CITY OF GRAND ISLAND

Working Together for a Better Tomorrow. Today.

BID SPECIFICATION PACKAGE

for

LIME SLURRY TANK INTERIOR PROTECTIVE COATING

C 130202

Bid Opening Date/Time

Thursday, March 18, 2021 at 2:00 p.m. (local time)
City of Grand Island, City Hall
100 East 1st Street, P.O. Box 1968
Grand Island, NE 68802-1968

Contact Information

Tylor Robinson
City of Grand Island – Utilities Department
Platte Generating Station
308/385-5496

Date issued: March 3, 2021

ADVERTISEMENT TO BIDDERS
FOR
LIME SLURRY TANK INTERIOR PROTECTIVE COATING
FOR
CITY OF GRAND ISLAND, NEBRASKA

Sealed bids for Lime Slurry Tank Interior Protective Coating will be received at the office of the City Clerk, 100 E. First Street, P.O. Box 1968, Grand Island, Nebraska 68802, until **Thursday, March 18, 2021 at 2:00 p.m. local time,** FOB the City of Grand Island, freight prepaid. Bids will be publicly opened at this time in the Grand Island City Hall City Clerk's Office located on 1st floor of City Hall. **Submit an original and three copies if submitting by mail.** Bid package and any Addendas are also available on-line at www.grand-island.com under Business-Bids and Request for Proposals-Bid Calendar under the bid opening date. Bidding documents, plans and specifications for use in preparing bids may be downloaded from the QuestCDN website www.QuestCDN.com for a small fee. Submitting through QuestCDN requires one original document of the bid to be uploaded. **Bids received after the specified time will not be considered**.

The successful bidder will be required to comply with fair labor standards as required by Nebraska R.R.S.73-102 and comply with Nebraska R.R.S. 48-657 pertaining to contributions to the Unemployment Compensation Fund of the State of Nebraska. Successful bidder shall maintain a drug free workplace policy. Every public contractor and his, her or its subcontractors who are awarded a contract by the City for the physical performance of services within the State of Nebraska shall register with and use a federal immigration verification system to determine the work eligibility status of new employees physically performing services within the State of Nebraska.

Each bidder shall submit with the bid a certified check, a cashiers check, or bid bond payable to the City of Grand Island in an amount no less than five percent (5%) of the bid price which shall guarantee good faith on the part of the bidder and the entering into a contract within fifteen (15) days at the bid price if accepted by the City. **Your certified check, cashiers check or bid bond must be submitted in a separate envelope attached to the outside of the envelope containing the bid. Each envelope must be clearly marked indicating its contents. Failure to submit the necessary qualifying information and correct number of copies in clearly marked and separate envelopes will result in your bid not being opened or considered.** Only surety companies authorized to do business in the State of Nebraska may issue bid bonds.

Bids will be evaluated by the Purchaser based on price, schedule, quality, adherence to schedule, plan and specifications, economy and efficiency of operation, experience and reputation of the bidder, ability, capacity, and skill of the bidder to perform contract required and adaptability of the particular items to the specific use intended.

The Purchaser reserves the right to reject any or all bids, to waive irregularities therein, and to accept whichever bid that may be in the best interest of the City, at its sole discretion.

No bidder may withdraw his/her bid for a period of thirty (30) days after date of bid opening.

RaNae Edwards, City Clerk

Advertised

(All bids must be submitted on this form)

LIME SLURRY TANK INTERIOR PROTECTIVE COATING
BID DATA FORM

CITY OF GRAND ISLAND
GRAND ISLAND, NE

The undersigned Bidder, having examined all specifications and other bidding documents, and all addenda thereto, and being acquainted with and fully understanding all conditions relative to the specified materials and equipment, hereby proposes to provide labor, supplies, equipment, materials and supervision to implement a corrosion resistant coating inside the lime slurry tank section of the silo as needed during the Spring Outage 2021 at Platte Generating Station FOB the City of Grand Island, freight prepaid, at the following price:

ITEM DESCRIPTION	EXTENDED COST
Base Bid:	
Materials	$ _____
Labor	$ _____
Applicable Sales tax*	$ _____
Total Base Bid	**$ _____**

_____
Bidder Company Name Date

_____
Company Address City State Zip

_____
Print Name of Person Completing Bid Signature

Email:_____ Telephone No._____

*** If bidder fails to include sales tax in their bid price or takes exception to including sales tax in their bid price, the City will add a 7.5% figure to the bid price for evaluation purposes; however, the City will only pay actual sales tax due. The State of Nebraska Department of Revenue has determined that building cleaning and maintenance services are taxable on both materials and labor.**

☐ **Exceptions Noted -** Bidder acknowledges there are *Exceptions* and/or *Clarifications* noted to the above bid, and those exceptions are fully explained on a separate sheet, clearly marked, and included with the Bid.

According to Nebraska Sales and Use Tax Requirements, Section 1-017, Contractors, check which option you have selected to file with the Nebraska Department of Revenue:

Nebraska law provides a sales and use tax exemption on contractor labor charges for the construction, repair, or annexation of any structure used for the generation, transmission, or distribution of electricity. Separately stated contractor labor would be exempt, all materials are taxable according to the contractor's option.

Option 1 (Section 1-017.05)_____ Option 2 (Section 1-017.06)_____ Option 3 (Section 1-017.07)_____

If the Nebraska sales and use tax election is not filed or noted above, the contractor will be treated as a retailer under Option 1 for sales and use tax purposes.

☐ By checking this box, Bidder acknowledges the specified completion date of the project is **May 9, 2021.**

☐ By checking this box, Bidder acknowledges that Addenda Number(s) _____ were received and considered in Bid preparation.

Note: If Bidder supplies individual unit pricing information as supplemental pricing to the base material and labor cost above, said individual pricing is proprietary information and should not be released under a public records request. The total base bid is not considered proprietary information and will be released pursuant to City Procurement Code.

Any exceptions the bidder wishes to take regarding the Owners specifications and/or contract documents must be submitted with the bid, and noted above under “Exceptions Noted”. Time is of the essence in the evaluation of proposals, the execution of contract documents for the execution of the work. Submittal of proposals that include terms and conditions unacceptable to the Owner, or that lack the information and clarity required by these specifications may be subject to rejection at the sole discretion of the Owner.

CHECKLIST FOR BID SUBMISSION

FOR

LIME SLURRY TANK INTERIOR PROTECTIVE COATING

Bids must be received by the City Clerk before *2:00 p.m. on Thursday, March 18, 2021.*

The following items must be completed for your bid to be considered.

- ❑ Submittal of bid documents:
  - ❑ **Option 1 – Mailing**: A signed original and three (3) copies of the bidding documents. Failure to submit the correct number of copies may result in your bid not being considered.
    - ❑ Note: Your certified check, cashiers check or bid bond should be clearly marked in a separate envelope attached to the signed original bid.
  - ❑ **Option 2 – QuestCDN (online)**: Purchase the bid specification through QuestCDN. Upload the signed original of the Bid Data Form, along with any supporting material required to meet the bid specification through QuestCDN. Upload your bid bond online through QuestCDN. If questions arise during the uploading, please contact the City Clerk or QuestCDN to ensure your bid is complete as submitted. *Bidders using Certified check or Cashiers' Check must mail said check to the office of the City Clerk no later than the scheduled bid opening date and time and clearly marked with the project name.*
- ❑ Bidders must complete and sign the Bid Data Form provided in these Documents. All blank spaces must be filled in. Bidders shall acknowledge receipt of any Addenda information on the Bid Data Form.
- ❑ A certified check, cashiers' check or bid bond in a separate envelope attached to the **outside of the envelope containing the original bid**. Each envelope must be clearly marked indicating its contents. Failure to submit the necessary qualifying information in clearly marked and separate envelopes will result in your bid not being opened.
- ❑ Selection of Nebraska Sales Tax Option. If the Nebraska sales and use tax election is not filed or noted above, the Contractor will be treated as a retailer under Option 1 for sales and use tax purposes.
- ❑ A reference list of at least three (3) projects of similar scope and complexity including a description, name and phone contact.
- ❑ A summary of the experience of the Superintendent proposed for this project.
- ❑ Any alternate systems to the specified Tnemec material listed shall be submitted with bid.
- ❑ Information regarding source of media, MOH scale hardness, mesh size and mean particle size required air blasting pressure.
- ❑ Firm lump sum pricing; firm unit pricing in case adjustments are necessary, and breakout of sales tax pricing.
- ❑ A proposed detailed schedule reflecting all key activities with sufficient information to demonstrate the means of completing the work in the allotted period and hold points for inspections and repairs.
- ❑ A description of the standard terms and conditions which will be in effect during the project.
- ❑ Exceptions to the specification or Owner's Contract Document must be submitted with the bid and noted on the Bid Data Form as time is of the essence.
- ❑ Copy of OSHA compliant Confined Space Procedure and Respiratory Protection Procedure.
- ❑ Acknowledgment of Addenda Number(s) _____.

Please check off each item as completed to ensure compliance. If you have any questions, please feel free to contact our office prior to the bid opening date/time.

INSTRUCTIONS TO BIDDERS

1. GENERAL INFORMATION.

   The following instructions outline the procedure for preparing and submitting Bids. Bidders must fulfill all requirements as specified in these Documents.

2. TYPE OF BID.

   Bidders shall be required to submit prices for all items listed in the Bid Data Form.

3. PREPARATION OF BIDS.

   Bidders shall use only the Bid Data Form provided in these Documents. All blank spaces in the Bid Data Form must be filled in, preferably in BLACK ink, in both words and figures where required. No changes to the wording or content of the forms is permitted. Written amounts shall govern in case of discrepancy between the amounts stated in writing and the amounts stated in figures.

   Prices stated shall be f.o.b. with freight and full insurance paid by Bidder, to the job site located in Grand Island, Nebraska.

   The Bidder shall acknowledge receipt of all Addenda in the Bid Data Form. Bids received without acknowledgement or without the Addendum enclosed will be considered informal.

   Individual unit pricing as listed on the Bid Data Form or supplied as supplemental information may be deemed proprietary information and not be released under a public records request. The total amount of the bid is not considered proprietary information and will be released pursuant to City Procurement Code.

4. SUBMISSION OF BIDS.

   All Bids must be submitted intact with the correct number of copies no later than the time prescribed, at the place, and in the manner set forth in the ADVERTISEMENT FOR BIDS. Bids must be made on the Bid Data Form provided herein. Each Bid mailed must be submitted intact in a sealed envelope, so marked as to indicate its contents without being opened, and delivered in person or addressed and mailed in conformance with the instructions in the ADVERTISEMENT FOR BIDS.

5. BID SECURITY.

   Bids must be accompanied by cash, a certified check, or cashier's check drawn on a bank which is insured by the Federal Deposit Insurance Corporation, or a bid bond issued by a Surety authorized to issue such bonds in the state where the Work is located, in the amount of 5 percent of the bid amount payable to OWNER. This bid security shall be given as a guarantee that the Bidder will not withdraw their Bid for a period of thirty (30) days after bid opening, and that if awarded the Contract, the successful Bidder will execute the attached Contract and furnish a properly executed Performance Bond and Payment Bond, each in the full amount of the Contract price, within the time specified.

   The Attorney-in-Fact that executes this bond on behalf of the Surety must attach a notarized copy of his/her power of attorney as evidence of his/her authority to bind the Surety on the date of execution of the bond. Where State Statue requires, certification by a resident agent shall also be provided.

6. RETURN OF BID SECURITY.

   Within fifteen (15) days after the award of the Contract, the OWNER will return the bid securities to all Bidders whose Bids are not to be further considered in awarding the Contract. All other retained bid securities will be held until the Contract has been finally executed, after which all bid securities, other

than Bidders' bonds and guarantees which have been fortified, will be returned to the respective Bidders whose Bids they accompanied.

7. BASIS OF AWARD.

The award will be made by the OWNER on the basis of the Bid from the lowest responsive, responsible Bidder which, in the OWNER's sole and absolute judgment will best serve the interest of the OWNER. All Bids will be considered on the following basis:

- Delivery time
- Bid price
- Cost of installation
- Suitability to project requirements
- Conformance with the terms of the Bid Documents
- Responsibility and qualification of Bidder

The OWNER reserves the right to reject all Bids, or any Bid not in conformance with the intent of the Bid Documents, and to waive any informalities and irregularities in said Bids.

8. EXECUTION OF CONTRACT.

The successful Bidder shall, within fifteen (15) days after receiving notice of award, sign and deliver to the OWNER the Contract hereto attached together with the acceptable bonds as required in these Bid Documents. Within fifteen (15) days after receiving the signed Contract with acceptable bond(s) from the successful Bidder, the OWNER's authorized agent will sign the Contract. Signature by both parties constitutes execution of the Contract.

9. PERFORMANCE AND PAYMENT BONDS.

The successful Bidder shall file with the OWNER Performance and Payment Bonds in the full amount (100 percent) of the Contract price, as security for the faithful performance of the Contract and the payment of all persons supplying labor and materials for the Work under this Contract, and to cover all guarantees against defective workmanship or materials, or both, for a period of one (1) year after the date of final acceptance of the Work by the OWNER. The Surety furnishing these bonds shall have a record of service satisfactory to the OWNER, be authorized to do business in the State where the OWNER's project is located and shall be named on the current list of approved Surety Companies, acceptable on Federal bonds as published by the Audit Staff, Bureau of Accounts, U.S. Treasury Department.

The Attorney-in-Fact (Resident Agent) who executes these bonds on behalf of the Surety must attach a notarized copy of his/her power-of-attorney as evidence of his/her authority to bind the Surety on the date of execution of the bond.

10. TIME OF COMPLETION.

The time of completion of the Work to be performed under this Contract is the essence of the Contract. The time allowed for the completion of the Work is stated in the Bid Data Form.

11. GRATUITIES AND KICKBACKS.

City Code states that it is unethical for any person to offer, give, or agree to give any City employee or former City employee, or for any City employee or former City employee to solicit, demand, accept, or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, or preparation of any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter, pertaining to any program requirement or a contract or subcontract, or to any solicitation or proposal therefor. It shall be unethical for any payment, gratuity, or offer of employment to be made by or on behalf of a

subcontractor under a contract to the prime contractor or higher tier subcontractor or any person associated therewith, as an inducement for the award of a subcontract or order.

12. FISCAL YEAR.

The City of Grand Island, Nebraska operates on a fiscal year beginning October 1st and ending on the following September 30th. It is understood and agreed that any portion of this agreement which will be performed in a future fiscal year is contingent upon the City Council adopting budget statements and appropriations sufficient to fund such performance.

Contract #
Issued:

CONTRACT AGREEMENT

THIS AGREEMENT made and entered into by and between **[SUCCESSFUL BIDDER]**, hereinafter called the Contractor, and the **CITY OF GRAND ISLAND, NEBRASKA**, hereinafter called the City.

WITNESSETH:

THAT, WHEREAS, in accordance with law, the City has caused contract documents to be prepared and an advertisement calling for bids to be published for LIME SLURRY TANK INTERIOR PROTECTIVE COATING*;* and

WHEREAS, the City, in the manner prescribed by law, has publicly opened, examined, and canvassed the bids submitted, and has determined the aforesaid Contractor to be the lowest responsive and responsible bidder, and has duly awarded to said Contractor a contract therefore, for the sum or sums named in the Contractor's bid, a copy thereof being attached to and made a part of this Contract;

NOW, THEREFORE, in consideration of the compensation to be paid to the Contractor and of the mutual agreements herein contained, the parties have agreed and hereby agree, the City for itself and its successors, and the Contractor for itself, himself/herself, or themselves, and its, his/her, or their successors, as follows:

ARTICLE I. That the following documents shall comprise the Contract, and shall together be referred to as the "Agreement" or the "Contract Documents";

1. This Contract Agreement.
2. City of Grand Island's Specification for this project.
3. [NAME OF SUCCESSFUL BIDDER] bid signed and dated [DATE OF BID].

In the event of any conflict between the terms of the Contract Documents, the provisions of the document first listed shall prevail.

ARTICLE II. That the Contractor shall (a) furnish all tools, equipment, superintendence, transportation, and other construction materials, services and facilities; (b) furnish, as agent for the City, all materials, supplies and equipment specified and required to be incorporated in and form a permanent part of the completed work; (c) provide and perform all necessary labor; and (d) in a good substantial and workmanlike manner and in accordance with the requirements, stipulations, provisions, and conditions of the Contract documents as listed in the attached General Specifications, said documents forming the Contract and being as fully a part thereof as if repeated verbatim herein, perform, execute, construct and complete all work included in and covered by the City's official award of this Contract to the said Contractor, such award being based on the acceptance by the City of the Contractor's bid;

ARTICLE III. That the City shall pay to the Contractor for the performance of the work embraced in this Contract and the Contractor will accept as full compensation therefore the sum (subject to adjustment as provided by the Contract) of **[DOLLAR AMOUNT] ($00.00)** for all services, materials, and work covered by and included in the Contract award and designated in the foregoing Article II; payments thereof to be made in cash or its equivalent in the manner provided in the General Specifications.

The total cost of the Contract includes:

Base Bid:

Materials	$ _____
Labor	$ _____
Applicable Sales tax*	$ _____
Total Base Bid	$ _____

Contractor Option ____

The City of Grand Island, Nebraska operates on a fiscal year beginning October 1st and ending on the following September 30th. It is understood and agreed that any portion of this agreement which will be performed in a future fiscal year is contingent upon the City Council adopting budget statements and appropriations sufficient to fund such performance.

ARTICLE IV. The Contractor hereby agrees to act as agent for the City in purchasing materials and supplies for the City for this project. The City shall be obligated to the vendor of the materials and supplies for the purchase price, but the Contractor shall handle all payments hereunder on behalf of the City. The vendor shall make demand or claim for payment of the purchase price from the City by submitting an invoice to the Contractor. Title to all materials and supplies purchased hereunder shall vest in the City directly from the vendor. Regardless of the method of payment, title shall vest immediately in the City. The Contractor shall not acquire title to any materials and supplies incorporated into the project. All invoices shall bear the Contractor's name as agent for the City. This paragraph will apply only to these materials and supplies actually incorporated into and becoming a part of the finished product of the LIME SLURRY TANK INTERIOR PROTECTIVE COATING.

ARTICLE V. That the Contractor shall start work as soon as possible after the Contract is signed and the required bonds and insurance are approved, and that the Contractor shall deliver the equipment, tools, supplies, and materials F.O.B. Platte Generating Station, and complete the work on or before ***May 9, 2021.***

ARTICLE VI. The Contractor agrees to comply with all applicable State fair labor standards in the execution of this Contract as required by Section 73-102, R.R.S. 1943. The Contractor further agrees to comply with the provisions of Section 48-657, R.R.S. 1943, pertaining to contributions to the Unemployment Compensation Fund of the State of Nebraska. During the performance of this Contract, the Contractor and all subcontractors agree not to discriminate in hiring or any other employment practice on the basis, of race, color, religion, sex, national origin, age or disability. The Contractor agrees to comply with all applicable Local, State and Federal rules and regulations. The Contractor agrees to maintain a drug-free workplace policy and will provide a copy of the policy to the City upon request. Every public contractor and his, her or its subcontractors who are awarded a contract by the City for the physical performance of services within the State of Nebraska shall register with and use a federal immigration verification system to determine the work eligibility status of new employees physically performing services within the State of Nebraska.

ARTICLE VII. Gratuities and kickbacks: City Code states that it is unethical for any person to offer, give, or agree to give any City employee or former City employee, or for any City

employee or former City employee to solicit, demand, accept, or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, or preparation of any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter, pertaining to any program requirement or a contract or subcontract, or to any solicitation or proposal therefor. It shall be unethical for any payment, gratuity, or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor or any person associated therewith, as an inducement for the award of a subcontract or order.

[SUCCESSFUL BIDDER]

By_____ Date _____

Title_____

CITY OF GRAND ISLAND, NEBRASKA

By_____ Date _____
Mayor

Attest:_____
City Clerk

The Contract is in due form according to law and hereby approved.

_____ Date _____
Attorney for the City

CITY OF GRAND ISLAND

Working Together for a Better Tomorrow, Today.

REQUEST FOR BIDS - GENERAL SPECIFICATIONS

The Bid shall be in accordance with the following and with all attached BID DATA and DETAILED SPECIFICATIONS.

All prices are to be furnished and installed FOB, Grand Island, Nebraska. **All prices shall be firm, and shall include all sales and use taxes as lawfully assessed under laws and regulations of the State of Nebraska.** * If bidder fails to include sales tax in their bid price or takes exception to including sales tax in their bid price, the City will add a 7.5% figure to the bid price for evaluation purposes; however, the City will only pay actual sales tax due.

Mailed bids shall include the following on the **outside** of the mailing envelope: **"Lime Slurry Tank Interior Protective Coating".** All bids submitted by mail must include **an original and three copies** of the bid. The bid specification and on-line bidding forms are also available at http://www.grand-island.com/business/bids-and-request-for-proposals/bid-calendar under the bid opening date and "Click here for bid document link" through QuestCDN for a fee. If submitting through QuestCDN, **one** original document of the bid and supporting documentation is required to be uploaded. No verbal bids will be considered. All sealed bids are due no later than **Thursday, March 18, 2021 at 2:00 p.m. local time**. to:

Mailing Address: City Clerk
City Hall
P. O. Box 1968
Grand Island, NE 68802-1968

Street Address: City Clerk
City Hall
100 E. First Street
Grand Island, NE 68801

Bids will be opened at this time in the City Hall City Clerk's Office located on 1st floor of City Hall. Any bid received after the specified date will not be considered.

Bids will be evaluated by the Purchaser based on price, schedule, quality, adherence to schedule, plan and specifications, economy and efficiency of operation, experience and reputation of the bidder, ability, capacity, and skill of the bidder to perform contract required and adaptability of the particular items to the specific use intended.

The successful bidder will be required to comply with fair labor standards as required by Nebraska R.R.S.73-102 and comply with Nebraska R.R.S. 48-657 pertaining to contributions to the Unemployment Compensation Fund of the State of Nebraska. Contractor shall maintain a drug free workplace policy. Every public contractor and his, her or its subcontractors who are awarded a contract by the City for the physical performance of services within the State of Nebraska shall register with and use a federal immigration verification system to determine the work eligibility status of new employees physically performing services within the State of Nebraska.

The equipment and materials must be new, the latest make or model, unless otherwise specified. Prior to approving the invoice for payment, the City reserves the right to thoroughly inspect and test the equipment to confirm compliance with specifications. Any equipment or material which does not meet the City's requirements will be returned at vendor's expense for correction. The invoice will be paid after approval at the next regularly scheduled City Council meeting and occurring after departmental approval of invoice; the City Council typically meets the second and fourth Tuesday of each month. Invoices must be received well in advance of Council date to allow evaluation and processing time.

Each bidder shall submit with the bid a certified check, a cashier's check, or bid bond payable to the City of Grand Island in an amount no less than five percent (5%) of the bid price which shall guarantee good faith on the part of the Bidder and the entering into a contract within fifteen (15) days at the bid price if accepted by the City. **Your certified check, cashier's check or bid bond must be submitted in a separate envelope attached to the outside of the envelope containing the bid. Each envelope must be clearly marked indicating its contents. Failure to submit the necessary qualifying information and correct number of copies in clearly marked and separate envelopes will result in your bid not being opened or considered.** Only surety companies authorized to do business in the State of Nebraska may issue bid bonds.

Successful bidder shall comply with the City's insurance requirements; performance and payment bonds are required for this project as outlined in the Detailed Specifications and Instructions to Bidders. All bids shall be valid for at least thirty (30) working days after the bid deadline for evaluation purposes.

All bids must be on the bid form and must be signed and dated to be accepted. If exceptions and/or clarifications are noted to the bid, those exceptions must be fully explained on a separate sheet, clearly marked, and included with the Bid. Any changes that are found made to the original bid specification, other than Owner generated Addendums, would result in your bid not being considered. Please contact Tylor Robinson at 308-385-5495, for questions concerning this specification.

LIME SLURRY TANK INTERIOR PROTECTIVE COATING

Grand Island Utilities Department - Detailed Specification

1.0 PROJECT DECRIPTION

1.1 BACKGROUND

The Unit 1 steam generator at Platte Generating Station is a tangential fired, natural circulation, superheat/reheat, pulverized coal-fired boiler manufactured by ABB-CE (CE Contract No. 13477). The steam generator produces 765,000 lb/hr (MCR) of steam at 1000 F and 1800 psi which is delivered to a 100,000 kW steam turbine. The unit uses Powder River Basin Coal from various mines in the basin.

In 2013 a spray absorption process was integrated into the flue gas path of the steam generator to comply with the MATS (Mercury Air Toxic Standards). The spray dry absorption process utilizes an aqueous slurry of slaked lime to chemically capture sulfur dioxide present in flue gases via the formation of calcium sulfite and calcium sulfate. Dry particulates are then removed from the gas stream by a fabric filter located downstream of the spray absorption process by a fabric filter.

Auxiliary equipment to the spray dry absorption process includes the Lime Slurry Preparation System. The lime slurry preparation system, including a lime storage silo, volumetric feeder, lime slaker, lime slurry grit screen, grit screw conveyor, lime slurry storage tank, and lime slurry feed pumps, is enclosed in a skirted storage silo.

The silo is a 14’ diameter x 67’ tall straight wall storage silo. At full capacity, the silo can store 22 tons of high calcium soft burned pebble lime. The lime slurry produced by the slaker train is stored in a tank at the base of the silo and then distributed into the flue gas stream. During an inspection in the Fall of 2020, it was documented that severe corrosion was occurring in the lime slurry storage tank. To prevent further corrosion of the structure, The City of Grand Island is requesting bids to implement a corrosion resistant coating inside the lime slurry tank section of the silo.

1.2 LOCATION

The Platte Generating Station is located at 1035 W. Wildwood Drive, two (2) miles south of Grand Island, Nebraska. The plant entrance is located two (2) miles south of U.S. Highway 34 and 1 ½ miles east of U.S. Highway 281.

1.3 CONTACT

Question regarding this specification may be directed to:

Tylor Robinson
Platte Generating Station
1035 W. Wildwood Dr.
Grand Island, NE 68801
Ph. (308) 385-5495
trobinson@giud.com

2.0 SCOPE

2.1 GENERAL

The Contractor shall, as herein described, furnish all material, supplies, equipment, labor and supervision necessary to prepare and coat the interior of the lime slurry tank. This work is being performed to prevent further corrosion. The interior of the lime slurry tank shall consist of but not be limited to all interior walls, floors, skirts, beams, baffles, hatches, and structural members in the bottom 16'6" of the 14'0" diameter skirt supported storage silo.

This scope shall also include the floor of the grit screen room at the 16'6" elevation.

Details of these sections of the lime silo are depicted in drawings 13-1802-06 and 13-1802-09.

2.1.1 APPLICABLE SPECIFICATIONS

All work shall be done in accordance with this detailed specification, and manufacturer's requirements. Any deviations from these specifications shall be detailed in the Contractor's proposal. Should the Contractor propose an alternate system to the TNEMEC system specified herein, the Contractor shall comply with the intent of these detailed specifications to the extent that they apply to the alternate system.

2.1.2 MINIMUM SPECIFICATIONS

These specifications are intended to detail the requirements for the performance of the work. Should instructions contained in these specifications, bid documents, or the coating schedule be in variance with the coating manufacturer's instructions, surfaces shall be prepared, and coatings applied to conform to the higher standard. All materials, supplies and labor not specifically called for herein yet which are required to perform the specified work in accordance with the manufacturer's instructions, applicable codes and standards, and standard industry practice shall be provided by the Contractor at no additional cost to the Owner.

2.1.3 PERMITS

The contractor shall obtain, at his own expense, all permits, licenses, and inspections and shall comply with all laws, codes, and ordinances required by authorities having jurisdiction.

2.1.4 CLARRIFICATIONS

The Contractor shall be responsible for requesting prompt clarification when instructions are lacking, conflicts occur in the Specification and or manufacturer's literature, or the procedure specified is not clearly understood. The Contractor shall be responsible for consulting with the coating manufacturer on all matters effecting the proper preparation and application of the coating system. In the event the Contractor fails to resolve these conflicts, the Contractor shall be responsible for handling the discrepancies in a manner as prescribed by the Owner.

2.2 SCHEDULE

The Lime Slurry Tank's Interior Protective Lining application and the coating of the Lime Silo's grit Chamber floor shall be completed during the Spring 2021 Maintenance Outage currently scheduled April 22nd - May 9th, 2021. The work shall be completed during the outage period,

between April 23rd - May 5th, 2021. This time frame is a 10-day period which includes Saturday, May 1st and Sunday, May 2nd.

The Contractor shall provide with the proposal a detailed schedule reflecting all key activities with sufficient information to demonstrate the means of completing the work in the allotted period. The schedule shall also reflect the hold points for inspections and repairs.

The Contractor shall provide a daily report of the work accomplished and shall attend a daily project progress meeting to discuss progress and planned work with the Owner and when required manufacturer's representatives.

2.2.1 COORDINATION

The Contractor shall be responsible for coordination of this work with all crafts, subcontractors, manufacturer's representatives, Owner's representative, and other contractors performing work on-site in this and other areas of the station.

2.2.2 OTHER WORK

During the outage period there will be numerous other scopes of work underway by other contractors as well as by plant personnel. The Contractor will control the activities of all its personnel and subcontractors to assure they stay in their designated work areas. The Owner will define the parking and laydown areas available for the contractor, equipment, and crews.

The Contractor will attend periodic coordination meetings with the Owner and other onsite contractors to assist in the coordination of activities throughout the facility.

2.3 EQUIPMENT

All equipment for application of polymer coatings and linings shall be furnished by the Contractor and shall comply with all manufacturer recommendations and appropriate product data sheets.

2.3.1 BRUSHES & ROLLERS

Brushes and rollers used in the application of coating shall be of the non-shedding, phenolic core type.

2.3.2 COMPRESSED AIR

Compressed air shall be free from moisture and oil contamination. If spray is allowed, effective oil and water separators shall be used on all compressed air lines serving spray painting. Separators shall be placed as close as practical to the equipment and their effectiveness test in accordance with these specifications.

Verify the cleanliness of the compressed air by the white blotter test in accordance with ASTM D4285 at least once per shift for each compressor system. Sufficient freedom from oil and moisture is confirmed if soiling or discoloration is not visible on the paper.

If air contamination is evident, change filters, clean traps, add moisture separators or filters, or make such adjustments as necessary to achieve clean, dry air.

2.3.3 AIRLESS SPRAY UNITS

Catalyst Injection Airless spray units used in the application of polymer coating or lining materials shall be calibrated and checked to assure they are within manufacturers recommended material application specifications. Ratio checks at minimum shall be performed prior to applying any material. Additionally, ratio checks shall be performed at the end of any spray application and at the start and end of any shift. Quality records of ratio checks shall be kept in accordance with the manufacturer's recommendations.

2.3.4 SCAFFOLD

The contractor shall be responsible for providing any temporary work platforms required to reach elevations. A certified person trained in the erection of scaffolding must design the scaffolds. Proof of this person's certification may be required by the owner.

Scaffolds and scaffold components must not be overloaded more than their maximum intended loads. All scaffold arrangements shall be OSHA compliant.

2.3.5 SAFETY EQUIPMENT

All safety equipment shall comply with plant, state, local, and federal regulations. The Contractor will be responsible for proper safety equipment and its use. Improper safety can result in cancellation of work with payment being made for only completed items.

2.4 ENVIRONMENTAL

No blasting, priming, or any other application processes shall be attempted without written waiver from the coating/lining manufacturer if environmental conditions do not correspond with manufacturer recommendations:

- Air and Surface Temperatures: Prepare surfaces and apply and cure coatings within air and surface temperature range in accordance with manufacturer's instructions.
- Relative humidity of the work area is greater than 90 percent
- Surface temperature of the application is less than 5°F above the dew point of the air in the work area.
- Do not prepare surfaces and apply coatings in rain, snow, fog, or mist.
- Do not spray coatings if wind velocity is above manufacturers limit.

2.4.1 VENTILATION

The Contractor must provide adequate ventilation throughout the duration of the work with sufficient rate of fresh air to create a safe work environment and to maintain exposure below TLV(s) and to dilute the rate of solvent emissions. The ventilation equipment shall be able to create enough air exchanges per hour to maintain vapor concentrations below 10% of the LEL in confined or enclosed areas. Ventilation shall be maintained until the coatings are fully cured to insure no potential for fire, explosion of health hazards.

2.4.2 FOREIGN MATERIALS

Work shall be scheduled to avoid excessive dust and airborne contaminants. Precautions shall be taken to protect work from excessive dust and airborne contaminants during application and curing.

2.4.3 ENVIRONMENTAL CONTROLS

If necessary, to complete the work in the time frame designated dehumidification and heating shall be used to control ambient conditions. The dehumidification and heating equipment shall be run continuously for 24 hours prior to the start of abrasive blasting, throughout abrasive blasting and coating applications, and for 4 to 24 hours after final coat application and all repairs are complete. Relative humidity of the processed air shall not exceed 45% at 80°F dry bulb temperature as measured by a sling psychrometer or calibrated digital gauge. Temperatures of the surfaces to be blast cleaned or coated/lined shall be maintained at a minimum of 5°F above the dew point. During the application of polymer coatings and linings, surface temperatures and relative humidity shall be maintained in accordance with the manufacturer's recommendations.

The space to be controlled shall be sealed off as well as possible allowing air to escape away from the point where the dehumidified air is being introduced. A slight positive pressure shall be maintained in the space unless the dust from the blasting operation is hazardous.

If necessary, a filtration system must be installed to filter the escaping air. The design of the filtration system must compliment the air conditioning system in order to balance the air volumes. Do not recirculate the air from the filtration equipment back through the conditioning equipment.

2.4.4 LIGHTING

The Contractor shall provide adequate explosion proof lighting for the performance of the specified work. And for inspections by the Contractor, Owner's representatives, and Manufacturer's representatives. The minimum acceptable level of lighting during all phases shall be a minimum of 20 toot-candles in accordance with SPPC Guide 12, with a recommended level of 50 foot-candles.

2.5 MATERIAL HANDLING

The Contractor shall be responsible for the receipt, unloading, handling, and storage of all deliveries and shall therefor be on site with adequate personnel, equipment, and facilities to properly handle all materials according to manufacturer's recommendations. All materials shall be received directly from the manufacturer in new, unopened containers. All materials shall have a shelf life outdating the completion of the project. Packaging labels shall clearly identify:

- Material Name
- Manufacturer
- Color Name and Number
- Batch of Lot Number
- Date of Manufacture and Date of Expiration
- Mixing and Thinning Instructions

2.5.1 STORAGE

All materials shall be stored in a temperature controlled, clean, and dry area, protected from excessive heat and/or cold. The Contractor shall be solely responsible for the provisions of suitable storage and the protection and safety of the materials stored at the

job site. The temperature of the materials shall be maintained as recommended by the manufacturer. Storage of materials shall meet the following requirements:

- Keep all containers of coating/lin9ings materials unopened until required for use.
- Store all coatings/linings materials, thinners, and solvents in accordance with OSHA regulations and manufacturer requirements. As necessary the Contractor shall provide adequate heated storage for all products
- Provide the size and number of fire extinguishers in proper portion to the quantity of coating/linings materials stored
- Do not Permit smoking in paint storage, mixing, and application areas.
- Do not open or mix coating/lining materials in the storage area
- Do not return mixed coating/lining materials to the storage area
- Bulk containers for solvents and thinners must be equipped with spring-loaded, self-closing, dispensing nozzles and UL approved drum bug vents. Use UL approved containers for transporting coating/lining materials to mixing areas.
- Use explosion-proof lighting fixtures.
- Do not permit the accumulation of empty coating/lining material containers, combustibles, and other debris.
- Maintain SDS for all materials
- Protect materials during handling and application to prevent damage, contamination, and/or spills.

2.5.2 MANUFACTURER REQUIREMENTS

Storage conditions shall comply with all OSHA and manufacturer's requirements.

2.5.3 DISPOSAL

The Contractor shall be responsible for the proper disposal of all unused materials, packaging and sundries.

2.6 SURFACE PREPERATION

When removed from service, the Lime Slurry Tank will typically have a layer of lime deposits adhering to all interior surfaces. The Owner will perform an initial cleaning of the tank for removal of the bulk deposits using high pressure water blasting. This will be done in the first week of the outage and will remove the bulk of the lime deposits. The residual lime that cannot be removed by these methods will be the Contractor's responsibility. After the initial cleaning by the Owner, the Lime Slurry tank will then be turned over to the Contractor. The Contractor and the manufacturer of the coatings/lining material shall determine if additional cleaning is required prior to abrasive blasting. If it is determined that additional cleaning is needed before blasting, the Contractor shall be responsible for any additional pre-cleaning and surface preparation. All areas to be abrasive blasted shall be thoroughly cleaned of visual contamination including lime residue prior to abrasive blasting.

All surfaces receiving a protective coating or lining shall be free of all oils, dirt, dust, and/or other debris. Solvents and cleaning detergents approved by the manufacturer may be used to remove oil and grease from working surfaces. Cleaning solvents shall be of low toxicity and shall have a flash point greater than 100°F.

The Contractor shall be responsible for identifying any areas requiring weld repair, grinding, or fillers. Repairs to the identified areas shall be completed by the contractor prior to the application of the coatings. If necessary, weld repairs shall be made by a certified welder and shall be billed to the owner on a time and material basis. All welding rates shall be billed at predetermined amounts. All repairs made by the Contractor shall meet or exceed the following requirements:

- Baffles, stiffeners, and/or structural supports that are "skip welded" and pitted shall be welded closed as approved by the coating manufacturer.
- All sharp edges being coated shall be ground to a minimum 1/8" radius to enhance edge retention. All butt-type welds shall be a minimum surface quality of Weld Grade "C"
- When appropriate corrosion pits in the various internal structures of the slurry tank shall be filled by the Contractor using a filler material approved by the coating manufacturer.
- Deep, subsurface undercutting and irregular pitting and corrosion pockets that are unacceptable for applications of coatings shall preferably be ground out to a wider, shallow pit suitable for coating.

All surfaces to be repairs, filled, coated, or lined shall be **abrasive blasted to a SSPC-SP10/NACE No.2, near-white metal blast, using clean, dry, contaminant-free abrasive. The abrasive shall be angular in orientation and shall achieve an angular profile of no less than 3.0 Mils.**

No welding or coating shall be applied over surface contamination of deficient surface cleanliness and preparation.

The Contractor shall have enough blast media on site to complete the work; including a margin of extra media should the work require an extended effort. The blast media shall be clean, dry non-silica type media. The Contractor will be responsible for removing all media blasting materials from the work area. Any used materials deemed non-hazardous shall be landfilled at an on-site location. Any used materials deemed hazardous shall be properly disposed of by the Contractor. Unused media shall remain the property of the Contractor and will be removed by the contractor on demobilization from the site. Information regarding source of media, MOH scale hardness, mesh size and mean particle size, required air blasting pressure shall be provided with the bid.

The blast quality must be maintained throughout the lining project. Options for dehumidification and/or desiccating equipment, timing of the primer application and other precautionary measures to maintain the specified cleanliness and abrasive profile shall be employed. In the event of flash-rusting or the occurrence of other surface contamination, the surface shall be recleaned and the referenced abrasive blast quality shall be restored prior to proceeding with the material application. Do not leave an abrasive blasted surface uncoated for more than 8 hours if dehumidification is not being employed.

All blasted surfaces are to be blown down with clean, dry, compressed air and/or vacuumed with mechanical brushing equipment. All traces of abrasive, dust and debris shall be removed from all surfaces, pockets, and corners before applying any coating materials. The Contractor will be responsible for the proper disposal of all materials collected during the surface cleaning and preparation.

Abrasive quality control measurements shall be conducted to assure that proper surface preparation is completed. These tests shall be documented as part of the quality control documentation. Minimum test to be conducted shall be surface profile measurements using appropriately sized Testex Tape and a calibrated micrometer as well as an industry standard recognized surface cleanliness guide for cleanliness of steel. These measurements shall be completed by a NACE Level I inspector.

2.7 MATERIAL COMPOSITION

The use of TNEMEC brand name products and all references throughout the specification that are based on the utilization of the TNEMEC system are for the purpose of describing the standard of quality, performance, and characteristics desired and is not intended to limit or restrict competition.

The bidder may propose alternative manufacturers, products and coating systems that meet or exceed the specified performance. Such alternatives shall be designed by the manufacturer for the conditions defined in the specification. The Contractor shall submit with his bid proposal any alternate systems to the specified Tnemec material listed in this document. This shall include product data sheets, SDS, and a letter from the manufacturer stating materials meet or exceed those listed in this document and are appropriate for the application intended.

2.7.1 MANUFACTURER

As Specified:

TENEMEC Company
6800 Corporate Dr, Kansas City, NO 64120
www.tnemec.com
(816) 483-3400

2.7.2 SYSTEM COMPONENTS

System Type: Epoxy & Vinyl Ester
Primer Coat: Series 1402 Vinyl Ester Primer
Mortar: Series 1415 mixed with 211-9111 Bulking Additive
Woven Roving: Series 211-228 18-ounce Fiberglass Woven Roving
Topcoat 1: Series 1415 Resin mixed with Series 211-915 Abrasion Resistant Aggregate
Topcoat 2: Series 1422 Glass Platelet Filled Vinyl Ester
Stripe Coat: Series 1432 Glass Pigment Filled Vinyl Ester (*Color 1) mixed 44-809 Agent
Topcoat 3: Series 1432 Glass Pigment Filled Vinyl Ester (*Color 2) mixed 44-809 Agent
Finish Coat: Series 1432 Glass Pigment Filled Vinyl Ester (*Color 3) mixed 44-809 Agent
*Coat Colors selected by City from manufacturer's standard colors.

Floor Coating

Base Layer: Series 118 Self-priming Mastic
Floor Finish Coat: Series 248 Moisture Cured Urethan (*Color 4)
*Coat Colors selected by City from manufacturer's standard colors.

2.8 MATERIAL APPLICATION

All manufacturers' mixing application and finishing instructions must be strictly followed through all phases of the application. The specific product data sheets are not intended to supersede this

specification. This specification has been written specific for this project and may not mirror the information on the product data sheet. In those cases, this specification will supersede the product data sheet. Generic thinners can be used only to clean equipment. Temperature and humidity limitations must be followed as outlined in the manufacturer's literature. Failure to comply with these general requirements will be cause for rejection of work.

The Contractor shall exercise care during the application of materials to ensure proper function of plant equipment shall not be affected.

2.8.1 GENERAL INSTRUCTIONS

Mix and thin coatings, in accordance with manufacturer's instructions. When applicable, mechanical mixers capable of thoroughly mixing the base and hardener together shall be used to mix the materials prior to use as per manufacturer's instructions.

Thoroughly scrape the bottom and sides of each container to incorporate all materials to avoid hot spots of un-reacted materials. If partial kit splitting is necessary, only use a calibrated scale and mix ratio by weight.

Keep containers closed when not in use to avoid contamination

Do not use materials beyond pot life limits or manufacturer's expiration dates.

Use application equipment, tools, pressure settings, and techniques in accordance with manufacturer's instructions.

Uniformly apply coatings at spreading rate required to achieve specified DFT.

Apply coatings to be free of film characteristics or defects that would adversely affect performance or appearance of coating system.

Apply the materials to assure thorough wetting of the substrate and to achieve a smooth, streamline surface free from dry spray, overspray, and orange peel. Shadow-through, pinholes, bubbles, skips, misses, lap marks between applications, variations in color or texture, or other visible discontinuities in any coat are unacceptable. Runs or sags may be brushed out while the material remains wet. Thoroughly coat all surfaces with special attention to hard-to-reach areas and irregular surfaces ad edges, corners, welds, and bolts.

Where multiple coats are required, apply each additional coat only after the previous coat has been allowed to dry as required by the manufacturer's written instructions, but as soon as possible to minimize the length of exposure to dust and contaminants.

Apply all coats in such a manner to assure that they are well adherent to each other and to the substrate. If application of any coat causes lifting of an underlaying coat, or there is poor adhesion between coats or to the substrate, remove the coating in the affected area to adjacent sound, adherent coatings and reapply the material.

The Contractor shall be responsible for avoiding damage and inter-coat contamination. In the event that the surfaces are damaged or contaminated (including amine blush), they shall be cleaned and recoated at the Contractor's expense. Recoat time shall be as specified by the manufacturer's data sheet.

Use of spark-producing tools shall be prohibited where explosive fume concentrations may occur. The Contractor shall provide a sufficient number of suitable type portable fire extinguishers to permit placing at least one extinguisher at each location where the use of flammable products is in progress.

No smoking shall be permitted in areas where volatile materials are in use or stored; Contractor is responsible for policing work.

Cloths, cotton, and waste material, which might constitute a fire hazard, shall be placed in closed metal containers, and removed from the work area at the end of each day's work.

2.8.2 FUGITIVE EMMISSIONS

The Contractor shall take measures to prevent all fugitive emissions from all surface preparation and coating application activities.

The Contractor shall be responsible for masking and otherwise protecting all name plates, switch plates, date tags, gauge dials, etc., to avoid coating over them.

The Contractor shall be responsible for adequately protecting all machinery and plant property from damage due to material overspray. Over spray damage is to be the responsibility of the Contractor. Signs are to be posted indicating spraying is in progress. Designated parking is to be enforced.

2.8.3 LIME SLURRY TANK COMPONENTS AND APPLICATION

Application #1 - Floor and Wall surfaces from the floor 8 foot up the wall; Baffles, Baffle support clips and Baffle Bracing (if present) – Lime Slurry Tank.

Primer: Prime prepared substrate with ProPolymer, Series 1402 Primer at 3-5 mils dft.

Mortar Basecoat with embedded Woven Roving: Trowel apply Vinester, Series 1415 mixed with Bulking Additive Series 211-9111 to make a mortar. Trowel apply this mortar at a nominal 1/8" thickness and immediately embed Series 211-0228 Woven Roving. Saturate the Woven Roving with Series 1415 resin. Allow to cure.

Mortar Intermediate Coat: Trowel apply Vinester, Series 1415 mixed with Series 211-9215 Abrasion Resistant Aggregate. Apply this abrasion resistant mortar at a nominal 1/8" thickness. Allow to cure.

Holiday Test and repair all areas prior to applying topcoat.

Top Coat: Apply ProPolymer, Series 1432 at 15-20 mils dft.

Total system thickness will be a nominal 1/4".

Application #2 – Wall surfaces above 8 foot from floor – Lime Slurry Tank.

Primer: Prime prepared substrate with ProPolymer, Series 1402 Primer at 3-5 mils dft.

Basecoat: Trowel apply ProPolymer, Series 1422 Glass Platelet Filled Vinyl Ester. Apply material to achieve a nominal 45 mils dft with a minimum of no less than 40 mils dft. Maximum thickness per coat shall not exceed 60 mils dft.

Intermediate Coat: Trowel apply ProPolymer, Series 1422 Glass Platelet Filled Vinyl Ester. Apply material to achieve a nominal 45 mils dft with a minimum of no less than 40 mils dft. Maximum thickness per coat shall not exceed 60 mils dft.

Note: This material shall be a different color than the basecoat material.

Holiday Test and repair all lined areas prior to applying topcoat.

Top Coat: Apply ProPolymer, Series 1432 at 15-20 mils dft.

Total System Thickness: Nominal 90 mils dft with a minimum of no less than 80 mils dft.

Application #3 – Roof Surfaces – Lime Slurry Tank.

Primer: Prime prepared substrate with ProPolymer, Series 1402 Primer at 3-5 mils dft.

Stripe Coating Roof Area: All structural steel flange edges as well as other irregular surface substrates and areas that are difficult to achieve proper dry film thickness by spray application shall be stripe coated with ProPolymer, Series 1432 prior to the full application of ProPolymer, Series 1432. This stripe coating procedure is being done to assure that these surfaces are properly coated. The preferred application method is by roller application.

Basecoat: Following the Stripe coat application, apply a basecoat ProPolymer, Series 1432 Glass Pigmented Filled Vinyl Ester. Apply to achieve a nominal 25-30 mils dft. Maximum thickness per coat shall not exceed 40 mils dft.

Top Coat: Apply a Top coat of ProPolymer, Series 1432 Glass Pigmented Filled Vinyl Ester. Apply to achieve a nominal 25-30 mils dft. Maximum thickness per coat shall not exceed 40 mils dft.

Holiday Test and repair all coated areas after the second coating application.

<u>Total System Thickness:</u> Nominal – 50-60 mils dft with a minimum of no less than 45 mils dft.

NOTE: Colors shall be selected by Owner's representative from manufacturer's standard colors.

2.8.4 SCREEN ROOM FLOOR COMPONENTS AND APPLICATION

Application #4: Lime Silo - Grit Screen Room at the 16'6" elevation.

The application shall consist of all flooring around the equipment. It shall provide a rugged, slip-proof surface that will allow the operators to wash down more easily.

Note: Surface preparation shall be as instructed by manufacturer's representative.

Primer: Apply Uni-Bond Mastic, Series 118 at 6 to 8 mils dft. (Two coats are required over bare steel).

Top Coat: Apply Everthane, Series 248 at 2 to 3 mils dft. Color shall be selected by Owner's representative from manufacturer's standard colors.

2.9 INSPECTION

The Contractor shall provide full access to the storage, staging, and work areas for the Owner's representatives, inspectors, and the coating Manufacturer's representatives. The inspections shall be allowed to verify all aspects of preparation, application and curing processes. Inspections may include, but shall not be limited to:

- Verify coatings and other materials
- Verify surface preparations and application are as specified.
- Verify that DFT of each coat and total DFT of each coating system is as specified using wet film and dry film gauges. Dry Film Thickness (DFT), thickness of a coat of paint in fully cured state measured in mils (1/1000 inch).
- Check coatings for film characteristics or defects that would adversely affect performance or appearance of coating systems

2.9.1 HOLD POINTS

At minimum, various key stages of the coating/lining application shall act as hold points. At these hold points, inspections will be made to ensure that the proper quality of previous portions of the work have been achieved prior to the Contractor's personnel proceeding with the remainder of the work. At this point in the process, the Contractor shall stop all work to permit a careful inspection and recommence work once the inspection is complete and the work is authorized by the inspector. The minimal hold points for this scope of work are as follows:

- Environmental and Site Conditions – Have the weather or environmental conditions within the structure been checked for compliance with the

specification? This involves ambient air and humidity checks as well as checks on site such as jobsite cleanliness, proper protective measures for surfaces not to be coated, and safety requirements for personnel.

- Pre-Surface Preparation – Checking of pre-surface preparation conditions. Can the surface preparation method remove existing coatings and/or contaminants? Check to see if substrate repairs will be necessary to move forward. Is the substrate contaminated with oil or grease, etc.?
- Monitoring of Surface Preparation – Spot checking of degree of cleanliness, surface profile, and surface pH testing, where applicable. Also, the cleanliness of compressed air should be checked for lack of oil and moisture.
- Post Surface Preparation – Measure and inspect for proper degree of cleanliness and surface profile as specified.
- Monitoring of Material Applications – Checking wet film thickness and general film quality. Visually Inspecting for runs, sags, pinholes, holidays, etc. as the application process progresses.
- Post Application Inspection – Identify any defects in application work including pinholes, holidays, excessive runs or sags, proper adhesion, and/or any other problems such as inadequate or excessive film thickness.
- Post Cure Evaluation – Shall include but not be limited to and overall Dry Film Thickness Survey, and adhesion testing, Holiday Detection, or cure testing as required. Mark all areas identified as defective with an appropriate marking pen.
- Follow-up to Corrective Actions and Final Inspections. This involves reinspection of all corrective coating work performed by the Contractor to repair defects identified at prior Hold Points. This activity also combines with a final careful visual inspection along with any follow-up testing, like holiday detection, and DTF surveys, etc.

2.9.2 INSPECTION STANDARDS

Dry film thickness tests shall be conducted using a calibrated dry film thickness gauge in the presence of the Owner's Representative. The Contractor shall conduct the calibration test prior to checking dry film thickness. The calibration test shall be documented in the quality control documents. Dry film readings shall be taken in a 6' grid pattern throughout the entire Lime Slurry Tank. Each reading shall be written with grease free chalk or ink marker on the surface of the substrate at the location it was taken and recorded in the quality control documents.

The Contractor shall conduct a Holiday detection procedure in accordance with ASTM D5162-01/Method 2. Holiday testing shall be performed in the presence of the Owner's representative. The Contractor shall Holiday test every 1 ft^2 of the coated surface using a variable voltage spark tester at a target voltage of 100 volts/mil, but not less than 80 volts/mil. The intensity of the spark tester shall not exceed 100 volts/mil.

2.10 REPAIR

All areas of inadequate or deficient material application shall be repaired by the Contractor prior to project completion. The Contractor shall consult with the Manufacturer's representative for a proper procedure to correct any deficiencies. Proper surface preparations shall be made to ensure a seamless, tapered transition into intact coating. Roughen the existing surfaces to assure proper adhesion of the repair coats.

2.11 QUALITY CONTROL

The Contractor's Superintendent shall continuously monitor and inspect the progress and quality of the work. The Superintendent shall maintain daily logs to include ambient environment conditions, recording temperature, humidity, dewpoint, and surface temperature. Environmental quality logs shall be recorded 3 times per shift throughout the duration of the project.

The quality control records shall also include all surface preparation information. Inspection and documentation of the surface preparation shall also be documented prior to the application of any coating materials. Quality assurance records shall be maintained after the coating has cured and can be inspected.

The Contractor shall document the preparation of the coating materials. Including mixing quantities, ratios, and batch numbers. The documentation shall be dated and numbered to correspond with the application areas.

Any areas of deficiencies in surface preparation that require reblasting or chemical treatment shall be documented. Documents shall include photographs, charting, and quantifying the number and size of the areas.

The results of any visual inspections, dry film thickness tests, and holiday detection shall be documented in the quality control records. Any deficiencies discovered in the inspection process shall be documented photographically and charted on a drawing of the tanks surface. The number of deficiencies and size of the deficiencies shall be quantified by type.

The quality control documentation shall include thorough charting and photographic documentation of the areas and procedure of any repairs required to correct deficiencies in the initial coating processes. The Contractor shall document each area of repair and describe in detail the procedure the Manufacturer recommends using to repair the coating deficiency.

2.11.1 MANUFACTURER'S REPRESENTATIVE

A manufacturer's field service representative shall be on site as needed throughout the completion of the project to provide the Contractor with technical assistance and guidance for surface preparation and application of the coating/lining system. The manufacturer's representative shall be involved in all phases of the project to ensure the quality of the installation is in accordance with the manufacturer's quality standards.

2.11.2 REPORT

All quality control and inspection documentation shall be compiled into a comprehensive report organized in chronological order. A subsection of the report shall detail any repairs made to the coating, as a result of deficiencies during the inspection process. The report shall also detail the condition of the coating at completion of the project using charting, maps, photographs, and other visual representations of the tank that can be used for comparison in future inspections.

2.11.3 WARNINGS AND IDENTIFICATIONS

The Contractor shall provide signage at entry points to the vessel that may provide needed identification or warning to the type of coating or damage that can be caused to

the materials. This shall include but not be limited to signs indicating welding is prohibited.

3.0 QUALIFICATIONS

The Contractor shall be a firm specializing in the provision of services as outlined within this scope for large-scale utility precipitators and boilers used in the electric power industry. The Contractor shall substantiate its experience through the submittal of three (3) similar projects' **reference list with the bid**. The Contractor will be expected to perform the work without the assistance of Platte Generating Station personnel or tools and comply with plant safety regulations and equipment lockout/tag out procedures.

3.1 MANUFACTURER

The Manufacturer shall specialize in the manufacture of industrial coatings with a minimum of 10 years successful experience. The Manufacturer shall be able to demonstrate successful performance on comparable projects. The Manufacturer shall be able to provide single source responsibility. All coating materials and coating application accessories shall be products of a single manufacturer.

3.1.1 MANUFACTURER'S REPRESENTATIVE

The Manufacturer's representative shall have knowledge and training in the products being supplied by the manufacturer. The Manufacturer's representative shall have obtained a minimum NACE CIP Level 2 certification.

3.2 CONTRACTOR

The Contractor shall be a firm experienced in the application of specified coatings for a minimum of 5 years. The Contractor shall have experience on three projects of similar size, scope, application, and complexity to this project.

3.2.1 CONTRACTOR PERSONNEL

The Contractor shall employ and utilize experienced persons trained for the application of the specified materials.

3.2.2 SUBCONTRACTOR

All subcontractors utilized in the performance of any portion of the work specified shall be experienced and well qualified for the portion of the work they are performing. All subcontractors shall be identified in the submittal of the bid. Qualifications of all subcontractors shall be submitted with the bid and all subcontractors shall be subject to approval by the Owner and shall not be changed without the approval of the Owner.

3.3 SUPERINTENDANT

The Contractor shall provide well qualified supervisor(s) and a Job Superintendent who will fully direct all field operations for the duration of the project, serve as liaison to the Owner's designated representatives, be fully authorized to make any and all decisions affecting the work in the field and coordinate activities between the Contractor and its subcontractors, if any. A summary of the experience of the Superintendent proposed for this project shall be provided with the bid.

4.0 BIDDING

The Contractor shall include in his bid a lump sum not-to-exceed estimate of all costs associated with the scope of work herein. Including, but not limited to all expenses, equipment, labor, mobilization and demobilization, and subcontractors.

For bidding purposes, the Contractor shall estimate a welder being on site for one, 12 hour day.

Bids will be evaluated by the Owner based on price, schedule, quality, economy of operation, experience of contractor, and adherence to specification. The primary evaluation factor will be the lump sum price. The owner reserves the right to reject any or all bids or waive informalities and to accept whichever bid that may be in the best interest of owner, at its sole discretion. **Bids must be received by 2:00 P.M. Thursday, March 18th, 2021.**

Bidder is solely responsible for obtaining any clarifications to this specification as may be required for the Bidder to submit an accurate and complete bid proposal.

4.1 RATES

The Bid shall include, as a separate T&M rate attachment, firm unit pricing for all labor, equipment, fuel surcharges, welding, sundries **and expenses reflecting the charges to be used in billing T&M adjustments** that may be required for new work scope additions, additional services other than what is required in this specification or reductions in the same. All travel time and per diems shall be included in the hourly labor rates. The City of Grand Island will not be responsible for travel expenses to and from plant site. The City of Grand Island will not be responsible for any associated overnight expenses.

4.1.1 Time and Material Accounting

Contractor shall be required to maintain accurate job logs describing work performed by each crew throughout each day and daily time sheets detailing all work performed and expenses incurred **in the same format as the bid detail submittal**. Daily time sheets shall identify all individuals by name, craft and all hours worked on each portion of the work. Such job logs and time sheets shall accurately account for all man-hours with clear separation and identification of Time, equipment and Material as required accounting for the actual service hours and expenses. A sample timesheet shall be included in the bid to be approved by the owner's designated representative.

The timesheets/logs shall clearly detail the specific work that was accomplished during the shift. These sheets shall be presented to the owner's representative on a daily basis for review with the contractor's superintendent. Any presentation of timesheets/logs deferred more than 48 hrs. before being presented to the owner's representative shall be null and void. The Owners representative will sign these documents as a record of receipt and review. Any corrections that need to be made to such signed documents shall be implemented upon the discovery of the error and both parties shall initial the change made on the form. These records will then serve as record of the work performed and a basis for determining the final billing.

4.2 TERMS AND CONDITIONS

Provide all other proposed terms and conditions which will be in effect during the performance of the work as a separate attachment with the bid. Any exceptions the bidder wishes to take regarding the Owners specifications and contract documents must be submitted with the bid.

4.3 DEVIATIONS

The bid shall provide any explanation of any anticipated deviations from the detailed scope of work or schedules.

The Platte Generating Station is NOT tax exempt and is subject to 7.5% sales tax. See the Nebraska Department of Revenue web site at www.revenue.state.ne.us for contractor's tax information.

5.0 SAFETY

The Contractor is required to follow their OSHA regulations for work in areas may be considered as confined spaces. NOTE: All contractors must submit **with the bid** a copy of their OSHA compliant Confined Space Procedure and Respiratory Protection Procedure. The Contractor will be required to provide proof that workers have successfully completed respiratory fit testing and pulmonary function testing and have been trained for confined space entry.

The Contractor shall be responsible for compliance with all safety practices as required by the regulatory agencies governing the Contractor's operations as well as all safety requirements of the Contractor's organization and shall submit historical evidence of such compliance. All personnel working on site will be required to participate in the plant's safety orientation prior to performing any work on site at PGS.

The plant has an equipment lockout/tag out procedure to prevent the unauthorized starting of motors and the unauthorized movement of valves and dampers. The Contractor is required to use the procedure and add its own locks/tags on top of the plant lock/tags if required. *Removal of plant locks/tags is not allowed and is cause for removal from the plant site.*

The Contractor is responsible for the safety of the work under its direct control. Use explosion proof lighting, fans, blowers and electrical equipment, non-sparking tools, clothes, and shoes. Properly ground all structures and equipment. Use procedures that prevent electrical sparks. Where properly fitted NIOSHA/MSHA approved air respirator. Provide appropriate air monitoring to demonstrate vapor/mist levels are within allowable limits.

The Contractor is responsible for the health and safety of its employees and its subcontractors' employees. The Contractor shall have and approved safety and health program for all Contractor employees and subcontractors. The Contractor shall designate a safety representative to participate in safety meetings when requested. The safety representative shall maintain accurate records of accidents, occupational illnesses, fatalities, or OSHA citations.

The Contractor shall maintain its work area a clean, neat, and safe condition. Smoking, matches, lighters, or other spark/flame producing items shall be prohibited in the painting, curing, or storage areas. Adequate ventilation shall be provided and maintained during the preparation, application, and curing phases of the work. The ventilation system shall adequately remove dust and fumes to prevent the accumulation of volatile gases or injury to workmen.

5.1 MANUFACTURER

All manufacturers' safety instructions must be strictly followed through all phases of the contract.

6.0 INSURANCE

The contractor shall comply with the attached City's insurance requirements

7.0 PERFORMANCE AND PAYMENT BOND

The successful Bidder shall file with the OWNER Performance and Payment Bonds in the full amount (100 percent) of the Contract price, as security for the faithful performance of the Contract and the payment of all persons supplying labor and materials for the Work under this Contract, and to cover all guarantees against defective workmanship or materials, or both, for a period of 1 year after the date of final acceptance of the Work by the OWNER. The Surety furnishing these bonds shall have a record of service satisfactory to the OWNER, be authorized to do business in the State where the OWNER's project is located and shall be named on the current list of approved Surety Companies, acceptable on Federal bonds as published by the Audit Staff, Bureau of Accounts, U.S. Treasury Department.

The Attorney-in-Fact (Resident Agent) who executes these bonds on behalf of the Surety must attach a notarized copy of his power-of-attorney as evidence of his authority to bind the Surety on the date of execution of the bond.

8.0 DRAWINGS AND SITE INFORMATION

A selection of drawings has been provided with the bid package for reference only. Additional drawings are available for review at Platte Generating Station office. The Contractor is responsible for making such pre-bid site visits as required to obtain additional details for bidding and execution of the work and for clarification of any questions or concerns the bidder may have related to the work scope and site conditions.

ATTACHMENTS:

PDS1402	Propolymer Series 1402 Product Data Sheet
PDS1415	Vinester Series 1415 Product Data Sheet
PDS211-9215	Abrasion Resistant Powder Series 211-9215 Product Data Sheet
PDS211-228	Woven Roving Series 211-228 Product Data Sheet
PDS1432	Propolymer Series 1432 Product Data Sheet
PDS44809	Smoothing Agent Series 44-809 Product Data Sheet
PDS118	Uni-Bond Mastic Series 118 Product Data Sheet
PDS248	Everthane Series 248
13-1802-06	Bottom Section Details of (1) 14'-0" Ø Skirt Support Storage Silo
13-1802-09	Bottom Section Details of (1) 14'-0" Ø Skirt Support Storage Silo

MINIMUM INSURANCE REQUIREMENTS
CITY OF GRAND ISLAND, NEBRASKA

The successful bidder shall obtain insurance from companies authorized to do business in Nebraska of such types and in such amounts as may be necessary to protect the Bidder and the interests of the City against hazards or risks of loss as hereinafter specified. This insurance shall cover all aspects of the Bidder's operations and completed operations. Failure to maintain adequate coverage shall not relieve Bidder of any contractual responsibility or obligation. Minimum insurance coverage shall be the amounts stated herein or the amounts required by applicable law, whichever are greater.

1. WORKERS COMPENSATION AND EMPLOYER'S LIABILITY

This insurance shall protect the Bidder against all claims under applicable State workers compensation laws. This insurance shall provide coverage in every state in which work for this project might be conducted. The liability limits shall not be less than the following:

Workers Compensation	Statutory Limits
Employers Liability	$100,000 each accident
	$100,000 each employee
	$500,000 policy limit

2. BUSINESS AUTOMOBILE LIABILITY

This insurance shall be written in comprehensive form and shall protect the Bidder, Bidder's employees, or subcontractors from claims due to the ownership, maintenance, or use of a motor vehicle. The liability limits shall not be less than the following:

Bodily Injury & Property Damage	$ 500,000 Combined Single Limit

3. COMPREHENSIVE GENERAL LIABILITY

The comprehensive general liability coverage shall contain no exclusion relative to explosion, collapse, or underground property. The liability limits shall not be less than the following:

Bodily Injury & Property Damage	$ 500,000 each occurrence
	$1,000,000 aggregate

4. UMBRELLA LIABILITY INSURANCE

This insurance shall protect the Bidder against claims in excess of the limits provided under employer's liability, comprehensive automobile liability, and commercial general liability policies. The umbrella policy shall follow the form of the primary insurance, including the application of the primary limits. The liability limits shall not be less than the following:

Bodily Injury & Property Damage	$1,000,000 each occurrence
	$1,000,000 general aggregate

5. ADDITIONAL REQUIREMENTS

The City may require insurance covering a Bidder or subcontractor more or less than the standard requirements set forth herein depending upon the character and extent of the work to be performed by such Bidder or subcontractor.

Insurance as herein required shall be maintained in force until the City releases the Bidder of all obligations under the Contract.

The Bidder shall provide and carry any additional insurance as may be required by special provisions of these specifications.

6. CERTIFICATE OF INSURANCE

Satisfactory certificates of insurance shall be filed with the City prior to starting any work on this Contract**. The certificates shall show the City as an additional insured on all coverage except Workers Compensation. The certificate shall state that thirty (30) days written notice shall be given to the City before any policy is cancelled (strike the "endeavor to" wording often shown on certificate forms). If the Bidder cannot have the "endeavor to" language stricken, the Bidder may elect to provide a new certificate of insurance every thirty (30) days during the contract. Bidder shall immediately notify the City if there is any reduction of coverage because of revised limits or claims paid which affect the aggregate of any policy.**

TNEMEC

PROPOLYMER™ SERIES 1402

PRODUCT DATA SHEET

PRODUCT PROFILE

GENERIC DESCRIPTION Elevated Temperature Vinyl Ester

COMMON USAGE Series 1402 is a food grade, vinyl ester primer for complete FDA-compliant lining systems in concrete, steel or stainless-steel tanks. Fast-cure characteristics allow for quick application of subsequent coats, limiting downtime and facility disruption. Series 1402 is the only approved primer for the ProPolymer food grade product line. Replaces ProPolymer 4808.

COLORS 900 Clear

FINISH Gloss

SPECIAL QUALIFICATIONS Complies with the requirements and extractive limitations of US FDA 21 CFR Part 175.300 Resinous and Polymeric Coatings for tanks or other repeated use direct food storage or mixing vessels 5 gallons or greater under conditions of use C-E with all food types. Compliance was based upon raw material supplier documents, and third party analytical and extractive test results (HKGH02404112 and HKGH02409467).

COATING SYSTEM

SURFACER/FILLER/PATCHER Series 1402 extended with 211-0211

INTERMEDIATE Series 1420, 1422

TOPCOATS Series 1430, 1432

SURFACE PREPARATION

STEEL **Immersion Service:** SSPC-SP10/NACE 2 Near-White Metal Blast Cleaning or ISO Sa 2 1/2 Very Thorough Blast Cleaning with a minimum angular anchor profile of 3.0 mils. **Note:** For aggressive cargo exposures or immersion in elevated temperatures, an SSPC-SP5/NACE 1 or ISO Sa 3 Blast Cleaning to Visually Clean Steel with a minimum angular anchor profile of 3.0 mils may be required. Contact Tnemec Technical Service for more information.

CONCRETE Allow new cast-in-place concrete to cure a minimum of 28 days at 75°F (24°C). Verify concrete dryness in accordance with ASTM F 1869 "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride" (moisture vapor transmission should not exceed three pounds per 1,000 square feet in a 24 hour period), F 2170 "Standard Test Method for Determining Relative Humidity in Concrete using in situ Probes" (relative humidity should not exceed 80%), or D 4263 "Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method" (no moisture present). Prepare concrete surfaces in accordance with NACE No. 6/SSPC-SP13 Joint Surface Preparation Standards and ICRI Technical Guidelines. Abrasive blast, shot-blast, water jet or mechanically abrade concrete surfaces to remove laitance, curing compounds, hardeners, sealers and other contaminants and to provide a minimum ICRI-CSP 3 surface profile. Large cracks, voids and other surface imperfections should be filled with a recommended filler or surfacer.

ALL SURFACES Must be clean, dry and free of oil, grease and other contaminants.

TECHNICAL DATA

VOLUME SOLIDS 85% (mixed). Series 1402 contains a reactive monomer and some loss will occur during application and cure. Actual solids by volume will vary depending upon temperature and air movement.

RECOMMENDED DFT 2.0 mils to 6.0 mils (50 microns to 152 microns).

CURING TIME

Temperature	To Recoat	Immersion Service
90°F (32°C)	2 hours min. 24 hours max.	24 hours
70°F (21°C)	2 hours min. 24 hours max.	24 hours

Note: If more than 24 hours has elapsed between coats, the Series 1402 surface must be mechanically abraded before topcoating.

VOLATILE ORGANIC COMPOUNDS EPA Method 24
1.67 lbs/gallon (200 grams/litre)

THEORETICAL COVERAGE 1,363 mil sq ft/gal (33.4 m²/L at 25 microns). See APPLICATION for coverage rates

NUMBER OF COMPONENTS Two: Part A (base) and Part B (catalyst)

PACKAGING

	Part A (Partially filled)	Part B (Partially filled)	Yield (mixed)
Medium Kit	5 gallon pail	Pint bottle	5.0 gallons (18.9 L)
Small Kit	1 gallon can	4 oz bottle	1.0 gallons (3.7 L)

NET WEIGHT PER GALLON 8.89 lbs ± 0.25 lbs (4.0 ± 0.11 kg) (mixed)

STORAGE TEMPERATURE Minimum 40°F (4°C) Maximum 80°F (26°C)

TEMPERATURE RESISTANCE (Dry) Continuous 240°F (116°C)

SHELF LIFE Part A: 3 months; Part B: 12 months at recommended storage temperatures.
DUE TO THE REACTIVE NATURE OF THE VINYL ESTER RESINS AND THE CORRESPONDING LIMITED SHELF LIFE, EXPEDITIOUS USE OF THIS PRODUCT IS SUGGESTED, SINCE JOBSITE STORAGE CONDITIONS ARE BEYOND TNEMEC'S CONTROL, THIS PRODUCT IS NON-RETURNABLE.

FLASH POINT - SETA Part A: 85°F (29°C) Part B: 133°F (56°C)

PROPOLYMER™ | SERIES 1402

HEALTH & SAFETY

Paint products contain chemical ingredients which are considered hazardous. Read container label warning and Safety Data Sheet for important health and safety information prior to the use of this product.
Keep out of the reach of children.

APPLICATION

COVERAGE RATES

	Dry Mils (Microns)	Wet Mils (Microns)	Sq Ft/Gal (m²/Gal)
Minimum	2.0 (50)	2.4 (62)	682 (63)
Maximum	6.0 (152)	7.0 (177)	227 (21)

Actual spreading rates will vary with surface profile, amount of overspray and surface irregularities. Application of coating below minimum or above maximum recommended dry film thicknesses may adversely affect coating performance. THIS PRODUCT SHOULD NOT BE APPLIED BELOW 60°F (16°C) MATERIAL TEMPERATURE.

MIXING

Power mix contents of Part A (base) thoroughly, making sure no pigment remains on the bottom of the can. Add the Part B (catalyst) slowly to the Part A while under agitation. Ensure that all Part B is blended with Part A by scraping the pail walls with a flexible spatula. Continue to agitate until thoroughly mixed. Care should be exercised so as not to entrap air in the mixed material. Do not use mixed material beyond pot life limits.

THINNING

Do not thin.

POT LIFE

30 minutes at 75°F (24°C)
Note: At higher temperatures pot life will decrease (use caution in spray equipment). In hot weather, material should be cooled to 65°F to 80°F (18°C to 27°C) prior to mixing and application to improve workability and avoid shortened pot life.

SPRAY LIFE

25 minutes at 75°F (24°C)

APPLICATION EQUIPMENT

Airless Spray

Tip Orifice	Atomizing Pressure	Mat'l Hose ID	Manifold Filter
0.013"-0.017" (330-431 microns)	3000-4000 psi (206-275 bar)	3/8" (9.5 mm)	60 mesh (250 microns)

Use appropriate tip/atomizing pressure for equipment, applicator technique and weather conditions.
Brush: Recommended for small areas only. Use high quality natural or synthetic bristle brushes.
Roller: Use 1/4" or 3/8" (6.5 mm to 9.5 mm) high quality synthetic woven nap covers.

SURFACE TEMPERATURE

Minimum 60°F (16°C), optimum 70°F (21°C), maximum 100°F (38°C). The surface should be dry and at least 5°F (3°C) above the dew point. At surface temperatures below 60°F (16°C), Series 1402 will not cure properly or obtain maximum chemical resistance. At relative humidities above 75%, the cure of this coating may be retarded. It is also recommended that all precautions be taken to insure that adequate forced-air ventilation exists.

MATERIAL TEMPERATURE

For optimum application, handling and performance, the material temperature during application should be between 60°F and 90°F (16°C and 32°C). Temperature will affect the workability. Cool temperatures increase viscosity and lengthen pot life. Warm temperatures will decrease viscosity and shorten pot life.

CLEANUP

Clean and purge lines immediately after use with MEK.

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TNEMEC

PRODUCT DATA SHEET

VINESTER® SERIES 1415

PRODUCT PROFILE

GENERIC DESCRIPTION Epoxy Vinyl Ester

COMMON USAGE This corrosion resistant resin is used as the base product for many reinforced applications due to the versatility provided from the product being supplied as "neat" or non-pigmented. A versatile selection for many secondary containments and process floors, Series 1415 is best for caustic and high-ph applications, and when used as the base material for silica-free systems. Use with specialty mortar powders, to embed glass mats, as a saturant coat or as a pigmented self-leveling finish coat. Series 1415 was formerly ProPolymer 4860.

COLORS 900 Clear **Note:** Supplied clear. Can be field-tinted (Series 1400 Color Packs) in five Vinester colors. Contact your Tnemec representative for additional information.

FINISH Semi-gloss

COATING SYSTEM

PRIMERS **Steel:** Self-priming or Series 1402
Concrete: Series 1402

TOPCOATS Series 1415, 1430, 1432

SURFACE PREPARATION

STEEL **Immersion Service/Severe Exposure/Elevated Temperatures:** SSPC SP5/ NACE No.1 White Metal Blast Cleaning or ISO Sa3 Blast Cleaning to Visually Clean with a minimum angular anchor profile of 3.0 mils (75 microns) is required. **Non-Immersion Service:** SSPC SP10/NACE No. 2 Near White Metal Blast Cleaning or ISO Sa 2 ½ Very Thorough Blast Cleaning with a minimum angular anchor profile of 3.0 mils (75 microns) is required.

CONCRETE Allow new cast-in-place concrete to cure a minimum of 28 days at 75°F (24°C). Verify concrete dryness in accordance with ASTM F 1869 "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride" (moisture vapor transmission should not exceed three pounds per 1,000 square feet in a 24 hour period), F 2170 "Standard Test Method for Determining Relative Humidity in Concrete using in situ Probes" (relative humidity should not exceed 80%), or D 4263 "Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method" (no moisture present). Prepare concrete surfaces in accordance with NACE No. 6/SSPC-SP13 Joint Surface Preparation Standards and ICRI Technical Guidelines. Abrasive blast, shot-blast, water jet or mechanically abrade concrete surfaces to remove laitance, curing compounds, hardeners, sealers and other contaminants and to provide a minimum ICRI-CSP 3 surface profile. Large cracks, voids and other surface imperfections should be filled with a recommended filler or surfacer.

TECHNICAL DATA

VOLUME SOLIDS 85% (mixed). Series 1415 contains a reactive monomer and some loss will occur during application and cure. Actual solids by volume will vary depending upon temperature and air movement.

RECOMMENDED DFT **Topcoat Application:** 20.0-30.0 mils (508-762 microns)
Mortar Applications: +50.0 mils (+1270 microns)
Abrasion Resistant Applications: +50 mils (+1270 microns)

CURING TIME

Temperature	To Recoat	Immersion	Maximum Recoat
90°F (32°C)	3 hours	20 hours	3 days
75°F (24°C)	4 hours	24 hours	4 days
50 °F (10°C)	12 hours	4 days	5 days

Note: Certain service applications may require elevated temperature and/or longer cure times for placing in service.

VOLATILE ORGANIC COMPOUNDS EPA Method 24
0.93 lbs/gallon (111 grams/litre)

NUMBER OF COMPONENTS Two: Part A (base) and Part B (catalyst)

PACKAGING

	Part A (Partially filled)	Part B (Partially filled)	Yield (mixed)
Medium Kit	5 gallon pail	Pint bottle	4.76 gallons (18.0 L)
Small Kit	1 gallon	4 oz bottle	0.95 gallons (3.59 L)

Note: Color packs, mats and bulking additives are ordered separately, please reference the table below for additional product information.

Product Number	Description	Size
Series 1400	Color Packs (available in 5 colors)	QT, HP
Series 211-9111-UT	Bulking Additive	50 lb bag
Series 211-9215-UT	Abrasion Resistant Powder	50 lb bag
Series 211-9106-UT	Silica-Free Bulking Powder	50 lb bag
Series 211-0225-UT	Carbon Mat †	50" W x 300' L
Series 211-0226-UT	1.5 oz Fiberglass Mat †	6" W x 268' L
Series 211-0227-UT	1.5 oz Fiberglass Mat †	38" W x 268' L
Series 211-0228-UT	Woven Roving †	38" W x 312' L

†Available in full rolls only.

VINESTER® | SERIES 1415

STORAGE TEMPERATURE Minimum 35°F (2°C) Maximum 75°F (24°C)

TEMPERATURE RESISTANCE (Dry) Continuous: Neat Resin 200°F (94°C) Filled 240°F (116°C)
(Wet) Contact Tnemec Technical Service

SHELF LIFE Part A: 3 months at 35°F to 49°F (2°C to 9°C), 2 months at 50°F to 79°F (10°C to 26°C), 1 month at 80°F to 90°F (27°C to 32°C). Do not store at temperature below 35°F (2°C) or above 90°F (32°C).
DUE TO THE REACTIVE NATURE OF THE VINYL ESTER RESINS AND THE CORRESPONDING LIMITED SHELF LIFE, EXPEDITIOUS USE OF THIS PRODUCT IS SUGGESTED, SINCE JOBSITE STORAGE CONDITIONS ARE BEYOND TNEMEC'S CONTROL, THIS PRODUCT IS NON-RETURNABLE.
Part B: 12 months at recommended storage temperature.

FLASH POINT - SETA Part A: 90°F (32°C) Part B: 133°F (56°C)

HEALTH & SAFETY Paint products contain chemical ingredients which are considered hazardous. Read container label warning and Safety Data Sheet for important health and safety information prior to the use of this product.
Keep out of the reach of children.

APPLICATION

COVERAGE RATES The coverage rates and yields listed in the tables below can be used as a guide. It is recommended to contact your Tnemec representatives to assist with calculating resins, powders and other additives, as yield and coverage rates will change based upon system and product recommendations.

Saturant

	DFT Mils (microns)	Series 1400 Colorants	Bulking Additives: Series 211-9106, 211-9111 or 211-9215	Sq ft (m²)/Kit
Medium Kit	20.0 (510)	n/a	n/a	340 (31.6)
Small Kit	20.0 (510)	n/a	n/a	68 (6.3)

Pigmented

	DFT Mils (microns)	Series 1400 Colorants	Bulking Additives: Series 211-9106, 211-9111 or 211-9215	Sq Ft (m²)/Kit
Medium Kit	20.0 (510)	Quart	See Note	340 (31.6)
Small Kit	20.0 (510)	Half Pint	See Note	68 (6.3)

Note: For vertical applications as a finish coat up to 10 mils, add 8 to 10 pounds of 211-9111 (if needed S211-0211 fumed silica may also be added).

Mortar

	DFT Mils (microns)	Series 1400 Colorants (optional)	Bulking Additives: Series 211-9106, 211-9111 or 211-9215	Sq Ft (m²)/Kit
Medium Kit	50.0 (1270)	Quart	2 bags or 95 pounds	250 (23.2)
Small Kit	50.0 (1270)	Half Pint	20 pounds (reduce 1 bag by 30 pounds)	49 (4.6)

Spread rates are theoretical and at a specific mil thickness. Actual spread rates will vary with surface profile and irregularities as well as accurate mixing of additives, waste in container and applicator proficiency.

MIXING Power mix contents of Part A (base) thoroughly, making sure no pigment remains on the bottom of the can. Add the Part B (catalyst) slowly to the Part A while under agitation. Ensure that all Part B is blended with Part A by scraping the pail walls with a flexible spatula. Continue to agitate until thoroughly mixed. **Note:** Do not use mixed material beyond pot life limits.
Field Colorant: If adding Series 1400 color packs, add the color pack to the Part A and thoroughly mix using a variable speed drill with a ps jiffy blade until a uniform color is achieved, prior to adding Part B. Add one half pint of Series 1400 per small kit of Series 1415 Part A and B liquids.
Bulking Additive: Use an appropriate type of mortar mixer and slowly blend recommended amounts of bulking additive with properly proportioned and mixed Part A and B mixed liquids. **Note:** Bulking additives are normally added at a rate of 20 pounds per mixed gallon of liquids but may be adjusted as needed for certain applications. Adjustments are usually no more than 5-pounds, plus or minus, the recommended 20 pounds.

THINNING Do Not Thin.

POT LIFE 45 minutes at 75°F (24°C)

APPLICATION EQUIPMENT **Troweled:** Use a high grade metal trowel with rounded corners in addition to if needed, a mortar hawk to assist in transfer of mixed materials.
Finish Roll: Use a high quality 1/4" nap, shed resistant, woven fabric roller, lightly dampened with Series 44-809 Smoothing Agent over the surface while Series 1415 is still in a semi-fluid condition.

SURFACE TEMPERATURE Minimum 60°F (16°C), optimum 70°F (21°C), maximum 90°F (32°C). The surface should be dry and at least 5°F (3°C) above the dew point. At the surface temperatures below 60°F (16°C), Series 1415 will not cure properly or obtain maximum chemical resistance. At relative humidities above 75%, the cure of this coating may be retarded. It is also recommended that all precautions be taken to insure that adequate forced-air ventilation exists. **Note:** Do not apply in direct sunlight.

MATERIAL TEMPERATURE For optimum application, handling and performance, the material temperature during application should be between 60°F and 90°F (16°C and 32°C). Temperature will affect the workability. Cool temperatures increase viscosity and lengthen pot life. Warm temperatures will decrease viscosity and shorten pot life.

CLEANUP Clean all equipment and tools immediately after use with MEK.

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TNEMEC

PRODUCT DATA SHEET

ABRASION RESISTANT POWDER SERIES 211-9215

PRODUCT PROFILE

GENERIC DESCRIPTION Specially Blended Abrasion Resistant Ultra-Fine Bulking Powder

COMMON USAGE Series 211-9215 is used to create a highly abrasion resistant mortar for areas of high wear and impingement. Series 211-9215 is added to Series 1415, 1416 or 1418 and applied over glass roving or directly to properly prepared and primed surfaces.

COLORS Series 211-9215: Brown
Series 211-9214: Off White (Silica-Free)

TECHNICAL DATA

PACKAGING Available in 50-pound bags.

STORAGE TEMPERATURE Minimum 40°F (4°C) Maximum 80°F (27°C)
Note: Material should be stored in a dry conditioned space.

HEALTH & SAFETY This product contains chemical ingredients which are considered hazardous. Read container label warning and Material Safety Data Sheet for important health and safety information prior to the use of this product. **Keep out of the reach of children.**

APPLICATION

MIXING Use an appropriate type of mortar mixer and slowly blend recommended amounts of bulking powder with properly proportioned and mixed Part A and B mixed liquids. **Note:** Bulking additives are normally added at a rate of 20 pounds per mixed gallon of liquids but may be adjusted as needed for certain applications. Adjustments are usually no more than 5-pounds, plus or minus, the recommended 20 pounds. **Note:** Reference the Series 1415, 1416 or 1418 product data sheets for additional information.

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TNEMEC

PRODUCT DATA SHEET

WOVEN ROVING SERIES 211-228

PRODUCT PROFILE

GENERIC DESCRIPTION 18-ounce Fiberglass Woven Roving

COMMON USAGE Provides an extra heavy fiberglass mat reinforcement to epoxy & vinyl ester lining systems. Series 211-228 increases impact, thermal shock and abrasion resistance for high wear areas when topcoated with an appropriate mortar finish.

SIZE Series 211-228: 38 in x 312 ft (988 sq ft)

COATING SYSTEM

BASE COATS Series 206SC, 215, 237SC, 239SC, 252SC, 1415, 1416, 1418

SATURANT Series 206SC, 237SC, 239SC, 252SC, 1415, 1416, 1418

TOPCOATS Series 206SC, 237SC, 239SC, 252SC, 1415 (pigmented and mortar coats), 1416 (pigmented and mortar coats), 1418 (pigmented and mortar coats), 1430, 1432, 1436

TECHNICAL DATA

PACKAGING Available in full rolls: Series 211-228: 38 in x 312 ft (988 sq ft)

HEALTH & SAFETY Read container label warning and Safety Data Sheet for important health and safety information prior to the use of this product. **Keep out of reach of children.**

APPLICATION

APPLICATION Measure the length desired (equal to the area to be base coated.) This area will vary with application rate. Cut the glass with scissors or fiberglass shears. Roll up the cut piece of mat tightly for easier handling. While the base coat is still wet, lay and press the 18-oz fiberglass roving chopped strand reinforcing mat into the surface. Using a rib roller, backroll the bonded side of the mat to fully embed and remove any air pockets. Once mat is placed, immediately saturate until mat is completely wet out. **Caution: The saturant coat should be applied at a thickness to only wet out the fiberglass mat. Any attempt to build a film on top of the mat may result in sags and runs.**

APPLICATION EQUIPMENT 1/8" Rib Roller

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TNEMEC

PROPOLYMER™ SERIES 1432

PRODUCT DATA SHEET

PRODUCT PROFILE

GENERIC DESCRIPTION Elevated Temperature Epoxy Vinyl Ester

COMMON USAGE Series 1432 is an FDA-compliant, vinyl ester lining for food grade tanks, vessels and other structures. Highly filled with glass flake, Series 1432 is specially formulated to provide exceptional service in thermal cycling and chemical reaction vessels. Applied by roller or spray, it may be used as a stand-alone lining system or as a topcoat for added protection over trowel applied vinyl ester linings. Replaces ProPolymer 1422S.

COLORS 901 White, 909 Dent Yellow

FINISH Semi-gloss

SPECIAL QUALIFICATIONS Complies with the requirements and extractive limitations of US FDA 21 CFR Part 175.300 Resinous and Polymeric Coatings for tanks or other repeated use direct food storage or mixing vessels 5 gallons or greater under conditions of use C-E with all food types. Compliance was based upon raw material supplier documents, and third party analytical and extractive test results (HKGH02410973).

COATING SYSTEM

PRIMERS **Steel:** Self-priming or Series 1402
Concrete: Series 1402

SURFACE PREPARATION

STEEL **Immersion Service:** SSPC-SP10/NACE 2 Near-White Metal Blast Cleaning or ISO Sa 2 1/2 Very Thorough Blast Cleaning with a minimum angular anchor profile of 3.0 mils. **Note:** For aggressive cargo exposures or immersion in elevated temperatures, an SSPC-SP5/NACE 1 or ISO Sa 3 Blast Cleaning to Visually Clean Steel with a minimum angular anchor profile of 3.0 mils may be required. Contact Tnemec Technical Service for more information.

CONCRETE Allow new cast-in-place concrete to cure a minimum of 28 days at 75°F (24°C). Verify concrete dryness in accordance with ASTM F 1869 "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride" (moisture vapor transmission should not exceed three pounds per 1,000 square feet in a 24 hour period), F 2170 "Standard Test Method for Determining Relative Humidity in Concrete using in situ Probes" (relative humidity should not exceed 80%), or D 4263 "Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method" (no moisture present). Prepare concrete surfaces in accordance with NACE No. 6/SSPC-SP13 Joint Surface Preparation Standards and ICRI Technical Guidelines. Abrasive blast, shot-blast, water jet or mechanically abrade concrete surfaces to remove laitance, curing compounds, hardeners, sealers and other contaminants and to provide a minimum ICRI-CSP 3 surface profile. Large cracks, voids and other surface imperfections should be filled with a recommended filler or surfacer.

ALL SURFACES Must be clean, dry and free of oil, grease and other contaminants.

TECHNICAL DATA

VOLUME SOLIDS 85% (mixed). Series 1432 contains a reactive monomer and some loss will occur during application and cure. Actual solids by volume will vary depending upon temperature and air movement.

RECOMMENDED DFT 10.0 to 25.0 mils (250 to 635 microns) per coat.

CURING TIME

Temperature	To Recoat	Immersion Service
90°F (32°C)	3 hours min. 3 days max.	20 hours
75°F (24°C)	4 hours min. 4 days max.	24 hours

VOLATILE ORGANIC COMPOUNDS EPA Method 24
0.62 lbs/gallon (74 grams/litre)

THEORETICAL COVERAGE 1,363 mil sq ft/gal (33.4 m²/L at 25 microns). See APPLICATION for coverage rates.

NUMBER OF COMPONENTS Two: Part A (base) to Part B (catalyst)

PACKAGING

	Part A (Partially filled)	Part B (Partially filled)	Yield (mixed)
Medium Kit	5 gallon pail	Pint bottle	5.0 gallons (18.9 L)
Small Kit	1 gallon can	4 oz bottle	1.0 gallons (3.7 L)

NET WEIGHT PER GALLON 10.9 lbs ± 0.25 lbs (4.9 ± 0.11 kg) (mixed)

STORAGE TEMPERATURE Minimum 50°F (10°C) Maximum 75°F (24°C)

TEMPERATURE RESISTANCE (Dry) Continuous 240°F (115°C)

SHELF LIFE Part A: 3 months; Part B: 12 months at recommended storage temperature.
DUE TO THE REACTIVE NATURE OF THE VINYL ESTER RESINS AND THE CORRESPONDING LIMITED SHELF LIFE, EXPEDITIOUS USE OF THIS PRODUCT IS SUGGESTED, SINCE JOBSITE STORAGE CONDITIONS ARE BEYOND TNEMEC'S CONTROL, THIS PRODUCT IS NON-RETURNABLE.

FLASH POINT - SETA Part A: 79°F (26°C) Part B: 133°F (56°C)

HEALTH & SAFETY Paint products contain chemical ingredients which are considered hazardous. Read container label warning and Safety Data Sheet for important health and safety information prior to the use of this product.
Keep out of the reach of children.

PROPOLYMER™ | SERIES 1432

APPLICATION

COVERAGE RATES

	Dry Mils (Microns)	Wet Mils (Microns)	Sq Ft/Gal (m²/Gal)
Minimum	10.0 (250)	12.0 (298)	136 (13)
Maximum	25.0 (635)	29.0 (747)	55 (5)

Actual spreading rates will vary with surface profile, amount of overspray and surface irregularities. Application of coating below minimum or above maximum recommended dry film thicknesses may adversely affect coating performance. THIS PRODUCT SHOULD NOT BE APPLIED BELOW 60°F (16°C) MATERIAL TEMPERATURE.

MIXING

Power mix contents of Part A (base) thoroughly, making sure no pigment remains on the bottom of the can. Add the Part B (catalyst) slowly to the Part A while under agitation. Ensure that all Part B is blended with Part A by scraping the pail walls with a flexible spatula. Continue to agitate until thoroughly mixed. Care should be exercised so as not to entrap air in the mixed material. **Note:** Do not over mix, caution should be taken to avoid shearing the glass flake. Do not use mixed material beyond pot life limits.

THINNING

Do no thin.

POT LIFE

45 minutes at 75°F (24°C)
Note: At higher temperatures pot life will decrease (use caution in spray equipment).

SPRAY LIFE

30 minutes at 75°F (24°C)

APPLICATION EQUIPMENT

Airless Spray

Spray Gun	Pump Size	Tip Orifice	Atomizing Pressure	Mat'l Hose ID	Manifold Filter
Graco XHF, XTR-7 Gun or WIWA 500F	45:1, 56:1, X50 or X60	0.025"-0.029" (635-736 microns)	3000-4000 psi (206-275 bar)	See below	n/a

Use appropriate tip/atomizing pressure for equipment, applicator technique and weather conditions.
Material Hose ID: Attach (1) 25' x 1/2" hose to the pump. Attach (1) 25' x 3/8" hose to the 1/2" line. Attach (1) 3-6' x 1/4" hose to the 1/2" line and gun.
Brush: Recommended for small areas only. Use high quality natural or synthetic bristle brushes.
Roller: Roller application acceptable, may require multiple coats to achieve specified thickness. Use a solvent resistant, phenolic core roller with a minimum 1/2" nap.

SURFACE TEMPERATURE

Minimum 60°F (16°C), optimum 70°F (21°C), maximum 100°F (38°C). The surface should be dry and at least 5°F (3°C) above the dew point. At surface temperatures below 60°F (16°C), Series 1432 will not cure properly or obtain maximum chemical resistance. At relative humidities above 75%, the cure of this coating may be retarded. It is also recommended that all precautions be taken to insure that adequate forced-air ventilation exists.

MATERIAL TEMPERATURE

For optimum application, handling and performance, the material temperature during application should be between 60°F and 90°F (16°C and 32°C). Temperature will affect the workability. Cool temperatures increase viscosity and lengthen pot life. Warm temperatures will decrease viscosity and shorten pot life.

CLEANUP

Clean and purge lines immediately after use with MEK.

PRODUCT DATA SHEET

SMOOTHING AGENT SERIES 44-809

PRODUCT PROFILE

GENERIC DESCRIPTION Proprietary Modified Styrene

COMMON USAGE Used to remove trowel marks in vinyl ester-based mortars and glass flake-filled lining. **Note:** Series 44-809 is not to be used as a reducer or thinner. Do not use in products other than vinyl ester-based materials.

TECHNICAL DATA

VOLATILE ORGANIC COMPOUNDS 7.58 lbs/gal (908 g/l)

PACKAGING 1 gallon cans

NET WEIGHT PER GALLON 7.56 ± 0.25 lbs (3.4 ± .11 kg)

SHELF LIFE 24 months at recommended storage temperatures.

FLASH POINT - SETA 88°F (31°C)

APPLICATION

MIXING The Series 44-809 container should be gently shook by hand prior to use. The material is commonly applied to the vinyl ester materials to be smoothed by using a solvent resistant 3/8-inch to 1/2-inch nap roller lightly dampened with Series 44-809. Use a very light rolling pressure to remove trowel fins in mortar applications and to orient protruding glass flakes in tank linings.

This material may also be sparingly misted on to trowels for smoothing or directly on to the lining and then roll or troweled to achieve the same results. **Note:** When ambient and surface temperatures are above 90°F (32°C) this material may have effect on the film holding characteristics if too much is applied.

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TNEMEC

PRODUCT DATA SHEET

UNI-BOND MASTIC SERIES 118

PRODUCT PROFILE

GENERIC DESCRIPTION Mastic Waterborne Acrylic

COMMON USAGE A high-build, rust-inhibitive, elastomeric coating formulated for exceptional adhesion and corrosion resistance over minimally prepared aged coating systems. Series 118 is an excellent choice for projects where abrasive blast cleaning of the substrate is not possible and an anti-corrosive coating is needed. Uni-Bond Mastic accepts a variety of high-performance topcoats for the creation of a long-term protective and aesthetic coating system.

COLORS 1281 White, 03BR Washed Khaki, 06WH Albatross, 18YW Sponge, 19RD Ruby Red, 20GN Fairway, 25BL Fountain Bleu, 30GR Comet, 34GR Deep Space, 36BL Touch of Blue, 45GR Captain Hook, 83BR Kindling.

FINISH Matte

COATING SYSTEM

PRIMERS **Steel:** Self-priming

TOPCOATS Series 30, 72, 73, 700, V700, 701, V701, 740, 750, 1026, 1028, 1029, 1070, 1070V, 1071, 1071V, 1072, 1072V, 1074, 1074U, 1075, 1075U or 1095. **Note:** Series 118 is not intended to be a finish coat. A topcoat is strongly recommended for aesthetics and avoidance of dirt accumulation.

SURFACE PREPARATION

STEEL Minimum surface preparation of bare steel or previously painted steel requires a cleanliness level as defined by SSPC-SP WJ-4/NACE WJ-4 Light Cleaning by use of Low Pressure Water Cleaning (LP WC) between 3,500 and 5,000 psi using a 0 degree rotating nozzle. If all visible contaminates, loose mill scale, loose rust and other corrosion products, and loose paint have not been removed, SSPC-SP2 Hand Tool Cleaning or SSPC-SP3 Power Tool Cleaning should be employed until the surface cleanliness definition is met.

GALVANIZED STEEL & ALUMINUM Surface preparation recommendations will vary depending on substrate and exposure conditions. Consult the latest version of Tnemec Technical Bulletin 10-78 or contact your Tnemec representative or Tnemec Technical Services.

ALL SURFACES Must be clean, dry and free of dust, dirt, oil, grease and other contaminants.

TECHNICAL DATA

VOLUME SOLIDS 55.0 ± 2.0% †

RECOMMENDED DFT 6.0 to 8.0 mils (150 to 205 microns) per coat. **Note:** Two coats are required over bare steel. Overcoating an aged system that is mostly intact and tightly adhered can be achieved by spot priming prior to applying a full coat.

CURING TIME

Temperature	To Touch	To Handle	To Recoat
75°F (24°C)	30 minutes	4 hours	8 hours

Curing time varies with surface temperature, air movement, humidity and film thickness.

VOLATILE ORGANIC COMPOUNDS **Unthinned:** 0.26 lbs/gallon (31 grams/litre) †

HAPS **Unthinned:** 0.02 lbs/gal solids

THEORETICAL COVERAGE 882 mil sq ft/gal (21.6 m²/L at 25 microns). See APPLICATION for coverage rates. †

NUMBER OF COMPONENTS One

PACKAGING 5 gallon (18.9L) pails and 1 gallon (3.79L) cans.

NET WEIGHT PER GALLON 11.51 ± 0.25 lbs (5.1 ± .11 kg) †

STORAGE TEMPERATURE Minimum 45°F (7°C) Maximum 110°F (43°C)

TEMPERATURE RESISTANCE (Dry) Continuous 170°F (77°C) Intermittent 200°F (93°C)

SHELF LIFE 6 months at recommended storage temperature

FLASH POINT - SETA N/A

HEALTH & SAFETY Paint products contain chemical ingredients which are considered hazardous. Read container label warning and Material Safety Data Sheet for important health and safety information prior to the use of this product.
Keep out of the reach of children.

UNI-BOND MASTIC | SERIES 118

APPLICATION

COVERAGE RATES

	Dry Mils (Microns)	Wet Mils (Microns)	Sq Ft/Gal (m²/Gal)
Suggested	7.0 (175)	13.0 (330)	126 (11.7)
Minimum	6.0 (150)	11.0 (280)	147 (13.7)
Maximum	8.0 (205)	15.0 (380)	110 (10.2)

Allow for overspray and surface irregularities. Wet film thickness is rounded to the nearest 0.5 mil or 5 microns. Application of coating below minimum or above maximum recommended dry film thicknesses may adversely affect coating performance. †

MIXING

Mix by stirring to uniform consistency without creating air bubbles. Stir thoroughly, making sure no pigment remains on the bottom of the can.

THINNING

DO NOT THIN.

APPLICATION EQUIPMENT

Airless Spray

Tip Orifice	Atomizing Pressure	Mat'l Hose ID	Manifold Filter
0.015"-0.027" (380-685 microns)	2500-3000 psi (172-206 bar)	3/8" (9.5 mm)	30 mesh (600 microns)

Use appropriate tip/atomizing pressure for equipment, applicator technique and weather conditions.
Roller: Rolling is an acceptable method of building a film to the proper thickness, however it will not produce an aesthetically pleasing finish. Use 3/8" to 3/4" (9.5 mm to 19.0 mm) synthetic woven nap covers. Multiple coats may be required to achieve recommended film thickness, depending on applicator technique and roller nap size.
Brush: Recommended for small areas only. Use a stiff nylon brush. Work material into voids and avoid brushing out too thin. **Note:** Applying this product by roller or brush will result in a film with stiple and/or brush marks.

SURFACE TEMPERATURE

Minimum 45°F (7°C) Maximum 120°F (49°C)
The surface should be dry and at least 5°F (3°C) above the dew point.

CLEANUP

Flush and clean all equipment immediately after use with clean tap water. Finish by flushing all spray equipment with isopropyl alcohol.

† Values may vary with color.

CAUTION

Dry overspray can be wiped or washed from most surfaces. Satisfactory dry-fall performance depends upon height of work, weather conditions and equipment adjustment. Low temperature and high humidity are of particular concern. Test for each application as follows: Spray from 15 to 25 feet towards paint container. The material then should readily wipe off. **Note:** Heat can fuse-dry overspray to surfaces. Always clean dry overspray from hot surfaces before fusing occurs. Be aware that exterior surface temperatures can be higher than air temperature.

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TNEMEC

PRODUCT DATA SHEET

EVERTHANE SERIES 248

PRODUCT PROFILE

GENERIC DESCRIPTION Aliphatic Moisture Cured Urethane

COMMON USAGE Extremely hard, chemical-resistant urethane floor coating with superb wear characteristics. Excellent resistance to abrasion, wet conditions, corrosive fumes and chemical contact. Excellent gloss and color retention. Low odor characteristic allows for use near occupied space.

COLORS Supplied as a clear coat. May be tinted with available Series 821 color pack in the 16 standard StrataShield colors and limited custom colors. Color packs sold separately. Contact Tnemec Company for availability. **Note:** Certain colors may require multiple coats depending on method of application and finish coat color. When feasible, the preceding coat should be the same color as the topcoat. **Note:** Series 44-600 UV Blocker may be added to Series 248 (clear) for increased resistance to ultra-violet light. Refer to the Series 44-600 product data sheet for more information.

FINISH Semi-gloss. **Note:** The gloss level can be reduced by adding two Part C filler components to each kit.

SPECIAL QUALIFICATIONS Series 248 was tested in accordance with, and passed, the California Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010 emissions testing and meets qualifications of LEED v4, Collaborative for High Performance Schools, and Living Building Challenge.

PERFORMANCE CRITERIA Additional test data available. Contact your Tnemec representative for specific test results.

COATING SYSTEM

PRIMERS **Concrete:** Series 66, 66HS, 161, 161HS, 201, 205, 237, 238, 256, 280, 281, 287. **Note:** Series 248 can be applied directly to concrete if a single coat urethane sealer is desired.

INTERMEDIATE Series 66, 66HS, 161, 161HS, 210, 237, 238, 256, 280, 281, 284, 285, 287
Note: Applying Series 248 to one of the listed primers or intermediate coats does not require sanding if the maximum recoat window for the primer or intermediate coat has not been exceeded. However, when applying Series 248 over smooth, slick, glossy surfaces it is good practice to uniformly degloss the surface by power sanding with 100 grit sandpaper, a 60 mesh sanding screen or a coarse stripping pad to eliminate surface tension and any potential for possible contamination in the surface that may lead to fisheyes and/or poor adhesion. Sanding is not required when topcoating textured coatings (i.e. aggregate or colored quartz broadcast to refusal) with Series 248 if the maximum recoat window for the primer or intermediate coat has not been exceeded. **Note:** When applying Series 248 over a broadcast or mortar system, a 100% solids epoxy grout coat or Series 256 is required.

SURFACE PREPARATION

Prepare surfaces by method suitable for exposure and service. Refer to the appropriate primer data sheet for specific recommendations.

CONCRETE Allow new poured-in-place concrete to cure a minimum of 28 days at 75°F (24°C). Verify concrete dryness in accordance with ASTM F 1869 "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride" (moisture vapor transmission should not exceed three pounds per 1,000 square feet in a 24 hour period), F 2170 "Standard Test Method for Determining Relative Humidity in Concrete using in situ Probes" (relative humidity should not exceed 80%), or D 4263 "Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method" (no moisture present). **Note:** The testing listed above cannot guarantee avoidance of future moisture related problems particularly with existing concrete slabs. This is especially true if the use of an under slab moisture vapor barrier cannot be confirmed or concrete contamination from oils, chemical spills, unreacted silicates, chlorides or Alkali Silica Reaction (ASR) is suspected.

Prepare concrete surfaces in accordance with NACE No. 6/SSPC-SP13 Joint Surface Preparation Standards and ICRI Technical Guidelines. Mechanically abrade concrete surfaces to remove laitance, curing compounds, hardeners, sealers and other contaminants and to provide a minimum ICRI-CSP 2 surface profile. Large cracks, voids and other surface imperfections should be filled with a recommended filler or surfacer.

ALL SURFACES Must be clean, dry and free of oil, grease and other contaminants. Existing coatings require thorough scarification using a power sander with 100 grit sandpaper and compatibility testing.

TECHNICAL DATA

VOLUME SOLIDS 92 ± 2.0% (clear mixed) †

RECOMMENDED DFT 2.0 to 3.0 mils (50 to 75 microns) per coat. **Note:** Number of coats will vary depending on color, substrate (surface) and other variables. Contact your Tnemec representative.

CURING TIME

Temperature	Min. Recoat ‡	To Service	Chemical Resistance
75°F (24°C)	12 hours	24 hours	7 days

‡ When recoating, the surface **must** be thoroughly scarified using 60 grit sandpaper.
Curing time varies with surface temperature, air movement, humidity and film thickness.

VOLATILE ORGANIC COMPOUNDS **Unthinned:** 0.68 lbs/gallon (82 grams/litre) †

THEORETICAL COVERAGE 1,476 mil sq ft/gal (36.2 m²/L at 25 microns). See APPLICATION for coverage rates. †

NUMBER OF COMPONENTS Three: Part A, Part B (clear) and Part C (powder)

EVERTHANE | SERIES 248

PACKAGING

	PART A (Partially filled)	PART B	PART C (Partially filled)	When Mixed Yield
Large Kit	3 gallon pail	1/2 gallon can	1 gal can-6.5460 lbs	3.225 gallons (12.2L)
Small Kit	1 gallon can	1 pint can	1 qt can-2.1820 lbs	1.075 gallons (4.07L)

Color packs are sold separately as 821 Field Colorant. Add one pint color pack per small kit or three pint color packages per large kit.

NET WEIGHT PER GALLON 10.67 ± 0.25 lbs (4.84 ± .11 kg) (clear mixed) †

STORAGE TEMPERATURE Minimum 20°F (-7°C) Maximum 110°F (43°C)

TEMPERATURE RESISTANCE (Dry) Continuous 250°F (121°C) Intermittent 275°F (135°C)

SHELF LIFE Part A: 12 months; Part B: 12 months; Part C: 24 months in unopened cans at recommended storage temperature.

FLASH POINT - SETA Part A: > 200°F (93°C) Part B: 186°F (86°C)

HEALTH & SAFETY Paint products contain chemical ingredients which are considered hazardous. Read container label warning and Safety Data Sheet for important health and safety information prior to the use of this product.
Keep out of the reach of children.

APPLICATION

COVERAGE RATES

	Dry Mils (Microns)	Wet Mils (Microns)	Sq Ft/Gal (m²/Gal)
Suggested	2.5 (65)	2.5 (65)	590 (54.8)
Minimum	2.0 (50)	2.0 (50)	738 (68.5)
Maximum	3.0 (75)	3.5 (90)	492 (45.7)

Allow for surface irregularities. Film thickness is rounded to the nearest 0.5 mil or 5 microns. Application of coating below minimum or above maximum recommended dry film thicknesses may adversely affect coating performance. †

MIXING Premix Part A for one minute. While under agitation slowly sift in Part C powder. If material is to be tinted, use one pint container of Series 821 color for a small kit and three pints for a large kit. Thoroughly combine the Parts A and C. Mix well before adding the Part B. Do not use mixed material beyond pot life limits. Part A is moisture sensitive and will react with atmospheric moisture. Mix in full kits only. Opened material should not be reused. Do not reseal containers of mixed material.

THINNING None required or recommended.

POT LIFE 2 hours at 77°F (25°C)

APPLICATION EQUIPMENT **Roller:** Use a 1/4" or 3/8" (6.4 mm or 9.5 mm) high quality and shed-resistant synthetic woven nap cover. Do not use long nap roller covers. **Note:** A 1/4" (6.4 mm) roller is recommended when applying Series 248 over a smooth or non-textured surface.
Brush: Use high quality natural or synthetic bristle brushes.

SURFACE TEMPERATURE Minimum 40°F (4°C) Maximum 90°F (32°C)
The surface should be dry and at least 5°F (3°C) above the dew point. This product is moisture sensitive until cured.

AMBIENT HUMIDITY Minimum 20% Maximum 80%
Humidity must be below 80%. Application of the coating above the maximum recommended dry film thickness or at relative humidities above 80% may cause bubbles or microfoaming to form in the cured film. Relative humidities below 20% will not allow the coating to properly cure.

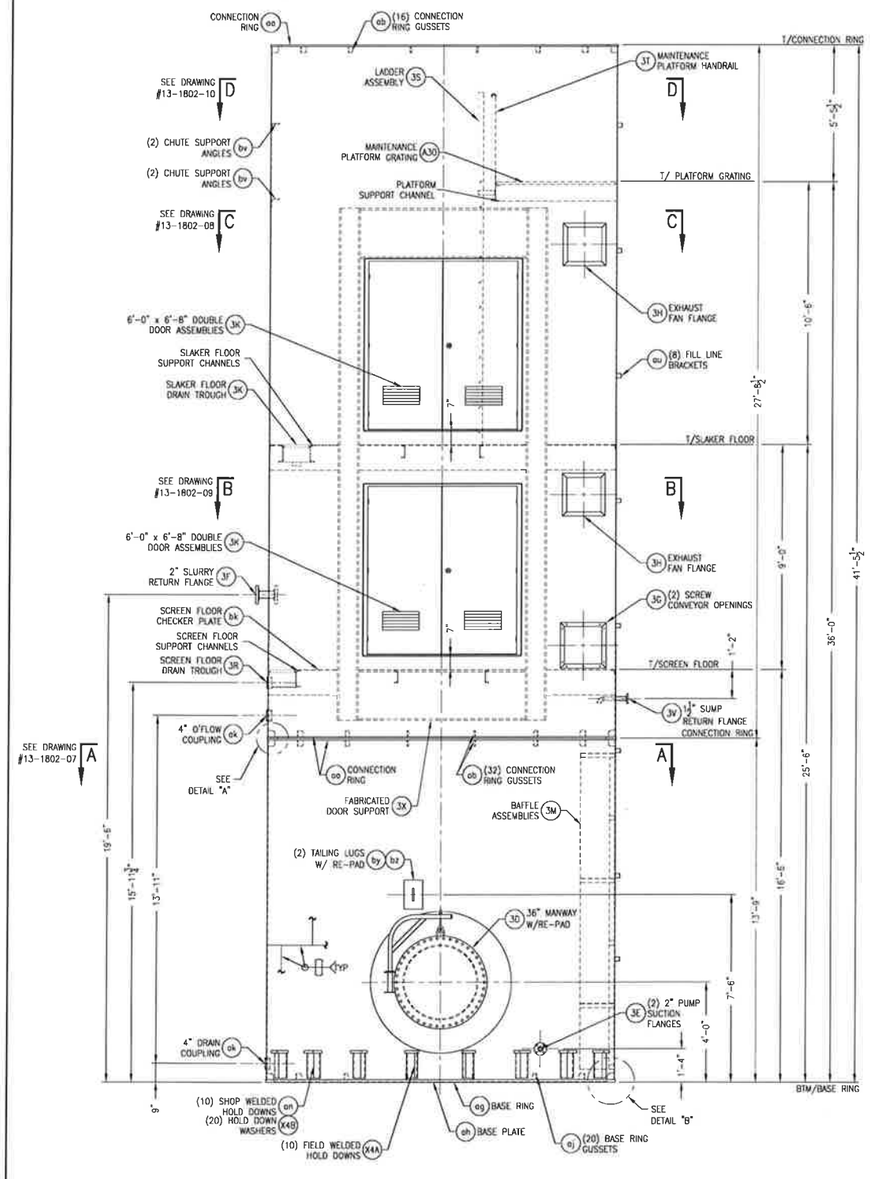
CLEANUP Flush and clean all equipment immediately after use with MEK.

† Values may vary with color.

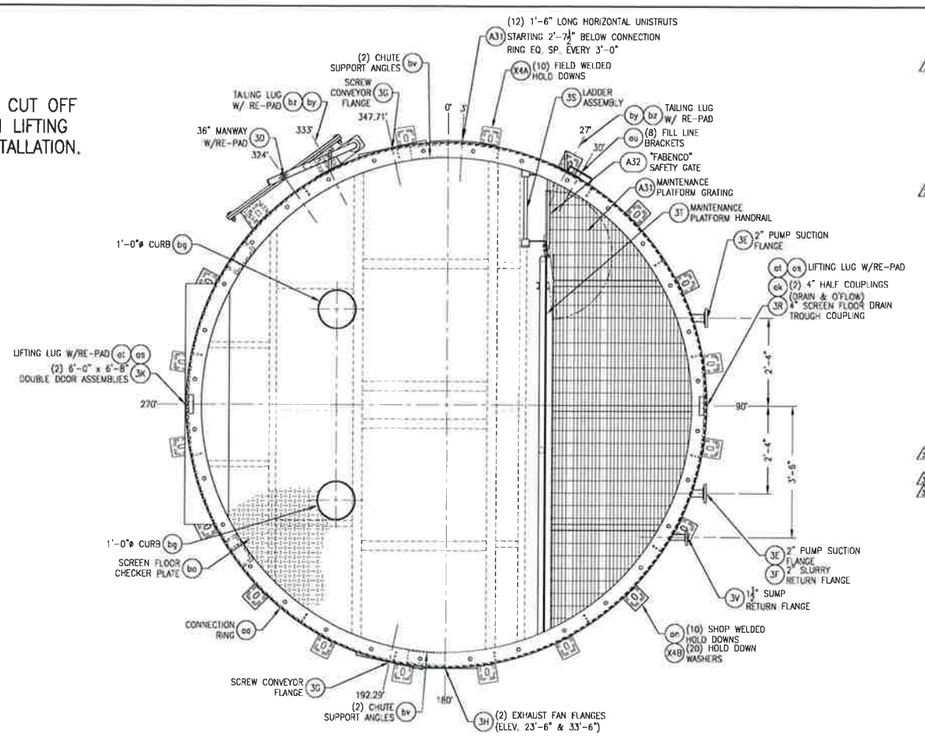
Customer: MET Grand Island - Platte Generating Station
MET P.O. Number: 30472
Equipment Name and Tag Number: Lime Silo / 1A-T410-01

CHEMCO SYSTEMS, L.P.
CERTIFIED DRAWING
Chemco Systems, L.P.
By: RGK
Date: 04/17/2014

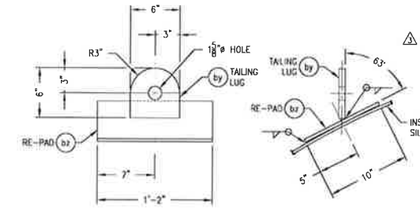
NOTE:
CONTRACTOR TO CUT OFF BOTTOM SECTION LIFTING LUGS AFTER INSTALLATION.



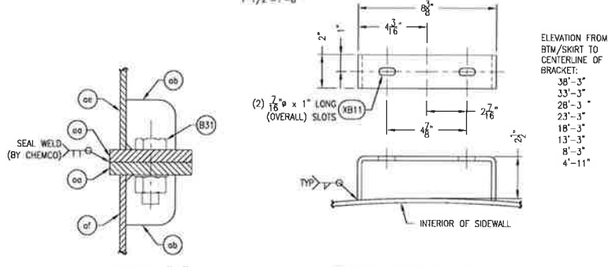
⚠ (X3A) BOTTOM SECTION ELEVATION VIEW
(OBJECTS MAY BE ROTATED FOR CLARITY. SEE PLAN VIEW FOR TRUE ORIENTATIONS.)
3/8"=1'-0"



PLAN VIEW
⚠ (X3A) BOTTOM SECTION
1/2"=1'-0"

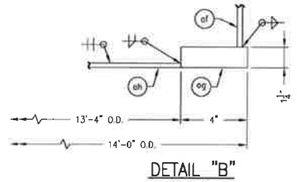


⚠ (by) TAILING LUG
1 1/2"=1'-0"



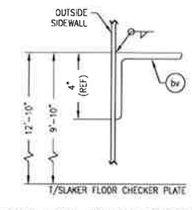
(au) FILL LINE BRACKET
3"=1'-0"

DETAIL "A"
3"=1'-0"

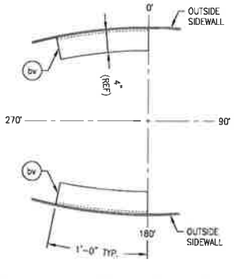


DETAIL "B"
3"=1'-0"

ELEVATION FROM BTM/SKIRT TO CENTERLINE OF BRACKET:
38'-3"
33'-3"
28'-3"
23'-3"
18'-3"
13'-3"
8'-3"
4'-11"



⚠ (bv) DISCHARGE CHUTE SUPPORT BRACKET
3"=1'-0"



(bv) DISCHARGE CHUTE SUPPORT BRACKET
3"=1'-0"

APPROVED RELEASED FOR FABRICATION
Date: 12/16/13 By: CDP
THE FOLLOWING DRAWINGS HAVE BEEN RELEASED FOR FABRICATION. ANY FURTHER CHANGES MAY RESULT IN SHIPMENT DELAY AND/OR INCREASED COSTS. THESE DRAWINGS ARE THE RESULT OF SUBMITTALS AND APPROVALS BY OUR CUSTOMER AND TAKE PRECEDENCE OVER ALL OTHER DOCUMENTS, DRAWINGS, AND SPECIFICATIONS

BILL OF MATERIALS

ITEM	Q'TY	LBS	MAT'L	DESCRIPTION
	ALL MATERIAL TO BE PER MATERIALS BLOCK ON DWG #13-1802-01, UNLESS NOTED			
⚠ X3A	1	(41286)		14'-0"ø SKIRT SUPPORTED STORAGE SILO BOTTOM SECTION
oe	3	1317		FB 3/4" x 5" ROLLED ON EDGE TO 14'-0" O.D. (CONN. RING)
ob	48	48		FB 3/8" x 3" SQUARE (CONNECTION RING GUSSETS)
oc	1	10616		PL 1/4" x 23'-10" ROLL TO 13'-10 3/4" I.D.
oe	1	2509		PL 3/8" x 3'-9" ROLL TO 13'-10 3/4" I.D.
of	1	9088		PL 3/8" x 13'-7" ROLL TO 13'-10 3/4" I.D.
og	1	730		FB 1 1/4" x 4" ROLL ON EDGE TO 14'-0" O.D. (BASE RING)
oh	1	1423		PL 1/4" x 13'-4" O.D. (BASE PLATE)
oj	20	20		FB 3/8" x 3" SQUARE (BASE RING GUSSETS)
ok	2	16		4" 3000# SOCKET WELD HALF COUPLING (DRAIN/OVERFLOW)
⚠ on	10	305		SQ. TUBING 5" x 5" x 1/2" x 1'-0" (EXTERNAL HOLD DOWN)
op	2	2		ANGLE 3" x 3" x 1/4" x 2 1/2" (LADDER-FLOOR CLIP)
or	2	1454		MC10 x 28.5 x 25'-5 5/8" LONG (VERTICAL DOOR SUPPORT)
os	2	184	A516-GR60	FB 1 1/2" x 6" x 3'-0" LONG (LIFTING LUG)
ot	2	156		PL 5/16" x 2'-0" x 3'-0" LONG (LIFTING LUG RE-PAD)
ou	8	16		FB 1/4" x 2" x 1'-0 5/8" LONG (FILL LINE BRACKET)
ba	1	1501		CHECKER PLATE 1/4" x 13'-10 3/4" O.D. (SLAKER FLOOR)
bb	4	139		ANGLE 2" x 2" x 1/4" ROLL LEG IN TO 13'-10 3/4" O.D. (FR)
bc	6	828		C12 x 20.7 x SHOP TO FIT (SLAKER FLOOR SUPPORT)
be	3	414		C8 x 11.5 x SHOP TO FIT (SLAKER FLOOR SUPPORT)
bf	11	198		C6 x 8.2 x SHOP TO FIT (SLAKER FLOOR SUPPORT)
bg	2	22		FB 1/4" x 4" ROLL TO TO 1'-0" I.D. (CURB)
bk	1	1437		CHECKER PLATE 1/4" x 13'-10 3/4" O.D. (SCREEN FLOOR)
bm	2	120		ANGLE 2" x 2" x 1/4" ROLL LEG IN TO 13'-10 3/4" O.D. (FR)
bn	4	652		C12 x 20.7 x SHOP TO FIT (SCREEN FLOOR SUPPORT)
bp	7	483		C8 x 11.5 x SHOP TO FIT (SCREEN FLOOR SUPPORT)
bq	12	221		C6 x 8.2 x SHOP TO FIT (SCREEN FLOOR SUPPORT)
br	1	141		PL 1" x 2'-0" SQUARE (MIXER PLATE)
bs	1	150		C8 x 11.5 x SHOP TO FIT (MAINTENANCE PLATFORM SUPPORT)
bt	3	82		C6 x 8.2 x SHOP TO FIT (MAINTENANCE PLATFORM SUPPORT)
bu	1	61		ANGLE 2" x 2" x 1/4" ROLL LEG IN TO 13'-10 3/4" O.D. (FR)
⚠ bv	4	28		ANGLE 4" x 4" x 3/8" x 1'-0" LG. ROLL LEG IN TO 13'-10 3/4" O.D. (CHUTE SUPPORT BRACKET)
⚠ by	2	16	A516-GR60	PL 3/4" x 6" SQUARE (TAILING LUG)
⚠ bz	2	30		PL 3/8" x 10" x 1'-2" LONG (TAILING LUG RE-PAD)
A30	1	354	GALVANIZED	GRATING, #19-W-4, 1 1/4" x 3/16" x 4'-2 7/8" x 12'-8 7/8" LG.
A31	12	24	GALVANIZED	HORIZONTAL UNISTRUT ø 1'-6" LONG, "POWERSTRUT" PART #PS520-PG, 1 5/8" x 13/16" x 12 GA, PREGALVANIZED
A32	1	35	GALVANIZED	SELF-CLOSING SAFETY GATE, "FABENCO" MODEL #A71-21, A36 GALVANIZED STEEL
B30	4	1		1/2"ø x 1 1/4" LONG STUDS (LADDER)
B31	32	38	A325	1"ø x 3 1/4" LONG BOLT, NUT, & FLAT WASHER (CONN. RING)
B32	6	1		5/8"ø x 2" LONG BOLTS, NUTS, & LW (PLATFORM-POST)
B41	A/R	2	STAINLESS	1/4"ø SELF-TAPPING MACHINE SCREWS
B42	A/R	2	GALVANIZED	SADDLE CLIPS, 14 GAGE THK W/ 5/16"ø x 1/2" LONG SLOTS
3D	1	(1327)		36" MANWAY W/DAVIT ARM
da	1	328		PL 3/4" x 3'-8 3/4" O.D. (COVER)
db	1	112		PL 3/4" x 3'-0 1/16" I.D. x 3'-8 3/4" O.D (FLANGE)
dc	1	258		PL 3/4" x 11", ROLL TO 3'-0" O.D. (SHELL)
dd	1	2		RB 3/4"ø SHOP TO FIT (EYE BOLT HOOK)
de	1	7		PIPE 1 1/2" SCH 80 SHOP TO FIT (DAVIT ARM SUPPORT)
df	2	9		PL 3/8" x 4 1/2" x 9 5/8" LONG (HINGE)
dg	1	3		PIPE 2" SCH 80 x 8 1/4" LONG
dh	1	18		PIPE 1 1/2" SCH 80 SHOP TO FIT (DAVIT ARM)
dj	1	1		PL 3/8" x 2" I.D. x 4" O.D. (STOPPER PLATE)
dm	1	1		PL 1/4" x 2" O.D. (PIPE CAP)
dn	1	555		PL 3/4" x 3'-0 1/8" x 3'-0 1/2" ELLIPTICAL I.D. x 5'-8" O.D. (RE-PAD)
A33	1	1	BLK. NEO.	GASKET, 1/8" THK W/MATCHING BOLT PATTERN
B34	1	1	1030 GALV	3/4"-10 x 8" LONG EYE BOLT, 3" OF THREAD, W/FLATWASHER & (2) HEX NUTS
B35	42	30		3/4"ø x 3" LONG BOLTS, NUTS & LOCKWASHERS
3E	2	(28)		2" 150# FLANGE (PUMP SUCTION)
ea	2	10		2" 150# RFSO FLANGE
eb	2	8		PIPE 2" SCH 80 x 9 3/4" LONG
ec	2	10		PL 3/8" x 10" O.D. (RE-PAD)
⚠ 3F	1	(13)		2" 150# FLANGE (SLURRY RETURN)
⚠ fa	2	10		2" 150# RFSO FLANGE
⚠ fb	1	3		PIPE 2" SCH 80 x 9 7/8" LONG
3G	2	(180)		SCREW CONVEYOR OPENING
ga	8	180		RECT. TUBING 6" x 2" x 1/4" x 1'-10" LONG
3H	2	(162)		EXHAUST FAN FLANGE
ha	8	162		RECT. TUBING 6" x 2" x 1/4" x 1'-8 1/2" LONG
3J	1	(308)		SLAKER FLOOR DRAIN HOX
ja	2	7		ANGLE 2" x 2" x 1/4" x 1'-1" LONG
jb	1	6		C4 x 5.4 x 1'-1" LONG
jc	1	6		PL 1/4" x 5 3/4" x 1'-1" LONG (END PLATE)
jd	1	6		PL 1/4" x 7 3/4" x 1'-1" LONG (END PLATE)
je	1	69		PL 1/4" x 1'-1" x 8'-1 3/8" LONG (BOTTOM PLATE)
jf	1	4		4" 3000# NPT HALF COUPLING
A34	2	54	GALVANIZED	GRATING, #19-W-4, 1 1/4" x 3/16" x 1'-0" x 3'-0" LONG
B36	A/R	1	STAINLESS	1/4"ø SELF-TAPPING MACHINE SCREWS
B37	A/R	1	GALVANIZED	SADDLE CLIPS, 14 GAGE THK W/ 5/16"ø x 1/2" LONG SLOTS

BILL OF MATERIALS IS CONTINUED ON DRAWING #13-1802-06.

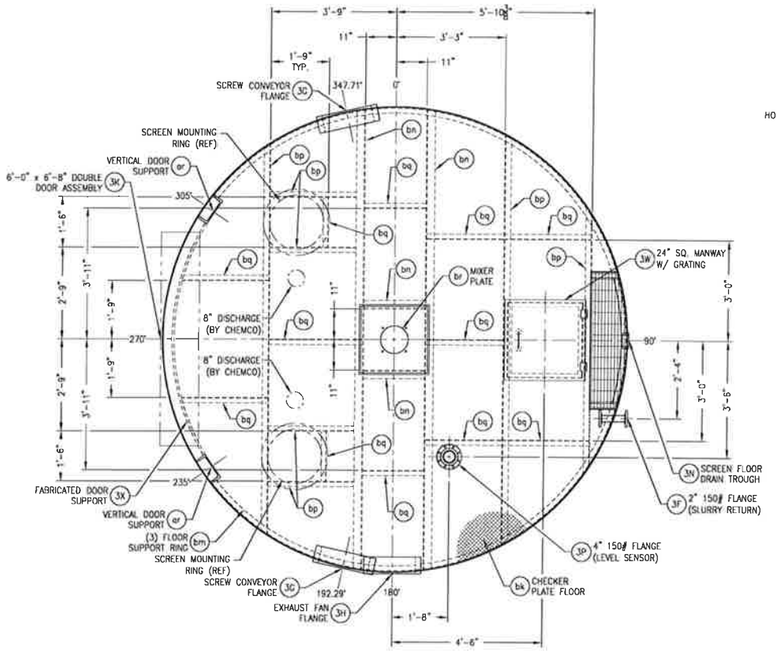
REV. #	DATE:	BY:	DESCRIPTION:
⚠	12/16/13	CDP	ADDED TAILING LUGS
⚠	11/7/13	CDP	ROTATED UNISTRUT, ADDED ADDITIONAL CHUTE SUPPORT BRACKET, CHANGED SHOP-WELDED HOLD DOWN QTY.
⚠	9/12/13	CDP	ADDED 1 1/2" SUMP RETURN FLANGE, MOVED 2" SLURRY RETURN FROM FLOOR TO SIDEWALL

PITTSBURGH TANK CORPORATION
1500 INDUSTRIAL DRIVE
MONONGAHELA, PA 15063
(724) 258-0200

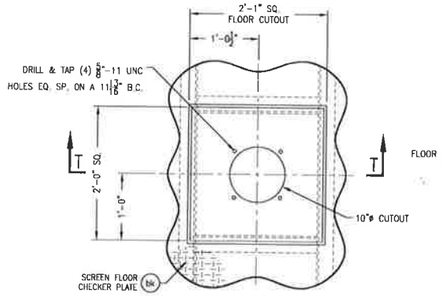
TITLE: BOTTOM SECTION DETAILS OF (1) 14'-0"ø SKIRT SUPPORTED STORAGE SILO

MARSULEX ENVIRONMENTAL TECHNOLOGIES
P.O. NUMBER: 30473
STORAGE SILO TAG #1A-T410-01
SLURRY TANK TAG #1A-T100-01

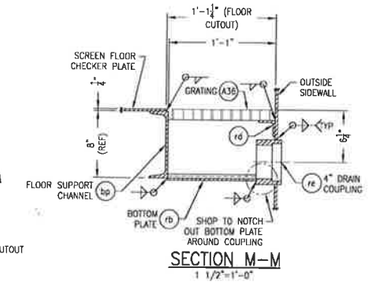
CUSTOMER: MARSULEX ENVIRONMENTAL TECHNOLOGIES
P.O. NUMBER: 30473
SHIP TO: GRAND ISLAND, NE (MET)
PROJECT BY: AP
DATE: 7/12/13
DRAWN BY: CDP
SCALE: 3/8"=1'-0"
APPROVED BY: JAF
DRAWING NUMBER: 13-1802-06
SHEET 1 OF 6
DRAWING 6 OF 15



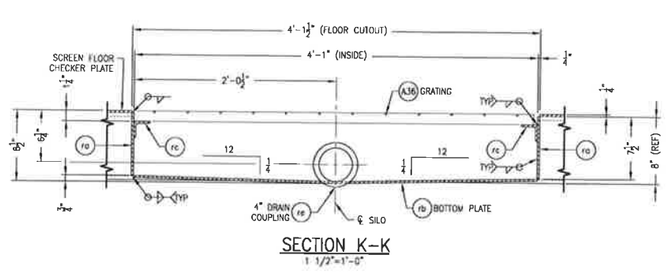
⚠ SECTION B–B
SCREEN FLOOR LAYOUT
1/2"=1'-0"



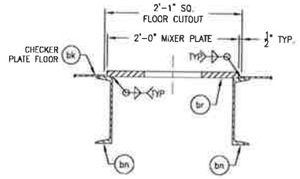
br MIXER MOUNTING PLATE
1"=1'-0"



SECTION M–M
1 1/2"=1'-0"

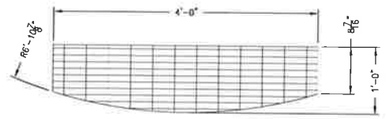


SECTION K–K
1 1/2"=1'-0"

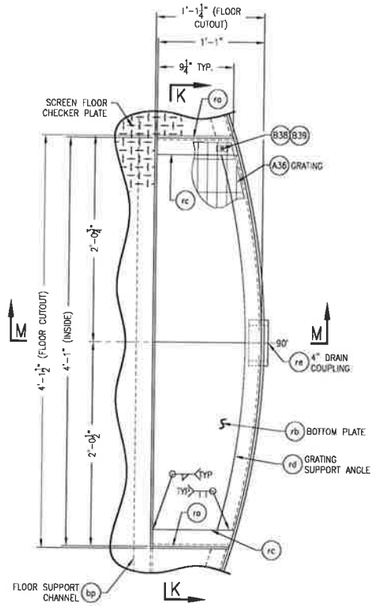


NOTE: MIXER MOUNTING PLATE TO SIT DIRECTLY ON SUPPORT BEAMS.

SECTION T–T
1"=1'-0"



A36 GRATING
1"=1'-0"

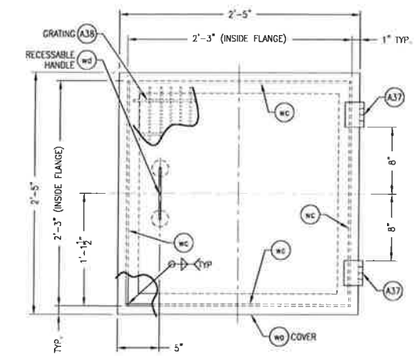


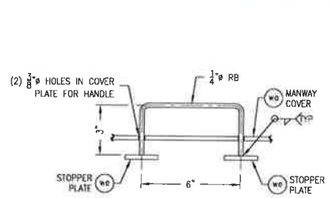
NOTE: A MIN. OF (4) SADDLE CLIPS TO BE USED TO ATTACH (1) GRATING PANEL TO FRAME.

3R SCREEN FLOOR DRAIN TROUGH ASSEMBLY
1 1/2"=1'-0"

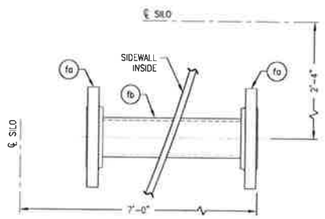
Customer: MET Grand Island - Platte Generating Station
MET P.O. Number: 30472
Equipment Name and Tag Number: Lime Silo / 1A-T410-01

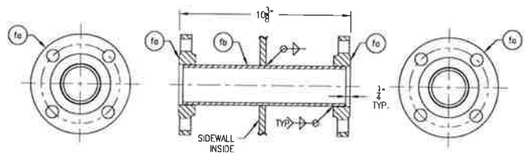
APPROVED RELEASED FOR FABRICATION
Date 11/7/13 By CDP
THE FOLLOWING DRAWINGS HAVE BEEN RELEASED FOR FABRICATION. ANY FURTHER CHANGES MAY RESULT IN SHIPMENT DELAY AND/OR INCREASED COSTS. THESE DRAWINGS ARE THE RESULT OF SUBMITTALS AND APPROVALS BY OUR CUSTOMERS AND TAKE PRECEDENCE OVER ALL OTHER DOCUMENTS, DRAWINGS, AND SPECIFICATIONS



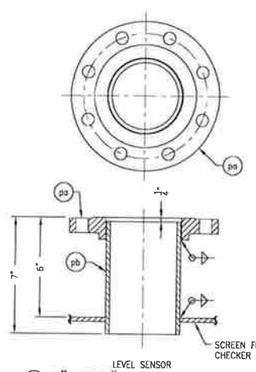


⚠ wd RECESSABLE HANDLE
3"=1'-0"

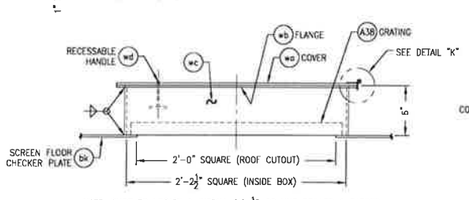




SLURRY RETURN
⚠ 3F 2" 150# RFSO FLANGE
3"=1'-0"

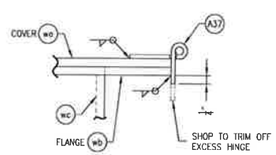


3P 4" 150# RFSO FLANGE
3"=1'-0"



NOTE: SHOP TO LOCATE & INSTALL (1) ¾"–20 UNC DRILLED & TAPPED HOLE W/BOLT TO SECURE LID FOR SHIPPING PURPOSES.

⚠ 3W 24" MANWAY W/ HINGE
1 1/2"=1'-0"



DETAIL "K"
6"=1'-0"

CERTIFIED DRAWING
Chemco Systems, L.P.
By: RGK
Date: 04/17/2014

MARSULEX ENVIRONMENTAL TECHNOLOGIES
P.O. NUMBER: 30473
STORAGE SILO TAG #1A-T410-01
SLURRY TANK TAG #1A-T100-01

PITTSBURGH TANK CORPORATION
1500 INDUSTRIAL DRIVE
MONONGAHELA, PA 15063
(724) 258–0200

TITLE: BOTTOM SECTION DETAILS OF (1) 14'-0"ø SKIRT SUPPORTED STORAGE SILO

CUSTOMER: MARSULEX ENVIRONMENTAL TECHNOLOGIES

P.O. NUMBER: 30473
SHIP TO: GRAND ISLAND, NE (MET)

PROJECT BY: AP
DATE: 7/12/13
DRAWN BY: CDP
SCALE: 1/4"=1'-0"
APPROVED BY: JAF
DRAWING NUMBER: 13–1802–09
SHEET 4 OF 6
DRAWING 9 OF 15

REV. #	DATE:	BY:	DESCRIPTION:
⚠	11/7/13	CDP	CORRECTED FLANGE DESCRIPTION
⚠	9/12/13	CDP	MOVED SLURRY RETURN FLANGE FROM FLOOR TO SIDEWALL, ADDED RECESSABLE HANDLE TO MANWAY