

ROOFINGPROJECTS-COM

SILICON ROOF RESTORATION SPECIFICATION

DealPoint Merrill – 7925-31 Indianapolis Blvd., Hammond, IL

Roof Sections: A, B, C & D (low slope membrane areas)

PART 1 - GENERAL

1.1 SUMMARY

A. Scope of Work

1. Work provided herein shall be provided only to the extent and is applicable to the work included in this specification.
2. The Lump Sum Base Bid in Words shall be for Section A only and will include all permits, project fees, mobilization and applicable taxes. Line items on the bid form will address add alternate pricing to add the remaining roof sections to the scope of work. Line items on the bid form will address only washing and repairing the existing membrane for various sections and to wash, repair and apply coating to various sections. All lump sum bid figures shall include all permits, project fees, mobilization and applicable taxes.
3. The manufacturer shall perform an adhesion test on the roofing membrane surfaces to insure proper adhesion of their product to the existing roofs prior to the commencement of the work by the contractor. The test shall be performed in accordance with ASTM D903 procedures (cost included in Lump Sum Base Bid Price). No work shall be performed until evaluation test results show that adhesion is adequate. The manufacturer shall provide a letter stating that the existing substrate is acceptable and upon successful completion of the project the specified warranty will be issued.
4. Tear off designated wet/damaged insulation roof areas and fill in with new insulation as identified during the course of the work. **Contractor to include in the base bid price an allowance of 1,000 square feet of removal and infill.** Fill in removed insulation areas to match the height of the existing adjacent roof area. Install new 60 mil TPO membrane to match existing in areas removed. Contractors to provide a unit price on the bid form for removal and filling of wet or damaged areas in excess of the allowance value noted above. Fill all removal areas with polyisocyanurate insulation to match the thickness of the existing roof system (approximately 2 ½ inches thick). All removal areas are to be documented by the contractor through markup drawing and photos confirming the conditions. Property management and Roofingprojects.com to be notified and made aware of the conditions immediately as they are encountered.
5. Contractor to thoroughly wash all roof and flashing areas to remove dirt and to expose membrane so that required repairs can be made to the existing membrane and flashing areas.
6. Contractor to repair all areas of the existing TPO membrane including base flashings that are unadhered, damaged areas, holes splits and tears prior to the application of the new silicon coating system. All repairs to be with compatible materials and in accordance with industry accepted practices for the existing system. The coating manufacturer shall inspect the completed repair work to the existing system and provide a letter stating these repairs are acceptable prior to the start of the coating work.
7. Prepare the repaired existing TPO Membrane System in accordance with the coating manufacturer's instructions including but not limited to removal of all walkway pads, etc. that will inhibit the installation of the specified coatings.
8. Apply new silicone coating system to the prepared existing membrane and base flashings including penetrations, curbs, etc.
9. Install coating manufacturer provided walkway pad system at all roof top access points and serviceable sides of rooftop equipment.
10. Coordinate with site personnel all necessary disconnects and shutdown of roof top equipment necessary to control any odors of the coatings and adhesive from entering the building. If contractor chooses to spray the coating system, control overspray of coating so as not to coat any adjacent surfaces or any ground level area or objects. Any over sprayed areas shall be cleaned up immediately to the satisfaction of the owner.

11. Reuse existing pipe supports in good condition. Replace missing or deteriorated pipe supports with treated wood supports height as required on wear pad with clamp to pipe to maintain support position
12. Lump Sum Base Bid: Contractor to provide a manufacturer's 10-year No Dollar Limit (NDL) watertightness warranty for the coating system upon completion of the project. Contractor to provide at Pre-Construction meeting the Warranty Reference Number assigned when the contractor registers the project with the Material Manufacturer providing the Long-term Warranty.
13. All required municipal permits, project fees and applicable taxes are to be included in the contractors base bid price.
14. All contractor payment applications are to be submitted to Roofingprojects.com for approval and certification to Owner for payment on standard AIA forms. Contractors are to include copies of itemized material supplier invoices and release of liens with all payment applications.

B. Instruction to Bidders:

1. The Owner's minimum qualifications to bid this project are displayed on the "Project Description" page and the Owner's minimum insurance requirements and service agreement are also available through a separate link at the top of the "Project Description" page.
2. Bids are to be submitted through the online bid form prior to the conclusion of the bid period -- bids can be changed prior to the bid period closing, however, no bid can be submitted after the bid period has closed.
3. The bid period is clearly displayed at the top of each page of the online "Project Package" assigned to this project.
4. In order to access the Bid Form, the Roofing Contractor must first fill out the form found when clicking on the "Tell the Owner about Your Company" link. Accessing the bid form will be allowed by the system once this form has been filled out and submitted and then clicking on the "Bid the Project" link.. The Roofing Contractor is encouraged to fill this form out specifically for this project as it relates to experience, crew size for this project, and time to complete the project, etc.
5. Contractors wishing to get clarification to any aspect of this project must submit their question through the "Ask your Question" link. All questions considered legitimate by RoofingProjects.com will be answered and available through the "Answers to Questions" link. All bidding contractors will be able to view the answered questions but not which contractor asked the questions.
6. Additional important project specific information is available through the "Estimator Assistant " and "Project Notes" links.
7. The Roofing Contractor is responsible for reviewing all drawings, specifications and the "Answer to Questions", "Project Notes", and "Estimator Assistant" links prior to submitting their final bid price.
8. Site visit opportunities will be displayed on the "Project Notes" link.
9. Bid Period Extensions: The Owner in association with Roofingprojects.com reserves the right to extend the bid period based on circumstances that may arise during the bid period. All bidders will be notified by email with the new bid closing date if applicable.

C. Bid Form Instructions

1. Please type in your bid price(s) in both words and figures in the appropriate line items given.
2. The amounts only accept (0123606789.) absolutely no commas or \$ signs
3. The Following unit prices are requested on bid form:
 - a. Per square foot price for steel deck replacement.
 - b. Lineal foot price for wood nailer add/replacement.
 - c. Lineal foot price for walk pad.
 - d. Unit price for new drain bowl and strainer.
 - e. Unit price for strainer replacement.
4. The following Schedule of Values are requested on bid form:
 - a. Mobilization
 - b. Roof Removal
 - c. Roof Insulation
 - d. Roof Membrane
 - e. Expansion Joint
 - f. Flashing Sheet Metal
 - g. State Taxes

- h. Separate line items for: Total Labor & Total Material
5. The following are specific and important instructions to filling out the online bid form as it relates to the Schedule of Values Section:
- a. The lump sum total is automatically carried down to the Bid Amount line at the top of the Schedule of Values.
 - b. Your total lump sum price for the project (the line item that asks you to spell your price in words) must equal the sum of two separate requested line item areas:
 - o #1 - Your lump sum must equal the sum total of your schedule of values (ie:mobilization, membrane, etc).
 - o #2 - Your lump sum must equal the sum total of the requested "total labor and total material". For example: If your lump sum is 100K then your total labor could be 50K and your total material could be 50K for a total of 100K.
 - o If you treat the schedule of values as separate from the requested total labor and total material line items you should have no problem. If you try to make the schedule of values combined with your total labor and total material equal to the lump sum it will be rejected by the system and clear the bid form.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's standard submittal package including specification, installation instructions, details, material data sheets and general information for each waterproofing material.
- B. Applicator Qualifications: Submit current "Qualified Applicator" certificate from the specified waterproofing manufacturer.
- C. Substrate Conditions:
 - 1. Manufacturer's representative to present to owner a completed inspection form verifying substrate condition are acceptable prior to the application of their coating system.
 - 2. Surface shall be free from loose dirt, stone, debris, moisture, and shall be in stable condition. Any work on the area to receive this application shall be completed prior to installation.
 - 3. Applicator shall complete a substrate inspection prior to start of roofing. The manufacturer and contractor shall accept the surface. Start of the work constitutes acceptance.

1.3 QUALITY ASSURANCE

- A. Primary waterproofing materials shall be products of a single manufacturer. Secondary materials shall be recommended by the primary manufacturer. Manufacturer shall have a minimum of 10 years experience in the manufacture of materials of this type. Coating system shall have UL & FM approvals.
- B. Applicators shall have a minimum of 5 years experience in the application of waterproofing materials of the type specified. Applicator shall possess a current "Qualified Applicator" certificate from the specified waterproofing manufacturer. Qualification of Workers: Use the necessary quantity of skilled laborers who are completely trained and versed in the necessary trades, and are thoroughly instructed in the various scopes of work required to complete this project as specified. Lack of skill or inadequate instruction of laborers to the scope of work required for this project will not be an excuse for accepting or rejecting the work performed.

- C. Regulatory Requirements for Elastomeric Roof Restoration Assembly: Comply with FM Global System Approval Guide Underwriters Laboratories, Inc. Roofing Materials, Building Code, Energy Code and Systems Directories as specified:
1. Underwriters Laboratory –UL790-Class A
 2. Factory Mutual Approvals– FM4470 - Class 1, ASTM E108 - Class A
 3. Cool Roof Rating Council –CRRC 0740-0012
 4. International Building Code
- D. Pre-Bid Meeting to be conducted by Roofingprojects.com as outlined in the project RFP.
- E. Materials other than specified shall be submitted to Roofingprojects/owner for approval no later than the bid date. In requesting prior approval, it shall be necessary to submit:
1. A letter of certification, signed by an officer of the manufacturer, stating that the alternative material is equal to or better than the specified product.
 2. Independent laboratory test data giving physical property values in comparison to the specified material.
- F. Pre-Installation Conference: Just prior to commencement of the work a pre-construction meeting will be held and conducted by Roofingprojects. At this meeting a representative from the following firms will be in attendance: coating manufacturer, the waterproofing/roofing contractor, Owner site personnel, Roofingprojects.com and any other parties necessary to execute the work. The purpose of the meeting is to review the following items (but not limited to) methods and procedures, staging & site access, work hours, substrate conditions, material submittals, scheduling and safety.
- G. Code Compliance: Bids must be in compliance with all applicable local and state codes. Contractor will be required to secure any and all permits required by local and state jurisdictions in order to conduct this project as specified. All costs for required permits must be included in contractor's base bid price.
- H. Employee Conduct: All employees and sub contracted employees must conduct themselves professionally at all times while on mall property. Owner will have a ZERO tolerance policy for employee interaction with mall customers. There will be no drinking of alcoholic beverages on mall property. In addition there will be no smoking allowed on the roof during the course of the project. Violation of the above mentioned items will be grounds for that employee to be banned from future work.
- I. Manufacturer's Site Inspections:
1. Provide site inspection and reports by the manufacturer's representative at the following periods:
 - a. Prior to 50% of roof installation.
 - b. Final Inspection: Two weeks prior to Final Payment.
 2. Prepare certificate of acceptance of completed roof installation by the Manufacturer.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in sufficient quantities as not to cause delays in application of the roofing system. Owner/owner's representative shall reject damaged materials not conforming. Rejected materials shall be removed immediately from the job site and replaced at no additional cost to the owner.
- B. Store materials as recommended by manufacturer and conforming to applicable safety regulatory agencies: town, state, and federal. Refer to all applicable data including but not limited to MSDS sheets, Product Data sheets, product labels and specific instructions for personal protection.
- C. Provide adequate ventilation, protection from hazardous fumes, and overspray potential to workers and associated trades in close proximity of site applications.

1.6 WARRANTY

- A. Lump Sum Base Bid: Manufacturer's Fifteen Year (10-year) Labor and Material No Dollar Limit (NDL) Watertightness Warranty
- B. Contractors Two Year (2-year) Labor and Material Warranty
- C. All warranties provided for the project must name the owner and address of project.

1.7 PROTECTION OF BUILDING AND OCCUPANTS:

- A. All surfaces not to receive system specified shall be protected from overspray hazard i.e. windows, doors, exterior and vehicles. Protective coverings shall be secured against wind and shall be vented if used in conjunction with applications preventing collection and moisture. If contractor chooses to spray apply the materials, they will be held responsible for any damage caused by and remediation required due to overspray of materials.
- B. Contractor is to post signs noting potential overspray hazard within 400' (121.90 meters) of applications.
- C. All air intake ventilation equipment shall be turned off to prevent fumes from entering building.
- D. Surfaces damaged during application shall be restored at no expense to the owner.
- E. No smoking signs to be posted as mandated by local fire officials.
- F. Substrate: Proceed with work as specified only after substrate construction, preparation, and detail work has been completed.
- G. Equipment: All equipment used must be approved as recommended in NCRA Guidelines for Roof Coatings Application. All equipment used shall be located so as not to adversely effect the daily operations or endanger occupants, structure or materials on-site. All spray equipment must be grounded during operations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

- A. Acceptable Manufacturers:
 - 1. Gaco Western
 - 2. Carlisle Syntec
 - 3. GAF
 - 4. Accella
 - 5. Tremco
 - 6. Henry
 - 7. GE
 - 8. Sarnafil
 - 9. Tropical

2.2 MATERIALS

A. **Gaco Western S-20 solvent-free 100% silicone coating** is the design basis for this specification, other acceptable manufacturers listed above may be proposed provided that the bidder provide (prior to contract signing) material technical specifications and methods indicating an equal product and installation to meet this specification, as determined by Roofingproducts.

1. Cleaner: GacoFlex D-09 etching detergent.
2. Primer: GacoFlex E-5320 epoxy primer.
3. Coating: Gaco Western GacoFlex S-20 series using contrasting colors (Coating color to be as selected by owner from the manufacturers standard colors –White, Gray or Tan)
4. Performance of cured coating must meet the following:

<u>Property</u>	<u>Value</u>	<u>Test Method</u>
Tensile Strength @ 73 deg. F	450 psi	ASTM D-412
Elongation @ 73 deg. F	174%	ASTM D-412
Tear Resistance	35.8 #/inch	ASTM D-624
Permeability	5.0 perms (Procedure B at 0.5 mm (20 mils) thickness ± 10%)	ASTM E-96
Wet Adhesion	Pass	ASTM C 794 / D 903
Reflectance	0.88	ASTM C-1549
Emittance	0.87	ASTM C-1371

- B. Existing Membrane Repair Materials – Membrane, mastics and other related materials from one manufacturer compatible with the existing roof system.
- C. Accessories: Walkpad system: Gaco Western #SF2036 walkpad system installed at a rate of approximately 4 gallons per 100 sq. feet applied at all rooftop access points and serviceable sides of all roof top equipment (30 inches depth area minimum x width as required for access). Install GacoFlex WalkPad Granules to be applied to the wet product at a rate of 0.5 lb. per 100 sq.ft.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

- A. Due to multiple system options the installation guidelines listed may include more than one alternative. Finished installation must be acceptable to the Material Manufacturer of the proposed roof restoration material for issuance of the specified long-term warranty.

B. SAFETY

1. Contractor shall follow all current OSHA and roofing industry requirements and standards for procedures followed during the roof restoration project.
2. Daily clean-up of work, staging and personnel areas is required.
3. Barricades: Barricades must be put in place prior to the start of the work that requires them. Proper barricades must be in place to encompass the entire swing radius of the crane to ensure and prevent the possibility of the public or employees being harmed by the crane or its operations.
4. Fire extinguishers must be present on the job site at all times – number of fire extinguishers should be sufficient so that any point is within 100 feet of a fire extinguisher.
5. Cranes and Hoists: Contractor must know and work within the load capacity, limitations and specifications provided by the equipment manufacturer.
6. Public Access: Unauthorized persons are not allowed to enter the roof at any time.
7. Fumes: Notify Property Management when there is the possibility that fumes and/or dust can be drawn into the building through air intake ducts so that steps can be taken to cover or shut down the unit.

3.2 EXAMINATION

- A. Verify substrate surfaces are dry and free of water, snow, and ice.
- B. Beginning installation means acceptance of substrate and pre-installation conference has been held with agreements reached.

3.3 PREPARATION

- A. Repairs to Existing Roof System.-This work is to be completed prior to the prepping and cleaning of the existing roof system.
 1. Remove any unadhered, loose or delaminated existing roof membrane areas.
 2. Reattach and/or replace any damaged insulation in the areas of the unadhered membrane being replaced. Fasten to the roof deck in accordance with manufacturers requirements.
 3. Remove any wet/damaged insulation as identified during the course of work. Fill in with new insulation to match the existing type and thickness to match the height of the existing roof insulation. Fasten to the roof deck in accordance with manufacturers requirements.
 4. Fully adhere new membrane to match existing type, thickness over the insulation and tie-in seal to existing membrane surfaces in accordance with industry standard practices in areas removed.
 5. Remove any unadhered, loose, delaminated or tented existing base flashing sheets and reinstall new flashing sheets in accordance with industry standard practices in areas removed.
 6. Repair all splits, punctures, tears or damage to the existing membrane and base flashings in accordance with industry standard practices.

3.4 INSTALLATION

- A. Before pressure washing is to begin remove heavy deposits of dirt, leaves and other debris from the roof using broom or air broom. Inspect the entire roof surface and flashings for any obvious open seams, tears, cuts, etc. and repair these flaws before pressure washing so the water is not blown in under membrane during the cleaning process.
- B. For general cleaning, apply etching detergent with sprayer of choice, Hudson type agricultural sprayer, Conventional pressure sprayer, or airless sprayer. Use 3 to 4 foot (.91 to 1.22 m) arc pattern. Allow etching

detergent to stand for 5 minutes. Clean with commercial power washer, >2000 psi (13.79 MPa). Beginning at the lowest point of the roof work toward the highest point, work down with a final rinse. On low-sloped roofs work away from and then back toward roof drains.

- C. Biological Control: Identified areas of algae, mildew or fungus on the roof membrane or the coating should be treated with a chlorine water solution, followed by a copious clear water rinse. (This treatment can be done using a commercially available chlorine compound available from swimming pool supply houses. Concentration of the chlorine solution should be five times that recommended for normal treatment of swimming pool.)
- D. Drying: After washing and cleaning the roof, allow surface to dry 48 hours before placing any coating. Examine roof, paying particular attention to areas of physical damage to determine that residual water has in fact dried. The roof should be allowed to dry completely if there is water present. Drying depends on weather conditions such as temperature, humidity and air movement. The above drying times assume good weather (70°F / 21°C.) daytime temperature and no rain. Conditions of lower temperature and rain will require a longer period for drying.
- E. Technical Advice: The installation of this system shall be accomplished in the presence of, or with the advice of the Manufacturer's technical representative. Contact the nearest regional office for assistance.

F. Primer: GacoFlex E5320

- 1. Two-component material. Equal parts by volume of Part A and Part B must be properly combined per the following directions prior to application: Mix Part A well for 3-5 minutes. Mix Part B for 3-5 minutes. Pour Part B into a clean, empty pail. Pour Part A into the same pail. It will sink. Mix both together for 3-5 minutes. Mixture will appear thin and light pink in color. Power mixing is recommended when combining more than one gallon(3.79L) each of Part A and Part B.
 - 2. Pot life after mixing is 1.5 hours at 75°F (24°C); the pot life will double at 55°F (13°C), however at 100°F (38°C) pot life is reduced to 45 minutes. Thinning is not normally required for roller application. When thinning is necessary to extend pot life for spraying, for application at cool temperatures, or to achieve recommended application rates, thin combined material with 10%-20% clean water and mix thoroughly. **Do not thin more than 20%.**
 - 3. Product may be applied by brush, roller or spray. On smooth surfaces, use a 1/4" to 3/8" nap roller or nylon brush. When applying E5320 as block filler for porous surfaces, use a 1" to 1-1/4" nap roller. If blow holes form as the primer dries, make a second pass with a relatively dry roller; allow 5 to 10 minutes between passes. Contact Gaco Western for application utilizing equipment. Do not apply to surfaces which are below 50°F (10°C)
 - 4. On smooth membrane surfaces, **apply one coat** of 1 1/2 gallons per 100 sq.ft.- NOTE: Application rate is job-specific. Additional material may be required.
- G. Repair: Inspect roof surface for delamination, punctures, tears, cuts and open seams. Open seams, tears, cuts must be over laid with a minimum 8" wide coat of GacoFlex S-20 applied with a brush or roller. While the GacoFlex S-20 is still wet embed a strip of 6" wide 66-S Polyester Tape centered over the seam or defect while applying additional GacoFlex S-20 as necessary to totally encapsulate the reinforcing fabric and feather out the coating onto the membrane surface.
 - H. Seams: After the specified top coat has been applied the contractor must walk the roof and make sure all seams are totally encapsulated. If any open seams are discovered additional coating must be brushed on the seam until it does become encapsulated.
 - I. Any flashing or field membrane that has stress crack will be reinforced with a layer of coating and polyester fabric before the other coats are applied.

- J. Existing equipment units on curbs with membrane: Membrane shall be coated up to the bottom of the metal cap of the unit and caulk installed underneath as long as curb is a minimum of 8" above the deck.
- K. Any units that are sitting on 4x4 wooden sleepers will have to be lifted so that the membrane can be cleaned, primed and coated underneath the units. Whenever you cannot get under something to properly clean, prime, and coat it will have to be moved or specifically excluded from the warranty.
- L. For details follow published guidelines or contact Gaco Western technical department.

M. Coating: GACOFLEX S20 SERIES SOLVENT-FREE 100% SILICONE COATING

- 1. Apply by brush or ¾" nap woven roller as received. For spray application, use as received; consult Gaco Western's Silicone Spray Guide SG-Silicone for more information. For cold weather application, keep material stored above 65°F (18°C). Do not apply if rain is expected within 1 hour. For application in temperatures below freezing or above 120°F (49°C), contact Gaco Western.
- 2. On smooth membrane surfaces, **apply one coat** at the rate of 1 1/2 gallon per 100 square feet per coat to achieve the required 22 dry mils. At all edges and penetrations, an extra pass must be applied. NOTE: Application rate is job-specific. Additional material may be required.
- 3. Coat all surfaces including expansion joint covers and flashings. Extra material is required at all edges and penetrations NOTE: Application rate is job-specific and losses due to overspray, surface profile and wind may occur. Additional material may be required to achieve the **required 22 dry mils**.
- 4. DRY TIME: Final coat should be allowed to cure 24 to 48 hours, depending on temperature and humidity, before suitable for light foot traffic.

3.5 FIELD QUALITY CONTROL

- A. No traffic shall be permitted on the coated surface for a minimum of three (3) days. Damage to surface by other trades shall not be responsibility of the roofing contractor.
- B. **Note:** It is the contractor's responsibility to calculate the gallons needed to obtain the required minimum 22 dry mils.

3.6 PROJECT CLOSE OUT

- A. Project Completion
 - 1. When the project is considered completed by the Roofing Contractor, the contractor will do the following:
 - a. Notify Owner Property Representative and Roofing Projects.com in writing that the Project is considered completed and that it has been inspected by the Material Manufacturer for warranty purposes. Letter shall list any punch list items generated by the Manufacturer's Inspection and that these items have been corrected to the Manufacturer's satisfaction.
 - b. Provide RoofingProjects.com with all inspection reports to include the Material Manufacturer's final inspection report.
 - c. Assure surfaces of new work and surrounding ground areas are clean and free of excess construction material and all debris.

B. Final Completion Inspection

1. When the Roofing Contractor, and Material Manufacturer have indicated that the project is complete then a final inspection with RoofingProjects.com, Owner Property Representative and the Roofing Contractor will take place.
2. All defects noted and non-compliances with the Specifications or the unfulfilled recommendations of the Material Manufacturer shall be itemized in a punch list. These items must be corrected immediately by the Applicator to the satisfaction of the Owner Property Representative and RoofingProjects.com. and the Material Manufacturer prior to demobilization.

C. Final Payment

1. The following documents shall be submitted to Roofingprojects.com and accepted prior to final payment being made:
 - a. Manufacturer's final inspection report.
 - b. Confirmation that any punch list items identified on the manufacturers and Roofingprojects.com final inspection reports have been resolved.
 - c. Contractor and manufacturers warranties as referenced in this specification.
 - d. Contractor release of liens indicating that all entities involved with the project have been paid in full including but not limited to labor, materials, fees, taxes, etc.

END OF SPECIFICATION