application Equipment

Airless spray – Standard equipment such as Graco Bulldog or larger with a 0.15- to 0.021- in. (0.38 to 0.53 mm) fluid tip.

Conventional spray – Industrial equipment such as DeVilbiss MBC or JGA spray gun with 78 or 765 air cap and “E” fluid tip, or Binks No. 18 or 62 gun with a 66 x 63PB nozzle set up. Separate air and fluid pressure regulators, and a moisture and oil trap in the main air supply line are recommended.

Power mixer – Jiffy Mixer powered by an air or an explosion-proof electric motor.

Brush – Natural bristle. Maintain wet edge.

Roller – Use industrial roller. Level any air bubbles with bristle brush.

Application Procedure

Amercoat 385 or 385PA consists of two components which must be mixed together before use. It is packaged in the proper portions in 2- or 10-gallon units.

1. Flush equipment with thinner or Amercoat 12 before use.
2. Stir each component thoroughly, then combine resin and cure and mix until uniform. When using Amercoat 880 glassflake, add material to mixed unit of Amercoat 385 following 880. Instructions for use.
3. Thin only if necessary for workability, add Amercoat 101 up to ½ pint (approximately 6%) per gallon of Amercoat 385. Use Amercoat 65 when faster drying is desired. Use Amercoat 101 when applying in confined spaces. Use only PPG recommended thinners.
4. Do not mix more material than will be used within pot life. Pot life is shortened by higher temperatures.
5. For conventional spray, use adequate air pressure and volume to ensure proper atomization.
6. Apply a wet coat in even, parallel passes; overlap each pass 50 percent. If required, cross-spray at right angles to avoid holidays, bare areas and pinholes.
Note: When applying directly over inorganic zincs or zinc-rich primers, a mist coat/full coat technique may be required to minimize bubbling. This will depend on the age of the primer, surface roughness, and environmental conditions during application and curing.
7. When applying antifouling coatings, apply first antifouling coat while Amercoat 385 is still soft to thumb pressure. Failure to apply antifouling while Amercoat 385 is still soft may result in poor adhesion between coatings and eventual delamination of the antifouling.
8. Normal recommended dry film thickness per coat is 4 to 6 mils for 385 and 6 to 14 mils for 385 with 880. However, if greater thickness is applied in local areas because of overlapping, no runs or sags will normally occur at a dry film thickness up to 10 mils for 385 and 16 mils for 385 with 880. Total dry film thickness in two coats must not exceed 16 mils for 385 and 32 mils for 385 with 880.
9. A wet film thickness of 6 mils (150 microns) normally provides 4 mils (100 microns) of dry film.
10. When using brush or roller application method, additional coats may be required to achieve proper film thickness.
11. When a pinhole-free film is required, check film continuity of material with a nondestructive holiday detector such as Tinker and Razor Model M-1. Apply additional Amercoat 385 to areas requiring touch up.
12. Clean all equipment with thinner or Amercoat 12 immediately after use.

Safety Precautions

Read each component's material safety data sheet before use. Mixed material has hazards of each component. Safety precautions must be strictly followed during storage, handling and use.

CAUTION – Improper use and handling of this product can be hazardous to health and cause fire or explosion. Do not use this product without first taking all appropriate safety measures to prevent property damage and injuries. These measures may include, without limitation: implementation of proper ventilation, use of proper lamps, wearing of proper protective clothing and masks, tenting and proper separation of application areas. Consult your supervisor. Proper ventilation and protective measures must be provided during application and drying to keep spray mists and vapor concentrations within safe limits and to protect against toxic hazards. Necessary safety equipment must be used and ventilation requirements carefully observed, especially in confined or enclosed spaces, such as tank interiors and buildings.

This product is to be used by those knowledgeable about proper application methods. PPG makes no recommendation about the types of safety measures that may need to be adopted because these depend on application environment and space, of which PPG is unaware and over which it has no control.

If you do not fully understand these warnings and instructions or if you cannot strictly comply with them, do not use the product.

Note: Consult Code of Federal Regulations Title 29, Labor, parts 1910 and 1915 concerning occupational safety and health standards and regulations, as well as any other applicable federal, state and local regulations on safe practices in coating operations.

This product is for industrial use only. Not for residential use.

Shipping Data

Packaging		
385 or 385PA		2- and 10-gal units
Shipping weight (approx.)	lb	kg
385 or 385PA 2-gal unit		
cure 1 gal in 1-gal can	12	5.6
resin 1 gal in 1-gal can	13	6.0
385 or 385PA 5-gal unit		
cure 5 gal in 5-gal can	61	27.7
resin 5 gal in 5-gal can	60	27.3

Shelf life when stored indoors at 40 to 100°F (4 to 38°C)
cure, resin and paste 1 year from shipment date

Numerical values are subject to normal manufacturing tolerances, color and testing variances. Allow for application losses and surface irregularities. See application instructions for complete information and safety precautions.

The mixed product is photochemically reactive as defined by the South Coast Air Quality Management District's Rule 102 or equivalent regulations.



PPG Protective & Marine Coatings
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Amershield™

Amershield Series

Aliphatic polyurethane coating

Product Data/ Application Instructions

- Unique, high-solids, high-build, multifunctional coating
- Low VOC
- High-gloss, self-priming coating
- Excellent gloss retention
- Direct to metal and concrete in selected environments
- Outstanding abrasion, reverse and direct impact resistance
- Good chemical and stain resistance
- Tough and flexible coating

Amershield displays high gloss and excellent color and gloss retention during extended service periods. The direct-to-metal capabilities of Amershield provide a single-coat system at reduced installation cost for use in protected environments. Compatible over prepared, smooth cold-rolled steel and abrasive blasted hot-rolled steel.

Amershield has excellent adhesion to concrete providing a durable, glossy, easy-to-clean flooring system. May be used over Amerlock® as a durable, weather-resistant topcoat for extra heavy duty service; over zinc-rich epoxy coatings as a direct topcoat; over intact, old paint as a maintenance product.

Amershield's curing time may be adjusted with Amercoat 866M Accelerator for convenient application at low temperatures or when faster cure is required. A full color range is available in the PPG Rapid Response color system to provide timely delivery.

Typical Uses

- Structural steel
 - Bridges
 - Stadiums
- Tanks
- Piping
- Industrial plants
 - Power
 - Pulp and paper
 - Food and beverage
 - Wastewater treatment
 - Chemical and petrochemical
- Concrete walls and floors
- Transportation
 - Rail car exterior and hopper lining
 - Vehicle equipment - buses, trucks, lifts
- Marine
 - Decks
 - Boottops
 - Topside and superstructures on ships
 - Barges and offshore platforms

Physical Data

Finish	Gloss	
Color	See PPG Amercoat color chart	
<i>Yellow, red and orange colors will fade faster than other colors due to the replacement of lead-based pigments with lead-free pigments in these colors.</i>		
Components	2	
Curing mechanism	Solvent release and chemical reaction	
Volume solids (ASTM D2697 modified)	73% ± 3%	
Dry film thickness per coat	4-6 mils (100-150 microns)	
Coats	1	
Theoretical coverage	ft ² /gal	m ² /L
1 mil (25 microns)	1171	29
5 mils (125 microns)	234	5.7
VOC	lb/gal	g/L
mixed	2.2	264
mixed/thinned (1 pt/gal)	2.7	323
mixed/thinned/accelerated	3.01	360
mixed/accelerated	2.5	304
Temperature resistance (dry)	°F	°C
continuous	200	93
intermittent	250	121
Flash point (SETA)	°F	°C
cure	122	50
resin	110	43
mixed	115	46
Amercoat 65	78	25
Amercoat 12	2	-17
Amercoat 866M	94	34

Qualifications

USDA – Incidental food contact
Tint and custom colors
NFPA – Class A

Typical Properties

Physical

Impact resistance (ASTM D2794) @ 5 mils		
direct	140 in · lbs	15.8 N · m
reverse	50 in · lbs	5.6 N · m

Taber abrasion	
1 kg load/1000 cycles	weight loss
CS-17 wheel	60.2 mg

Elongation (ASTM D522) >32%

Graffiti cleaning with Amerase with gloss retention 100 cycles

Chemical Resistance Guide

Environment	Splash and Spillage	Fumes and Weather
Acidic	E	E
Alkaline	E	E
Salt solutions		
Acidic	E	E
Neutral	E	E
Alkaline	E	E
Seawater	E	E
Fresh water	E	E
Solvents	G	E
Petroleum products	E	E
F-Fair G-Good E-Excellent NR-Not Recommended		

This table is only a guide to show typical resistance of Amershield. Contact your PPG representative for your particular corrosion protection needs.

Typical Systems

Substrate	Primer	Finish Coat
Steel	none, 400*, 68HS	Amershield
Galvanizing	400*	Amershield
Aluminum	none, 400*	Amershield
Concrete	400*	Amershield
Masonry	none, 400*	Amershield

*Other PPG epoxy primers are also acceptable.

Refer to specific primer's product data sheets and application instructions for detailed application and surface preparation information.

Apply test patch to intact coating to confirm compatibility and adhesion.

When Amerlock 400 is used as a primer for Amershield the maximum topcoat time is one month; Amerlock 2 – 7 days, 400 with 861 Accelerator – 14 days. Clean and roughen surface if topcoat time is exceeded.

On Amercoat 68HS use a mist coat/full coat application procedure to prevent application bubbling.

Environmental Conditions

Temperature air or surface	°F	°C
Amershield	40 to 120	4 to 49
Amershield with 866M	32 to 120	0 to 49

Surface temperature must be at least 5°F (3°C) above dew point to prevent condensation.

Low Temperature Application

At low temperatures or when a fast cure is required Amercoat 866M accelerator can be added to mixed Amershield resin and cure (see Amercoat 866M literature). **DO NOT** apply Amershield with 866M when surface temperature is over 120°F.

Application Data

Applied over Prepared* or primed steel, aluminum, galvanizing, masonry and primed concrete
*Protected environments

Surface preparation	
steel	SSPC-SP 6 or 10
aluminum	Alodine®, Alumiprep® or light abrasive blast
galvanizing	Galvaprep® or light abrasive blast
concrete	See specific primer
masonry	ASTM D4261
previously coated surface	SSPC-SP1, 3 or 7

Appearance will vary depending on substrate and application method.

Mixing ratio (by volume) 1 part cure to 4 parts resin

Pot life (hours)	°F/°C			
	90/32	70/21	50/10	32/0
Amershield	1½	2½	5	-
Amershield with 866M	½	1	2	4

Using ½ pt Amercoat 866M per mixed 5 gallon Amershield

Environmental Conditions

Temperature-Air or surface	°F	°C
Amershield	40 to 120	4 to 49
Amershield with 866M	32 to 120	0 to 49

Surface temperatures must be at least 5°F (3°C) above dew point to prevent condensation.

Drying time (ASTM D1640) (hours)	°F/°C			
	90/32	70/21	50/10	32/0
touch	1	2½	4	-
with 866M	½	¾	1	2½
through	5	10	72	-
with 866M	2	3	6	10

Recoat time (hours)	°F/°C				
	90/32	80/26	70/21	50/10	32/0
minimum	4	5½	8	48	-
with 866M	1½	1¾	2	4	8
maximum	12	24	168	168	-
with 866M	6	8	12	24	48

Drying times are dependent on air and surface temperatures as well as film thickness, ventilation and relative humidity. Maximum recoating time is highly dependent upon actual surface temperatures - not simply ambient air temperatures. Surface temperatures should be monitored, especially with sun-exposed or otherwise heated surfaces. Higher surface temperatures shorten the maximum recoat window.

Roughen surface or use Amerase™ if maximum recoat time is exceeded.

Thinner	Amercoat 65
Equipment cleaner	Thinner or Amercoat 12

Adhere to all application instructions, precautions, conditions and limitations to obtain the maximum performance. For conditions outside the requirements or limitations described, contact your PPG representative.

Surface Preparation

Coating performance is, in general, proportional to the degree of surface preparation. All surfaces must be clean, dry and free of oil, grease, dirt, salt deposits or other contamination.

- To provide a smooth appearance to the Amershield coating Amercoat® 851, flow control additive may be used. See Amercoat 851 Product Data Sheet for more information.
- For faster drying at low temperatures, Amercoat 866M can be used with all Amershield products.

Steel – Mill scale and rust must be removed. Abrasive blast hot-rolled steel to SSPC-SP6 and rusted and pitted steel to SSPC-SP10. Clean cold-rolled steel to SSPC-SP1 using vapor degreasing or solvent emulsion to remove all oil, grease and contamination. Solvent wipe is not satisfactory. Contact PPG for compatible phosphate surface treatments.

Aluminum – Remove oil, grease or soap film with neutral detergent or emulsion cleaner; treat with Alodine® 1200 or Alumiprep® or blast lightly with fine abrasive.

Amercoat 68HS – Wash off water soluble contaminants; remove oil, grease, etc., with a neutral detergent or emulsion cleaner. Solvent wipe is not satisfactory.

Concrete – Clean concrete and masonry surfaces, abrasive blast (ASTM D4259) or acid etch (ASTM D4260). Fill concrete voids with Nu-Klad® 114A or 965. Fill masonry block with Amerlock® 400BF block filler.

Coated surface – Clean by low pressure water cleaning (1000 psi or greater) water blast, abrasive blast (SSPC-SP7), solvent emulsion cleaning (SSPC-SP1) or power tool cleaning (SSPC-SP3). Surface must be clean, dry and free of oil, grease, dirt or other contamination. Apply test patch to confirm compatibility and adhesion.

Application Equipment

Power mixer – Jiffy mixer powered by an air or explosion-proof electric motor.

Airless and electrostatic spray – Standard equipment Graco, DeVilbiss, Nordson-Bede, Speeflo or others having a 28:1 or higher pump ratio and a fluid tip with a 0.015- to 0.021-inch (0.38- to 0.53-mm) orifice.

Conventional, air-assisted airless and electrostatic spray – Devilbiss, Binks or Graco production spray equipment with moisture and oil trap in the main air supply line.

Brush – Natural bristle. Maintain a wet edge.

Roller – Solvent resistant. Level any air bubbles with a bristle brush.

When brush or roller applied, multiple coats may be needed to achieve dry film thickness.

Application Procedures

- Flush equipment with thinner or Amercoat 12.
- Stir resin thoroughly, add cure and mix until uniform. Do not mix more material than will be used within pot life time. Mixing ratio is 4 parts resin to 1 part cure by volume.

Pot life (hours)	°F/°C			
	90/32	70/21	50/10	32/0
Amershield	1½	2½	5	-
Amershield with 866M	½	1	2	4

- If thinning is necessary, add up to 1 pint Amercoat 65 per gallon of Amershield.
- When applying by spray, adjust pressures for equipment configuration and environmental conditions to ensure proper atomization.

- Apply a wet coat in even, parallel passes; overlap each pass 50 percent.

Drying time (ASTM D1640) (hours)	°F/°C			
	90/32	70/21	50/10	32/0
touch	1	2½	4	-
with 866M	½	¾	1	2½
through	5	10	72	-
with 866M	2	3	6	10

Using ½ pt Amercoat 866M per 5 gal Amershield

Recoat time (hours)	°F/°C			
	90/32	80/26	70/21	50/10
minimum	4	5½	8	48
with 866M	1½	1¾	2	4
maximum	12	24	168	168
with 866M	6	8	12	24

Roughen surface or use Amerase™ if maximum recoat time is exceeded.

Note: When applying directly over organic zinc at full thickness, bubbling may occur. A mist coat/full coat technique may be required to prevent application bubbling.

- For colors, application of 8-mil wet film thickness (thinned) will normally provide 5-mil dry film thickness. Clear coat at 5-mils WFT will normally provide 3-mil DFT.
- Clean all equipment with thinner or Amercoat 12 immediately after use.

Note: Moisture sensitive – Keep cure container tightly closed. Repeated moisture exposure will cause gelation and gassing; handle bulged containers with caution, lids may eject forcibly.

Repair

Spot blast or power tool clean bare substrate to the requirements shown under surface preparation. Feather edges of intact coating. Remove dust, dirt and contamination before recoating.

Shipping Data

Packaging units	1 gal		5 gal	
	0.20 gal in 1-qt can		1 gal in 1-gal can	
cure				
resin	0.80 gal in 1-gal can		4 gal in 5-gal can	
Shipping weight (approx)	lb		kg	
1-gal unit				
cure	2.2		1.0	
resin	11.0		5.0	
5-gal unit				
cure	10.4		4.7	
resin	55.0		25.0	

Shelf life when stored indoors at 40 to 100°F (4 to 38°C)

resin	1 year from shipment date
cure	1 year from manufacturer date

Numerical values are subject to normal manufacturing tolerances, colors and testing variances. Appearance will vary depending on substrate and application method. Allow for application losses and surface irregularities. See application instructions for complete information and safety precautions.

This mixed product is nonphotochemically reactive as defined by the South Coast Air Quality Management District's Rule 102 or equivalent regulations.

Safety Precautions

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Graffiti cleaner

Product Data/ Application Instructions

- Graffiti removal compound
- Easy to apply
- No harsh solvent odor
- Biodegradable
- Surface treatment for aged coatings

Typical Uses

Amerase is specifically formulated to remove graffiti from Amershield™ coated surfaces effectively, easily and economically.

Tests have demonstrated that Amerase removes common materials used for graffiti including spray paint, permanent markers, inks, crayons and lipstick. When properly used, Amerase will not damage Amershield coated surfaces, even after repeated cleaning. Simply apply Amerase to the surface and wipe with a clean cloth. Some graffiti materials become more difficult to remove when aged, and incomplete removal may result.

In addition to the use of Amerase as a graffiti remover, Amerase is effective as a surface treatment to prepare aged coatings for topcoating. Use Amerase treatment with Amerlock® 400, Amercoat® 385 or Amershield for recoating or topcoating with Amershield when aged beyond maximum recoat time. Do not use Amerase treatment on Amerlock 400 with Amercoat 861 Accelerator, Amercoat 385 with 861.

Application Equipment

Clean rags, soft natural bristle brush, 1-quart high-density polyethylene or polypropylene hand-pump spray bottle, Neoprene™ or butyl rubber gloves. **Do not use a pressurized pump sprayer with rubber gaskets.**

Physical Data

Color	Clear amber	
VOC	8.1 lb/gal	976 g/L
Flash point (SETA)	°F	°C
Amerase	183	84

Application Data

Graffiti removal method	Wiping cloths, soft natural bristle brush, hand-pump spray.
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Surface treatment

method	Hand-pump or industrial spray.
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Shipping Data

Packaging and shipping weight (approx)	lb	kg
1-qt can	2.3	1
1-gal can	8.8	4
5-gal can	45.8	21

Shelf life when stored indoors at 40 to 100°F (4 to 38°C)
1 year from shipping date

Numerical values are subject to normal manufacturing tolerances, color and testing variances.

This product is nonphotochemically reactive as defined by the South Coast Air Quality Management District's Rule 102 or equivalent regulations.

Environmental Conditions

	°F	°C
Air and surface temperature	60 to 120	16 to 49

Ideal surface temperatures for Graffiti removal are above 70°F. Below 70°F longer contact time may be needed and below 60°F many Graffiti materials may be difficult to remove.

Use Amerase treatment on Kynar 500* for topcoating with Amershield.

*Use Amercoat 929 surface treatment on Kynar ADS.

Application Procedures

Note: Wear safety goggles and gloves. Avoid prolonged skin contact with Amerase.

Graffiti Removal

1. Apply Amerase directly to graffiti.
2. Wait approximately 3 to 5 minutes, keeping area moist with Amerase, then wipe with clean rags. If more than two applications of Amerase are needed to remove stubborn stains, rinse the area with clean water and wipe dry before each additional application.
3. Masonry walls or aged graffiti may require scrubbing with a soft natural bristle brush.
4. Avoid Amerase contact with rubber materials such as gaskets, etc. Swelling may occur on prolonged contact.
5. Rinse all Amerase cleaned surfaces with water.
6. Allow surface to dry.
7. Discard wiping rags in closed container.

Surface Treatment

1. Apply Amerase to aged coating using soft brush, clean rags, polyethylene hand-pump spray bottle or industrial spray equipment.

Topcoat time after treatment (hours)	°F/°C			
	120/49	90/32	70/21	50/10
(minimum)	¼	½	1	2
(maximum)	½	1	3	7

2. Allow Amerase to dwell on surface before topcoating. See minimum topcoating time.
3. Topcoat treated surface before Amerase is fully evaporated. See maximum topcoating time.
4. If Amerase is fully evaporated reapply Amerase to the surface.

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