

MADISON COUNTY PURCHASING
DEPARTMENT
100 North Side Square, Room 734
Huntsville, AL 35801

BID SUBMISSION CHECKLIST

Bid #2016-50

Bid Opening Date: December 14, 2016

√	<i>(Please check all completed items)</i>
	Signed, notarized and returned the Illegal Affidavit Forms with bid
	Completed IFB Form, signed and notarized
	Filled in all blanks within the specifications
	Included bid bond, if applicable
	*Included performance bond, if applicable
	Included all requested information in bid package
	Certifications/Licenses/Permits, if applicable
	Certificate of Insurance(s), if applicable
	Acknowledged the Addenda, if applicable
	Put bid number, company name and address on the outside of the envelope(s)
	Sealed bid response
	Cost Sheet on CD, if applicable
	Read specifications thoroughly

INCOMPLETE AND IRREGULAR BIDS

A bid that is not accompanied by data required by the Bid Documents, or a bid which is in any way incomplete, may be rejected. Any bid which contains any uninitiated alterations or erasures, or any bid which contains any additions, alternate bids, or conditions not called for, or any other irregularities of any kind, will be subject to rejection. Bids may also be rejected for any of (but not limited to) the following causes:

- A. Failure to utilize bid forms provided by Madison County.**
- B. Lack of signature on all notarized document(s) by authorized representative on the bid forms.**
- C. Failure to properly complete the bid.**
- D. Evidence of collusion among bidders.**
- E. Unauthorized alteration of bid/proposal form.**
- F. Failure to submit other forms and documents as required.**
- G. Failure to print and submit bid forms on letter size paper**
(make sure no portion of the bid documents are cut off)

EACH VENDOR SUBMITTING A BID MUST COMPLETE
AND SUBMIT WITH ITS BID THE FOLLOWING
STATEMENT

STATE OF ALABAMA
MADISON COUNTY

VERIFIED STATEMENT REGARDING UNAUTHORIZED ALIENS

The undersigned hereby certifies, under oath, in regard to the performance of the services or for the supply of materials or things described in this Invitation for Bid, that:

(A) it has conducted a verification, pursuant to all federal and state laws, of all the employees who will perform work on the Madison County Commission contract or work on the materials or things supplied to the Madison County Commission in response to this Invitation for Bid to insure that no unauthorized aliens will be employed to perform Madison County Commission work or supply materials or things to the Madison County Commission,

and

(B) to the best of their knowledge and belief, it is not employing or otherwise using unauthorized aliens to provide services, materials or things to the Madison County Commission.

The undersigned agrees:

1. it will verify that whether an employee is an unauthorized alien by inspecting such documents as are designated by Federal Law. For contracts in excess of \$100,000.00, in any twelve (12) month period of time, the contractor or supplier shall certify to the Commission that it has and will verify, to the extent allowable by Federal Law, by using the Federal E-Verify program, that no unauthorized aliens are utilized in providing services, materials or things to the Commission;

2. upon request, it will certify to the Commission, under oath by an officer or a management level employee, that it has verified to the extent allowable under Federal Law that named or otherwise described employees utilized in providing services, materials or things to the Commission are not unauthorized aliens;

3. upon determination by any appropriate Federal Agency that an employee is an unauthorized alien, the undersigned shall terminate the unauthorized alien's employment.

4. if the undersigned fails to terminate an employee determined to be an unauthorized alien by the Federal government or fails to provide the verification described above, the Madison County Commission may terminate the contract for the performance of services, materials or things pursuant to Madison County, Alabama, Policy Regarding The Employment of Unauthorized Aliens by Contractors and Suppliers.

The requirements and obligations of this Policy and Statement shall be interpreted and implemented in a manner consistent with all Federal and State Laws. If any provision of this Policy or Statement is declared invalid or in conflict with Federal or State Laws, such invalidly or conflict shall not affect the other provisions of this Policy or Statement which can be given effect without the invalid provision. The provisions of this Policy and Statement are declared to be severable.

NAME:

BY: _____

Printed Name of Person Signing: _____

Position: _____

SWORN TO and subscribed before me on this the _____ day of _____, 20_____.

Notary Public

My Commission Expires: _____

SWORN AFFIDAVIT OF EMPLOYER REGARDING UNAUTHORIZED ALIENS

1. The undersigned hereby attests by this sworn affidavit signed before a notary that it does not knowingly employ, hire for employment, or continue to employ an unauthorized alien.

2. The undersigned hereby attests that it is enrolled in the Federal E-Verify program. A true and correct copy of the undersigned's fully executed Federal E-Verify Memorandum of Understanding is attached hereto.

3. The Federal E-Verify Memorandum of Understanding attached hereto is the operative Memorandum of Understanding under which the undersigned is currently participating in the Federal E-Verify Program.

4. This sworn affidavit is provided to comply with Alabama Act No. 2011-535, known as the "Beason-Hammon Alabama Taxpayer and Citizen Protection Act."

Name:

_____ **Company Name** _____

By: _____ **Signature** _____

Printed Name: _____

Position: _____

STATE OF _____

COUNTY OF _____

I, the undersigned, Notary Public in and for said County in said State, hereby certify that _____ **Employee** _____, whose name as _____ **Job Title** _____ of _____ **Name of Organization** _____, is signed to the foregoing instrument and who is known to me, acknowledged before me on this day that, being informed of the contents of the instrument, he, as such _____ **Job Title** _____ and with full authority, executed the same voluntarily for and as the act of said _____ **Name of Organization/Company** _____.

Given under my hand this the _____ day of _____, 20____.

Notary Public

My Commission Expires: _____

SWORN AFFIDAVIT OF EMPLOYER REGARDING UNAUTHORIZED ALIENS

1. The undersigned hereby attests by this sworn affidavit signed before a notary that it does not knowingly employ, hire for employment, or continue to employ an unauthorized alien.

2. The undersigned hereby attests that it is enrolled in the Federal E-Verify program. A true and correct copy of the undersigned's fully executed Federal E-Verify Memorandum of Understanding is attached hereto.

3. The Federal E-Verify Memorandum of Understanding attached hereto is the operative Memorandum of Understanding under which the undersigned is currently participating in the Federal E-Verify Program.

4. This sworn affidavit is provided to comply with Alabama Act No. 2011-535, known as the "Beason-Hammon Alabama Taxpayer and Citizen Protection Act."

Name:

By: _____

Printed Name: _____

Position: _____

STATE OF _____

COUNTY OF _____

I, the undersigned, Notary Public in and for said County in said State, hereby certify that _____, whose name as _____ of _____, is signed to the foregoing instrument and who is known to me, acknowledged before me on this day that, being informed of the contents of the instrument, he, as such _____ and with full authority, executed the same voluntarily for and as the act of said _____.

Given under my hand this the _____ day of _____, 20____.

Notary Public

My Commission Expires: _____

SWORN AFFIDAVIT OF SUBCONTRACTOR
REGARDING UNAUTHORIZED ALIENS

1. The undersigned subcontractor hereby attests by this sworn affidavit signed before a notary that it does not knowingly employ, hire for employment, or continue to employ an unauthorized alien.

2. The undersigned subcontractor hereby attests that it is enrolled in the Federal E-Verify program. A true and correct copy of the undersigned's fully executed Federal E-Verify Memorandum of Understanding is attached hereto.

3. The Federal E-Verify Memorandum of Understanding attached hereto is the operative Memorandum of Understanding under which the undersigned is currently participating in the Federal E-Verify Program.

4. This sworn affidavit is provided to comply with Alabama Act No. 2011-535, known as the "Beason-Hammon Alabama Taxpayer and Citizen Protection Act."

Name:

By:_____

Printed Name:_____

Position:_____

STATE OF _____

COUNTY OF _____

I, the undersigned, Notary Public in and for said County in said State, hereby certify that _____, whose name as _____ of _____, is signed to the foregoing instrument and who is known to me, acknowledged before me on this day that, being informed of the contents of the instrument, he, as such _____ and with full authority, executed the same voluntarily for and as the act of said _____.

Given under my hand this the _____ day of _____, 20____.

Notary Public
My Commission Expires: _____

MADISON COUNTY COMMISSION
100 NORTH SIDE SQUARE
HUNTSVILLE, ALABAMA 35801

INVITATION FOR BIDS

BID NUMBER: 2016-50

Madison County Commission will accept bids for SPF (Sprayed Polyurethane Foam) Roof Coating or Equivalent for the Madison County Neavis Davis Center 817 Cook Avenue Huntsville, AL 35801.

Bids will open on , December 14, 2016 at 2:00 p.m.
7th Floor, Room 734 – Madison County Courthouse, Huntsville, Alabama
(See attached specifications)

Current bids are available on our website at www.madisoncountyal.gov

Each vendor submitting a bid must complete the Verified Statements Regarding Unauthorized Aliens.

The Madison County Commission will receive sealed bids until the date and time of bid opening for item(s) meeting, exceeding, or equivalent to specifications.

The Madison County Commission reserves the right to accept or reject any and all bids in whole or in part.

Failure to comply with any of the requirements contained in this invitation for bids may result in the rejection of the entire bid submitted.

Any attachments hereto become a part of the bid and will remain in the bid file.

Brand names used in this invitation for bids are for comparison purposes only and are not to be construed as indicating any preference. Any items submitted as equivalent to or exceeding specifications must be described in detail.

All bids must be submitted on this form. No errors will be corrected after bids are opened. Bids made out in pencil will NOT be accepted.

No Federal or State taxes are to be included or charged.

It is the intent of the Madison County Commission to allow any business selling the type(s) of merchandise described, to participate in our bidding process. If any prospective vendor feels that any part of these specifications would prohibit their company from submitting a bid, or has any questions regarding this bid, you may email the Purchasing Department at bidspecs@madisoncountyal.gov prior to the bid opening date.

Each vendor must possess proper state, county, and city license, certification, or other requirements imposed, for engaging in the type of activity for which bids are solicited.

Subsequent contracts will not be accepted from a vendor after a bid has been awarded. Vendors must include their contracts with the Invitation for Bids form prior to the bid opening.

Madison County reserves the right to require proof that the products bid are suitable for the purposes for which they are intended. Madison County also reserves the right to cancel a bid if the products received under the bid are not suitable for the purposes intended.

F.O.B. Destination, Freight Prepaid and Allowed. F.O.B. term to mean: Title to the goods passes to the agency upon successful inspection and acceptance once received at the delivery destination point and that the supplier will prepay and bear all of the transportation shipping costs.

Vendors must sign and notarize their bid. Failure to do so may result in rejection of bid.

Madison County Commission reserves the right to waive any minor informality which is immaterial in nature, negligible, or trivial, and does not affect responsiveness.

**SUBMIT BID TO: MADISON COUNTY PURCHASING
100 NORTH SIDE SQUARE
ROOM 734
HUNTSVILLE, AL 35801**

Vendor must show on envelope the bid number and opening date.

Each numbered bid must be in a separate envelope.

All documents submitted to Madison County will be subject to Alabama's Open Records Laws (Code of Alabama, Title 36-12-40 and 41, as last amended). Due to the provisions of the Open Records Laws and the Competitive Bid Laws (especially Code of Alabama, Title 41-16-24(b)), the Madison County Commission cannot assure any Bidder that any information submitted with the bid, even though marked "Proprietary" will not be open to public inspection and copying.

Terms of payment _____

I hereby affirm that I have not been in any agreement or collusion among vendors or prospective vendors in restraint of freedom of competition, by agreement to bid at a fixed price or to refrain from bidding, or otherwise.

THIS BID MUST BE NOTARIZED.

Subscribed and sworn to before
me this _____ day of
_____ 20_____.

Notary Public

Angela Anderson
Madison County Purchasing Director

Madison County Commission
Awarding Authority

DATE: November 30, 2016

COMPANY NAME: _____

SIGNATURE: _____

PRINT NAME: _____

STREET ADDRESS: _____

CITY: _____ STATE: _____ ZIP CODE: _____

PHONE #: _____ FAX #: _____

EMAIL ADDRESS: _____

FEDERAL ID# _____

General Specifications

- Bidder must have proper certification, experience, and/or affiliations, to apply and/or install Spray Polyurethane Foam roof coating systems.
- **Mandatory pre-bid conference will be held on December 6th at 11:00 a.m. In order to submit a sealed bid for this solicitation you must attend the pre-bid conference.**
- Bidder must have proper contractors licensing and insurance to perform commercial roofing in the Huntsville area.
- **POC for this project is: Jacques Cothren, Director email: j.cothren@madisoncountyal.gov.**
- Madison County Inspection Department will issue a permit for this job. Location is 226 Shields Rd. Huntsville, AL 35811. Office number is 256.746.2950.

**All procurement inquiries must be sent via email to Angela Anderson at bidspecs@madisoncountyal.gov.
Procurement inquiries will not be permitted via telephone.**

Total Cost: _____

ALL VENDORS PLEASE NOTE

Addenda: Bidders must periodically check the County's website for any addenda issued for this procurement. Madison County will not be responsible for a bidder's failure to acquire any addenda issued. The Bidder acknowledges receipt of the following addenda, if applicable: _____

www.madisoncountyal.gov

Bid Specifications

Accella Polyurethane Systems GE SCM3500 Silicone Coating/Premiseal™ Polyurethane Foam Insulated Roof System (equivalent or greater) for New Construction or Retrofit

PART 1 - GENERAL

1.01 Work Included

- A. Preparation of Substrate
- B. Accella Polyurethane Systems Premiseal™ Sprayed-in-place Polyurethane Foam (SPF) Insulation
- C. Accella Polyurethane Systems GE SCM3500 Series Silicone Roof Coating
- D. Roofing Granules
- E. Walkways

1.02 Related Documents

The codes, standards and practices listed shall be the latest edition. ASTM refers to ASTM International.

ASTM C518 – Standard Test Method for Steady State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus

ASTM C1371 - Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers

ASTM C1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer

ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension

ASTM D522 - Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings

ASTM D1475 - Standard Test Method For Density of Liquid Coatings, Inks, and Related Products

ASTM D1621 – Standard Test Method of Compressive Properties of Rigid Cellular Plastics

ASTM D1622 – Standard Test Method for Apparent Density of Rigid Cellular Plastics

ASTM D1623 - Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics

ASTM D1644 - Standard Test Methods for Nonvolatile Content of Varnishes

ASTM D2126 – Test Method for Response of Rigid Cellular Plastics to Thermal and Heat Aging

ASTM D2240 - Standard Test Method for Rubber Property—Durometer Hardness

ASTM D2697 - Standard Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings

ASTM D4263 - Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method
ASTM D5469 – Standard for SPF Roofing Systems
ASTM D6694 - Standard Specification for Liquid-Applied Silicone Coating Used in Spray Polyurethane Foam Roofing Systems
ASTM D6226 - Standard Test Method for Open Cell Content of Rigid Cellular Plastics
ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces
ASTM E 108 (UL 790) – Standard Test Method for Fire Tests of Roof Coverings
SPFA AY 104 – Spray Polyurethane Foam Systems for New and Remedial Roofing
NRCA – Sprayed Polyurethane Foam-Based Roofing Manual

1.03 Quality Assurance

- A. Applicator Qualifications: Must be a current Accella Polyurethane Systems Authorized Applicator or current applicator of the approved roof system manufacturer.
- B. Roofing applicator must exhibit 2 years and a minimum of 250,000 sq. ft. experience with spray polyurethane roofing systems, with projects of a similar scope and nature.
- 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 Jacques Cothren & or Designee

1.04 Submittals

- A. Any alternate products shall be submitted to the owner and/or owner's representative 10 days before bid date to allow time for product review. Submittals shall include: all appropriate technical data sheets, manufacturer's references, sample warranty, inspection policy, material safety data sheets, and a typical, physical sample (3' x 3') to be used as a standard of quality.
- B. Applicator shall submit to owner's representative at or before time of bid:
 - 1. Reference projects with contacts, substantiating years of experience and completion of minimum prior work submitted by applicator.
 - 2. Provide sample copy of warranty.
 - 3. Submit Underwriters Laboratory, UL 790 classification, or Factory Mutual, and local building code approvals as required/requested.
 - 4. Submit product technical data sheets, SDS, shop drawings as applicable.

1.05 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, dry and where the temperatures are within the limits specified by the manufacturer.
- C. All materials shall be stored in compliance with applicable fire and safety requirements.

D. Protect materials from damage during transit, handling, storage and installation.

1.06 Environmental Conditions

- A. The coating and the polyurethane foam shall not be applied during periods of inclement weather (rain, snow, fog, mist).
- B. Do not apply the polyurethane foam when substrate or ambient air temperatures are below 45°F (7°C) unless specifically approved in writing by the polyurethane foam manufacturer.
- C. Do not apply silicone coatings when ambient or substrate temperatures are below 40°F (4.5°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 20 miles per hour.

1.07 Sequencing and Scheduling

The spray polyurethane foam is installed when the deck, parapet walls, rough openings, and curbs are completed. The type of skylights used will determine when skylights should be installed. 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.

1.08 Warranty

The roof system manufacturer's 15 year System Warranty shall be issued upon completion, inspection and acceptance of the project. Any repairs covered by the warranty are without cost to the Owner throughout the term. The warranty shall be comprehensive with no proration and no cap for repairs. All sprayed polyurethane foam and coating systems shall be supplied and warranted by the same manufacturer. Any substitutions must be approved by the owner.

PART 2 - PRODUCTS

2.01 Polyurethane Foam Insulation

- A. The spray polyurethane foam roofing insulation system shall be a two component rigid product processed through plural component proportioning equipment. Physical property requirements are as follows, for acceptable spray polyurethane foam insulation products with zero-ozone depleting potential; as Accella Polyurethane Systems Premiseal™ 285 or approved equal.

<u>Property</u>	<u>Value</u>	<u>Test Method</u>
Density, sprayed-in-place, pcf, min.	2.7 – 2.9	ASTM D 1622
Compressive strength, psi, min.	50-60	ASTM D 1621
Tensile Strength, psi, min.	65-75	ASTM D 1623
Closed-cell content, percent, min.	>90	ASTM D 6226
R-value, aged, per 1 inch	6.4	ASTM C 518
Dimensional Stability, 28 days, Percent volume change, max.	<+4%	ASTM D 2126
Flame spread*, max.	<75	ASTM E 84

**These flame spread ratings are for test conditions, and are not intended to reflect hazards presented by this or any other material under actual fire conditions.*

2.02 Silicone Coating

- A. The silicone roofing membrane shall consist of a minimum two coats of an elastomeric, liquid applied material, domestically engineered and produced. The two coats shall be of contrasting colors. The coating shall be the spray applied GE SCM 3500 series elastomeric silicone coating system, sold by Accella Polyurethane Systems. Owner has chosen **gray** as the color of the top coat.

<u>Property</u>	<u>Value</u>	<u>Test Method</u>
As Supplied:		
Solids Content		
by weight, percent	91	ASTM D 1644
by volume, percent	90	ASTM D 2697
Volatile Organic Content (VOC), (g/l)	<24	EPA Method 24
As Cured:		
Tensile Strength, psi	204 min.	ASTM D412
Elongation, percent	542 min	ASTM D412
Hardness, Shore A	36	ASTM D2240

Solar Reflectivity (white)	0.88	ASTM C1549
Emissivity (white)	0.90	ASTM C1371
Solar Reflectance Index (SRI) (White)	111	ASTM E1980

2.03 Sealant

- A. Sealant shall be a pigmented silicone sealant such as GE Silpruf Sealants or equal. The color of this sealant, if exposed, shall closely match that of the topcoat.

2.04 Primers

- A. For freshly scarified polyurethane foam (SPF), day to day tie-ins, over exposed SPF, and at SPF repairs use Premicote™ P75 primer applied at a rate of ½ gallon per 100 sf.
- B. For Non-Ferrous Metal Substrates (aluminum, galvalume, copper, stainless steel and galvanized steel) use a wash primer. A wash primer such as Jones Blair Mist Coat II or Sherwin Williams Industrial Wash primer is recommended.
- C. For BUR, Mod-bit, Wood, Concrete, Masonry or primed/painted metal substrates use Premicote™ P75 primer applied at a rate of ½ gallon per 100 sf.
- D. Cut back asphalt primers shall not be used.
- E. Consult Accella Polyurethane Systems for primer recommendations for other substrates. (770-528-9556)

2.05 Granules

- A. Granules shall be number 11 screen size, ceramic-coated roofing granules as manufactured by the Industrial Products Division of 3M Company or equal, color to best match topcoat.
- B. Quartz or silica aggregate such as SESCO's are acceptable and color should be selected to match topcoat.

2.06 Protective Covering / Walkways

- A. As required a weather-resistant, breathable, resilient pad composed of synthetic rubber strands shall be installed to create protected walkways over the spray polyurethane and coating system. Walk pad shall be yellow in color. This product shall be approved by Accella Polyurethane Systems. Such a walkway is Yellow Spaghetti, as manufactured by Western Plastics, Inc.

2.07 Insulation Board

- A. Shall be a 1 ½" Hunter polyisocyanurate insulation board with a coated glass matt facer fastened per wind uplift requirements and manufacturers recommendations.

PART 3 – EXECUTION

3.01 Inspection

- A. Verify that all surfaces to receive spray polyurethane foam insulation are clean, dry and free of dust, dirt, debris, oil, solvents and all materials that may adversely affect the adhesion of the polyurethane foam.
- B. Verify that all roof penetrations and other details are properly installed and secured. A metal roof deck shall be securely fastened; the existing fasteners may need to be tightened and/or new fasteners installed to enhance wind uplift resistance.
- C. Do not begin applying spray polyurethane foam insulation until substrate and environmental conditions are satisfactory.

3.02 Surface Preparation

- A. Remove all ballast/stone from existing roofing surface using care not to overload any section of the roof in this process.
- B. Remove existing EPDM membrane roof system and provide for disposal.
- C. Remove existing metal flashing at north and south draining edges.
- D. Install new 2" x 6" wood nailers at the north and south draining edges.
- E. Install new 24 g Kynar coated metal flashing on north and south draining edges.

3.03 Polyisocyanurate board Installation

- A. Install Hunter 1.5 inch thick polyisocyanurate board insulation with coated glass facer over existing iso board using recommended screws and plates @ 3.2 sf in the field of the roof and @1.77 sf on the 12' in from the perimeter of the roof.
- B. Primer board with Premicote P75 primer at the rate of ½ gallon per 100 sf.

3.04 Polyurethane Foam Application

- A. Inspection
 - 1. Prior to polyurethane foam application, inspect the substrate surface to ensure preparations required in Section 3.02 have been met.
 - 2. Polyurethane foam shall not be applied unless the environmental requirements of Section 1.07 are met.
 - 3. Apply materials within the range of relative humidity recommended by manufacturer of each component, but not when relative humidity exceeds 85 percent, or when temperatures are less than 5 degrees F above dew point.

B. Application

1. All objects that require protection from overspray shall be protected; all mobile objects shall be moved to an acceptable protected area. All intake air vents shall be turned off and covered. Temporarily close off roof drains, removing roof-drain plugs when not doing coated spray polyurethane foam roofing work or when rain is forecast.
2. Apply the polyurethane foam in strict accordance with the polyurethane foam manufacturer's specifications and application instructions, using spray equipment recommended by the SPF manufacturer. The field of the roof shall be applied, as practical, by a robotic SPF application device. The robotic method shall improve consistency, slope-to-drain, and visual appearance.
3. Polyurethane foam shall be applied in a minimum of ½-inch thick passes and not more than 1 ½ inches. The total thickness of the polyurethane foam shall be a minimum of 1.5 inches (or more for drainage or detail considerations), except where tapering is required to facilitate drainage.
4. Apply the full thickness of polyurethane foam in any area on the same day.
5. Polyurethane foam shall be applied to ensure positive drainage, resulting in no ponding water. Ponding water is defined as "an area of 100 square feet or more which holds in excess of ½ inch of water as measured 24 hours after rainfall."
6. The polyurethane foam shall be terminated neatly a minimum of 4 inches above the finished roof surface at roof penetrations. Sprayed-in-place cants shall be applied to allow a smooth transition from the horizontal to vertical surface.
7. The finished polyurethane foam surface texture shall be "smooth to orange-peel", free of voids, pinholes and depressions. "Verge of popcorn" texture is acceptable if it can be thoroughly and completely coated. Popcorn and tree bark textures are not acceptable. Unacceptable SPF textures shall be removed and re-sprayed prior to the coating application.

3.05 Momentive SCM 3500 Series Silicone Roof Coating Application

A. Inspection

1. Prior to the application of silicone coating, inspect the polyurethane foam surface to ensure the conditions of Section 3.04 have been met.
2. The polyurethane foam surface shall be free of moisture, dust, dirt, pollen, debris and other contaminants that would impair the adhesion of the silicone coating.
3. 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 Accella Polyurethane Systems technical department for procedures to proceed, if UV degradation has affected the SPF.
4. Make sure all environmental conditions of Section 1.07 are met prior to silicone coating application.

B. Application

1. The Momentive SCM 3500 Silicone base coating shall be applied on the same day as the polyurethane foam application, after the polyurethane foam has been allowed to cure a minimum 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.
2. 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 urethane sealant and/or roller coated with additional base coat prior to applying subsequent coats of silicone.
3. The base coat and sealant must be cured, clean and free of all moisture prior to application of intermediate coat and/or topcoat.
4. Apply the intermediate coat and/or topcoat in a contrasting color to the base coat within 72 hours of the base coat application. The subsequent applications shall be made at right angles to the base coat application. Surface texture and conditions may require additional quantities of silicone coating to insure proper thickness. It is the applicator's responsibility to properly coat the spray polyurethane foam insulation regardless of the quantity of silicone coating necessary.
5. Apply the topcoat in a uniform application to achieve a minimum total finished dry film thickness of the base coats and topcoat of 25 mils. It is the applicator's responsibility to ensure the minimum total dry film thickness specified is achieved throughout the entire roof area regardless of the quantity of silicone coating required.
6. The Momentive SCM 3500 Silicone Roof Coating shall be applied a minimum of 2 inches beyond all the terminated edges of the polyurethane foam. These terminations should be masked to provide a straight edge, neat, finished appearance.
7. Allow the topcoat to cure and inspect the finished coating surface for pinholes, cracks, thin areas, or other defects. Repair any defects observed with Urethane sealant and/or additional silicone coating material.

3.06 Granule Application

A. Application

1. Apply roofing granules in the second or finish coat of silicone coating. A minimum of 10 dry mils or one gallon per 100 square feet of silicone coating is required to hold the granules.
2. Apply the roofing granules, using suitable compressed air equipment, uniformly at a rate of approximately 30-40 pounds per 100 square feet of roof area.
3. Apply the roofing granules immediately after the additional coating application to obtain maximum wet-out and embedment.

4. After the coating has fully cured, excessive, loose granules shall be removed using a soft-bristled broom or air nozzle, to prevent blocking drains, scuppers, or gutters.
5. Bare spots in the granulated surface shall be filled in by applying additional coating and granules in these areas.

3.07 Walkways

- A. Factory-formed walkway pads may be used at rooftop equipment to provide a working surface and create walkways. Spot adhere the pads or rolls to the finished roof surface with generous buttons of sealant. These shall be applied where instructed by the owner's representative.

3.08 Field Quality Control

- A. The Owners designee, Jacques Cothren, (& or his appointee), upon inspection of work, shall instruct the contractor to repair any deficient roof areas, such as: ponding, wet insulation, deck problems, required new drains, etc.
- B. Applicator's quality control during application shall consist of the following, as a minimum:
 1. If specified, the primer application rate shall be verified by a wet mil gauge test onto a metal test panel.
 2. Insulation thickness shall be verified with a probe at frequent and random locations.
 3. During and after the coating application process, the applicator shall remove slits to examine adhesion of the coating to the insulation and the dry film thickness of each coat.

3.08 Safety Requirements

- A. Proper safety precautions shall be followed throughout the entire roofing operation. OSHA and local regulations shall be strictly followed. Manufacturer's 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.