



Specifications for SWC #171: Roofing Maintenance and Repair

Section 1: Scope of Work

The State of Tennessee (State) is seeking to establish a contract for Roofing Maintenance and Repair for all State agencies, local governmental units within the geographic limits of the State of Tennessee, the Military bases located in Catoosa, GA and Fort Campbell, KY, any private nonprofit institution of higher education chartered in Tennessee, and any corporation which is exempted from taxation under 26 U.S.C. Section 501(c) (3) as amended and which contracts with the Department of Mental Health and Substance Abuse Services to provide services to the public (T.C.A. 33-2-401 et seq.). The resulting contract will be open to the aforementioned entities unless a letter is attached to your bid, requesting exemption to this allowance. Contractor(s) agree to extend services under this contract to all authorized contract users at the same price and under the same terms and conditions offered in this bid.

Section 2: Contract Exceptions

- **State Building Commission (SBC)** – Jobs that are estimated to be over \$100,000 are excluded from being conducted under this contract without the prior approval of the State Building Commission (“SBC”) per By-Laws, Policy, and Procedure of the State Building Commission of Tennessee Item 2. Agencies should maintain SBC approval documentation for a minimum of one year following the end of the contract period for audit purposes of all contract release orders that are valued at \$100,000 or more. Agencies should contact the Contract Administrator to determine what proper approval maintenance procedures are.
- **Other Exceptions**
Asphalt Shingles

Section 3: Preventative Maintenance

- Agencies have the right to call out the Contractor to perform a preventative maintenance inspection. It is the discretion of the agency as to how often these inspections should occur. The Agency/Contractor should work at a custom preventative maintenance schedule, if so desired.
- Contractor shall inspect all copings, concrete, terra-cotta, etc. for loose fasteners, unsealed lap joints, and deteriorated sealants.

- Contractor shall inspect roof membranes – fully adhered EPDM (Ethylene Propylene Diene Monomer), ballast EPDM, BUR (Built-Up Roof), etc. – for splits, tears, holes, loose seams, over stretched EPDM along parapet walls, base of all roof protrusions, vent pipes, roof curbs, pitch pockets, roof hatches, skylights, etc.
- Contractor shall inspect all interior drains, gutters, and downspouts.
- Contractor shall inspect for roof hazards, exposed wires, broken conduits, damaged antennas, cables, gas lines, and roof debris.
- Contractor shall inspect roof insulation to determine the integrity of existing insulation or the lack of adequate insulation.
- Contractor shall provide a written report to the agency of its findings and recommendations within five (5) business days from completion of inspection.
- Agencies reserve the right to request the Contractor to execute any work recommended by the Contractor during the maintenance inspection; however, they are not obligated to execute any recommended work.

Section 4: Galvalume Metal Roofing Repair Specifications (Non-Salt Bin Facilities)

- All paints used in galvalume roofing repairs must be equal to either Sherwin Williams' exterior products or PPG Porter Paints' exterior products.

Section 4.1: Substrate Preparation

- Contractor shall remove non-operable gas vents, electrical conduit, etc.
- Contractor shall remove old metal roofing down to wood decking.
- Contractor shall replace damaged decking with same or equal decking material.
- Contractor shall re-secure decking.
- Contractor shall install 30 lb. felt paper prior to roof panel installation. (Felt paper to be used only on solid roof decks).
- Contractor shall install ice and water shield onto all valleys a minimum of 3' wide.
- All lumber used for galvalume roofing repairs must be new #2 grade.

Section 4.2 Galvalume Metal R-Panels

- All R-panels (PBR panels) shall be a premium #1 galvalume 26-gauge.

- Contractor shall install sealants along entire full length of side lap seams and all flashing details using np-1 sealant or equal.
- Metal roof panel ends, along each side of ridge, shall be cut along metal rib profile parallel to roof panel 2". Contractor shall fold up and cut flanges flush with top side of each metal rib. Contractor shall leave flanges between metal ribs and apply sealant in corners.
- Contractor shall install fasteners every two feet in the flat service of the R-Panel and securing each to a purlin.
- Contractor shall install universal polyethylene rolled foam closure along each side of ridge cap.
- Metal ridge cap shall be premium #1, 26-gauge with .5" hem along cut edges.
- Metal roof panels along gable rakes shall have a manufacture raised rib or be cut in flat and folded 2" up before gable rake trim is installed.
- Contractor shall replace all electrical flashing boots.
- Contractor shall replace all gas vent boots up to 12" in diameter using high-temp (437 degrees Fahrenheit) boot.
- Contractor must have a minimum of 5-years commercial experience with galvalume metal roof repairs. Contractor shall be required to furnish three job references, names and telephone numbers.

Section 5: Polyurea Roofing Repair and Polyurethane Foam Specifications (Non-Salt Bin Facilities)

- Product shall be VFI#540 aluminum coating two-part component with 96% solids and capable of achieving a minimum of 50 dry mils thick in one coat or equivalent.
- Manufacturer must be the sole manufacturer of polyurethane foam and coating, and must be able to provide manufacturer complete foam and coating systems warranty. Contractor should be certified by the manufacturer to apply their product.
- Manufacturer must have a minimum of 10-years experience in manufacturing plural component coatings with a solids content of 96% or more and a perm rating of .45 or less. Documentation must be provided prior to award.
- Contractor must have a minimum of 5-years commercial experience with polyurea, have applied a minimum of 100,000 square feet in the polyurethane foam and polyurea coating application process and must be certified by an approved manufacturer. Contractor shall be required to furnish three job references, names and telephone numbers.
- All polyurethane roof closed cell foam shall be a minimum of 1 ½ " thick with a minimum density of 2.7 and manufactured by a coating manufacturer as part of a complete roof system.

- Contractor will be required to designate a proportioning unit solely for the application of 2.70 roof foam only. Machine must be capable of maintaining pressures of 2500 psi and maintaining moderate temperature of 160 degrees Fahrenheit.
- Contractor will be required to designate a second proportioning unit solely for the application of plural component polyurea coating only with 96% solids and a 1-1 ratio. Machine shall be capable of maintaining pressures of 2500 psi and maintaining temperatures of 160 degrees Fahrenheit.
- The Contractor is responsible for applying coating when the weather forecast is favorable 24 hours prior to and after application. Application of foam insulation must be performed when the substrate surface temperature is at least 50 degrees Fahrenheit, the ambient temperature is at least 50 degrees Fahrenheit and the wind speed is no more than 15 miles per hour. The foam insulation should not be applied when the humidity is greater than 85% or when the dew point and the ambient temperature are within 5 degrees Fahrenheit of one another.
- The Contractor must protect areas surrounding the spray area from excess spray with drop cloths, tarps, etc. If the Contractor fails to do so, the Contractor will be held liable for repairs.
- No pinholes will be accepted. Contractor will be responsible for 100% of materials and labor for all repairs and the recoating of all pinhole areas.

Section 6: Salt Bins

- Repairs to be made to Salt Bins owned by the Tennessee Department of Transportation (TDOT) will be determined solely by TDOT's maintenance division. The salt bin's structure has a curvature but the length of the building will be determined by the length of the concrete wall. All linear and square feet calculations will be determined by straight line measurements (note: the metal curvature measurement will not be used for the length down the side or back walls. A straight tape measurement is to be used to measure the length and width of the bin. The tape or wheel will be placed on top of the concrete wall and pulled over the roof to the other side, which is the top of the concrete wall on the opposite side. This measurement will be for linear and square feet measurements. Any measurements to factor the curvature of each rib of metal will not be accepted. All TDOT salt bins have a curvature metal design.
- The Contractor will provide all labor, material, and equipment to apply polyurea and primer to salt bins on an as needed basis.
- The Contractor must have a minimum of 5-years experience with structural repairs and applying polyurea coating and epoxy primer inside and outside buildings. Contractor shall have experience using the mechanical applicator proportioning unit. Proof of experience will be required by the State.
- Polyurea hybrid coatings and two part epoxy metal primers used for Salt Bin repair are to be delivered in unopened manufacturer's containers with manufacturer labels affixed.

- The polyurea shall be applied by use of a mechanical applicator proportioning unit. Contractor will be required to designate a proportioning unit solely for the application of plural component polyurea coating only with 96% solids and a 1-1 ratio. Machine shall be capable of maintaining pressures of 2500 psi and maintaining temperatures of 160 degrees Fahrenheit.
- The Contractor is responsible for applying coating when the weather forecast is favorable 24 hours prior to and after application. Application of foam insulation must be performed when the substrate surface temperature is at least 50 degrees Fahrenheit, the ambient temperature is at least 50 degrees Fahrenheit and the wind speed is no more than 15 miles per hour. The foam insulation should not be applied when the humidity is greater than 85% or when the dew point and the ambient temperature are within 5 degrees Fahrenheit of one another.
- No pinholes will be accepted. Contractor will be responsible for 100% of materials and labor for all repairs and the recoating of all pinhole areas.
- A current listing of State Salt Bins can be found in this solicitation as Attachment I. The State of Tennessee reserves the right to add to or delete from this listing during the life of the contract.
- Salt will not be removed from the salt bins while repairs are underway. It will be the Contractor's responsibility to protect the content of the Salt Bins during all times while work is ongoing. The Contractor will be responsible for any damage caused to either facility or product(s) within said facility by the Contractor's employees or sub-contractor(s).

Section 6.1: Primer Application of Metal Roofs and Walls

- VFI #11 epoxy primers or Sherwin Williams' copoxy shop primer or equal must be applied over all metal roofs and walls at a rate of 250 - 300 square feet per gallon.
- Epoxy shall be applied with a maximum 45 minute pot life.
- Epoxy shall not be exposed for over 7 days.
- The epoxy catalyst must be thoroughly mixed for 5 minutes.

Section 6.2: Metal Repairs (Within 4 feet of Base Plate and Concrete Wall)

- All work shall include that all metal repairs of metal roofing are secured to the existing metal base plate.
- All repairs shall be completed using galvalume or stainless steel 16-gauge metal.
- All metal is to be cleaned and primed with VFI #11 or Sherwin Williams' copoxy shop primer or equal on all sides.
- New metal will be secured to the existing base plate and existing metal of the building roof using stainless steel fasteners along the perimeter of repaired areas.

- Reinforced all-purpose 1602 butyl fabric or equal or sonolastic np-1 urethane caulk or equal with a minimum of 50% solids will be installed around the perimeter of repaired areas.

Section 6.3: Metal Repairs (4 feet or more above Concrete Wall)

- All repairs shall be completed using galvalume or stainless steel 16-gauge metal.
- Metal is to be cleaned and primed with VFI #11 or Sherwin Williams' copoxy shop primer or equal on all sides.
- New metal will be secured to the existing roof using stainless steel fasteners along the perimeter of repaired areas.
- Reinforced all-purpose 1602 butyl fabric or equal or sonolastic np-1 urethane caulk or equal with a minimum of 50% solids will be installed around the perimeter of repaired areas.

Section 6.4: Vertical Wall Replacement

- Contractor shall remove all damaged metal from any vertical wall.
- Contractor shall install galvalume or stainless steel 16 gauge metal using stainless steel fasteners to secure each panel.
- Salt bins are approximately 40' to 100' wide with a dome shape. All replacement wall panels shall be approximately 2' wide.

Section 6.5: Galvalume Plates

- All galvalume used shall be 18 gauge.
- All plates shall be installed at an angle that fits the contour of the salt bin wall and roof.
- All plates shall fit over the bottom seal as it attaches to the concrete wall. Plate to be mechanically attached using 1/4" x 1 1/4" stainless steel fasteners.
- All seams shall be sealed with sonolastic np-1urethane caulk or equal.
- Contractor shall apply VFI #11 or Sherwin Williams' copoxy shop primer or equal to all exposed surfaces of the plate.
- Contractor shall apply VFI #540 or Sherwin Williams' envirolastic ar170 or equal polyurea aluminum coating at a minimum of 50 mils thick over all exposed sides of the plate.

Section 6.6: Application of Aluminum Polyurea Coating

- VFI #540 aluminum polyurea coating or Sherwin Williams' envirolastic ar170 or equal with 96% solids over dry substrate.
- Product shall be installed with mechanical applicator proportioning unit.
- Contract shall use the gusmer h-20/35 mechanical applicator or equal meeting the following specifications:
 1. Applicator must maintain pressure of approximately 2500 psi.
 2. Applicator must maintain product temperature of approximately 130 to 140 degrees Fahrenheit.
 3. The heater product hose must be capable of handling maximum pressure output of 3500 psi by the mechanical applicator proportioning unit.
- Aluminum polyurea shall be applied onto metal substrate at a minimum of 50 mils thick in one coat upon completion.

Section 6.7: Base Plate Installation

- Contractor shall apply VFI #11 epoxy primers or Sherwin Williams' copoxy shop primer or equal to all sides of 1/4" metal base plate.
- Contractor shall apply VFI #540 polyurea aluminum coating or Sherwin Williams' envirolastic ar170 or equal on all sides of metal base plate at a minimum of 50 mils thick.
- Contractor must remove all debris from top side of concrete wall prior to installation of metal base plate.
- All coated metal base plates will be approximately 4" in width along the vertical concrete wall, approximately 4" in width on top of the concrete wall and approximately 4" in width along the metal roof wall. The base plate will resemble the shape of a "lazy z".
- All base plates shall be secured to the concrete wall with 1/2" diameter, 3 3/4" long concrete fasteners every two feet.
- Stainless steel metal fasteners must be attached to every curve on metal wall that touches 1/4" of metal plate.
- All metal fasteners must also be coated with polyurea.

Section 7: Warranty

- A manufacturer's warranty of 10 years materials and labor shall be required for all polyurea work completed as part of this contract.

- Contractors shall include a three year labor warranty, and a minimum one year parts warranty or a manufacturer's standard warranty, whichever is greater, for all galvalume metal roofs.
- A manufacture twenty-five year material warranty to be included for all galvalume metal roofs.

Section 8: Off-Site Work

- All work must be completed onsite, unless preapproved by authorized agency personnel. A Contractor should make every effort to let the agency know off-site work will be needed for a job during the initial estimate phase. The State will not pay for work conducted off-site if the Contractor does not receive written approval prior to beginning work off-site.

Section 9: Rental Equipment

- Contractor shall gain approval from authorized agency personnel prior to renting any equipment prior to beginning a job. Contractor should make every effort to use owned equipment to complete work.

In the event rental equipment is needed to complete work for the State, and the Contractor has gained prior approval, the State will compensate the Contractor for the cost of the rental equipment less sales tax, plus 10%. In the event the State does not issue approval prior to the Contractor renting equipment to be used to complete work, the State reserves the right to not compensate the contractor for any equipment rented.

Section 10: General Specifications

- **Licenses** – Contractor must have a valid State of Tennessee Contractor's License.
- **Beginning Work** – All work should be coordinated with the site's Facilities Manager. A time to begin work will be mutually agreed upon by the Contactor and the State's Facilities Manager. No work will begin until approval is granted by the site's Facilities Manager. If work begins without prior approval, the State will not be liable for payment of this work and the Contractor will be liable for any damage done to the site. The Contractor should sign-in and sign-out with agency personnel when arriving and leaving a facility or the surrounding grounds.
- **Response Time for Scheduled Work** – the Contractor shall respond to the agency's request for roof repairs within thirty days. The Contractor and the agency contact person will coordinate a job start date.
- **Response Time for Emergency Work** – Contractor must respond and resolve any roof related leaks within five working days of notification from client, permitted proper weather conditions are present.
- **On-Site Responsibilities** – Contractor is responsible for keeping building dry during roofing process.

- **Final Inspection** – Prior to acceptance of any project the Contractor or his designated authority will be required to attend a final inspection. This inspection is to ensure that all painted surfaces are acceptable. An authorized agency representative will have final approval.
- **Charge Schedule** – All work must be performed during the State’s regular business hours, unless pre-approved by the site’s Facilities Manger. Regular business hours are Monday through Friday, 8:00 AM to 4:00 PM. Legal State holidays are excluded. A listing of approved holidays in the State of Tennessee can be found at: <http://www.tn.gov/state-holidays.shtml>.
- **Trip Charge** – Contractor will be allowed a one-time/one-way trip charge on a per job/single truck basis, unless otherwise approved by the requesting agency. The Trip Charge will be calculated on a per mile basis, using Google Maps directions for the shortest route between points A and B. Point A will be the Contractor’s home office, and Point B will be the location of the job site. The Contractor will be required to submit a Google Maps printout demonstrating the shortest route with their final invoice. Vendor will be responsible for all lodging, meals, and other associated travel expenses.
- **Equipment** – The Contractor should have all tools, equipment, materials, and supplies required to complete the scope of service of this contract readily available for their private use.
- **Job Estimating** – An estimate of cost will be required for all work. The Contractor shall receive agency written approval prior to starting any work. The agency will request a written estimate be submitted. Job estimates will be monitored by agency personnel for accuracy.
- **Repair Costs beyond Initial Estimate** – Repair cost cannot exceed the amount estimated without justification from the Contractor and prior approval from the site’s Facility Manager.
- **Invoice Requirements** –
 - Payment invoices must be submitted to the agency within thirty days of job completion. The invoice, service ticket, and all product receipts and rental agreements shall be legible.
 - The invoice for payment must reference the following:
 - The facility name
 - Brief description of work performed
 - An itemized list by commodity line of work performed per line item(s)
 - The date(s) the work was performed
 - The current date (date invoice was created)
- **Parts Reimbursement** – Parts, materials, supplies, and equipment invoice(s) must accompany the invoice for payment. A copy of the original invoice(s) incurred with the procurement of chargeable parts, materials, and supplies shall be required as documentation to substantiate cost. Parts reimbursement and any and all payment(s) will be made to the contract holder only. Payment will not made by the agency to the Contractor's suppliers or sub-contractors. The

Contractor should reference the Terms and Conditions' Part's Markup term for additional details on Parts Reimbursement and Parts Markups.

Section 11: TDOT Contacts

- **TDOT Invoice and Payment Contact Information**

- General Inquiries – Alan Durham – 615-741-5616
- Invoice and Payments

TDOT Region 1

PO Box 58
Knoxville, TN
Mark Lewis
Facilities Manager
Phone: 865-594-4528

TDOT Region 2

PO Box 22368
Chattanooga, TN 37422
Gwen Whittaker
Regional Maintenance Manager
Phone: 423-510-1218

TDOT Region 3

6601 Centennial Blvd.
Nashville, TN 37243
Jimmy Kistner
Facilities Manager
Phone: 615-350-4398

TDOT Region 4

300 Benchmark Place
Jackson, TN 38301
Frank Hornsby
Facilities Manager
Phone: 731-935-0262

Section 12: Military Department Contacts and Special Requirements

- **General Inquiries - Crystal Lysinger, 615-313-0691, crystal.m.lysinger@tn.gov**

- **Agency Contacts:**

Facility Maintenance Zone 1

Military Department / CFMO
3041 Sidco Drive
Nashville, TN 37204-1502
ATTN: Willard Finch
Phone: 615-313-0616

Facility Maintenance Zone 2

Military Department / CFMO
3041 Sidco Drive
Nashville, TN 37204-1502
ATTN: John Watson
Phone: 615-313-0705

Facilities Maintenance Zone 3

Military Department / CFMO
3041 Sidco Drive
Nashville, TN 37204-1502
ATTN: Dick Townes
Phone: 615-313-0742

Facilities Maintenance Zone 4

Military Department / CFMO
3041 Sidco Drive
Nashville, TN 37204-1502
ATTN: Earl Biggs
Phone: 615-313-0918

- **Send Invoices to: military.invoices@tn.gov**

- **Proper Identification Required - Military Department**

Contractor employees must provide proper Government issued identification to enter the State Military Facility, may be subject to search, and are restricted to the work area site, and must wear proper identification at all times. Contractor vehicle(s) must be properly marked and must have current and valid license tags. All vehicles and personnel are subject to search. All State Facilities are non-smoking: the vendor/contractor and their employees must adhere to this requirement. No weapons shall be allowed on the Military Facility.