

BIDDERS COMPANY NAME

# REQUEST FOR PROPOSAL

## #6537

# ROOF REPLACEMENT

At

## 2140 E. ELLSWORTH, ANN ARBOR

Prepared By:

Washtenaw County Purchasing  
Administration Building  
220 N. Main, B-35  
Ann Arbor, MI 48107

Crystal A. Wake, C.P.M., CPPB  
Senior Buyer





## WASHTENAW COUNTY

Finance Department

**Purchasing Division**

220 N. Main, Ann Arbor, MI 48107-8645  
Phone (734) 222-6760, Fax (734) 222-6764

### REQUEST FOR PROPOSAL #6537

May 17, 2010

Washtenaw County Purchasing Division on behalf of the Support Services Facilities Management is issuing a Request for Proposal (RFP) #6537 for the installation of a Firestone Fully Adhered Standard Adhesive EPDM single-ply roof system.

**Sealed Proposals:** Vendor will deliver one (1) original and three (3) copies to the following address:

**Washtenaw County  
Administration Building  
Purchasing Division  
220 N. Main St. Room B-35  
Ann Arbor, MI 48107**

**BY: 4:00 PM ON MONDAY JUNE 7, 2010.**

A **MANDATORY Pre-Bid Walk-Through** will be held on **Wednesday, May 26, 2010 at 10:00 am**. Meet outside the CSTS building, 2140 E. Ellsworth Road, Ann Arbor, MI 48104. A Sign-In Sheet will be used to verify attendance.

**Proposals received after the above-cited time will be considered a late quote and are not acceptable unless waived by the Purchasing Manager.**

- The envelope must be clearly marked "**SEALED RFP #6537**"
- Please direct purchasing and procedural questions regarding this RFP to Crystal A. Wake at (734) 222-6761 or [wakec@ewashtenaw.org](mailto:wakec@ewashtenaw.org).
- Technical questions may be directed to Bill Goebel (734) 260-5244 or email at [goebelb@ewashtenaw.org](mailto:goebelb@ewashtenaw.org)

Thank you for your interest

## RFP #6537 - ROOF REPLACEMENT AT 2140 E. ELLSWORTH

### I. PROPOSAL

- Definitions:**
- “**County**” is Washtenaw County in Michigan.
  - “**Bidder**” an individual or business submitting a bid to Washtenaw County.
  - “**Contractor**” One who contracts to perform services in accordance with a contract.

#### Purpose of Proposal

The purpose of this proposal is to provide interested vendors with sufficient information to enable them to prepare and submit proposals for consideration by Washtenaw County for the installation of a Firestone EPDM roofing system using 60-mil membrane approximately 31,000 square feet at the County’s facility located at 2140 E. Ellsworth, Ann Arbor in accordance with the Firestone Building Roof System specifications and guidelines. The term of the contract will be from the execution of a contract until the project is completed or no later than December 31, 2010.

### II. PROPOSAL TERMS

- A. Washtenaw County reserves the right to reject any and all proposals received as a result of this RFP. If a proposal is selected, it will be the most advantageous regarding price, quality of service, the Contractor’s qualifications and capabilities to provide the specified service, and other factors which Washtenaw County may consider. The County does not intend to award a contract fully on the basis of any response made to the proposal; the County reserves the right to consider proposals for modifications at any time before a contract would be awarded, and negotiations would be undertaken with that provider whose proposal is deemed to best meet the County’s specifications and needs.
- B. The County reserves the right to reject any or all bids, to waive or not waive informalities or irregularities in bids or bidding procedures, and to accept or further negotiate cost, terms, or conditions of any bid determined by the County to be in the best interests of the County even though not the lowest bid.
- C. The price quotations stated in the bidder’s proposal will not be subject to any price increase from the date on which the proposal is opened at the County Purchasing Office to the mutually agreed-to date of Bid.
- D. Proposals must be signed by an official authorized to bind the provider to its provisions for at least a period of 90 days. Failure of the successful bidder to accept the obligation of the Bid may result in the cancellation of any award.

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- E. In the event it becomes necessary to revise any part of the RFP, addenda will be provided. Deadlines for submission of the RFP's maybe adjusted to allow for revisions. The **entire** proposal document with any amendments should be returned. To be considered, **an original proposal and two copies** must be at the County Purchasing Division on or before the date and time specified.
- F. Proposals should be prepared simply and economically providing a straight-forward, concise description of the vendor's ability to meet the requirements of the RFP. Proposals shall be written in ink or typewritten. No erasures are permitted. Mistakes may be crossed out and corrected and must be initialed in ink by the person **signing** the proposal.
- G. A standard Washtenaw County Service Contract will be executed between Washtenaw County and the awarded vendor.
- H. In the event, the County receives two or more bids from responsive, responsible bidders, one or more of whom are Washtenaw County vendors and the bids are substantially equal in price, quality and service, the County shall award the contract to the most responsive, responsible Washtenaw County vendor. For purposes of this section, Washtenaw County vendor means a company which has maintained its principal office in Washtenaw County for at least six (6) months. Maintaining a Washtenaw County P.O. Box is not, in and of itself, sufficient to discretion under this section to determine if a company qualifies as a Washtenaw County vendor and if two or more bids are substantially equal.

**III. PROPOSAL SPECIFICATIONS**

The Proposal shall include all of the following information. Failure to include all of the required information may result in disqualification of a bidder. Proposals are sought from firms with recognized expertise roofing projects with experience in the public sector.

- A. Contractor's name, address, and names of primary contact person.

**List as Addendum A**

- B. A description of the specific staff that will comprise the project team for this assignment.

**List as Addendum B**

- C. Samples of related/comparable past projects that would serve as examples of experience and expertise necessary for this project.

**List as Addendum C**

- D. Statement of qualifications and experience with public sector work.

**List as Addendum D**

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E. Provide a list of intended subcontractors.

**List as Addendum E**

F. Provide a list of client references.

**List as Addendum F**

G. A proposed fee structure for the work to be performed, including costs from all anticipated subcontractors.

**List as Addendum G**

H. Review contract provisions and insurance requirements. Note any limitations on meeting these requirements as outlined in the contract provisions.

**List as Addendum H**

I. Have you ever defaulted on a contract? If so, where and why.

**List as Addendum I**

It is not the intent of this RFP to solicit an overly long response, but it is important the firm's experience/expertise be adequately described. It will, for example, be much more useful to address abilities and expertise directly comparable to this project than to include an exhaustive list of all projects completed by the firm. County staff will review the submitted proposals and if necessary will select vendors to meet with and discuss the proposal submitted and vendor qualifications in greater detail.

**IV. GENERAL SPECIFICATIONS**

**Scope of Services**

The scope of services will include all labor, services, materials and products to install a Firestone Fully Adhered Standard Adhesive EPDM roofing system using 60-mil membrane with the following conditions. **It has been calculated that a combined extra weight of 1.5 pounds per square foot of insulation and roofing shall not be exceeded by the roofing contractor. Any further additional roof load such as rooftop mechanical units will need to be studied on an individual basis and is not part of this proposal. Bidders shall provide the combined pounds per square foot of all insulation and roofing material as part of the response to the bid package or risk being disqualified.**

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In addition to the above mentioned load limit the scope of services will include the following:

- 1) Remove all abandoned mechanical equipment and properly cover/repair resulting holes.
- 2) Remove asphalt sealant, wash roof to remove surface contamination and loose sealants.
- 3) Install a layer of 1.5" EPS Flute Filler Insulation in ribs of the existing metal roof substrate leaving no gaps or voids.
- 4) Install a second layer of 1" isocyanurate insulation, over the EPS Insulation substrate mechanically fastened through the first layer of insulation and into the metal decking.
- 5) Install EPDM fully adhered roof system using 60-mil membrane over the insulation substrate utilizing manufacturer recommended installation protocols. **(See Attachment A, pg. 24-38)**
- 6) All seams are to be assembled with seam tape in accordance with the manufacturer recommendations and guidelines.
- 7) Prefabricated boots will be used to flash plumbing stacks.
- 8) Roof walkway pads will be provided at the roof hatch and/or ladder locations, and under any freestanding mechanical equipment.
- 9) Three existing small EPDM roof sections to be reroofed to match the existing specifications.
- 10) Installation of new metal gravel-stop and drip edge using 24-gauge pre-finished sheet metal, color to be selected by owner from manufacturer's standard colors.
- 11) All gutter laps and downspout outlets are to be cleaned and stripped in with uncured flashing.
- 12) Existing metal gutters and downspouts are to remain in place.
- 13) Minimum 5 year material and labor warranty and a 15 year minimum manufacturer material warranty.
- 14) Specify pre-cautionary procedures, and recommendation for consideration to assist the County in most disruptive manner of performing services without displacing building occupants.
- 15) Must remove all scrap, litter and debris resulting from the specified project herein and leave work and premises in clean and satisfactory condition.

## **Project Control**

1. The vendor will meet with selected representatives on a regular basis or as determined necessary by Support Services Facilities Management staff/project manager to review progress and provide necessary guidance to the contractor in solving problems which may arise.
2. Although there will be continuous liaison with the project team, the Facilities Management representative/project manager(s) will meet as often as required with the vendor's project manager for the purpose of reviewing progress and providing necessary guidance.
3. The vendor will, on a regular basis, submit brief written summaries of the work accomplished during the reporting period, work to be accomplished during the subsequent reporting period, real or anticipated problems and notification of any significant deviation from previously agreed upon work plans.
4. Within 10 working days of the award of a project and release of contract, the vendor will submit to the county's project manager for approval a work plan which includes the following:
  - a. The vendor's names and titles of personnel assigned to the project.
  - b. Complete background check applications (see contract provision) for ALL personnel that will be performing services on the project at the facility.
  - c. The project breakdown showing subprojects, costs, activities and tasks.
  - d. The time-phased plan for completing the project.
5. Upon completion, county's project manager and/or county representative shall conduct careful inspection with vendor's project manager/supervisor and shall correct all defective work to the satisfaction of the County.
6. The vendor and/or manufacturer shall warrant all work performed under this contract for a period of 5 years from the date of County's acceptance of completed job. Any defects in materials or workmanship appearing during this period shall be corrected without cost to the County.

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### V. TERMS AND CONDITIONS

#### **Award:**

Washtenaw County reserves the right to reject any and all proposals received as a result of this RFP. If a proposal is selected it will be the most advantageous regarding price (See: "Low Bidder" following), quality of service, the Vendors' qualifications and capabilities to provide the specified service, and other factors which the County may consider. The County does not intend to award a Bid fully on the basis of any response made to the proposal; the County reserves the right to consider proposals for modifications at any time before a Bid would be awarded, and negotiations would be undertaken with that Vendor whose proposal is deemed to best meet the County's specifications and needs

#### **Low Bidder:**

A low bidder will be determined by the price qualifications and capabilities to provide the specified services.

#### **Term of Bid:**

The Bid is for a specific project therefore valid for the duration of the project and this project solely.

**VI. CONTRACT PROVISIONS**

If a contract is awarded, the selected vendor will be required to adhere to a set of general contract provisions which will become a part of any formal agreement. These provisions are general principles which apply to all contractors of service to Washtenaw County such as the following:

**ARTICLE III - REPORTING OF CONTRACTOR**

Section 1 - The Contractor is to report to Director of Support Services Technology & Operations and/or designee and will cooperate and confer with him/her as necessary to insure satisfactory work progress.

Section 2 - All reports, estimates, memoranda and documents submitted by the Contractor must be dated and bear the Contractor's name.

Section 3 - All reports made in connection with these services are subject to review and final approval by the County Administrator.

Section 4 - The County may review and inspect the Contractor's activities during the term of this contract.

Section 5 - When applicable, the Contractor will submit a final, written report to the County Administrator.

Section 6 - After reasonable notice to the Contractor, the County may review any of the Contractor's internal records, reports, or insurance policies.

**ARTICLE V - PERSONNEL**

Section 1 - The contractor will provide the required services and will not subcontract or assign the services without the County's written approval.

Section 2 - The Contractor will not hire any County employee for any of the required services without the County's written approval.

Section 3 - The parties agree that the Contractor is neither an employee nor an agent of the County for any purpose.

Section 4 - The parties agree that all work done under this contract shall be completed in the United States and that none of the work will be partially or fully completed by either an offshore subcontractor or offshore business interest either owned or affiliated with the contractor. For purposes of this contract, the term, "offshore" refers to any area outside the contiguous United States, Alaska or Hawaii.

ARTICLE VI - INDEMNIFICATION AGREEMENT

The contractor will protect, defend and indemnify Washtenaw County, its officers, agents, servants, volunteers and employees from any and all liabilities, claims, liens, fines, demands and costs, including legal fees, of whatsoever kind and nature which may result in injury or death to any persons, including the Contractor's own employees, and for loss or damage to any property, including property owned or in the care, custody or control of Washtenaw County in connection with or in any way incident to or arising out of the occupancy, use, service, operations, performance or non-performance of work in connection with this contract resulting in whole or in part from negligent acts or omissions of contractor, any sub-contractor, or any employee, agent or representative of the contractor or any sub-contractor.

ARTICLE VII - INSURANCE REQUIREMENTS

The Contractor will maintain at its own expense during the term of this Contract, the following insurance:

1. Workers' Compensation Insurance with Michigan statutory limits and Employers Liability Insurance with a minimum limit of \$100,000 each accident for any employee.
2. Commercial General Liability Insurance with a combined single limit of \$1,000,000 each occurrence for bodily injury and property damage. The County shall be added as "additional insured" on general liability policy with respect to the services provided under this contract.
3. Automobile Liability Insurance covering all owned, hired and nonowned vehicles with Personal Protection Insurance and Property Protection Insurance to comply with the provisions of the Michigan No Fault Insurance Law, including residual liability insurance with a minimum combined single limit of \$1,000,000 each accident for bodily injury and property damage.

Insurance companies, named insureds and policy forms may be subject to the approval of the Washtenaw County Administrator, if requested by the County Administrator. Such approval shall not be unreasonably withheld. Insurance policies shall not contain endorsements or policy conditions which reduce coverage provided to Washtenaw County. Contractor shall be responsible to Washtenaw County or insurance companies insuring Washtenaw County for all costs resulting from both financially unsound insurance companies selected by Contractor and their inadequate insurance coverage. Contractor shall furnish the Washtenaw County Administrator with satisfactory certificates of insurance or a certified copy of the policy, if requested by the County Administrator.

No payments will be made to the Contractor until the current certificates of insurance have been received and approved by the Administrator. If the insurance as evidenced by the certificates furnished by the Contractor expires or is canceled during the term of the contract, services and related payments will be suspended. Contractor shall furnish the County Administrator's Office with certification of insurance evidencing such coverage and endorsements at least ten (10) working days prior to commencement of services under this contract. Certificates shall be addressed to the County Administrator, Attn: Support Services, P. O. Box 8645, Ann Arbor, MI, 48107, and shall provide for 30 day written notice to the Certificate holder of cancellation of coverage.

ARTICLE VIII - COMPLIANCE WITH LAWS AND REGULATIONS

The Contractor will comply with all federal, state and local regulations, including but not limited to all applicable OSHA/MIOSHA requirements and the Americans with Disabilities Act.

ARTICLE IX - INTEREST OF CONTRACTOR AND COUNTY

The Contractor promises that it has no interest which would conflict with the performance of services required by this contract. The Contractor also promises that, in the performance of this contract, no officer, agent, employee of the County of Washtenaw, or member of its governing bodies, may participate in any decision relating to this contract which affects his/her personal interest or the interest of any corporation, partnership or association in which he/she is directly or indirectly interested or has any personal or pecuniary interest. However, this paragraph does not apply if there has been compliance with the provisions of Section 3 of Act No. 317 of the Public Acts of 1968 and/or Section 30 of Act No. 156 of Public Acts of 1851, as amended by Act No. 51 of the Public Acts of 1978, whichever is applicable.

ARTICLE X - CONTINGENT FEES

The Contractor promises that it has not employed or retained any company or person, other than bona fide employees working solely for the Contractor, to solicit or secure this contract, and that it has not paid or agreed to pay any company or person, other than bona fide employees working solely for the Contractor, any fee, commission, percentage, brokerage fee, gifts or any other consideration contingent upon or resulting from the award or making of this contract. For breach of this promise, the County may cancel this contract without liability or, at its discretion, deduct the full amount of the fee, commission, percentage, brokerage fee, gift or contingent fee from the compensation due the Contractor.

ARTICLE XI - EQUAL EMPLOYMENT OPPORTUNITY

The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex, sexual orientation, national origin, physical handicap, age, height, weight, marital status, veteran status, religion and political belief (except as it relates to a bona fide occupational qualification reasonably necessary to the normal operation of the business).

The Contractor will take affirmative action to eliminate discrimination based on sex, race, or a handicap in the hiring of applicant and the treatment of employees. Affirmative action will include, but not be limited to: Employment; upgrading, demotion or transfer; recruitment advertisement; layoff or termination; rates of pay or other forms of compensation; selection for training, including apprenticeship.

The Contractor agrees to post notices containing this policy against discrimination in conspicuous places available to applicants for employment and employees. All solicitations or advertisements for employees, placed by or on the behalf of the Contractor, will state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex, sexual orientation, national origin, physical handicap, age, height, weight, marital status, veteran status, religion and political belief.

ARTICLE XII - PREVAILING WAGE RATES AND CUB AGREEMENT

The Contractor agrees that all craftsmen, mechanics and laborers it employs to work on this project shall, at a minimum, receive the prevailing wages and fringe benefits of the Building Trade Department for corresponding classes of craftsmen, mechanics and laborers for the Washtenaw County area, as determined and published by the Davis-Bacon Division of the United States Department of Labor. Contractor agrees that all subcontracts entered into by the Contractor shall contain a similar provision covering any sub-contractor's employees who perform work on this project. Contractor further agrees to sign a project labor agreement as provided by the Construction Unity Board ("CUB Agreement"). A copy of the CUB Agreement is attached as an appendix to this Contract.

ARTICLE XIII - EQUAL ACCESS

The Contractor shall provide the services set forth in Article I without discrimination on the basis of race, color, religion, national origin, sex, sexual orientation, marital status, physical handicap, or age.

ARTICLE XIV - OWNERSHIP OF DOCUMENTS AND PUBLICATION

All documents developed as a result of this contract will be freely available to the public. None may be copyrighted by the Contractor. During the performance of the services, the Contractor will be responsible for any loss of or damage to the documents while they are in its possession and must restore the loss or damage at its expense. Any use of the information and results of this contract by the Contractor must reference the project sponsorship by the County. Any publication of the information or results must be co-authored by the County.

ARTICLE XV – CRIMINAL BACKGROUND CHECK

The Contractor will be responsible for payment of security screening as determined by the County. Any employee of the vendor will be subject to an approved criminal background check before entering County facilities.

ARTICLE XVI - ASSIGNS AND SUCCESSORS

This contract is binding on the County and the Contractor, their successors and assigns. Neither the County nor the Contractor will assign or transfer its interest in this contract without the written consent of the other.

ARTICLE XVII - TERMINATION OF CONTRACT

Section 1 - Termination without cause. Either party may terminate the contract by giving thirty (30) days written notice to the other party.

ARTICLE XVIII - PAYROLL TAXES

The Contractor is responsible for all applicable state and federal social security benefits and unemployment taxes and agrees to indemnify and protect the County against such liability.

ARTICLE XIX - PRACTICE AND ETHICS

The parties will conform to the code of ethics of their respective national professional associations.

ARTICLE XX- CHANGES IN SCOPE OR SCHEDULE OF SERVICES

Changes mutually agreed upon by the County and the Contractor, will be incorporated into this contract by written amendments signed by both parties.

ARTICLE XXI - CHOICE OF LAW AND FORUM

This contract is to be interpreted by the laws of Michigan. The parties agree that the proper forum for litigation arising out of this contract is in Washtenaw County, Michigan.

**CUB MEMORANDUM OF UNDERSTANDING**

**I. WORK DISPUTES**

In return for the promise made in paragraph III. below, the parties agree that there will be no strike, work stoppage or lock-out for the duration of this Memorandum. Any jurisdictional dispute shall be resolved through normal procedures.

There will be a job conference with all contractors and sub-contractors prior to starting work.

**II. COFFEE BREAKS**

There shall be no organized coffee breaks.

**III. PAYMENT OF FRINGES**

Any Union having a claim against a contractor or subcontractor for unpaid wages and/or fringe benefits for work performed on the project shall give written notice of such claim to such contractor or subcontractor (With a copy of the notice to the Construction Manager or General Contractor) within three (3) business days after such claim has become known. Upon receipt of such written notice, the Construction Manager or General Contractor involved shall withhold an amount equal to the claim from the next disbursement payable to the contractor, pending resolution of the dispute satisfactory to the Construction manager or general Contractor. In the event of any such dispute, the Union agrees to use its best efforts to pursue any legal remedies available, including litigation by Fund Trustees. It is understood that the intent to this section is to accomplish prompt and effective resolution of any disputes between the Union and any contractor or subcontractor over payment of wages and fringes.

**IV. UNION WORK**

The parties understand and agree that each contractor and subcontractor at all tiers of this project shall, prior to beginning work on the project, become signatory parties to the respective current collective bargaining agreements of the appropriate Local Unions of the Washtenaw County Skilled Building Trades Council.

\_\_\_\_\_  
(Contractor, Owner or Construction Manager)

\_\_\_\_\_  
(Representative of Washtenaw County  
Skilled Building Trades Council)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
(Project Description)

\_\_\_\_\_  
(DATE)

**THIS MEMORANDUM APPLIES ONLY TO THE PROJECT AND/OR CONSTRUCTION ABOVE DESCRIBED.**

**DISTRIBUTION:**

- WHITE – Union Copy
- GREEN – Contractor or Construction Manager Copy
- CANARY – Owner Copy
- PINK – CUB Copy
- GOLD – Project Copy

**RFP #6537 - ROOF REPLACEMENT AT 2140 E. ELLSWORTH**

**BID SHEET**

Provide a detailed response on all products, price, permits and costs associated to install a Firestone Fully Adhered Standard Adhesive EPDM roofing system using 60-mil membrane at the 2140 E. Ellsworth Facility.

Total Weight: Roofing Material and Insulation as specified in the Scope of Services items 3, 4, and 5.

\_\_\_\_\_ LBS. PER SQ. FT.

Project timeline: Provide the timeframe from start to finish that is expected to complete the reference project.

\_\_\_\_\_ DAYS/WEEKS/MONTHS

Cost of Project: (**Attach detailed pricing labeled Addendum J**)

\$ \_\_\_\_\_

\_\_\_\_\_  
(Above Amount in Words)

**SUPPLEMENTAL PRICING DETAILS:**

It is highly recommended that a comprehensive labor rate table by position be provided that lists all three of the labor rates (standard, overtime, and emergency).

Labor Rates	Rates/Hr
Standard hourly rate	\$ _____
Overtime hourly rate	\$ _____
Emergency response hourly rate	\$ _____

Material Mark up Cost + % \_\_\_\_\_ %  
Transportation costs, if any \_\_\_\_\_

Additional charges not listed, but should be considered:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**ATTACHMENT "A"**

**Firestone Building Products Company**  
**FIRESTONE ROOFING SYSTEMS**

THIS SPECIFICATION WAS GENERATED USING SPECTOOL v 2.1. THE SPECIFICATIONS FOR ROOFING SYSTEMS HEREIN DESCRIBED ARE GENERAL GUIDELINES AND NOT TO BE CONSTRUED AS FINAL, BINDING OR AUTHOROTATIVE. THE SPECIFICATIONS HAVE BEEN CREATED FROM INFORMATION PROVIDED TO FIRESTONE BUILDING PRODUCTS BY PROJECT SPECIFIERS AND DESIGN PROFESSIONALS AND ARE INTENDED ONLY AS A TOOL TO AID AND ASSIST IN THE PROCESS OF SELECTING ROOFING MATERIALS. THE SPECIFICATIONS GENERATED AND THE MEANS FOR DERIVING THEM ARE NOT INTENDED TO SUBSTITUTE FOR THE EXPERIENCE, KNOWLEDGE AND JUDGEMENT OF PROPERLY QUALIFIED DESIGN PROFESSIONALS, ARCHITECTS, SPECIFIERS, ENGINEERS AND/OR ROOFING CONTRACTORS. THE ULTIMATE SELECTION AND PRODUCTION OF A SPECIFICATION FOR ANY PARTICULAR USE REMAINS THE RESPONSIBILITY OF THE BUILDING OWNERS AND THEIR DESIGN PROFESSIONALS.

The Specifications are provided without charge or cost and are provided on an "AS-IS" basis. The User of this Product and the Specifications it generates assumes the entire risk as to results, quality, accuracy and performance of the Specifications. Firestone Building Products does not warrant, guarantee, or make any representations regarding the use of, or the results of the Specification as applied in the field or otherwise.

Firestone Building Products assumes no responsibility or liability for any defects in design or construction of the building, the roofing system selected, or the surface over which the roof products are applied. Firestone Building Products assumes no responsibility for the design, engineering, construction or architecture of the roof, roofing system or building and in no way confers its approval of or endorses any specific design, methods or system as a result of the use of this Product or its Specifications.

**FIRESTONE BUILDING PRODUCTS SELLS ROOFING MATERIALS THAT ARE COVERED BY SPECIFIC MANUFACTURER'S WARRANTIES WHICH ARE INCORPORATED HEREIN BY REFERENCE AND AS SUCH ARE THE ONLY WARRANTY PROVIDED. ALL OTHER WARRANTIES OF ANY KIND, ORAL OR WRITTEN, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF QUALITY, PERFORMANCE, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. NO FIRESTONE BUILDING PRODUCTS DEALER OR AGENT IS AUTHORIZED TO MAKE ANY MODIFICATION, EXTENSION, OR ADDITION TO THIS WARRANTY. THIS WARRANTY MAY ONLY BE MODIFIED BY AN OFFICER OR DULY AUTHORIZED EMPLOYEE OF FIRESTONE BUILDING**

**PRODUCTS AND ONLY IN WRITING. IN NO EVENT SHALL FIRESTONE BUILDING PRODUCTS BE LIABLE FOR ANY LOSS OF PROFIT OR ANY OTHER COMMERCIAL DAMAGE INCLUDING BUT NOT LIMITED TO SPECIAL, INCIDENTAL, CONSEQUENTIAL OR OTHER DAMAGES.**

Use of this product does not indicate any endorsement, by Firestone Building Products, of the Product User, the Product User's Company, nor of any Specifications generated by or with the use of the Product.

**SECTION 07530**

**METAL RECOVER  
FULLY ADHERED STANDARD ADHESIVE EPDM ROOFING SYSTEM**

**PART 1 GENERAL**

**1.01 GENERAL NOTES**

- A. Preceding job start up, contractor shall decide to his satisfaction that all specifications contained herein are workable.
- B. Contractor will perform all work by competent, trained, and properly equipped personnel in strict accordance with good roofing practices and applicable industry standards.
- C. Contractor will observe all published safety prevention policies and practices relating to application of roofing system and related work. All federal, state, and local codes shall be followed.
- D. Contractor will follow application, safety, etc. information as published in the most current edition of the Firestone RubberGard EPDM Roofing System Technical Specifications.

**1.02 WORK INCLUDED**

- A. Work under this section covers the installation of a new FULLY ADHERED EPDM ROOFING SYSTEM on **2140 ELLSWORTH RD. A.A. MI.** In addition, contractor shall include all related items of work as noted herein or indicated on the drawings or otherwise required to complete the specified elements of work and provide the necessary warranties for this work.
- B. Contractor shall install new specified system over an existing light gauge metal roof panel per manufacturers requirements.

**1.03 SECTION INCLUDES**

- A. Substrate preparation.
- B. Wood nailer installation.
- C. Membrane installation.
- D. Membrane flashing installation.

**1.04 RELATED SECTIONS**

- A. Section 02500 - Selective Demolition.
- B. Section 06100 - Rough Carpentry.
- C. Section 07220 - Roof Insulation.
- D. Section 07600 - Sheet Metal, Flashing and Trim.
- E. Section 07700 - Roofing Specialties and Accessories.
- F. Section 07800 - Skylights.
- G. Section 07900 - Joint Sealers.
- H. Section 15400 - Plumbing Specialties.

**1.05 DEFINITIONS**

- A. Roofing Terminology: Refer to ASTM D1079 for definition of terms related to roofing work not otherwise defined in the section.
- B. Firestone: Firestone Building Products Co., Headquarters, 525 Congressional Blvd., Carmel, IN 46032-5607
- C. American Society for Testing and Materials (ASTM): 1916 Race St., Philadelphia, PA 19103

**1.06 SYSTEM DESCRIPTION**

- A. **.060 LSFR** elastomeric sheet roofing that is adhered to acceptable substrate with system manufacture's bonding adhesive.

**1.07 SUBMITTALS**

- A. Product Data:
  - 1. Submit copies of Firestone Technical Information Sheets (TIS) for primary products used including roof membrane, splice tape, fasteners, and batten strip.
- B. Samples:
  - 1. Submit samples of roof membrane, fasteners, and walkway pads
- C. Application Information:
  - 1. Submit copy of job related Firestone details including flashings, base tie-ins, roof edges, terminations, expansion joints, penetrations, drains, and any other relevant details
- D. Letter attesting that Firestone currently licenses roofing contractor.
- E. Warranty: Submit warranty sample.
- F. Drawings:

**1.08 QUALITY ASSURANCE**

- A. Manufacturer: Firestone Building Products
- B. Applicator: Red Shield Contractor

**1.09 REGULATORY REQUIREMENTS**

- A. Conform to applicable local building code requirements.
- B. Factory Mutual FM 1-60

**1.10 QUALITY INSPECTION/OBSERVATION**

- A. Inspection by Manufacturer: Provide a final inspection of the roofing system by a Technical Representative employed by roofing system manufacturer.
  - 1. Technical representative shall not perform any sales functions.
  - 2. Contractor shall complete any necessary repairs required for issuance of warranty.

**1.11 PRE-INSTALLATION CONFERENCE (*Option*)**

- A. Before start of roofing work, attend a conference to discuss the proper installation of materials. Attendees shall include all parties directly affecting work of this Section.

**1.12 DELIVERY, STORAGE AND HANDLING**

- A. Deliver products in manufacturer's original containers dry, undamaged, seals and labels intact and legible.
- B. Store all materials clear of ground and moisture with weather protective covering.
- C. Keep all combustible materials away from ALL ignition sources.

**1.13 ENVIRONMENTAL REQUIREMENTS**

- A. Install roofing membrane only when surfaces are clean, dry, smooth and free of snow or ice.
- B. Do not apply roofing membrane during inclement weather or when ambient conditions will not allow proper application. Consult Firestone Technical Specifications on cold weather application.

**1.14 WARRANTY**

- A. Type/Term:
  - 1. Provide **15**, year Firestone Red Shield Roofing System Limited Warranty (Red Shield Warranty). Warranty shall include membrane, roof insulation, **membrane accessories and edge metal**
- B. Coverage
  - 1. Red Shield Warranty:
    - a. Limit of liability: No Dollar Limitation
    - b. Scope of coverage  
Repair any leak in the Firestone EPDM Roofing System caused by the ordinary wear and tear of the elements, manufacturing defect in Firestone brand materials, and the workmanship used to install these materials.

**PART 2 PRODUCTS**

**2.01 NAILERS FOR FLANGES AND ROOF ACCESSORIES**

- A. Description: Structural Grade No. 2 or better Southern Pine, Douglas Fir or Exterior Grade plywood. All wood shall be pressure treated for rot resistance.
  - 1. Nailer width: Minimum 3-1/2 in. (nominal) wide or as wide as the nailing flange of each roof accessory.

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- 2. Nailers thickness: Thickness of roof insulation.
- B. Reference Standards:
  - 1. Southern Pines: PS 20; SPIB Grading Rules.
  - 2. Western Woods: PS 20; WWPB Grading Rules
  - 3. Plywood: PS 1; APA Grade Stamps.
  - 4. Pressure preservative treatment: AWPB LP2.

**2.02 MANUFACTURERS - MEMBRANE MATERIALS**

- A. Firestone Adhered single-ply membrane system: **.060 LSFR** elastomeric sheet roofing that is adhered to acceptable substrate with manufacturers bonding adhesive.
- B. Approved Equals: None

**2.03 ELASTOMERIC SHEET ROOFING AND FLASHING MEMBRANE**

- A. Description: Non-reinforced, cured, synthetic single-ply membrane composed of Ethylene Propylene Diene Terpolymer (EPDM) conforming to the following physical properties:
  - 1. Membrane Type: **.060 LSFR**

<b>Property:</b>	<b>Specification:</b>
Specific Gravity	1.15 +/- 0.05
Tensile Strength, Minimum, psi ( Mpa )	1425 (9.8)
Elongation, Minimum, %	475
Tear Resistance, lbf / in ( N / M )	210 ( 933)
Ozone Resistance, 166 hours @ 100 pphm @ 104°F with 50% extension	No Cracks
Heat Aging, 28 days @ 240°F	
Tensile Strength, Minimum psi ( Mpa)	1415 ( 9.8)
Elongation, Minimum %	310
Brittleness Point, max., °F, °C	-49 ( -45)
Water Absorption, change in weight after immersion in water for 166 hours @ 158°F, %	< 2.0
Tolerance On Nominal Thickness, %	+/- 10
Water Vapor Permeability, Perm-Mils	2.0

- B. Reference Standards:
  - 1. ASTM D4637-96: Standard Specification for EPDM Sheet used in single-ply roof membrane
  - 2. ASTM D297: Methods for Rubber Products, Chemical Analysis.
  - 3. ASTM D412, Die C: Test Methods for Rubber Properties in Tension.
  - 4. ASTM D471: Test Methods for Rubber Property, Effect of Liquids.
  - 5. ASTM D573: Test Method for Rubber, Deterioration in an Air Oven.
  - 6. ASTM D624, Die C: Test Method for rubber property-Tear Resistance
  - 7. ASTM D746: Test Method for Brittleness Temperature of Plastics and Elastomers by Impact.
  - 8. ASTM D751: (Grab Method) Method of Testing Coated Fabrics.
  - 9. ASTM D816: (Modified) Methods of Testing Rubber Cements.
  - 10. ASTM D1149: Test Method for Rubber Deterioration, Surface Ozone Cracking in a Chamber.

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11. ASTM D2240: Test Method for Rubber Property - Durometer Hardness.
12. ASTM E96: Test Methods for Water Vapor Transmission of Materials.

C. Product/Producer:

1. RubberGard® EPDM membrane by Firestone.

### 2.04 INSULATION PRODUCTS

A. BASE LAYER

1. Polystyrene insulation to be used as flute filler for metal roof systems recover.
2. Thickness to match existing flute height.

B. TOP LAYER

#### POLYISOCYANURATE ROOF INSULATION

- A. Description: Roof insulation consisting of closed cell polyisocyanurate foam core and a perforated black glass reinforced mat laminated to the face.
  1. Minimum Thickness **1"**
  2. Nominal Size: 48 in x 96 in
- B. Reference Standards
  1. FS HH-I-1972/Gen.
  2. FS HH-I-1973/3.
  3. ASTM C 209 - Water Absorption.
  4. ASTM E 96 - Water Vapor Transmission of Materials.
  5. ASTM D 1621 - Compressive Strength.
  6. ASTM D 1622 - Density.
  7. ASTM D 2126 - Dimensional Stability.
  8. ASTM E 84 - Flame Spread
- C. Product/Producer: ISO 95+ Polyisocyanurate Insulation by Firestone.

#### TOP LAYER INSULATION FASTENERS

1. Description: Heavy duty threaded fastener with 3-coat waterborne fluorocarbon polymer coating and drill point tip capable of penetrating 20-gauge steel. Fastener shall meet minimum thread size of .260" and 13 threads per inch. Length shall be sufficient to penetrate deck a minimum of ¾" for steel and 1" for wood and concrete. Structural concrete decks must be pre-drilled with a 7/32" carbide drill bit to a depth ½" deeper than the fastener engagement.
2. Reference Standard: SAE 1022, Heat Treated
3. Product/Producer:
  - a. Heavy Duty (HD) fasteners by Firestone.

### 2.05 ELASTOMERIC SHEET ROOFING SYSTEM COMPONENTS

A. Roof Flashing (Gravel Stops):

1. Description: Semi-cured 45 mil EPDM membrane laminated to 35 mil EPDM tape adhesive
2. Product/Producer:
  - a. QuickSeam™ Flashing by Firestone.

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**B. Elastomeric Uncured Flashing:**

1. Description: Non-reinforced, self curing, synthetic, single-ply flashing composed of Ethylene Propylene Diene Terpolymer (EPDM) conforming to the following physical properties as indicated by ASTM D4811-90 standard specification for Non-vulcanized rubber sheet used as roof flashing.
  - a. Nominal Thickness: .060 inch

<b>Property:</b>	<b>Specification:</b>
Thickness	0.055
Green Strength Modulus 100% @ 75°F(psi)	25-250
Elongation, (Ultimate), %	400
modulus 100% @ 122°F(psi)	12
Elongation (Ultimate) %	200
Shelf Stability: Modulus 100% at 75°F(psi)	250
Elongation, min, %	400
Vulcanizability: Tensile strength, min, (psi)	406
Elongation, min, %	400
Tensile Set: min, %	80
Dimensional Stability, max, %	+/- 10
Weatherability , no cracks or crazing	pass
Water Vapor Permeability, Perm-Mils	2.0

**b. Reference Standards:**

1. ASTM D412: Test Methods for Rubber Properties in Tension
2. ASTM D471: Test Methods for Rubber Property-Effect of liquids
3. ASTM D573: Test Methods for Rubber-Deterioration in Air oven
4. ASTM D624: Test Methods for Rubber Property-Tear Resistance
5. ASTM D1149: Test Method for Rubber Deterioration-Surface Ozone Cracking in a chamber
6. ASTM D1204: Test Method for Linear Dimensional Changes on a Non-rigid Thermoplastic Sheeting or Film at Elevated Temperatures
7. ASTM D2137: Test Methods for Rubber Property-Brittleness Point of Flexible Polymers and Coated Fabrics

**2. Product/Producer:**

- a. EPDM FormFlash™ flashing membrane by Firestone.

**C. Lap Splice Tape:**

1. Description: 35 mil EPDM-based, formulated for compatibility with EPDM membrane and high-solids primer.
2. Product/Producer:
  - a. QuickSeam™ Splice Tape by Firestone.

**D. Adhesive Primer:**

1. Description: High-solids, butyl based primer formulated for compatibility with EPDM membrane & tape adhesive.
2. Product/Producer:
  - a. QuickPrime™ by Firestone.

**E. Batten Covers:**

1. Description: Cured 60 mil EPDM membrane laminated to 35 mil EPDM tape adhesive.
2. Product/Producer:

- a. QuickSeam™ Batten Cover by Firestone.
- F. Splice Adhesive:
  - 1. Description: Butyl-based, formulated for compatibility with EPDM membrane.
  - 2. Product/Producer:
    - a. RubberGard® Splice Adhesive by Firestone.
- G. Bonding Adhesive:
  - 1. Description: Neoprene-based, formulated for compatibility with EPDM membrane & a wide variety of substrate materials, including masonry, wood, and insulation facings.
  - 2. Product/Producer:
    - a. RubberGard® Bonding Adhesive by Firestone.
- H. Pourable Sealer:
  - 1. Description: 2-Part urethane, 2-color for reliable mixing.
- I. Seam Plates, Batten Strips and Insulation Plates:
  - 1. Description: Steel with a Galvalume® coating.
  - 2. Reference Standard: Corrosion-resistant to meet FM-4470 criteria.
- J. Termination Bar:
  - 1. Description: 1.3" X 0.10" thick aluminum bar with integral caulk ledge.
  - 2. Product/Producer:
    - a. Termination Bar by Firestone.
- K. Roof Walkway Pads:
  - 1. Description: EPDM Walkway Pads, 0.30" X 30" X 30" with EPDM tape adhesive strips laminated to the bottom.
  - 2. Product/Producer:
    - a. QuickSeam™ Walkway Pads by Firestone.

## **2.06 METAL FLASHING**

- A. Edge Metal and/or Coping:
  - 1. Description: Provide prefabricated **24 gauge Steel** with **Kynar** finish in manufacturers standard colors to be selected by owner.
  - 2. Product/Producer: **Firestone Metal Products/UNA-CLAD**

## **PART 3 INSTALLATION**

### **3.01 EXAMINATION**

- A. Examine roof deck to determine that it is sufficiently rigid to support roofers and their mechanical equipment and that deflection will no strain or rupture roof components or deform deck.
- B. Verify that surfaces and site conditions are ready to receive work. Correct defects in the substrate before commencing with roofing work.
- C. Examine roof substrate to verify that it is properly sloped to drains.
- D. Start work with sealants and adhesives at 60° - 80° F.
- E. Fumes from adhesive solvents may be drawn into the building during installation through rooftop intakes. Appropriate measures must be taken to assure that fumes from adhesive solvents are not drawn into the building through air intakes.
- F. For reroofing applications only: remove existing roof system components as specified.
- G. The surface must be clean, dry, smooth, free of sharp edges, fins, loose or foreign materials, oil, grease and other materials that may damage the membrane, All

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roughened surfaces, which could cause damage, shall be properly repaired before proceeding.

- H. All surface voids of the immediate substrate greater than 1/4" wide must be properly filled with an acceptable insulation or suitable fill material.

### 3.02 PROTECTION OF OTHER WORK

- A. Protect metal, glass, plastic, and painted surfaces from adhesives and sealants.
- B. Protect neighboring work, property, cars, and persons from spills and overspray from adhesives, sealants and coatings and from damage related to roofing work.
- C. Protect finished areas of the roofing system from roofing related work traffic and traffic by other trade.

### 3.03 MATERIAL STORAGE AND HANDLING

- A. Keep all adhesives, sealants, primers and cleaning materials away from all sources of ignition.
- B. Consult container labels and material Safety Data Sheets (MSDS) for specific safety instructions.
- C. Deliver materials to job site in their original containers as labeled by the manufacturer.

### 3.04 WOOD NAILER LOCATION AND INSTALLATION

- A. Total wood nailer height shall match the total thickness of insulation being used and shall be installed with a 1/8" gap between each length and at each change of direction.
- B. Wood nailers shall be firmly fastened to the deck. Mechanically fasten wood nailers to resist a force of 200 lbs. Per linear foot.

### 3.05 VAPOR RETARDER

None

### 3.06 ROOF INSULATION APPLICATION: GENERAL

- A. Install only as much insulation as can be covered with the completed roofing system before the end of the day's work or before the onset of inclement weather.
- B. Seal deck joints, where needed, to prevent bitumen drippage.
- C. Lay roof insulation in courses parallel to roof edges.
- D. Neatly fit insulation to all penetrations, projections, and nailers. Insulation shall be fit tightly, with gaps not greater than 1/4". All gaps greater than 1/4" shall be filled with acceptable insulation. Under no circumstances shall the roofing membrane be left unsupported over a space greater than 1/4". Tapered insulation shall be installed around roof drains so as to provide proper slope for drainage. Miter roof insulation edges at ridge, valley and other similar non-planar conditions.
- E. When installing multiple layers of insulation, all joints between layers shall be staggered at least 6 in.

### 3.07 INSULATION ATTACHEMENT

- A. Base Layer: **Polystyrene**
  - 1. Base Layer Attachment: **Loose Laid**

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- B. Intermediate Layer: **None**
  - 1. Intermediate Layer Attachment **None**
- C. Top Layer: **Firestone ISO 95+ GL**
  - 1. Top Layer Attachment: **Mechanically Attached**

### **3.08 INSULATION APPLICATION**

#### **A. BASE LAYER:**

1. Install Firestone Insulation by "Loose-Laying" over **existing standing seam metal roof system**. No mechanical securement of insulation will be used.

#### **B. INTERMEDIATE LAYER:**

None

#### **C. TOP LAYER:**

1. Using the Firestone **Heavy Duty** fasteners and Firestone insulation plate engage fastener through insulation and standing seam system and into the **existing standing seam metal roof system** at the depth and rate specified in the Firestone Technical Information Manual.

### **3.09 MEMBRANE PLACEMENT AND ATTACHMENT**

- A. Beginning at the low point of the roof, place the Firestone RubberGard membrane without stretching over the acceptable substrate and allow to relax a minimum of 30 minutes before attachment or splicing.
- B. After making sure the sheet is placed in its final position, fold it back evenly onto itself so as to expose the underside.
- C. Sweep the mating surface of the membrane with a stiff broom to remove excess dusting agent (if any) or other contaminants from the mating surface.
- D. Apply Bonding Adhesive at about the same time to both the exposed underside of the sheet and the substrate to which it will be adhered so as to allow approximately the same drying time. Apply Bonding Adhesive so to provide an even and uniform film thickness. Do not apply bonding adhesive to areas that will be subsequently spliced.
- E. Allow Bonding Adhesive to flash off until tacky. Touch the Bonding Adhesive surface with a clean, dry finger to be certain that the adhesive does not stick or string. As you are touching the adhesive, pushing straight down to check for stringing, also push forward on the adhesive at an angle to ensure that the adhesive is ready throughout its thickness. If either motion exposes wet or stringy adhesive when the finger is lifted, then it is not ready for mating.
- F. Starting at the fold, roll the previously coated portion of the sheet into the coated substrate slowly and evenly so as to minimize wrinkles.
- G. Compress the bonded half of the sheet to the substrate with a stiff push broom.
- H. Fold the unadhered half of the membrane sheet back onto itself, and repeat the bonding procedure to complete the bonding of the sheet.

### **3.10 MEMBRANE LAP SPLICING**

#### **A. General:**

1. Position the sheet at the splice area by overlapping membrane 5 inches. Once the membrane is in place, mark the bottom sheet 1/2" to 3/4" from the edge of the top sheet every 4 to 6 feet. Tack the sheet back with Firestone QuickPrime at 5' centers and at factory splices or as necessary to hold back the membrane at the splicing area.

2. Remove excess amounts of dusting agent on the sheet and at factory splices using a stiff push broom. Stir Firestone QuickPrime thoroughly before and during use. Dip the QuickScrubber into the bucket of QuickPrime, keeping the QuickScrubber flat. Apply the QuickPrime using long back and forth type strokes with pressure along the length of the splicing area until surfaces become a dark gray in color. Apply QuickPrime to both surfaces at the same time to allow the same flash off time. Change the scrub pad each 200 feet of 3 inch field splice, or when the pad will no longer hold the proper amount of QuickPrime. Additional scrubbing is required at areas that may have become contaminated or have excess amounts of dusting agent, and at all factory splices.
3. Position the QuickSeam Splice Tape on the bottom sheet, aligning the edge of the release paper with the markings. Immediately roll the splice tape with a 3"-4" wide silicone or silicone sleeved steel hand roller or a short nap 3" paint roller.
4. When the QuickSeam Splice Tape has been installed for the entire splice length allow the top sheet to rest on top of the tape's paper backing. Trim the top sheet as necessary to assure that 1/8"-1/2" of the QuickSeam Splice Tape will be exposed on the finished splice.
5. To remove the paper backing from the tape, first roll back the RubberGard membrane sheet, then peel the paper backing off the QuickSeam Splice Tape by pulling against the weight of the bottom sheet at approximately a 45 degree angle to the tape and parallel with the roof surface. Allow the top sheet to fall freely onto the exposed QuickSeam Splice Tape. Broom the entire length of the splice as the release paper is being removed.
6. Roll the splice using a 1-1/2"-2" wide silicone or silicone sleeved steel hand roller, first across the splice, and then along the entire length of the splice.

### **3.11 MEMBRANE SECUREMENT Standard Adhesives**

- A. Secure membrane at all locations where the membrane terminates or goes through an angle change greater than 2" in 12" except for round pipe penetrations less than 18" in diameter and square penetrations less than 4" square.
- B. Mechanically fasten Reinforced Perimeter Fastening Strips per Firestone recommendations.

### **3.12 FLASHING - PENETRATIONS**

- A. General:
  1. If project is a Tear-off or Reroof, remove all existing flashings (i.e. lead, asphalt, mastic, etc.).
  2. Flash all penetrations passing through the membrane.
  3. The flashing seal must be made directly to the penetration.
- B. Pipes, Round Supports, etc
  1. Flash with Firestone Pre-Molded EPDM Pipe Flashings where practical.
  2. Flash using FormFlash when Pre-Molded EPDM Pipe Flashing is not practical.
- C. Structural Steel Tubing:
  1. Use a field fabricated pipe flashing detail provided that the minimum corner radius is greater than 1/4" and the longest side of the tube does not exceed 12". When the tube exceeds 12" use a standard curb detail.
- D. Roof Drains:

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1. If project is a Tear-off or Reroof remove all existing flashings, drain leads, roofing materials and cement from the existing drain in preparation for membrane and Water Block Seal.
  2. Provide a clean even finish on the mating surfaces between the clamping ring and the drain bowl.
  3. Taper insulation around the drain to provide a smooth transition from the roof surface to the drain. Use pre-manufactured tapered insulation with facer or suitable bonding surface to achieve slope. Slope shall not exceed Firestone recommendations.
  4. Position the RubberGard membrane, then cut a hole for the roof drain to allow 1/2" - 3/4" of membrane extending inside the clamping ring past the drain bolts.
  5. Make round holes in the RubberGard membrane to align with clamping bolts. Do not cut the membrane back to the bolt holes.
  6. Place Water Block Seal on top of drain bowl where the clamping ring seats below the membrane
  7. Install the roof drain clamping ring and clamping bolts. Tighten the clamping bolts to achieve constant compression.
- E. Pipe Clusters and Unusual Shaped Penetrations:
1. Fabricate penetration pockets to allow a minimum clearance of 1" between the penetration and all sides.
  2. Secure penetration pockets per Firestone Details
  3. Fill penetration pockets with Pourable Sealer, so as to shed water. Pourable Sealer shall be a minimum of 2" deep.
- F. Hot Pipes:
1. Protect the rubber components from direct contact with steam or heat sources when the in-service temperature is in excess of 180° F. In all such cases flash to an intermediate insulated "cool" sleeve per Firestone details.
- G. Flexible Penetrations:
1. Provide a weathertight gooseneck set in Water Block Seal and secured to the deck.
  2. Flash in accordance with Firestone Details.
- H. Scuppers:
1. Remove existing scupper and provide a new welded watertight scupper or clean the existing scupper for reuse.
  2. Set welded watertight scupper in Water Block Seal and secure to the structure.
  3. Flash in accordance with Firestone Details.
- I. Expansion Joints:
1. Install as shown on roof drawings in accordance with Firestone details.

### **3.13 FLASHING - WALLS, PARAPETS, MECHANICAL EQUIPMENT CURBS, SKYLIGHTS, ETC.**

- A. General:
1. Using the longest pieces practical, flash all walls, parapets, curbs, etc., a minimum of 8" high per Firestone Details.
- B. Evaluate Substrate:
1. Evaluate the substrate and overlay per Firestone specifications as necessary.
- C. For Tear-off or Reroof projects:
1. Remove loose or unsecured flashings.
  2. Remove mineral surfaced or coated flashings.
  3. Remove excessive asphalt to provide a smooth, sound surface for new flashings.

- D. Complete the splice between flashing and the main roof sheet with Splice Adhesive before adhering flashing to the vertical surface. Provide lap splices in accordance with Firestone Details.
- E. Apply Bonding Adhesive at about the same time to both the flashing and the surface to which it is being bonded so as to allow approximately the same flash off time. Apply Bonding Adhesive in a uniform coating.
- F. Allow Bonding Adhesive to flash off until tacky. Touch the Bonding Adhesive surface with a clean, dry finger to be certain that the adhesive does not stick or string. While touching the adhesive, pushing straight down to check for stringing, also push forward on the adhesive at an angle to ensure that the adhesive is ready throughout its thickness. If either motion exposes wet or stringy adhesive when the finger is lifted, then it is not ready for mating. Flash off time will vary depending on ambient air conditions.
- G. Roll the flashing into the adhesive evenly and carefully so as to minimize wrinkles.
- H. Ensure proper contact of flashing by brooming in place.
- I. Provide termination directly to the vertical substrate as shown on roof drawings.
- J. Install T-Joint covers at field and flashing splice intersections as required by Firestone.
- K. Install intermediate flashing attachment as required by Firestone Specifications and Details.

### **3.14 FLASHING - GRAVEL STOPS OR ROOF EDGE METALS**

- A. *Apply QuickPrime to the metal edging and membrane as described in Firestone Specifications.*
- B. Place the roll of QuickSeam Flashing on the roof a few feet ahead of the application starting point, positioned so that it unrolls from the top of the roll. Remove approximately 2'-3' of release paper and apply to the metal flange and RubberGard membrane. Lap adjacent rolls of QuickSeam Flashing a minimum of one inch.
- C. With a 2"-3" wide silicone or silicone sleeved steel hand roller, roll the QuickSeam Flashing ensure proper adhesion. Additional attention must be given to factory splice intersections and to any change in plane.
- D. Apply 6" length of QuickSeam Flashing, a QuickSeam Joint Cover, or 6"x6" FormFlash to the inside edge of the QuickSeam Flashing at all overlaps.
- E. Apply 6" length of QuickSeam Flashing, a QuickSeam Joint Cover, or 6"x6" FormFlash at all intersections between the QuickSeam Flashing and field fabricated splices.
- F. Where QuickSeam Flashing will not completely cover the metal flange, an additional piece of QuickSeam Flashing must be applied to the metal edge laps . Apply Seam Edge Treatment at the intersections of the flashing sections.
- G. If the roof edge includes a gravel stop and sealant is not applied between the laps in the metal edging, an additional piece of QuickSeam Flashing shall be applied over the metal lap to the top of the gravel stop, after the initial application of QuickSeam Flashing. SeamEdge Treatment shall be applied at the intersections of the two flashing sections.
- H. When the roof slope is greater than 1 in 12, apply Seam Edge Treatment along the back edge of the QuickSeam Flashing.

### **3.15 TEMPORARY CLOSURE**

- A. Temporary closures, which ensure that moisture does not damage any completed section of the new roofing system, are the responsibility of the applicator. Completion of flashings, terminations, and temporary closures shall be completed as required to provide a watertight condition.

**3.16 ROOF WALKWAYS**

- A. Install walkways at all access points to the roof and around all rooftop equipment that may require maintenance and as shown on roof drawings.
- B. Layout Firestone RubberGard Walkway Pads so that the flat surface is over the completed RubberGard membrane, spacing each pad a minimum of 1" and a maximum of 3" from each other to allow for drainage. Walkway pads may not be used within 10' of any roof edge or perimeter. These areas will require the installation of concrete pavers.
- C. If the installation of Firestone RubberGard Walkway Pads over field fabricated splices or within 6" of a splice edge cannot be avoided, flash in the splice using QuickSeam Flashing prior to installing the walkway pad. The QuickSeam Flashing shall extend beyond the walkway pad a minimum of 6" on either side.
- D. Remove the release paper. Turn the walkpad over and place it in the QuickPrime.
- E. Walk on the pad to press in place assuring proper adhesion.
- F. If loose laid pavers are used for walkways. Adhere a layer of RubberGard membrane beneath them to isolate them from the roofing membrane. Protection layers must extend a minimum of 2" beyond the paving stone.

**3.17 SHEET METAL WORK**

- A. Install Firestone sheet metal as shown on roof drawings.
- B. Follow current industry guidelines for installation or Firestone requirements, whichever is more stringent.

**3.18 FIELD QUALITY CONTROL**

- A. Field inspection and testing will be performed as required by the manufacturer
- B. Correct identified defects or irregularities.

**3.19 CLEAN-UP**

- A. Clean all contaminants from building and surrounding areas.
- B. Remove trash, debris, equipment from project site and surrounding areas.
- C. Repair or replace damaged building components or surrounding areas to the satisfaction of the building owner.

**END OF SECTION**