

MIDLAND PUBLIC SCHOOLS FACILITIES DEPARTMENT RFP SPECIFICATIONS FOR “ROOF REPLACEMENT AT DISTRICTS TRANSPORTATION, MAINTENANCE AND WAREHOUSE BUILDING”

SCOPE:

BASE BID

1. Tear off all roofing membrane and flashings down to the roof deck, dispose of legally.
2. Remove any items identified by the owner as abandoned.
3. Furnish and install 2 layer of new 2.6 Firestone ISO mechanically attached on wood and metal deck areas. Insulation to be set in adhesive on concrete deck area.
4. Furnish and install a new 1/8” per foot Tapered ISO system fully adhered with Firestone insulation adhesive.
5. Furnish and install new fully adhered 90 mil EPDM. Provide all necessary details at projections, flashings, drains etc for a complete watertight system.
6. Furnish and install new ANSI/SPRI ES 1 kynar coated steel edge metal system gravel stop - Firestone Anchor guard.
7. Provide a full system Firestone Red Shield 30 year warranty.
8. **Alternate** for fully adhered .060 EPDM 20 year system following the same procedures as the system listed above.

Contractor is responsible for all measurements:

Site Visit/Mandatory Pre-Bid Walk

Contractors are required to attend a mandatory site visit on Monday, September 9, at 10:00 am. Interested contractor should meet at Midland Public Schools Administration Building 600 E. Carpenter St. Midland Mi. 48640. Please direct questions to contact listed below. Building drawings are available upon request.

Michael Moeggenberg
Director of Facilities and Operations
Midland Public Schools

989-923-5035

moeggenbergmj@midlandps.org

Bid Security

A Bid Security by a qualified surety authorized to do business in Michigan in the amount of five percent (10%) of the Base Bid shall accompany each proposal or proposal combination. The Bid Security may be in the form of a Bid Bond, Cashier's Check, or Money Order. Personal checks are not acceptable.

Safety

The Contractor shall be responsible for compliance with all applicable federal and state laws, codes, and regulations, including but not limited to MIOSHA and the Right-to-Know.

Fines for MIOSHA Violations

If the District is assessed any fines for MIOSHA violations arising out of these contract services and attributable to the Contractor, the Contractor shall reimburse the District for these.

Permits

The contractor is required to obtain and pay for any required permits both state and local.

Insurance Requirements

The Contractor will provide the District with the required insurance certificates before the Contractor is awarded the contract. These certificates of insurance shall be submitted to the District's Maintenance Department. Once contract is awarded Midland Public Schools will need to be added as an additional insured to the insurance policies.

Minimum Required Insurance Limits

Commercial General Liability	Minimum Limits
Fire Damage	\$100,000
Medical Expenses	\$ 10,000
Personal & Adv. Injury	

Each Occurrence	\$1,000,000
Aggregate \$2,000,000	
Products - Comp/Op Agg.	\$1,000,000
Property Damage	
Each Occurrence	\$1,000,000
Aggregate	\$2,000,000
Excess Liability (Umbrella)	
Each Occurrence	\$5,000,000
Aggregate	\$10,000,000
Fidelity/Employee Dishonesty Bond	\$50,000
Automobile Liability (Including Hired & Non-Owned)	
Personal Injury/Bodily Injury	
Each Occurrence	\$1,000,000
Or Combined Single Limit	\$1,000,000
Property Damage	
Each Occurrence	\$500,000

The Contractor must also provide all of its employees working on this contract with Workers' Compensation insurance. The District will not be responsible for any job related injuries to the Contractor's employees. Contractor will provide the District with proof of insurance with at least the following coverage limits:

Minimum Limits

Coverage A Statutory

Coverage B as follows:

Each Accident \$500,000

Disease - Policy Limit \$1,000,000

Disease - Each Employee \$500,000

Bid Information

Bids will be accepted until 2:00 P.M. local time on September 17, 2019 at which time bids will be opened and read aloud for presentation to the Board of Education at their next regularly scheduled meeting. No oral, telephonic or facsimile proposals will be considered. No proposals will be considered after time of closing of bids other than an act of God, determined by the district.

Owners Rights

The Board of Education reserves the right to accept or reject any or all item(s) in the bid; to accept or reject any or all bid(s); to waive any informalities therein; or for any reason, to award the contract to other than the low bidder. If a unit price or extended price is obviously in error and the other is obviously correct, the incorrect price will be disregarded.

All bids shall be firm for one hundred eighty days (90) from the date of the bid opening. All bids must include a signed "Iran Economic Sanctions Act Certification" and a "Familial Relationship Disclosure" form (enclosed with documents).

All bids must be submitted on the attached bid form and signed by the bidder. Two (2) copies of the bid form should be addressed to the attention of:

Michael Moeggenberg
Director of Facilities and
Operations
Midland Public Schools
600 East Carpenter Street
Midland, Michigan 48640
"Facilities Roof Replacement"

One (1) copy of the bid form should be retained for your files. Questions should be referred to Michael Moeggenberg, Director of Facilities and Operations at 989-923-5035 or moeggenbergmj@midlandps.org

Work Timeline

The work shall be determined by weather and the ability to complete the roof replacement to manufactures specifications before inclement weather. If the awarded contractor determines the roof replacement cannot be accomplished to specification during 2019, work must commence in the spring of 2020 and completed before June 1, 2020.

Instruction to Bidders

1. It shall be the bidder's responsibility to read this entire document, review all enclosures and attachment, and comply with all requirements specified within.
2. Bids received after the scheduled opening time will not be accepted.
3. The only bids accepted will be hard copy paper bids.
4. No bid may be withdrawn, changed or modified in any way for a period of one hundred eighty (90) calendar days from date of bid opening.
5. Negligence on the part of the bidder in preparing the bid confers no rights for the withdrawal of the bid after it has been opened.
6. Bids received prior to time of opening will be kept securely unopened. No responsibility will be attached to school district employee who prematurely opens an incorrectly addressed bid proposal.
7. If either a unit price or extended price is obviously in error or the other is obviously correct, the incorrect price will be disregarded.
8. Midland Public Schools is exempt from state and federal taxes.
9. All bids are subject to acceptance by Midland Public Schools Board of Education which reserves the right to accept or reject any or all bids, to split awards by items, to waive irregularities or defects, and accept other than the low bid when deemed to be in the best interest of Midland Public Schools.
10. The laws of the State of Michigan shall govern rights, obligations, and remedies of the Parties under this bid and any agreement reached through this process.
11. All information included in a bid response is subject to the Freedom of Information Act and may be disclosed in its entirety after the formal, public bid opening has been completed.
12. By submission of the proposal, the bidder certifies that the pricing structure offered has been arrived at independently without consultation, communication, or agreement of such prices for the purpose of restricting competition with any other bidder or competitor.
13. The bidder agrees to hold and save Midland Public Schools, its officers, agents and employees harmless from liability of any kind, including costs and expenses, with respect to any claim, action, cost or judgment for patent, copyright or trademark infringement arising out of the purchase or use of equipment, materials, supplies, or services covered by this bid document.
14. The contractor shall provide items of a minor nature, not specifically noted in these specification, so as to provide a complete, operable and Owner acceptable service.
15. Contractors are required to comply with the Safety Rules and Accident Prevention plan. The district reserves the right to exclude any worker(s) from the job site(s) for violation of these work rules or any other such offenses deemed inappropriate by the District.
16. The contractor shall clean their job area daily and dispose of all trash and debris leaving the area broom clean.
17. It is the responsibility of the contractor/bidder to field verify all existing field conditions. Bidders shall inspect the work site and take such steps as may be

reasonably necessary to ascertain the nature of the work; and general and local conditions which can affect the work or cost thereof. Failure to do so will not relieve the bidders from responsibility for estimating properly the difficulty or cost of successfully performing the work.

18. The sites are available for your inspections by appointment.

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.

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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

FIRESTONE PLATINUM 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 **Platinum** EPDM Roofing System Technical Specifications.

1.02 WORK INCLUDED

- A. Work under this section covers the installation of a new **Firestone Platinum Roofing System** on **(Midland Public Schools Transportation Building)**. 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 will dispose of all materials properly. Any asbestos removal shall comply with state and local codes and requirements and shall be disposed of in a legal manner.
- C. Contractor shall remove the existing roof down to the roof deck including all existing composition base flashings. Contractor will dispose of all materials properly. Any asbestos removal shall comply with state and local codes and requirements and shall be disposed of in a legal manner.

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. **Firestone RubberGard Platinum 90 mil EPDM** elastomeric sheet roofing that is adhered to acceptable substrate with Firestone 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 Firestone application specification.
 - 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
 - 1. Submit copies of Firestone Material Safety Data Sheets (MSDS) for roof membrane products.
- G. Drawings:
 - 1. Submit manufacturers shop drawing for tapered insulation.
 - a. Shop drawings shall show complete layout of the tapered system and shall comply with the drainage patterns required. Only the manufacturer's tapered insulation shop drawings will be acceptable.
 - 1. The responsibility of providing shop drawings for this project lies solely with the manufacturer of the tapered insulation system. Shop drawings by others will not be acceptable.
 - 2. Shop drawings shall include: Outline of roof, location of drains, scuppers or gutters, profile of tapered insulation components, indications of minimum and maximum insulation thicknesses, and the average "R" value for the completed insulation system.

3. The roofing contractor shall verify all roof dimensions and drain locations and confirm same with the manufacturer.
4. Approved shop drawings shall be returned to the manufacturer before insulation is delivered to the jobsite.

1.08 QUALITY ASSURANCE

- A. Manufacturer:
 1. Company specializing in manufacturing the roofing membrane specified in this Section with ten years of manufacturing experience.
 2. System supplier must have ISO 9002 certification.
 3. Manufacturer must be able to provide the project with the membrane and Isocyanurate insulation that is produced in their facilities.
- B. Applicator:
 1. Shall be a Firestone Red Shield Licensed Contractor.
 2. Shall provide payment and performance bond to building owner.
 3. Shall provide a payment performance bond.

1.09 REGULATORY REQUIREMENTS

- A. Conform to applicable local building code requirements.
- B. Underwriters Laboratories, Inc. (UL): Class **(A)** Fire Hazard Classification.
- C. Factory Mutual Corporation (FM): Roof Assembly Classification, FM Construction Bulletin 1-28, and 1-29 meeting minimum requirements of FM **(1-90)**.

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

- 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 30-year Firestone Platinum **(P)** Roofing System Limited Warranty. Warranty shall include membrane, roof insulation, **(edge metal)** and membrane accessories.
- B. Coverage
 - 1. Platinum P 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, unintentional and occasional damage to the membrane as a result of normal rooftop inspection, maintenance or service, manufacturing defect in Firestone brand materials, and the workmanship used to install these materials.
 - 2. Platinum PH 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, unintentional and occasional damage to the membrane as a result of normal rooftop inspection, maintenance or service, hail up to 2" in diameter, manufacturing defect in Firestone brand materials, and the workmanship used to install these materials.
 - 3. Platinum PHW 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, unintentional and occasional damage to the membrane as a result of normal rooftop inspection, maintenance or service, hail up to 2" in diameter, winds up to 100 mph, 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.
 2. Nailer thickness: Thickness of roof insulation.
- B. Reference Standards:
1. Southern Pines: PS 20; SPIB Grading Rules.
 2. Western Woods: PS 20; WWPA Grading Rules
 3. Plywood: PS 1; APA Grade Stamps.
 4. Pressure preservative treatment: AWPB LP2.

2.02 MANUFACTURERS - MEMBRANE MATERIALS

- A. [Firestone RubberGard Platinum](#) single-ply membrane system: 90 mil elastomeric sheet roofing that is adhered to acceptable substrate with Firestone 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 Termolymer (EPDM) conforming to the following physical properties:
1. Membrane Type:
 - a. 90 mil
 - b. Membrane shall have 90 mils of uninterrupted weatherable thickness.
 - c. Membrane shall comply with UL Class A fire requirements in conjunction with specified slope, insulation and surfacing.

Property:	Specification:
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.
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 Platinum® EPDM membrane by Firestone.

2.04 INSULATION PRODUCTS

A. BASE LAYER and TOP LAYER (R-30 MIN)

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 : **2.6"**
 - 2. Nominal Size: 48 in x 48 in or 48 in x 96 in
 - 3. System slope: **N/A**
- 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.

BASE LAYER INSULATION FASTENERS

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 a 13 threads per inch. Length shall be sufficient to penetrate deck a minimum of 3/4" 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 1/2" deeper than the fastener engagement.

- 1. Reference Standard: SAE 1022, Heat Treated
- 2. Product/Producer:
 - a. Heavy Duty (HD) fasteners by Firestone.

Concrete Area: Insulation may be installed in insulation adhesive that is approved by the membrane manufacture.

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.
- 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

Property:	Specification:
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: **Anchorgard**
 - 1. Description: Provide prefabricated (**24 gauge steel**) with (**Kynar**) finish in manufacturers standard colors to be selected by specifier.
 - 2. Product/Producer: (**Firestone Metal Products**)

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 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.

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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.

3.09 MEMBRANE PLACEMENT AND ATTACHMENT

- A. Beginning at the low point of the roof, place the Firestone RubberGard [Platinum](#) 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 [Platinum](#) 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.
 7. [Over the completed seam install a 5" QuickSeam Flashing cover strip centered over the Lap Splice. Remove excess amounts of dusting agent on the sheet and at factory splices using a stiff push broom. Stir Firestone QuickPrime Plus thoroughly before and during use. Dip the QuickScrubber into the bucket of QuickPrime Plus, keeping the QuickScrubber flat. Apply the QuickPrime Plus using long back and forth type strokes with pressure along the length of the splicing area until surfaces become a dark gray in color. Change the scrub pad each 100 feet of cover strip, or when the pad will no longer hold the proper amount of QuickPrime Plus. Additional scrubbing is required at areas that may have become contaminated or have excess amounts of dusting agent, and at all factory splices.](#)
 8. [Position the 5" QuickSeam Flashing cover strip centered over the Lap Splice. Immediately roll the splice tape with a 3"-4" wide silicone or silicone sleeved steel hand roller or a short nap 3" paint roller.](#)
 9. [To remove the paper backing from the flashing, peel the paper backing off the 5" QuickSeam Flashing cover strip by pulling at approximately a 45-degree angle to the flashing and parallel with the roof surface. Broom the entire length of the cover strip as the release paper is being removed.](#)
 10. [Roll the cover strip using a 1-1/2"-2" wide silicone or silicone sleeved steel hand roller, first across the cover strip, and then along the entire length of the cover strip.](#)

3.11 MEMBRANE SECUREMENT

- 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, 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:
 - 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 [Platinum](#) 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 [Platinum](#) 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 [Platinum](#) 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 [Platinum](#) 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 [Platinum](#) 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 [Platinum](#) Details.
- I. Expansion Joints:
 - 1. Install as shown on roof drawings in accordance with Firestone [Platinum](#) 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 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 [Platinum](#) 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 [Platinum](#) 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 [Platinum](#) 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 [Platinum](#) 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. [Install a second layer of 9" QuickSeam Flashing over the 5" QuickSeam Flashing as described above.](#)
- E. 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.
- F. 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.

- G. 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.
- H. 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.
- I. When the roof slope is greater than 1 in 12, apply Seam Edge Treatment along the back edge of the QuickSeam Flashing.

3.16 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.

3.17 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 [Platinum](#) 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 [Platinum](#) membrane beneath them to isolate them from the roofing membrane. Protection layers must extend a minimum of 2" beyond the paving stone.

3.18 SHEET METAL WORK

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

3.19 FIELD QUALITY CONTROL

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

3.20 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

Bid Form

Total Pricing to Include Labor and Materials _____

Price for drain replacement Per/Drain _____

Price for metal deck replacement per/ft _____

Price for wood deck replacement per/ft _____

Please Describe Scope of Work to Include start and completion times

Company _____

Title _____

Email _____

Phone _____

My signature certifies that the proposal as submitted complies with all Terms and Conditions as set forth in this RFP.

Signature _____

Iran Economic Sanctions Act Certification

I am the _____ (insert title) of _____ (insert bidder company name), or I am bidding in my individual capacity ("Bidder"), with authority to submit a binding bid for the provision of roofing services to Midland Public Schools. I have personal knowledge of the matters described in this Certification, and I am familiar with the Iran Economic Sanctions Act, MCL 129.311, et seq. ("Act"). I am fully aware that the school district will rely on my representations in evaluating bids.

I certify that Bidder is not an Iran-linked business, as that term is defined in the Act. I understand that submission of a false certification may result in contract termination, ineligibility to bid for three (3) years, and a civil penalty of \$250,000 or twice the bid amount, whichever is greater, plus related investigation and legal costs.

Signature _____

Affidavit of Bidder-Compliance with School Safety Initiative Legislation

The undersigned, the owner or authorized officer of _____ (the “Bidder”), certifies to Midland Public Schools (the “School District”), that any and all persons who will work directly or indirectly for the Bidder, including, but not limited to, Bidder’s employees, agents, vendors, subcontractors or consultants, and who will work at or on any School District property, shall at all times be in compliance with MCL 380.1230, 380.1230a, 380.1230c, 380.1230d, and 380.1230g and have not been convicted of any “listed offenses”.¹ The Bidder further warrants and represents that all persons who will work directly or indirectly for the Bidder, including, but not limited to, Bidder’s employees, agents, vendors, subcontractors or consultants, and who will work at or on any School District property, shall at all times be in compliance with MCL 380.1230, 380.1230a, 380.1230c, 380.1230d, and 380.1230g. In this regard, Bidder agrees, without limitation, to report within 3 business days to the School District when any such person is charged with a crime listed in Section 1535a(1) of the Revised School Code² or a substantially similar law, and to immediately report to the School District if that person is subsequently convicted, plead guilty or plead no contest to that crime.

BIDDER: _____

By: _____

Its: _____

Affidavit of Bidder –Familial Relationships Form

The undersigned, the owner or authorized officer of _____ (the “Bidder”), pursuant to the familial disclosure requirement provided in the _____ (the “School District”) advertisement for construction bids, hereby represent and warrant, except as provided below, that no familial relationships exist between the bidder(s) or any employee of _____, and any member of the Board of Education of the School District or the Superintendent of the School District.

List any Familial Relationships:

BIDDER: _____

By: _____

Its: _____

STATE OF MICHIGAN)
)ss.
COUNTY OF _____)

This instrument was acknowledged before me on the ____ day of _____, 2018, by _____.

_____, Notary Public
_____, County, Michigan
My Commission Expires: _____
Acting in the County of : _____