

SECTION 01 1000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project information.
2. Access to site.
3. Coordination with occupants.
4. Work restrictions.

1.2 PROJECT INFORMATION

A. Project Identification:

1. Project Location: Chatham County Resource Conservation Education Center, 1321 Eisenhower Drive, Savannah, Georgia

B. Owner: Commisioners of Chatham County

1. Owner's Representative: Jerrell McRell, (912) 652-7871

C. Architect: Barnard Architects, 220 East Hall Street, Savannah, GA 31401 (912) 232-6173.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. Re-roofing project comprising of applying over the existing flat roof section a coated foamed roof. Approimate area of the existing roof is 1,700 s.f.

B. Type of Contract.

1. Project will be constructed under a single prime contract.

1.4 ACCESS TO SITE

A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

B. Use of Site: Limit use of Project site to work in areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Limits: Confine construction operations to only the roof area and adjacent ground surface are immediately adjacent to the roof.
 2. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Coordinate with the Owner to move vehicles parked near the work area to minimize the risk of over-spray.
 - b. Coordinate staging area on site for the Contractor including parking area used for their employees.
 - c. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.
- a. Protect existing roof and wall surfaces from over-spray.

1.5 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy site and existing building(s) during entire period of this work. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
 2. Notify Owner not less than 48 hours in advance of activities that will affect Owner's operations.

1.6 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
1. Notify Owner not less than two days in advance of proposed utility interruptions.
- C. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
1. Notify Owner not less than two days in advance of proposed disruptive operations.
 2. Obtain Owner's written permission before proceeding with disruptive operations.

- D. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor-air intakes.
- E. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 1000

SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for temporary utilities.
- B. Related Requirements:
 - 1. Section 01 1000 "Summary" for work restrictions and limitations on utility interruptions.

1.2 USE CHARGES

- A. Water service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- B. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.3 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

PART 2 - PRODUCTS

2.1 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 TEMPORARY UTILITY INSTALLATION

- A. General: Connect to Owner's existing service.
- B. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

1. Toilets: Use of Owner's existing toilet facilities will not be permitted.
- C. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
 1. Owner to furnish (2) 110 volt 20 amp outlets and one (1) 220 volt 80 amp outlet, single or three phase as contractor's equipment requires.
 2. Outlets to be made available at beginning of the job. Contractor to furnish prior to the start of the Work a 220 volt pigtail which should be checked by the Owner before commencing the Work.

3.2 SUPPORT FACILITIES

- A. General: Comply with the following:
- B. Parking: Use pre-designated areas of Owner's existing parking areas for construction personnel. Verify location prior to start of the Work.
- C. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations.

END OF SECTION 01 5000

SECTION 07 5700 - COATED FOAMED ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Preparation of Substrate
2. Spray-applied, coated, polyurethane foam roofing.

1.2 PREINSTALLATION MEETINGS

- A. Pre-installation Conference: Conduct conference at the Project site.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

- A. Product certificates.
- B. Research reports.
- C. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who is approved, authorized, or licensed by coating manufacturer for installation of manufacturer's product over polyurethane foam and is a manufacturer's approved Team Q 1 Applicator.
1. Roofing applicator must exhibit 10 years and a minimum of 1,000,000 sq ft experience with the selected roofing system with projects of a similar scope and nature.
 2. Engage an installer who participates in and who has fulfilled requirements of the SPFA Accreditation Program for company accreditation. Present documentation, that he has successfully completed the SPF Chemical Health & Safety Training Program as provided by The American Chemistry Council.

- B. Comply with recommendations in SPFA AY-104, "Spray Polyurethane Foam Systems for New and Remedial Roofing."
- C. The roofing applicator shall perform the work of this section. Subcontracting installation of the silicone coating/polyurethane foam is not allowed.
- D. Inspections: Completed roofing application will be inspected by AMEC, ENT, Inc. the independent inspection firm designated by the warranty provider on a periodic basis.
- E. The Roofing System Manufacture shall have a 5A D & B or better rating & be ISO 9002 certified.

1.7 MATERIALS, DELIVERY and STORAGE

- A. Deliver materials to the site in their original, tightly sealed containers, all clearly labeled with manufacturer's name, product identification and lot number.
- B. Safely store materials in their original containers out of the weather and where the temperatures are within the limits specified by the manufacture.
- C. All materials shall be stored in compliance with the applicable fire and safety requirements.
- D. Protect materials from damage during transit, handling, storage and installation.

1.8 ENVIRONMENTAL CONDITIONS

- A. The coating and the polyurethane foam shall not be applied during periods of inclement weather (rain, fog, mist).
- B. Do not apply the polyurethane foam when substrate or ambient air temperatures are below 40°F (7°C) unless specifically approved in writing by the polyurethane foam manufacturer.
- C. Do not apply silicone coatings when temperature is below 40°F (5°C).
- D. When wind speeds exceed 10 miles per hour or adversely affects the quality of the SPF, windscreens shall be used during the application of the polyurethane foam and coatings to prevent overspray onto surfaces not intended to receive foam and coating. Under no circumstances shall the polyurethane foam or silicone coating be applied when wind speeds exceed 25 miles per hour.

1.9 SEQUENCING and SCHEDULING

- A. The spray polyurethane foam is installed when the deck, parapet walls, rough openings, and curbs are completed. Plumbing vents, drains, and electrical penetrations should all be in place. There should not be any tradespeople working on the roof when the spray polyurethane foam and silicone coating are being installed.

1.10 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace coated foamed roofing that does not comply with requirements or that does not remain watertight within specified warranty period.
 - 1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Material Compatibility: Provide polyurethane foam, coatings, substrate board, and auxiliary materials that are compatible with one another and with substrate under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Source Limitations for Coated Foamed Roofing System: Obtain coating and polyurethane foam from single source from single manufacturer.
- C. Basis for Design: BASF Seamless Silicone/Polyurethane Insulated Roof System

2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Coated foamed roofing shall withstand exposure to weather without failure due to defective manufacture, installation, or other defects in construction. Membrane roofing shall remain watertight.
- B. Fire-Test-Response Characteristics: Provide coated foamed roofing with the fire-test-response characteristics indicated, as determined by testing identical systems according to test methods below for deck type and slopes indicated by a qualified testing and inspecting agency that is acceptable to authorities having jurisdiction.
 - 1. Surface-Burning Characteristics: Comply with ASTM E 84 or UL 723; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - a. Flame-Spread Index: 75 or less.

2.3 POLYURETHANE FOAM

- A. Polyurethane Foam: Rigid, cellular polyurethane; complying with ASTM C 1029, Type III; spray applied, with fire retardants as required, and acceptable to coating manufacturer.
 - 1. In-Place Density: 2.7 to 3.2 lb/cu. ft.; ASTM D 1622.
 - 2. Compressive Strength psi min: 50, ASTM D 1621

3. Closed cell content percent min: >90, ASTM D 2856
4. K-factor, aged, max: 0.158, ASTM C 518
5. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - a. Flame-Spread Index: 75 or less.

2.4 SILICONE COATINGS

- A. Silicone Coating: Liquid silicone elastomeric coating system complying with ASTM D 6694 and specifically formulated for coating sprayed polyurethane-foam roofing.
 1. Composition: Two coats of an elastomeric, liquid applied material, domestically engineered and produced. The two coats shall be of contrasting colors..
 2. Thickness: 24 dry mils average and 20 dry mils minimum.

2.5 AUXILIARY MATERIALS

- A. Primer: Polyurethane foam manufacturer's standard factory-formulated primer.
- B. Mineral Granules: Ceramic-coated roofing granules, No. 11 screen size with 100 percent passing No. 8 sieve and 98 percent of mass retained by No. 40 sieve.
 1. Color: Shall match top coat.
- C. Sealant: ASTM C 920, Class 25, Use NT, Grade NS, Type S, one-component, neutral- or acid-curing silicone, and as recommended by coated foamed roofing manufacturer for substrate and joint conditions and for compatibility with roofing materials.
- D. Sheet Flashing and Accessories: Types recommended by coated foamed roofing manufacturer, provided at locations indicated and as recommended by coated foamed roofing manufacturer.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

- A. General: Clean and prepare substrate according to coated foamed roofing manufacturer's written instructions. Provide clean, dust-free, dew-free, and dry substrate for coated foamed roofing application.
- B. Prepare substrate for re-covering according to foamed roofing manufacturer's written instructions.
- C. Cover and mask adjoining surfaces not receiving coated foamed roofing to prevent overspray or spillage affecting other construction. Temporarily close off roof drains, removing roof-drain plugs when not doing coated foamed roofing work or when rain is forecast.
- D. Prime substrate as recommended by coated foamed roofing manufacturer.
- E. Fill, cover, or tape joints and cracks in substrate that exceed a width of 1/4 inch (6 mm). Remove dust and dirt from narrower joints and cracks before applying polyurethane foam.

- F. Do not begin applying polyurethane foam insulation until substrate and environmental conditions are satisfactory.

3.2 POLYURETHANE FOAM APPLICATION

- A. Prior to polyurethane foam application, inspect the substrate surface to ensure preparations required in Section 3.1 have been met.
- B. Polyurethane foam shall not be applied unless the environmental requirements of section 1.8 have been met.
- C. General: Mix and apply polyurethane foam according to ASTM D 5469 and coated foamed roofing manufacturer's written instructions.
- D. Apply polyurethane foam in lift thicknesses not less than 1/2 inch and not more than 1-1/2 inches.
- E. Apply the full thickness of polyurethane form in any area on the same day.
- F. Uniformly apply total thickness of polyurethane foam indicated, but not less than 1-1/2 inches, to a surface tolerance of plus 1/4 inch and no minus.
 - 1. Slope to Drain: Polyurethane foam shall be applied to ensure positive drainage, resulting in no-ponding water. Ponding water is defined as 'an area of 100 s.f. or more which holds in excess of 1/2 inch of water as measured 24 hours after rainfall'. Vary thickness uniformly and fill low spots to achieve minimum 1/4 inch per foot slope to drain unless otherwise indicated.
- G. Unless otherwise indicated, extend polyurethane foam at least 4 inches above elevation of adjacent roof field.
- H. Surface Finish: Provide finished surface of polyurethane foam within the following range of surface textures as defined by ASTM D 5469:
 - 1. Texture: Smooth to orange peel.
 - 2. Popcorn and tree bark textures are not acceptable. Unacceptable SPF textures shall be removed and re-sprayed prior to coating application.
- I. Remove and replace polyurethane foam not complying with surface-texture limitations. Remove defective thickness and prepare and reapply polyurethane foam with acceptable, uniform results.

3.3 COATING APPLICATION

- A. Apply coating system to polyurethane foam by spray, roller, or other suitable application method according to coating manufacturer's written instructions.
- B. Prior to the application of silicone coating, inspect the polyurethane foam surface to ensure the conditions of sections 3.2A & 3.2.B are met.
- C. The polyurethane foam surface shall be free of moisture, dust, dirt, debris and other contaminants that would impair the adhesion of the silicone coating.
- D. If more than 24 hours elapse between the polyurethane foam application and the start of the silicone coating application, thoroughly inspect the polyurethane foam surface for UV degradation and oxidation.

- Call manufacture's technical department for procedures to proceed if UV degradation has affected the SPF.
- E. Make sure all environmental conditions of section 1.8 have been met.
 - F. The silicone base coat shall be applied on the same day as the polyurethane foam application, after the polyurethane foam has been allowed to cure a min of one hour. Apply the base coat in a uniform application to achieve a finished dry film thickness of approximately ½ the total thickness required for the roof.
 - G. The base coat shall not be subjected to foot traffic or otherwise disturbed until it is tack-free or cured. After it has cured, inspect the coating for pinholes, cracks, thin areas or other defects. All defects observed shall be caulked with silicone sealant and/or roller coated with additional base coat prior to applying subsequent coats of silicone.
 - H. The base coat and sealant must be cured, clean and free of all moisture prior to application of topcoat.
 - I. Apply the topcoat in a contrasting color to the base coat within 72 hours of the base coat application. The topcoat application shall be made at right angles to the base coat application. Surface texture and conditions may require additional quantities of silicone to insure proper thickness. It is the applicator's responsibility to properly coat the insulation regardless of the quantity of silicone coating necessary.
 - J. Apply the topcoat in a uniform application per the following:
 - 1. Silicone Coating: Apply coating system to a minimum dry film thickness of 24 dry mils average and 20 dry mils minimum.
 - K. Height at Terminations: Apply coating system at wall terminations and other vertical surfaces to extend vertically beyond polyurethane foam by a minimum of 2 inches. These terminations should be masked to provide a straight edge, neat, finished appearance.
 - L. Mineral Granules: Apply mineral granules over wet topcoat using pressure equipment at the rate of 35 lbs per 100 s.f.. Apply granules in the second or finish coat of silicone coating. A minimum of 10 dry mils of silicone coating is required to hold the granules. Remove excess granules after topcoat has cured. Bare spots in the granulated surfaces shall be filled in by applying additional coating and granules in these areas.
 - M. Sealant: Apply sealant to perimeter and other terminations where indicated on Drawings or required by coated foamed roofing manufacturer.
 - N. Cure coatings according to manufacturer's written instructions, taking care to prevent contamination and damage during application stages and curing. Do not permit traffic on uncured coatings.
- 3.4 FIELD QUALITY CONTROL
- A. An independent inspection firm shall instruct the contractor to repair any deficient roof areas such as ponding issues
 - B. Core samples of the silicone roof system will be secured at completion by independent licensed inspection firm at the rate of one core per 10,000 s.f. with a minimum of 2 cores per roof, to test for SPF thickness, compressive strength, density and adhesion. Additionally, slit samples will be taken at a rate of 6 per 10,000 square feet, with a minimum of 6 per roof, to test the coating thickness and coating adhesion. Sampled areas will be repaired using silicone sealant and replacement SPF cores.
 - C. Applicator's quality control during application shall consist of the following, as a minimum:

1. Insulation thickness shall be verified with a probe at frequent and random locations.
2. During and after the coating application process, the applicator shall removed slits to examine adhesion of the coating to the insulation and the dry film thickness of each coat.

3.5 SAFETY REQUIREMENTS

- A. Proper safety precautions shall be followed throughout the entire roofing operation. OSHA and local regulations shall be strictly followed. Manufacturer's Material Safety Data Sheets must be available on site, for specific safety information on handling and working with all materials. Spray Polyurethane Foam Alliance and the American Chemistry Council's Recommendations for the Safe Handling and Use of Sprayed Urethane Foam and Coating Materials shall be strictly adhered to. Dispose of all trash, debris and empty containers in accordance with local regulations.
- B. On the roof and at all work sites, a properly maintained fire extinguisher will always be available.
- C. Dispose of trash, debris and empty containers in accordance with local regulations.

3.6 FOLLOW UP INSPECTIONS

- A. The system manufacture shall have a standard warranty inspection program. An independent testing firm to perform periodic inspections throughout the term of the warranty.

END OF SECTION 07 5700