

**Request for Proposal  
Kindergarten Roof Replacements  
Rochester School District**

The Rochester School District is seeking proposals for a roof replacement project involving three kindergarten addition roof replacements located at Chamberlain Street Elementary, 65 Chamberlain Street; East Rochester Elementary, 773 Portland Street; and Gonic Elementary, 10 Railroad Ave. Rochester NH to be accepted until 12:00 noon EST on Monday, November 30, 2020. The bids will be opened publicly and read aloud at that time.

A **mandatory pre-bid conference** to be held on Tuesday November 24, 2020, meeting at 9:00 AM at the Chamberlain Street Elementary School, 65 Chamberlain Street Rochester NH 03867. Prospective bidders are encouraged to familiarize themselves with the project and the project requirements prior to the conference.

Proposals shall be submitted to, Mr. Kyle Repucci, Superintendent of Schools, Rochester School Department, 150 Wakefield Street, Suite 8, Rochester, New Hampshire 03867. Proposals must be submitted on the attached bid proposal form in sealed envelopes plainly marked **Proposal for Kindergarten Roof Replacements – Rochester School District**. Failure to properly mark the envelope will result in disqualification of the bid if it is prematurely opened.

Specifications with the required Proposal Form may be obtained at no cost from the Superintendent of Schools Office or on the District website at:

[www.rochesterschools.com/SAU/bids/bids.html](http://www.rochesterschools.com/SAU/bids/bids.html)

**Project Overview & Specification**  
**For**  
**Kindergarten Roof Replacements**  
**Rochester School District**

**Any questions or concerns can be addressed to:**

**David G. Totty**

**Director of Facilities**

**Rochester School District**

**(603) 332-3678 ext. 1145**

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# OVERVIEW

**Note:** This section is provided for quick reference only. The Specification section will define the full scope of work.

**Note:** Whenever a specific product is specified by brand name and/or term “or equal” appears in these specifications, it shall be the vendor’s responsibility to establish through objective independent performance reports that the proposed product will perform with the same reliability as the specified product.

**Note:** Bidders will carry a snow removal allowance of 10 crew hours, to be returned if unused. This rate will be used to calculate additional cost for snow removal as needed. Any additional snow removal requires prior approval from the owner’s representative.

## **I. RE: Chamberlain School Kindergarten Wing Roof Replacement**

*The scope of work included in the project specification and summarized below will meet Carlisle’s requirements for a 20-Year 55-MPH Edge-to-Edge Total System Warranty (Labor and Material Coverage, NO Dollar Limit, NON Pro-rated) or equivalent:*

### ***Chamberlain School- Kindergarten Wing***



***Scope of Work:***

- *Remove and dispose of existing PVC roof system including membrane, insulation, flashings, and metal flashings down to the steel deck substrate.*
- *Clear exposed substrate of all debris and then furnish and install new VapAir Seal 725TR Air and Vapor Barrier per Carlisle specification.*
- *Furnish and install (2) layers of new 2.5" Insulbase 20 psi Insulation loose laid over air and vapor barrier. Insulation joints should be staggered as detailed in project specification.*
- *Furnish and install new Tapered Insulbase 20 psi Insulation cricket between two roof drains.*
- *Furnish and install new 1/2" SecurShield HD 100 psi coverboard over all loose laid insulation. Coverboard will be mechanically fastened using 12 HP Fasteners and 3" Insulation Plates per 4' x 8' board.*
- *Furnish and install new Sure-Seal 60-mil EPDM non reinforced membrane with 3" Factory Applied Tape adhered with either CavGrip III Adhesive or 90-8-30A Bonding Adhesive.*
- *Furnish and install new wood blocking around perimeter as needed to bring blocking height to be flush or higher than the insulation height.*
- *Furnish Carlisle brand metal flat sheets to shop fabricate 050 hook strip and 050 Kynar Fascia cover material and install system per Carlisle specification.*

## **II. RE: East Rochester School Roof Replacement**

*The scope of work included in the project specification and summarized below will meet Carlisle's requirements for a 20-Year 55-MPH Edge-to-Edge Total System Warranty (Labor and Material Coverage, NO Dollar Limit, NON Pro-rated):*

### ***East Rochester School- Kindergarten Building***



**Scope of Work - Main Roof Area:**

- *Remove and dispose of existing PVC membrane, flashings, and metal flashings with existing insulation to remain.*
- *Remove and replace any existing insulation that is identified as wet or damaged with like thickness.*
- *Furnish and install (1) layer of new 1.5" Insulbase 20 psi Insulation loose laid over air and vapor barrier. Insulation joints should be staggered relative to the existing insulation as detailed in project specification.*
- *Furnish and install new ½" SecurShield HD 100 psi coverboard over all loose laid insulation. Coverboard will be mechanically fastened using 12 HP Fasteners and 3" Insulation Plates per 4' x 8' board.*
- *Furnish and install new Sure-Seal 60-mil EPDM non reinforced membrane with 3" Factory Applied Tape adhered with either CavGrip III Adhesive or 90-8-30A Bonding Adhesive.*
- *Furnish and install new wood blocking around perimeter as needed to bring blocking height to be flush or higher than the insulation height.*
- *Furnish Carlisle brand metal flat sheets to shop fabricate 050 hook strip and 050 Kynar Fascia cover material and install system per Carlisle specification.*

**Scope of Work – E. Rochester Front Canopy Roof\*:**

- *Remove and dispose of existing EPDM roof system including membrane, flashings, and metal flashings down to existing plywood deck.*
- *Furnish and install new Sure-Seal 60-mil EPDM non reinforced membrane with 3" Factory Applied Tape with either CavGrip III or 90-8-30A Bonding Adhesive.*

**III. RE: Gonic School Roof Replacement**

*The scope of work included in the project specification and summarized below will meet Carlisle's requirements for a 20-Year 55-MPH Edge-to-Edge Total System Warranty (Labor and Material Coverage, NO Dollar Limit, NON Pro-rated.*

### ***Gonic School- Kindergarten Wing***



#### ***Scope of Work - Main Roof Area:***

- *Remove and dispose of existing PVC membrane, flashings, and metal flashings with existing insulation to remain.*
- *Remove and replace any existing insulation that is identified as wet or damaged with like thickness.*
- *Furnish and install (1) layer of new 1.5" Insulbase 20 psi Insulation loose laid over air and vapor barrier. Insulation joints should be staggered relative to the existing insulation as detailed in project specification.*
- *Furnish and install new ½" SecurShield HD 100 psi coverboard over all loose laid insulation. Coverboard will be mechanically fastened using 12 HP Fasteners and 3" Insulation Plates per 4' x 8' board.*
- *Furnish and install new Sure-Seal 60-mil EPDM non reinforced membrane with 3" Factory Applied Tape adhered with either CavGrip III Adhesive or 90-8-30A Bonding Adhesive.*
- *Furnish and install new wood blocking around perimeter as needed to bring blocking height to be flush or higher than the insulation height.*
- *Furnish Carlisle brand metal flat sheets to shop fabricate 050 hook strip and 050 Kynar Fascia cover material and install system per Carlisle specification.*

#### ***Scope of Work – Gonic School Lower EPDM Roof:***

- *Remove and dispose of existing EPDM roof system including membrane, insulation, flashings, and metal flashings.*

- *Furnish and install (2) layers of new 2.5" Insulbase 20 psi Insulation loose laid over air and vapor barrier. Insulation joints should be staggered relative to the existing insulation as detailed in project specification.*
- *Furnish and install new ½" SecurShield HD 100 psi coverboard over all loose laid insulation. Coverboard will be mechanically fastened using 12 HP Fasteners and 3" Insulation Plates per 4' x 8' board.*
- *Furnish and install new Sure-Seal 60-mil EPDM non reinforced membrane with 3" Factory Applied Tape adhered with either CavGrip III Adhesive or 90-8-30A Bonding Adhesive.*
- *Furnish and install new wood blocking around perimeter as needed to bring blocking height to be flush or higher than the insulation height.*
- *Furnish Carlisle brand metal flat sheets to shop fabricate 050 hook strip and 050 Kynar Fascia cover material and install system per Carlisle specification.*

**-End Overview-**



# SPECIFICATIONS

**Note:** Wherever a specific product is specified by brand name and/or term “or equal” appears in these specifications, it shall be the vendor’s responsibility to establish through objective independent performance reports that the proposed product will perform with the same reliability as the specified product.

**Note:** Bidders will carry a snow removal allowance of 10 crew hours, to be returned if unused. This rate will be used to calculate additional cost for snow removal as needed. Any additional snow removal requires prior approval from the owner’s representative.

# **Sure-Seal EPDM Adhered Specification**

**Chamberlain School  
65 Chamberlain Street  
Rochester, New Hampshire**

**November 2020**

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## **PART 1 GENERAL**

### **1.01 DESCRIPTION**

- A. The Chamberlain School Kindergarten Wing is located at 65 Chamberlain Street in Rochester, NH.
- B. The project consists of installing Carlisle's Sure-Seal Adhered Roofing System as outlined below:

Apply the Fully Adhered EPDM Roofing System in conjunction with Insulbase insulation system and VapAir Seal 725TR air and vapor barrier to the existing steel deck following the tear off and disposal of the existing PVC roof system. Existing substrate conditions must be evaluated and confirmed acceptable prior to new roof system installation as required by this specification.

### **1.02 EXTENT OF WORK**

- A. Provide all labor, material, tools, equipment, and supervision necessary to complete the installation of a Sure-Seal 60-mil EPDM membrane Fully Adhered Roofing System including flashings and insulation as specified herein and as indicated on the drawings in accordance with the manufacturer's most current specifications and details.
- B. The roofing contractor shall be fully knowledgeable of all requirements of the contract documents and shall make themselves aware of all job site conditions that will affect their work.

- C. The roofing contractor shall confirm all given information and advise the building owner, prior to bid, of any conflicts that will affect their cost proposal.
  
- D. Any contractor who intends to submit a bid using a roofing system other than the approved manufacturer must submit for pre-qualification in writing fourteen (14) days prior to the bid date. Any contractor who fails to submit all information as requested will be subject to rejection. Bids stating “as per plans and specs” will be unacceptable.

### **1.03 SUBMITTALS**

- A. Prior to starting work, the roofing contractor must submit the following:
  - 1. Shop drawings showing layout, details of construction and identification of materials.
  
  - 2. Sample of the manufacturer’s Total Systems Warranty covering all components of the roofing system.
  
  - 3. Submit a letter of certification from the manufacturer which certifies the roofing contractor is authorized to install the manufacturer’s roofing system and lists foremen who have received training from the manufacturer along with the dates training was received.
  
  - 4. Certification of the manufacturer’s warranty reserve.
  
- B. Upon completion of the installed work, submit copies of the manufacturer’s final inspection report to the specifier prior to the issuance of the manufacturer’s warranty.

### **1.04 PRODUCT DELIVERY, STORAGE AND HANDLING**

- A. Deliver materials to the job site in the manufacturer’s original, unopened containers or wrappings with the manufacturer’s name, brand name and installation instructions intact and legible. Deliver in sufficient quantity to permit work to continue without interruption.
  
- B. Comply with the manufacturer’s written instructions for proper material storage.

1. Store materials between 60°F and 80°F in dry areas protected from water and direct sunlight. If exposed to lower temperature, restore to 60°F minimum temperature before using.
  2. Store materials containing solvents in dry, well ventilated spaces with proper fire and safety precautions. Keep lids on tight. Use before expiration of their shelf life.
- C. Insulation and underlayment products must be on pallets, off the ground and tightly covered with waterproof materials. Manufacturer's wrap does not provide sufficient waterproofing. Insulation and underlayment products that become wet or saturated are to be discarded.
- D. Any materials which are found to be damaged shall be removed and replaced at the applicator's expense.

#### **1.05 WORK SEQUENCE**

- A. Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Care should be exercised to provide protection for the interior of the building and to ensure water does not flow beneath any completed sections of the membrane system.
- B. Do not disrupt activities in occupied spaces.

#### **1.06 USE OF THE PREMISES**

- A. Before beginning work, the roofing contractor must secure approval from the building owner's representative for the following:
1. Areas permitted for personnel parking.
  2. Access to the site.
  3. Areas permitted for storage of materials and debris.
  4. Areas permitted for the location of cranes, hoists and chutes for loading and unloading materials to and from the roof.
- B. Interior stairs or elevators may not be used for removing debris or delivering materials, except as authorized by the building superintendent.

## 1.07 EXISTING CONDITIONS

If discrepancies are discovered between the existing conditions and those noted on the drawings, immediately notify the owner's representative by phone and solicit the manufacturer's approval prior to commencing with the work. Necessary steps shall be taken to make the building watertight until the discrepancies are resolved.

## 1.08 PRE-CONSTRUCTION CONFERENCE

- A. A **mandatory** pre-bid meeting will be held at 65 Chamberlain Street on **Tuesday November 24th at 9:00AM**. Contact the owner's representative, David G. Totty, Director of Facilities, at (603) 332-3678 if there are any questions. The roofing contractor will observe actual conditions and verify all dimensions on the roof at this time. Should additional access to the roof be necessary after the pre-bid meeting, the contractor must contact the owner's representative, David G. Totty, Director of Facilities, at (603) 332-3678 to coordinate an appropriate time.
- B. Proposals shall be submitted to, Mr. Kyle Repucci, Superintendent of Schools, Rochester School Department, 150 Wakefield Street, Suite 8, Rochester, New Hampshire 03867. Proposals must be submitted on the attached bid proposal form in sealed envelopes plainly marked **Proposal for Kindergarten Roof Replacements – Rochester School District**. Failure to properly mark the envelope will result in disqualification of the bid if it is prematurely opened.
- Proposals to be accepted until **12:00 noon EST on Monday, November 30, 2020**. The bids will be opened publicly and read aloud at that time.
- C. Any conditions which are not shown on the shop drawings should be indicated on a copy of the shop drawing and included with bid submittal if necessary to clarify any conditions not shown.

## 1.09 TEMPORARY FACILITIES AND CONTROLS

- A. Temporary Utilities:
1. Water, power for construction purposes and lighting are not available at the site and will not be made available to the roofing contractor.
  2. Provide all hoses, valves and connections for water from source designated by the owner when made available.

3. When available, electrical power should be extended as required from the source. Provide all trailers, connections and fused disconnects.

B. Temporary Sanitary Facilities

Sanitary facilities will not be available at the job site. The roofing contractor shall be responsible for the provision and maintenance of portable toilets or their equal.

C. Building Site:

1. The roofing contractor shall use reasonable care and responsibility to protect the building and site against damages. The contractor shall be responsible for the correction of any damage incurred as a result of the performance of the contract.
2. The roofing contractor shall place all construction debris in a dumpster **provided by the owner** in a timely and legally acceptable manner so as to not detract from the aesthetics or the functions of the building.

D. Security:

Obey the owner's requirements for personnel identification, inspection and other security measures.

## 1.10 JOB SITE PROTECTION

- A. The roofing contractor shall adequately protect building, paved areas, service drives, lawn, shrubs, trees, etc. from damage while performing the required work. Provide canvas, boards and sheet metal (properly secured) as necessary for protection and remove protection material at completion. The contractor shall repair or be responsible for costs to repair all property damaged during the roofing application.
- B. During the roofing contractor's performance of the work, the building owner will continue to occupy the existing building. The contractor shall take precautions to prevent the spread of dust and debris, particularly where such material may shift into the building. The roofing contractor shall provide labor and materials to construct, maintain and remove necessary temporary enclosures to prevent dust or debris in the construction area(s) from entering the remainder of the building.

- C. Do not overload any portion of the building, either by use of or placement of equipment, storage of debris, or storage of materials.
- D. Protect against fire and flame spread. Maintain proper and adequate fire extinguishers.
- E. Take precautions to prevent drains from clogging during the roofing application. Remove debris at the completion of each day's work and clean drains, if required. At completion, test drains to ensure the system is free running and drains are watertight. Remove strainers and plug drains in areas **where work is in progress**. Install flags or other telltales on plugs. Remove plugs each night and screen drain.
- F. Store moisture susceptible materials above ground and protect with waterproof coverings.
- G. Remove all traces of piled bulk materials and return the job site to its original condition upon completion of the work.

## 1.11 SAFETY

The roofing contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, state and federal requirements that are safety related. **Safety shall be the responsibility of the roofing contractor.** All related personnel shall be instructed daily to be mindful of the full time requirement to maintain a safe environment for the facility's occupants including staff, visitors, customers and the occurrence of the general public on or near the site.

## 1.12 WORKMANSHIP

- A. Applicators installing new roof, flashing and related work shall be factory trained and approved by the manufacturer they are representing.
- B. All work shall be of highest quality and in strict accordance with the manufacturer's published specifications and to the building owner's satisfaction.
- C. There shall be a supervisor on the job site at all times while work is in progress.
- D. All field seams and flashing details are to be completed according to manufacturer's specifications and details by the end of each work day.

## 1.13 QUALITY ASSURANCE

- A. The Sure-Seal Roofing System must achieve a UL Class A.

The specified roofing assembly must have been successfully tested by a qualified testing agency to resist the design uplift pressures calculated according to International Building Code (IBC) and American Society of Civil Engineers (ASCE 7) ANSI/SPRI WD-1 "Wind Design Standard Practice for Roofing Assemblies".

- B. The membrane must be manufactured by the material supplier or equal.
- C. The manufacturer must have a minimum of 30 years experience in the manufacturing of vulcanized, white or black, thermoset sheeting.
- D. Unless otherwise noted in this specification, the roofing contractor must strictly comply with the manufacturer's current specifications and details.
- E. The roofing system must be installed by an applicator authorized and trained by the manufacturer in compliance with shop drawings as approved by the manufacturer. The roofing applicator shall be thoroughly experienced and upon request be able to provide evidence of having at least five (5) years successful experience installing single-ply EPDM roofing systems and having installed at least one (1) EPDM roofing application or several similar systems of equal or greater size within one year.
- F. Provide adequate number of experienced workmen regularly engaged in this type of work who are skilled in the application techniques of the materials specified. Provide at least one thoroughly trained and experienced superintendent on the job at all times roofing work is in progress.
- G. There shall be no deviations made from this specification or the approved shop drawings without the prior written approval of the specifier. Any deviation from the manufacturer's installation procedures must be supported by a written certification on the manufacturer's letterhead and presented for the specifier's consideration.
- H. Upon completion of the installation, the applicator shall arrange for an inspection to be made by a non-sales technical representative of the membrane manufacturer in order to identify any needed corrective repairs that will be required for warranty issuance. Notify the building owner seventy-two (72) hours prior to the manufacturer's final inspection.
- I. Inspector shall be employed and trained by the manufacturer and have received product-specific training from the manufacturer of the products.
- J. The Sure-Seal EPDM Membrane exceeds 41,580 kJ/m<sup>2</sup> under Xenon-Arc UV Light testing used for testing "Resistance to Outdoor (Ultraviolet) Weathering." (ASTM D 4637 Specification requires a 7560 kJ/m<sup>2</sup> minimum total radiant exposure at 70 W/m<sup>2</sup> irradiance at 176°F black panel temperature to pass.)The membrane shows no visible signs of cracking or crazing.
- K. Sure-Seal EPDM Membranes achieves a zero (no growth) rating in the ASTM G21 test for fungi growth.



## **1.14 JOB CONDITIONS, CAUTIONS AND WARNINGS**

Refer to Carlisle's EPDM Roofing System specification for General Job Site Considerations.

- A. Safety Data Sheets (SDS) must be on location at all times during the transportation, storage and application of materials.
- B. When positioning membrane sheets, exercise care to locate all field splices away from low spots and out of drain sumps. All field splices should be shingled to prevent bucking of water.
- C. When loading materials onto the roof, the Carlisle Authorized Roofing Applicator must comply with the requirements of the building owner to prevent overloading and possible disturbance to the building structure.
- D. Proceed with roofing work only when weather conditions are in compliance with the manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with the manufacturer's requirements and recommendations.
- E. Proceed with work so new roofing materials are not subject to construction traffic. When necessary, new roof sections shall be protected and inspected upon completion for possible damage.
- F. Provide protection, such as 3/4 inch thick plywood, for all roof areas exposed to traffic during construction. Plywood must be smooth and free of fasteners and splinters.
- G. The surface on which the insulation or roofing membrane is to be applied shall be clean, smooth, dry, and free of projections or contaminants that would prevent proper application of or be incompatible with the new installation, such as fins, sharp edges, foreign materials, oil and grease.
- H. New roofing shall be complete and weathertight at the end of the work day.
- I. Contaminants such as grease, fats and oils shall not be permitted to come in direct contact with the roofing membrane. An overlay of Epichlorohydrin membrane must be adhered around units which have the potential to emit solvents, grease or oil.

## **1.15 WARRANTY**

- A. Provide manufacturer's 20-year Total System Warranty covering both labor and all materials with no dollar limitation. The maximum wind speed coverage shall be peak gusts of 55 mph measured at 10 meters above ground level. Certification is required with bid submittal indicating the manufacturer has reviewed and agreed to such wind coverage.
- B. Warranty shall also cover leaks caused by hail:
- C. Pro-rated System Warranties shall not be accepted.

## **PART 2 PRODUCTS**

### **2.01 GENERAL**

- A. All components of the specified roofing system shall be products of Carlisle SynTec or accepted by Carlisle SynTec as compatible.
- B. Unless otherwise approved by the specifier and accepted by the membrane manufacturer, all products (including insulation, fasteners, fastening plates and edgings) must be **manufactured and supplied** by the roofing system manufacturer and covered by the warranty.

### **2.02 MEMBRANE**

Furnish Sure-Seal 60-mil EPDM (Ethylene, Propylene, Diene Terpolymer) in the largest sheet possible with 3" Factory-Applied Tape (FAT). (Splice tape shall be a butyl/EPDM based polymer with a minimum thickness of 25-mil.) The membrane shall conform to the minimum physical properties of ASTM D4637. When a 10-foot-wide membrane is to be used, the membrane shall be manufactured in a single panel with no factory splices to reduce splice intersections.

### **2.03 INSULATION/UNDERLAYMENT**

- A. When applicable, insulation shall be installed in multiple layers. Insulation layers will be loose laid and mechanically fastened from the top layer.
- B. Insulation shall be Insulbase 20 psi as supplied by Carlisle SynTec. Minimum R-value required is R-30.
  - 1. **Carlisle Insulbase Polyisocyanurate** – A foam core insulation board covered on both sides with a medium weight fiber-reinforced felt facer meeting ASTM C 1289-06, Type II, Class 1, Grade 2 (20 psi) or Grade 3 (25 psi). The product is available in 4' x 8' standard size with a thickness from 1 to 4 inches. 4' x 4' tapered panels are also available.

2. **Carlisle SecurShield HD Cover Board**— a rigid insulation panel composed of a high-density, closed-cell polyisocyanurate foam core laminated to moisture resistant coated-glass fiber-mat facer for use as a cover board or recover board meeting ASTM 1289-06, Type II, Class 2 (100 psi). Available 1/2" thick 4' x 8' panel weight 11 lbs with an R-value of 2.5.

## 2.04 FASTENING COMPONENTS

To be used for mechanical attachment of insulation and to provide additional membrane securement:

### A. Fasteners, Plates and Bars

1. **HP- Fasteners:** a threaded, #14 fastener with a #3 phillips drive used with steel and wood roof decks.
2. **HP-X Fasteners:** A heavy duty #15 threaded fastener with a #3 phillips drive used for insulation securement into steel, wood plank or minimum 15/32 inch thick plywood when increased pullout resistance is desired.
3. **InsulFast Fasteners:** A threaded #12 fastener with #3 phillips drive used for insulation attachment into steel or wood decks.
4. **HP Term Bar Nail-Ins:** A 1-1/4" long expansion anchor with a zinc plated steel drive pin used for fastening the Carlisle Termination Bar or Seam Fastening Plates to concrete, brick, or block walls.
5. **Seam Fastening Plate:** a 2" diameter metal fastening plate used in conjunction with RUSS or EPDM membrane for additional membrane securement.
6. **Insulation Fastening Plates:** a nominal 3 inch diameter plastic or metal plate used for insulation attachment.
7. **Sure-Seal Pressure-Sensitive RUSS™** (Reinforced Universal Securement Strip): a 6" wide, nominal 45-mil thick clean, cured black reinforced EPDM membrane with 3" wide SecurTAPE laminated along one edge. The 6" wide Pressure-Sensitive RUSS is used horizontally or vertically at the base of walls, curbs, etc., in conjunction with 2" diameter securement plates or bars below the EPDM deck membrane for additional membrane securement.

## 2.05 ADHESIVES, CLEANERS AND SEALANTS

All products shall be furnished by Carlisle and specifically formulated for the intended purpose.

- A. **90-8-30A Bonding Adhesive:** A high-strength, yellow colored, synthetic rubber adhesive used for bonding Sure-Seal/Sure-White EPDM membranes to various surfaces. Available in 5-gallon pails.
- B. **CAV-GRIP III Low-VOC Aerosol Contact Adhesive/Primer:** a low-VOC, methylene chloride-free adhesive that can be used for a variety of applications including: enhancing the bond between Carlisle's VapAir Seal 725TR and various substrates, priming unexposed asphalt prior to applying Flexible FAST Adhesive, adhering Sure-Seal EPDM, horizontally, for the field of the roof and for adhering Sure-Seal FleeceBACK and Sure-Seal EPDM membrane to vertical walls. Coverage rate is approximately 2,000-2,500 sq. ft. per #40 cylinder and 4,000-5,000 sq. ft. per #85 cylinder as a primer, in a single-sided application and 750 sq. ft. per #40 cylinder and 1,500 sq. ft. per #85 cylinder as an adhesive for vertical walls, in a double-sided application.
- C. **Carlisle Weathered Membrane Cleaner:** A clear, solvent-based cleaner used to loosen and remove dirt and other contaminants from the surface of exposed EPDM membrane (for repairs, etc.) prior to applying EPDM Primer. Weathered Membrane Cleaner can also be used when applying Splicing Cement. Available in 1 and 5-gallon pails.
- D. **Sure-Seal/Sure-White Pressure-Sensitive SecurTAPE™ (Factory Applied):** A 3" or 6" wide by 100' long splice tape used for splicing adjoining sections of EPDM membrane. Complies with the South Coast Air Quality Management District Rule 1168.
- E. **HP-250 EPDM Primer:** A solvent-based primer used to prepare the surface of EPDM membrane for application of Splice Tape or Pressure-Sensitive products. Available in 1 gallon pails.
- F. **Lap Sealant:** A heavy-bodied material used to seal the exposed edges of a membrane splice. Available in tubes.
  - 1. Sure-Seal Lap Sealant is a black sealant for use with Sure-Seal (black) Roofing Systems.
  - 2. Sure-White Lap Sealant is a white sealant for use with Sure-White (white-on-black) Roofing Systems.
- G. **Water Cut-Off Mastic:** A one-component, low viscosity, self-wetting, Butyl blend mastic used to achieve a compression seal between the EPDM membrane or Elastoform Flashing and applicable substrates. Available in tubes.
- H. **Pourable Sealer:** A black, two-component, solvent-free, polyurethane based product used for tie-ins and as a sealant around hard-to-flash membrane penetrating objects such as clusters of pipes and for a daily seal when the completion of flashings and terminations cannot be completed by the end of each work day.
- I. **One-Part Pourable Sealer:** Available in black or white, a one-component, moisture curing, elastomeric polyether sealant used for attaching lightning rod bases and ground cable clips to the membrane surface and as a sealant around hard-to-flash penetrations such as clusters of pipes.
- J. **Universal Single-Ply Sealant** A one-part polyether, non-sagging sealant designed for sealing expansion joints, control joints and counterflashings. Available in white only.

## 2.06 METAL EDGING AND MEMBRANE TERMINATIONS

- A. **General:** All metal edgings shall be tested and meet ANSI/SPRI ES-1 standards and comply with International Building Code. All metal work is to be supplied and warranted by the manufacturer.
- B. **Drip Edge:** a metal fascia/edge system with a 22- or 24-gauge continuous anchor cleat and .032-inch-thick aluminum or 24 gauge steel fascia. Metal fascia color and profile dimensions will match existing color and profile dimensions.
- C. **Termination Bar:** a 1” wide and .098” thick extruded aluminum bar pre-punched 6” on center; incorporates a sealant ledge to support Lap Sealant and provide increased stability for membrane terminations.

## 2.07 WALKWAYS

Protective surfacing for roof traffic shall be Sure-Seal (black) Pressure-Sensitive Walkway Pads (with Factory-Applied Tape on the underside of the walkway) adhered to the membrane surface in conjunction with Sure-Seal Primer.

## 2.08 OTHER MATERIALS

- A. **Carlisle VapAir Seal 725TR Air & Vapor Barrier / Temporary Roof:** 725TR is a 40-mil composite consisting of 35-mils of self-adhering rubberized asphalt factory laminated to a 5-mil polyethylene film with an adhesion textured surface. 725TR roll dimensions are 39” x 100’ and the product is applied after priming an acceptable substrate with CCW 702, 702-LV or Cav-Grip III primer.

## PART 3 EXECUTION

### 3.01 GENERAL

- A. Comply with the manufacturer’s published instructions for the installation of the membrane roofing system including proper substrate preparation, jobsite considerations and weather restrictions.
- B. Position sheets to accommodate contours of the roof deck and shingle splices to avoid bucking water.

### 3.02 VAPOR RETARDERS

A. **General:**

The use of a vapor retarder to protect insulation and reduce moisture accumulation within an insulated roofing assembly should be investigated, especially on projects with high interior humidity, such as, swimming pools, breweries, pulp mills, etc.

B. In the generally temperate climate of the United States, during the winter months, water vapor flows upward from a heated, more humid interior toward a colder, drier exterior. Vapor retarders are more commonly required in northern climates than in southern regions, where downward vapor pressure may be expected and the roofing membrane itself becomes the vapor retarder.

C. On cold storage/freezer facilities, the perimeter details must be selected to provide an air seal and prevent outside air from infiltrating and condensing within the roofing assembly.

D. Consult the latest publications by ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.) and NRCA (National Roofing Contractors Association) for specific information.

E. **VapAir Seal 725TR Installation:**

1. **Surface Preparation:** Concrete shall be in place for 7 days minimum and the substrate must be dry. The surface shall have a smooth finish and be free of voids, spalled areas, sharp protrusions, loose aggregate, lath and form release agents. In the event of rain, concrete must be allowed to dry before primer is applied.

2. **Application:** Apply Carlisle VapAir Seal 725TR Air and Vapor Barrier from low to high point, in a shingle fashion, so that laps will shed water. Overlap all edges at least 2-1/2". End laps shall be staggered. Place membrane carefully so as to avoid wrinkles and fishmouths. Immediately after installation, roll with a 30" wide 150 pound weighted segmented steel roller.

3. **Insulation Installation:** Ensure surface of Carlisle VapAir Seal 725TR Air and Vapor Barrier is dry prior to installing insulation. Place insulation over the surface and mechanically fasten to the roof deck in accordance with this Carlisle Specification.

### 3.03 INSULATION PLACEMENT

A. Install insulation or membrane underlayment over the substrate with boards butted tightly together with no joints or gaps greater than 1/4 inch. Stagger joints both horizontally and vertically if multiple layers are provided.

B. Secure insulation to the substrate with the required mechanical fasteners in accordance with the manufacturer's specifications.

### **3.04 MEMBRANE PLACEMENT AND BONDING**

- A. Unroll and position membrane without stretching. Allow the membrane to relax for approximately 1/2 hour before bonding. Fold the sheet back onto itself so half the underside of the membrane is exposed.
  
- B. Apply the Bonding Adhesive in accordance with the manufacturer's published instructions and coverage rates, to both the underside of the membrane and the substrate. Allow the adhesive to dry until it is tacky but will not string or stick to a dry finger touch.
  - 1. Roll the coated membrane into the coated substrate while avoiding wrinkles. Brush down the bonded half of the membrane sheet with a soft bristle push broom to achieve maximum contact.
  
  - 2. Fold back the unbonded half of the membrane sheet and repeat the bonding procedure.
  
- C. Install adjoining membrane sheets in the same manner, overlapping edges approximately 4 inches. Do not apply bonding adhesive to the splice area.

### **3.05 MEMBRANE SPLICING**

- A. Position membrane sheet to allow for required splice overlap. Mark the bottom sheets with an indelible marker approximately 1/4" to 1/2" from the top sheet edge. The pre-marked line on the membrane edge can also be used as a guide for positioning splice tape.
  
- B. When the membrane is contaminated with dirt, fold the top sheet back and clean the dry splice area (minimum 3" wide) of both membrane sheets by scrubbing with clean natural fiber rags saturated with Sure-Seal Weathered Membrane Cleaner. When using Sure-Seal (black) PRE-KLEENED membrane, cleaning the splice area is not required unless contaminated with field dirt or other residue.
  
- C. Apply EPDM Primer to splice area and permit to flash off. Primer must be applied to both the top membrane layer and the bottom membrane layer.
  
- D. When adhering Factory Applied Tape (FAT), pull the poly backing from FAT beneath the top sheet and allow the top sheet to fall freely onto the exposed primed surface. Press top sheet on to the bottom sheet using firm even hand pressure across the splice towards the splice edge
  
- E. For end laps, apply 3" or 6" SecurTAPE to the primed membrane surface in accordance with the manufacturer's specifications. Remove the poly backing and roll the top sheet onto the mating surface.

- F. Tape splices must be a minimum of 2-1/2" wide using 3" wide (Butyl/EPDM) SecurTAPE that is a minimum 25-mil thick. SecurTAPE must extend 1/8" minimum to 1/2" maximum beyond the splice edge. Field splices at roof drains must be located outside the drain sump.

Note: For projects where 20-year or longer System Warranty is specified, splice enhancements are required. Refer to Carlisle Sure-Seal Roofing System Specification.

- G. Immediately roll the splice using positive pressure when using a 2" wide steel roller. Roll across the splice edge, not parallel to it. When FAT is used, Carlisle's Stand-Up Seam Roller can be used to roll parallel to the splice edge.
- H. **At all field splice intersections**, apply Lap Sealant along the edge of the membrane splice to cover the exposed SecurTAPE 2" in each direction from the splice intersection. Install Carlisle's Pressure-Sensitive "T" Joint Covers or a 6" wide section (with rounded corners) of Sure-Seal Pressure-Sensitive Elastoform Flashing over the field splice intersection.

### **3.06 FLASHING**

- A. Wall and curb flashing shall be cured EPDM membrane. Continue the deck membrane as wall flashing where practicable. Use Pressure-Sensitive Curb Wrap when possible to flash curb units.
- B. Follow manufacturer's typical flashing procedures for all wall, curb, and penetration flashing including metal edging/coping and roof drain applications.

### **3.07 WALKWAYS**

- A. Install walkways at all traffic concentration points (such as roof hatches, access doors, rooftop ladders, etc.) and all locations as identified on the specifier's drawing.
- B. Adhere walkways pads or rubber pavers to the EPDM membrane in accordance with the manufacturer's specifications.

### **3.08 DAILY SEAL**

- A. On phased roofing, when the completion of flashings and terminations is not achieved by the end of the work day, a daily seal must be performed.



Note: A temporary seal should be performed at the conclusion of daily work and use of the appropriate method will vary based on project and project conditions. Contact Carlisle for various methods that may be utilized.

### **3.09 CLEAN UP**

- A. Perform daily clean-up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.
  
- B. Prior to the manufacturer's inspection for warranty, the applicator must perform a pre-inspection to review all work and to verify all flashing has been completed as well as the application of all caulking.

# **Sure-Seal EPDM Adhered Specification**

**East Rochester Elementary School**

**773 Portland Street**

**Rochester, New Hampshire**

**November 2020**

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## **PART 1 GENERAL**

### **1.01 DESCRIPTION**

- A. The East Rochester Elementary School Kindergarten building is located at 773 Portland Street in Rochester, NH.
- B. The project consists of installing Carlisle's Sure-Seal Adhered Roofing System as outlined below:

Remove the existing roof membrane, flashings, and metal flashing leaving the existing insulation. Apply the Fully Adhered EPDM Roofing System in conjunction with Insulbase insulation over the existing insulation system.

### **1.02 EXTENT OF WORK**

- A. Provide all labor, material, tools, equipment, and supervision necessary to complete the installation of a Sure-Seal 60-mil EPDM membrane Fully Adhered Roofing System including flashings and insulation as specified herein and as indicated on the drawings in accordance with the manufacturer's most current specifications and details.
- B. The roofing contractor shall be fully knowledgeable of all requirements of the contract documents and shall make themselves aware of all job site conditions that will affect their work.

- C. The roofing contractor shall confirm all given information and advise the building owner, prior to bid, of any conflicts that will affect their cost proposal.
  
- D. Any contractor who intends to submit a bid using a roofing system other than the approved manufacturer must submit for pre-qualification in writing fourteen (14) days prior to the bid date. Any contractor who fails to submit all information as requested will be subject to rejection. Bids stating “as per plans and specs” will be unacceptable.

### **1.03 SUBMITTALS**

- A. Prior to starting work, the roofing contractor must submit the following:
  - 1. Shop drawings showing layout, details of construction and identification of materials.
  
  - 2. Sample of the manufacturer’s Total Systems Warranty covering all components of the roofing system.
  
  - 3. Submit a letter of certification from the manufacturer which certifies the roofing contractor is authorized to install the manufacturer’s roofing system and lists foremen who have received training from the manufacturer along with the dates training was received.
  
  - 4. Certification of the manufacturer’s warranty reserve.
  
- B. Upon completion of the installed work, submit copies of the manufacturer’s final inspection report to the specifier prior to the issuance of the manufacturer’s warranty.

### **1.04 PRODUCT DELIVERY, STORAGE AND HANDLING**

- A. Deliver materials to the job site in the manufacturer’s original, unopened containers or wrappings with the manufacturer’s name, brand name and installation instructions intact and legible. Deliver in sufficient quantity to permit work to continue without interruption.
  
- B. Comply with the manufacturer’s written instructions for proper material storage.

1. Store materials between 60°F and 80°F in dry areas protected from water and direct sunlight. If exposed to lower temperature, restore to 60°F minimum temperature before using.
  2. Store materials containing solvents in dry, well ventilated spaces with proper fire and safety precautions. Keep lids on tight. Use before expiration of their shelf life.
- C. Insulation and underlayment products must be on pallets, off the ground and tightly covered with waterproof materials. Manufacturer's wrap does not provide sufficient waterproofing. Insulation and underlayment products that become wet or saturated are to be discarded.
- D. Any materials which are found to be damaged shall be removed and replaced at the applicator's expense.

#### **1.05 WORK SEQUENCE**

- A. Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Care should be exercised to provide protection for the interior of the building and to ensure water does not flow beneath any completed sections of the membrane system.
- B. Do not disrupt activities in occupied spaces.

#### **1.06 USE OF THE PREMISES**

- A. Before beginning work, the roofing contractor must secure approval from the building owner's representative for the following:
1. Areas permitted for personnel parking.
  2. Access to the site.
  3. Areas permitted for storage of materials and debris.
  4. Areas permitted for the location of cranes, hoists and chutes for loading and unloading materials to and from the roof.
- B. Interior stairs or elevators may not be used for removing debris or delivering materials, except as authorized by the building superintendent.

## 1.07 EXISTING CONDITIONS

If discrepancies are discovered between the existing conditions and those noted on the drawings, immediately notify the owner's representative by phone and solicit the manufacturer's approval prior to commencing with the work. Necessary steps shall be taken to make the building watertight until the discrepancies are resolved.

## 1.08 PRE-CONSTRUCTION CONFERENCE

A. A **mandatory** pre-bid meeting will be held at 65 Chamberlain Street on **Tuesday November 24th at 9:00AM**. Contact the owner's representative, David G. Totty, Director of Facilities, at (603) 332-3678 if there are any questions. The roofing contractor will observe actual conditions and verify all dimensions on the roof at this time. Should additional access to the roof be necessary after the pre-bid meeting, the contractor must contact the owner's representative, David G. Totty, Director of Facilities, at (603) 332-3678 to coordinate an appropriate time.

B. Proposals shall be submitted to, Mr. Kyle Repucci, Superintendent of Schools, Rochester School Department, 150 Wakefield Street, Suite 8, Rochester, New Hampshire 03867. Proposals must be submitted on the attached bid proposal form in sealed envelopes plainly marked **Proposal for Kindergarten Roof Replacements – Rochester School District**. Failure to properly mark the envelope will result in disqualification of the bid if it is prematurely opened.

Proposals to be accepted until **12:00 noon EST on Monday, November 30, 2020**. The bids will be opened publicly and read aloud at that time.

C. Any conditions which are not shown on the shop drawings should be indicated on a copy of the shop drawing and included with bid submittal if necessary to clarify any conditions not

## 1.09 TEMPORARY FACILITIES AND CONTROLS

A. Temporary Utilities:

1. Water, power for construction purposes and lighting are not available at the site and will not be made available to the roofing contractor.
2. Provide all hoses, valves and connections for water from source designated by the owner when made available.

3. When available, electrical power should be extended as required from the source. Provide all trailers, connections and fused disconnects.

B. Temporary Sanitary Facilities

Sanitary facilities will not be available at the job site. The roofing contractor shall be responsible for the provision and maintenance of portable toilets or their equal.

C. Building Site:

1. The roofing contractor shall use reasonable care and responsibility to protect the building and site against damages. The contractor shall be responsible for the correction of any damage incurred as a result of the performance of the contract.
2. The roofing contractor shall place all construction debris in a dumpster **provided by the owner** in a timely and legally acceptable manner so as to not detract from the aesthetics or the functions of the building.

D. Security:

Obey the owner's requirements for personnel identification, inspection and other security measures.

## 1.10 JOB SITE PROTECTION

- A. The roofing contractor shall adequately protect building, paved areas, service drives, lawn, shrubs, trees, etc. from damage while performing the required work. Provide canvas, boards and sheet metal (properly secured) as necessary for protection and remove protection material at completion. The contractor shall repair or be responsible for costs to repair all property damaged during the roofing application.
- B. During the roofing contractor's performance of the work, the building owner will continue to occupy the existing building. The contractor shall take precautions to prevent the spread of dust and debris, particularly where such material may shift into the building. The roofing contractor shall provide labor and materials to construct, maintain and remove necessary temporary enclosures to prevent dust or debris in the construction area(s) from entering the remainder of the building.

- C. Do not overload any portion of the building, either by use of or placement of equipment, storage of debris, or storage of materials.
- D. Protect against fire and flame spread. Maintain proper and adequate fire extinguishers.
- E. Take precautions to prevent drains from clogging during the roofing application. Remove debris at the completion of each day's work and clean drains, if required. At completion, test drains to ensure the system is free running and drains are watertight. Remove strainers and plug drains in areas **where work is in progress**. Install flags or other telltales on plugs. Remove plugs each night and screen drain.
- F. Store moisture susceptible materials above ground and protect with waterproof coverings.
- G. Remove all traces of piled bulk materials and return the job site to its original condition upon completion of the work.

## 1.11 SAFETY

The roofing contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, state and federal requirements that are safety related. **Safety shall be the responsibility of the roofing contractor.** All related personnel shall be instructed daily to be mindful of the full time requirement to maintain a safe environment for the facility's occupants including staff, visitors, customers and the occurrence of the general public on or near the site.

## 1.12 WORKMANSHIP

- A. Applicators installing new roof, flashing and related work shall be factory trained and approved by the manufacturer they are representing.
- B. All work shall be of highest quality and in strict accordance with the manufacturer's published specifications and to the building owner's satisfaction.
- C. There shall be a supervisor on the job site at all times while work is in progress.
- D. All field seams and flashing details are to be completed according to manufacturer's specifications and details by the end of each work day.

## 1.13 QUALITY ASSURANCE

- A. The Sure-Seal Roofing System must achieve a UL Class A.

The specified roofing assembly must have been successfully tested by a qualified testing agency to resist the design uplift pressures calculated according to International Building Code (IBC) and American Society of Civil Engineers (ASCE 7) ANSI/SPRI WD-1 "Wind Design Standard Practice for Roofing Assemblies".

- B. The membrane must be manufactured by the material supplier or equal.
- C. The manufacturer must have a minimum of 30 years experience in the manufacturing of vulcanized, white or black, thermoset sheeting.
- D. Unless otherwise noted in this specification, the roofing contractor must strictly comply with the manufacturer's current specifications and details.
- E. The roofing system must be installed by an applicator authorized and trained by the manufacturer in compliance with shop drawings as approved by the manufacturer. The roofing applicator shall be thoroughly experienced and upon request be able to provide evidence of having at least five (5) years successful experience installing single-ply EPDM roofing systems and having installed at least one (1) EPDM roofing application or several similar systems of equal or greater size within one year.
- F. Provide adequate number of experienced workmen regularly engaged in this type of work who are skilled in the application techniques of the materials specified. Provide at least one thoroughly trained and experienced superintendent on the job at all times roofing work is in progress.
- G. There shall be no deviations made from this specification or the approved shop drawings without the prior written approval of the specifier. Any deviation from the manufacturer's installation procedures must be supported by a written certification on the manufacturer's letterhead and presented for the specifier's consideration.
- H. Upon completion of the installation, the applicator shall arrange for an inspection to be made by a non-sales technical representative of the membrane manufacturer in order to identify any needed corrective repairs that will be required for warranty issuance. Notify the building owner seventy-two (72) hours prior to the manufacturer's final inspection.
- I. Inspector shall be employed and trained by the manufacturer and have received product-specific training from the manufacturer of the products.
- J. The Sure-Seal EPDM Membrane exceeds 41,580 kJ/m<sup>2</sup> under Xenon-Arc UV Light testing used for testing "Resistance to Outdoor (Ultraviolet) Weathering." (ASTM D 4637 Specification requires a 7560 kJ/m<sup>2</sup> minimum total radiant exposure at 70 W/m<sup>2</sup> irradiance at 176°F black panel temperature to pass.)The membrane shows no visible signs of cracking or crazing.
- K. Sure-Seal EPDM Membranes achieves a zero (no growth) rating in the ASTM G21 test for fungi growth.



## **1.14 JOB CONDITIONS, CAUTIONS AND WARNINGS**

Refer to Carlisle's EPDM Roofing System specification for General Job Site Considerations.

- A. Safety Data Sheets (SDS) must be on location at all times during the transportation, storage and application of materials.
- B. When positioning membrane sheets, exercise care to locate all field splices away from low spots and out of drain sumps. All field splices should be shingled to prevent bucking of water.
- C. When loading materials onto the roof, the Carlisle Authorized Roofing Applicator must comply with the requirements of the building owner to prevent overloading and possible disturbance to the building structure.
- D. Proceed with roofing work only when weather conditions are in compliance with the manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with the manufacturer's requirements and recommendations.
- E. Proceed with work so new roofing materials are not subject to construction traffic. When necessary, new roof sections shall be protected and inspected upon completion for possible damage.
- F. Provide protection, such as 3/4 inch thick plywood, for all roof areas exposed to traffic during construction. Plywood must be smooth and free of fasteners and splinters.
- G. The surface on which the insulation or roofing membrane is to be applied shall be clean, smooth, dry, and free of projections or contaminants that would prevent proper application of or be incompatible with the new installation, such as fins, sharp edges, foreign materials, oil and grease.
- H. New roofing shall be complete and weathertight at the end of the work day.
- I. Contaminants such as grease, fats and oils shall not be permitted to come in direct contact with the roofing membrane. An overlay of Epichlorohydrin membrane must be adhered around units which have the potential to emit solvents, grease or oil.

## **1.15 WARRANTY**

- A. Provide manufacturer's 20-year Total System Warranty covering both labor and all materials with no dollar limitation. The maximum wind speed coverage shall be peak gusts of 55 mph measured at 10 meters above ground level. Certification is required with bid submittal indicating the manufacturer has reviewed and agreed to such wind coverage.
- B. Warranty shall also cover leaks caused by hail:
- C. Pro-rated System Warranties shall not be accepted.

## **PART 2 PRODUCTS**

### **2.01 GENERAL**

- A. All components of the specified roofing system shall be products of Carlisle SynTec or accepted by Carlisle SynTec as compatible.
- B. Unless otherwise approved by the specifier and accepted by the membrane manufacturer, all products (including insulation, fasteners, fastening plates and edgings) must be **manufactured and supplied** by the roofing system manufacturer and covered by the warranty.

### **2.02 MEMBRANE**

Furnish Sure-Seal 60-mil EPDM (Ethylene, Propylene, Diene Terpolymer) in the largest sheet possible with 3" Factory-Applied Tape (FAT). (Splice tape shall be a butyl/EPDM based polymer with a minimum thickness of 25-mil.) The membrane shall conform to the minimum physical properties of ASTM D4637. When a 10-foot-wide membrane is to be used, the membrane shall be manufactured in a single panel with no factory splices to reduce splice intersections.

### **2.03 INSULATION/UNDERLAYMENT**

- A. When applicable, insulation shall be installed in multiple layers. Insulation layers will be loose laid and mechanically fastened from the top layer.
- B. Insulation shall be Insulbase 20 psi as supplied by Carlisle SynTec. Minimum R-value required is R-30.
  - 1. **Carlisle Insulbase Polyisocyanurate** – A foam core insulation board covered on both sides with a medium weight fiber-reinforced felt facer meeting ASTM C 1289-06, Type II, Class 1, Grade 2 (20 psi) or Grade 3 (25 psi). The product is available in 4' x 8' standard size with a thickness from 1 to 4 inches. 4' x 4' tapered panels are also available.

2. **Carlisle SecurShield HD Cover Board**– a rigid insulation panel composed of a high-density, closed-cell polyisocyanurate foam core laminated to moisture resistant coated-glass fiber-mat facer for use as a cover board or recover board meeting ASTM 1289-06, Type II, Class 2 (100 psi). Available 1/2” thick 4’ x 8’ panel weight 11 lbs with an R-value of 2.5.

## 2.04 FASTENING COMPONENTS

To be used for mechanical attachment of insulation and to provide additional membrane securement:

### A. Fasteners, Plates and Bars

1. **HP- Fasteners:** a threaded, #14 fastener with a #3 phillips drive used with steel and wood roof decks.
2. **HP-X Fasteners:** A heavy duty #15 threaded fastener with a #3 phillips drive used for insulation securement into steel, wood plank or minimum 15/32 inch thick plywood when increased pullout resistance is desired.
3. **InsulFast Fasteners:** A threaded #12 fastener with #3 phillips drive used for insulation attachment into steel or wood decks.
4. **HP Term Bar Nail-Ins:** A 1-1/4” long expansion anchor with a zinc plated steel drive pin used for fastening the Carlisle Termination Bar or Seam Fastening Plates to concrete, brick, or block walls.
5. **Seam Fastening Plate:** a 2” diameter metal fastening plate used in conjunction with RUSS or EPDM membrane for additional membrane securement.
6. **Insulation Fastening Plates:** a nominal 3 inch diameter plastic or metal plate used for insulation attachment.
7. **Sure-Seal Pressure-Sensitive RUSS™** (Reinforced Universal Securement Strip): a 6” wide, nominal 45-mil thick clean, cured black reinforced EPDM membrane with 3” wide SecurTAPE laminated along one edge. The 6” wide Pressure-Sensitive RUSS is used horizontally or vertically at the base of walls, curbs, etc., in conjunction with 2” diameter securement plates or bars below the EPDM deck membrane for additional membrane securement.

## 2.05 ADHESIVES, CLEANERS AND SEALANTS

All products shall be furnished by Carlisle and specifically formulated for the intended purpose.

- A. **90-8-30A Bonding Adhesive:** A high-strength, yellow colored, synthetic rubber adhesive used for bonding Sure-Seal/Sure-White EPDM membranes to various surfaces. Available in 5-gallon pails.
- B. **CAV-GRIP III Low-VOC Aerosol Contact Adhesive/Primer:** a low-VOC, methylene chloride-free adhesive that can be used for a variety of applications including: enhancing the bond between Carlisle's VapAir Seal 725TR and various substrates, priming unexposed asphalt prior to applying Flexible FAST Adhesive, adhering Sure-Seal EPDM, horizontally, for the field of the roof and for adhering Sure-Seal FleeceBACK and Sure-Seal EPDM membrane to vertical walls. Coverage rate is approximately 2,000-2,500 sq. ft. per #40 cylinder and 4,000-5,000 sq. ft. per #85 cylinder as a primer, in a single-sided application and 750 sq. ft. per #40 cylinder and 1,500 sq. ft. per #85 cylinder as an adhesive for vertical walls, in a double-sided application.
- C. **Carlisle Weathered Membrane Cleaner:** A clear, solvent-based cleaner used to loosen and remove dirt and other contaminants from the surface of exposed EPDM membrane (for repairs, etc.) prior to applying EPDM Primer. Weathered Membrane Cleaner can also be used when applying Splicing Cement. Available in 1 and 5-gallon pails.
- D. **Sure-Seal/Sure-White Pressure-Sensitive SecurTAPE™ (Factory Applied):** A 3" or 6" wide by 100' long splice tape used for splicing adjoining sections of EPDM membrane. Complies with the South Coast Air Quality Management District Rule 1168.
- E. **HP-250 EPDM Primer:** A solvent-based primer used to prepare the surface of EPDM membrane for application of Splice Tape or Pressure-Sensitive products. Available in 1 gallon pails.
- F. **Lap Sealant:** A heavy-bodied material used to seal the exposed edges of a membrane splice. Available in tubes.
  - 1. Sure-Seal Lap Sealant is a black sealant for use with Sure-Seal (black) Roofing Systems.
  - 2. Sure-White Lap Sealant is a white sealant for use with Sure-White (white-on-black) Roofing Systems.
- G. **Water Cut-Off Mastic:** A one-component, low viscosity, self-wetting, Butyl blend mastic used to achieve a compression seal between the EPDM membrane or Elastoform Flashing and applicable substrates. Available in tubes.
- H. **Pourable Sealer:** A black, two-component, solvent-free, polyurethane based product used for tie-ins and as a sealant around hard-to-flash membrane penetrating objects such as clusters of pipes and for a daily seal when the completion of flashings and terminations cannot be completed by the end of each work day.
- I. **One-Part Pourable Sealer:** Available in black or white, a one-component, moisture curing, elastomeric polyether sealant used for attaching lightning rod bases and ground cable clips to the membrane surface and as a sealant around hard-to-flash penetrations such as clusters of pipes.
- J. **Universal Single-Ply Sealant** A one-part polyether, non-sagging sealant designed for sealing expansion joints, control joints and counterflashings. Available in white only.

## 2.06 METAL EDGING AND MEMBRANE TERMINATIONS

- A. **General:** All metal edgings shall be tested and meet ANSI/SPRI ES-1 standards and comply with International Building Code. All metal work is to be supplied and warranted by the manufacturer.
- B. **Drip Edge:** a metal fascia/edge system with a 22- or 24-gauge continuous anchor cleat and .032-inch-thick aluminum or 24 gauge steel fascia. Metal fascia color and profile dimensions will match existing color and profile dimensions.
- C. **Termination Bar:** a 1” wide and .098” thick extruded aluminum bar pre-punched 6” on center; incorporates a sealant ledge to support Lap Sealant and provide increased stability for membrane terminations.

## 2.07 WALKWAYS

Protective surfacing for roof traffic shall be Sure-Seal (black) Pressure-Sensitive Walkway Pads (with Factory-Applied Tape on the underside of the walkway) adhered to the membrane surface in conjunction with Sure-Seal Primer.

# PART 3 EXECUTION

## 3.01 GENERAL

- A. Comply with the manufacturer’s published instructions for the installation of the membrane roofing system including proper substrate preparation, jobsite considerations and weather restrictions.
- B. Position sheets to accommodate contours of the roof deck and shingle splices to avoid bucking water.

## 3.02 VAPOR RETARDERS

- A. **General:**

The use of a vapor retarder to protect insulation and reduce moisture accumulation within an insulated roofing assembly should be investigated, especially on projects with high interior humidity, such as, swimming pools, breweries, pulp mills, etc.
- B. In the generally temperate climate of the United States, during the winter months, water vapor flows

upward from a heated, more humid interior toward a colder, drier exterior. Vapor retarders are more commonly required in northern climates than in southern regions, where downward vapor pressure may be expected and the roofing membrane itself becomes the vapor retarder.

- C. On cold storage/freezer facilities, the perimeter details must be selected to provide an air seal and prevent outside air from infiltrating and condensing within the roofing assembly.
- D. Consult the latest publications by ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.) and NRCA (National Roofing Contractors Association) for specific information.

### **3.03 INSULATION PLACEMENT**

- A. Install insulation or membrane underlayment over the substrate with boards butted tightly together with no joints or gaps greater than 1/4 inch. Stagger joints both horizontally and vertically if multiple layers are provided.
- B. Secure insulation to the substrate with the required mechanical fasteners in accordance with the manufacturer's specifications.

### **3.04 MEMBRANE PLACEMENT AND BONDING**

- A. Unroll and position membrane without stretching. Allow the membrane to relax for approximately 1/2 hour before bonding. Fold the sheet back onto itself so half the underside of the membrane is exposed.
- B. Apply the Bonding Adhesive in accordance with the manufacturer's published instructions and coverage rates, to both the underside of the membrane and the substrate. Allow the adhesive to dry until it is tacky but will not string or stick to a dry finger touch.
  - 1. Roll the coated membrane into the coated substrate while avoiding wrinkles. Brush down the bonded half of the membrane sheet with a soft bristle push broom to achieve maximum contact.
  - 2. Fold back the unbonded half of the membrane sheet and repeat the bonding procedure.
- C. Install adjoining membrane sheets in the same manner, overlapping edges approximately 4 inches. Do not apply bonding adhesive to the splice area.

### 3.05 MEMBRANE SPLICING

- A. Position membrane sheet to allow for required splice overlap. Mark the bottom sheets with an indelible marker approximately 1/4" to 1/2" from the top sheet edge. The pre-marked line on the membrane edge can also be used as a guide for positioning splice tape.
- B. When the membrane is contaminated with dirt, fold the top sheet back and clean the dry splice area (minimum 3" wide) of both membrane sheets by scrubbing with clean natural fiber rags saturated with Sure-Seal Weathered Membrane Cleaner. When using Sure-Seal (black) PRE-KLEENED membrane, cleaning the splice area is not required unless contaminated with field dirt or other residue.
- C. Apply EPDM Primer to splice area and permit to flash off. Primer must be applied to both the top membrane layer and the bottom membrane layer.
- D. When adhering Factory Applied Tape (FAT), pull the poly backing from FAT beneath the top sheet and allow the top sheet to fall freely onto the exposed primed surface. Press top sheet on to the bottom sheet using firm even hand pressure across the splice towards the splice edge
- E. For end laps, apply 3" or 6" SecurTAPE to the primed membrane surface in accordance with the manufacturer's specifications. Remove the poly backing and roll the top sheet onto the mating surface.
- F. Tape splices must be a minimum of 2-1/2" wide using 3" wide (Butyl/EPDM) SecurTAPE that is a minimum 25-mil thick. SecurTAPE must extend 1/8" minimum to 1/2" maximum beyond the splice edge. Field splices at roof drains must be located outside the drain sump.  
  
Note: For projects where 20-year or longer System Warranty is specified, splice enhancements are required. Refer to Carlisle Sure-Seal Roofing System Specification.
- G. Immediately roll the splice using positive pressure when using a 2" wide steel roller. Roll across the splice edge, not parallel to it. When FAT is used, Carlisle's Stand-Up Seam Roller can be used to roll parallel to the splice edge.
- H. **At all field splice intersections**, apply Lap Sealant along the edge of the membrane splice to cover the exposed SecurTAPE 2" in each direction from the splice intersection. Install Carlisle's Pressure-Sensitive "T" Joint Covers or a 6" wide section (with rounded corners) of Sure-Seal Pressure-Sensitive Elastoform Flashing over the field splice intersection.

### 3.06 FLASHING

- A. Wall and curb flashing shall be cured EPDM membrane. Continue the deck membrane as wall flashing where practicable. Use Pressure-Sensitive Curb Wrap when possible to flash curb units.

- B. Follow manufacturer's typical flashing procedures for all wall, curb, and penetration flashing including metal edging/coping and roof drain applications.

### **3.07 WALKWAYS**

- A. Install walkways at all traffic concentration points (such as roof hatches, access doors, rooftop ladders, etc.) and all locations as identified on the specifier's drawing.
- B. Adhere walkways pads or rubber pavers to the EPDM membrane in accordance with the manufacturer's specifications.

### **3.08 DAILY SEAL**

- A. On phased roofing, when the completion of flashings and terminations is not achieved by the end of the work day, a daily seal must be performed.

Note: A temporary seal should be performed at the conclusion of daily work and use of the appropriate method will vary based on project and project conditions. Contact Carlisle for various methods that may be utilized.

### **3.09 CLEAN UP**

- A. Perform daily clean-up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.
- B. Prior to the manufacturer's inspection for warranty, the applicator must perform a pre-inspection to review all work and to verify all flashing has been completed as well as the application of all caulking.



# **Sure-Seal EPDM Adhered Specification**

**Gonic Elementary School**

**10 Railroad Ave.**

**Rochester, New Hampshire**

**November 2020**

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## **PART 1 GENERAL**

### **1.01 DESCRIPTION**

- A. The Gonic Elementary School Kindergarten Wing is located at 10 Railroad Ave. in Rochester, NH.
- B. The project consists of installing Carlisle's Sure-Seal Adhered Roofing System as outlined below:

Remove the existing roof membrane, flashings, and metal flashing leaving the existing insulation. Apply the Fully Adhered EPDM Roofing System in conjunction with Insulbase insulation over the existing insulation system.

### **1.02 EXTENT OF WORK**

- A. Provide all labor, material, tools, equipment, and supervision necessary to complete the installation of a Sure-Seal 60-mil EPDM membrane Fully Adhered Roofing System including flashings and insulation as specified herein and as indicated on the drawings in accordance with the manufacturer's most current specifications and details.
- B. The roofing contractor shall be fully knowledgeable of all requirements of the contract documents and shall make themselves aware of all job site conditions that will affect their work.

- C. The roofing contractor shall confirm all given information and advise the building owner, prior to bid, of any conflicts that will affect their cost proposal.
  
- D. Any contractor who intends to submit a bid using a roofing system other than the approved manufacturer must submit for pre-qualification in writing fourteen (14) days prior to the bid date. Any contractor who fails to submit all information as requested will be subject to rejection. Bids stating “as per plans and specs” will be unacceptable.

### **1.03 SUBMITTALS**

- A. Prior to starting work, the roofing contractor must submit the following:
  - 1. Shop drawings showing layout, details of construction and identification of materials.
  
  - 2. Sample of the manufacturer’s Total Systems Warranty covering all components of the roofing system.
  
  - 3. Submit a letter of certification from the manufacturer which certifies the roofing contractor is authorized to install the manufacturer’s roofing system and lists foremen who have received training from the manufacturer along with the dates training was received.
  
  - 4. Certification of the manufacturer’s warranty reserve.
  
- B. Upon completion of the installed work, submit copies of the manufacturer’s final inspection report to the specifier prior to the issuance of the manufacturer’s warranty.

### **1.04 PRODUCT DELIVERY, STORAGE AND HANDLING**

- A. Deliver materials to the job site in the manufacturer’s original, unopened containers or wrappings with the manufacturer’s name, brand name and installation instructions intact and legible. Deliver in sufficient quantity to permit work to continue without interruption.
  
- B. Comply with the manufacturer’s written instructions for proper material storage.

1. Store materials between 60°F and 80°F in dry areas protected from water and direct sunlight. If exposed to lower temperature, restore to 60°F minimum temperature before using.
  2. Store materials containing solvents in dry, well ventilated spaces with proper fire and safety precautions. Keep lids on tight. Use before expiration of their shelf life.
- C. Insulation and underlayment products must be on pallets, off the ground and tightly covered with waterproof materials. Manufacturer's wrap does not provide sufficient waterproofing. Insulation and underlayment products that become wet or saturated are to be discarded.
- D. Any materials which are found to be damaged shall be removed and replaced at the applicator's expense.

#### **1.05 WORK SEQUENCE**

- A. Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Care should be exercised to provide protection for the interior of the building and to ensure water does not flow beneath any completed sections of the membrane system.
- B. Do not disrupt activities in occupied spaces.

#### **1.06 USE OF THE PREMISES**

- A. Before beginning work, the roofing contractor must secure approval from the building owner's representative for the following:
4. Areas permitted for personnel parking.
  5. Access to the site.
  6. Areas permitted for storage of materials and debris.
  4. Areas permitted for the location of cranes, hoists and chutes for loading and unloading materials to and from the roof.
- B. Interior stairs or elevators may not be used for removing debris or delivering materials, except as authorized by the building superintendent.

## 1.07 EXISTING CONDITIONS

If discrepancies are discovered between the existing conditions and those noted on the drawings, immediately notify the owner's representative by phone and solicit the manufacturer's approval prior to commencing with the work. Necessary steps shall be taken to make the building watertight until the discrepancies are resolved.

## 1.08 PRE-CONSTRUCTION CONFERENCE

- A. A **mandatory** pre-bid meeting will be held at 65 Chamberlain Street on **Tuesday November 24th at 9:00AM**. Contact the owner's representative, David G. Totty, Director of Facilities, at (603) 332-3678 if there are any questions. The roofing contractor will observe actual conditions and verify all dimensions on the roof at this time. Should additional access to the roof be necessary after the pre-bid meeting, the contractor must contact the owner's representative, David G. Totty, Director of Facilities, at (603) 332-3678 to coordinate an appropriate time.
- B. Proposals shall be submitted to, Mr. Kyle Repucci, Superintendent of Schools, Rochester School Department, 150 Wakefield Street, Suite 8, Rochester, New Hampshire 03867. Proposals must be submitted on the attached bid proposal form in sealed envelopes plainly marked **Proposal for Kindergarten Roof Replacements – Rochester School District**. Failure to properly mark the envelope will result in disqualification of the bid if it is prematurely opened.
- Proposals to be accepted until **12:00 noon EST on Monday, November 30, 2020**. The bids will be opened publicly and read aloud at that time.
- C. Any conditions which are not shown on the shop drawings should be indicated on a copy of the shop drawing and included with bid submittal if necessary to clarify any conditions not shown.

## 1.09 TEMPORARY FACILITIES AND CONTROLS

- A. Temporary Utilities:
1. Water, power for construction purposes and lighting are not available at the site and will not be made available to the roofing contractor.
  2. Provide all hoses, valves and connections for water from source designated by the owner when made available.

3. When available, electrical power should be extended as required from the source. Provide all trailers, connections and fused disconnects.

B. Temporary Sanitary Facilities

Sanitary facilities will not be available at the job site. The roofing contractor shall be responsible for the provision and maintenance of portable toilets or their equal.

C. Building Site:

1. The roofing contractor shall use reasonable care and responsibility to protect the building and site against damages. The contractor shall be responsible for the correction of any damage incurred as a result of the performance of the contract.
2. The roofing contractor shall place all construction debris in a dumpster **provided by the owner** in a timely and legally acceptable manner so as to not detract from the aesthetics or the functions of the building.

D. Security:

Obey the owner's requirements for personnel identification, inspection and other security measures.

## 1.10 JOB SITE PROTECTION

- A. The roofing contractor shall adequately protect building, paved areas, service drives, lawn, shrubs, trees, etc. from damage while performing the required work. Provide canvas, boards and sheet metal (properly secured) as necessary for protection and remove protection material at completion. The contractor shall repair or be responsible for costs to repair all property damaged during the roofing application.
- B. During the roofing contractor's performance of the work, the building owner will continue to occupy the existing building. The contractor shall take precautions to prevent the spread of dust and debris, particularly where such material may shift into the building. The roofing contractor shall provide labor and materials to construct, maintain and remove necessary temporary enclosures to prevent dust or debris in the construction area(s) from entering the remainder of the building.

- C. Do not overload any portion of the building, either by use of or placement of equipment, storage of debris, or storage of materials.
- D. Protect against fire and flame spread. Maintain proper and adequate fire extinguishers.
- E. Take precautions to prevent drains from clogging during the roofing application. Remove debris at the completion of each day's work and clean drains, if required. At completion, test drains to ensure the system is free running and drains are watertight. Remove strainers and plug drains in areas **where work is in progress**. Install flags or other telltales on plugs. Remove plugs each night and screen drain.
- F. Store moisture susceptible materials above ground and protect with waterproof coverings.
- G. Remove all traces of piled bulk materials and return the job site to its original condition upon completion of the work.

## 1.11 SAFETY

The roofing contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, state and federal requirements that are safety related. **Safety shall be the responsibility of the roofing contractor.** All related personnel shall be instructed daily to be mindful of the full time requirement to maintain a safe environment for the facility's occupants including staff, visitors, customers and the occurrence of the general public on or near the site.

## 1.12 WORKMANSHIP

- A. Applicators installing new roof, flashing and related work shall be factory trained and approved by the manufacturer they are representing.
- B. All work shall be of highest quality and in strict accordance with the manufacturer's published specifications and to the building owner's satisfaction.
- C. There shall be a supervisor on the job site at all times while work is in progress.
- D. All field seams and flashing details are to be completed according to manufacturer's specifications and details by the end of each work day.

## 1.13 QUALITY ASSURANCE

- L. The Sure-Seal Roofing System must achieve a UL Class A.

The specified roofing assembly must have been successfully tested by a qualified testing agency to resist the design uplift pressures calculated according to International Building Code (IBC) and American Society of Civil Engineers (ASCE 7) ANSI/SPRI WD-1 "Wind Design Standard Practice for Roofing Assemblies".

- M. The membrane must be manufactured by the material supplier or equal.
- N. The manufacturer must have a minimum of 30 years experience in the manufacturing of vulcanized, white or black, thermoset sheeting.
- O. Unless otherwise noted in this specification, the roofing contractor must strictly comply with the manufacturer's current specifications and details.
- P. The roofing system must be installed by an applicator authorized and trained by the manufacturer in compliance with shop drawings as approved by the manufacturer. The roofing applicator shall be thoroughly experienced and upon request be able to provide evidence of having at least five (5) years successful experience installing single-ply EPDM roofing systems and having installed at least one (1) EPDM roofing application or several similar systems of equal or greater size within one year.
- Q. Provide adequate number of experienced workmen regularly engaged in this type of work who are skilled in the application techniques of the materials specified. Provide at least one thoroughly trained and experienced superintendent on the job at all times roofing work is in progress.
- R. There shall be no deviations made from this specification or the approved shop drawings without the prior written approval of the specifier. Any deviation from the manufacturer's installation procedures must be supported by a written certification on the manufacturer's letterhead and presented for the specifier's consideration.
- S. Upon completion of the installation, the applicator shall arrange for an inspection to be made by a non-sales technical representative of the membrane manufacturer in order to identify any needed corrective repairs that will be required for warranty issuance. Notify the building owner seventy-two (72) hours prior to the manufacturer's final inspection.
- T. Inspector shall be employed and trained by the manufacturer and have received product-specific training from the manufacturer of the products.
- U. The Sure-Seal EPDM Membrane exceeds 41,580 kJ/m<sup>2</sup> under Xenon-Arc UV Light testing used for testing "Resistance to Outdoor (Ultraviolet) Weathering." (ASTM D 4637 Specification requires a 7560 kJ/m<sup>2</sup> minimum total radiant exposure at 70 W/m<sup>2</sup> irradiance at 176°F black panel temperature to pass.)The membrane shows no visible signs of cracking or crazing.
- V. Sure-Seal EPDM Membranes achieves a zero (no growth) rating in the ASTM G21 test for fungi growth.

## **1.14 JOB CONDITIONS, CAUTIONS AND WARNINGS**

Refer to Carlisle's EPDM Roofing System specification for General Job Site Considerations.

- A. Safety Data Sheets (SDS) must be on location at all times during the transportation, storage and application of materials.
- B. When positioning membrane sheets, exercise care to locate all field splices away from low spots and out of drain sumps. All field splices should be shingled to prevent bucking of water.
- C. When loading materials onto the roof, the Carlisle Authorized Roofing Applicator must comply with the requirements of the building owner to prevent overloading and possible disturbance to the building structure.
- D. Proceed with roofing work only when weather conditions are in compliance with the manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with the manufacturer's requirements and recommendations.
- E. Proceed with work so new roofing materials are not subject to construction traffic. When necessary, new roof sections shall be protected and inspected upon completion for possible damage.
- F. Provide protection, such as 3/4 inch thick plywood, for all roof areas exposed to traffic during construction. Plywood must be smooth and free of fasteners and splinters.
- G. The surface on which the insulation or roofing membrane is to be applied shall be clean, smooth, dry, and free of projections or contaminants that would prevent proper application of or be incompatible with the new installation, such as fins, sharp edges, foreign materials, oil and grease.
- H. New roofing shall be complete and weathertight at the end of the work day.
- I. Contaminants such as grease, fats and oils shall not be permitted to come in direct contact with the roofing membrane. An overlay of Epichlorohydrin membrane must be adhered around units which have the potential to emit solvents, grease or oil.

## **1.15 WARRANTY**



- D. Provide manufacturer's 20-year Total System Warranty covering both labor and all materials with no dollar limitation. The maximum wind speed coverage shall be peak gusts of 55 mph measured at 10 meters above ground level. Certification is required with bid submittal indicating the manufacturer has reviewed and agreed to such wind coverage.
- E. Warranty shall also cover leaks caused by hail:
- F. Pro-rated System Warranties shall not be accepted.

## **PART 2 PRODUCTS**

### **2.01 GENERAL**

- A. All components of the specified roofing system shall be products of Carlisle SynTec or accepted by Carlisle SynTec as compatible.
- B. Unless otherwise approved by the specifier and accepted by the membrane manufacturer, all products (including insulation, fasteners, fastening plates and edgings) must be **manufactured and supplied** by the roofing system manufacturer and covered by the warranty.

### **2.02 MEMBRANE**

Furnish Sure-Seal 60-mil EPDM (Ethylene, Propylene, Diene Terpolymer) in the largest sheet possible with 3" Factory-Applied Tape (FAT). (Splice tape shall be a butyl/EPDM based polymer with a minimum thickness of 25-mil.) The membrane shall conform to the minimum physical properties of ASTM D4637. When a 10-foot-wide membrane is to be used, the membrane shall be manufactured in a single panel with no factory splices to reduce splice intersections.

### **2.03 INSULATION/UNDERLAYMENT**

- A. When applicable, insulation shall be installed in multiple layers. Insulation layers will be loose laid and mechanically fastened from the top layer.
- B. Insulation shall be Insulbase 20 psi as supplied by Carlisle SynTec. Minimum R-value required is R-30.
  - 3. **Carlisle Insulbase Polyisocyanurate** – A foam core insulation board covered on both sides with a medium weight fiber-reinforced felt facer meeting ASTM C 1289-06, Type II, Class 1, Grade 2 (20 psi) or Grade 3 (25 psi). The product is available in 4' x 8' standard size with a thickness from 1 to 4 inches. 4' x 4' tapered panels are also available.

4. **Carlisle SecurShield HD Cover Board**— a rigid insulation panel composed of a high-density, closed-cell polyisocyanurate foam core laminated to moisture resistant coated-glass fiber-mat facer for use as a cover board or recover board meeting ASTM 1289-06, Type II, Class 2 (100 psi). Available 1/2" thick 4' x 8' panel weight 11 lbs with an R-value of 2.5.

## 2.04 FASTENING COMPONENTS

To be used for mechanical attachment of insulation and to provide additional membrane securement:

### B. Fasteners, Plates and Bars

8. **HP- Fasteners:** a threaded, #14 fastener with a #3 phillips drive used with steel and wood roof decks.
9. **HP-X Fasteners:** A heavy duty #15 threaded fastener with a #3 phillips drive used for insulation securement into steel, wood plank or minimum 15/32 inch thick plywood when increased pullout resistance is desired.
10. **InsulFast Fasteners:** A threaded #12 fastener with #3 phillips drive used for insulation attachment into steel or wood decks.
11. **HP Term Bar Nail-Ins:** A 1-1/4" long expansion anchor with a zinc plated steel drive pin used for fastening the Carlisle Termination Bar or Seam Fastening Plates to concrete, brick, or block walls.
12. **Seam Fastening Plate:** a 2" diameter metal fastening plate used in conjunction with RUSS or EPDM membrane for additional membrane securement.
13. **Insulation Fastening Plates:** a nominal 3 inch diameter plastic or metal plate used for insulation attachment.
14. **Sure-Seal Pressure-Sensitive RUSS™** (Reinforced Universal Securement Strip): a 6" wide, nominal 45-mil thick clean, cured black reinforced EPDM membrane with 3" wide SecurTAPE laminated along one edge. The 6" wide Pressure-Sensitive RUSS is used horizontally or vertically at the base of walls, curbs, etc., in conjunction with 2" diameter securement plates or bars below the EPDM deck membrane for additional membrane securement.

## 2.05 ADHESIVES, CLEANERS AND SEALANTS

All products shall be furnished by Carlisle and specifically formulated for the intended purpose.

- K. **90-8-30A Bonding Adhesive:** A high-strength, yellow colored, synthetic rubber adhesive used for bonding Sure-Seal/Sure-White EPDM membranes to various surfaces. Available in 5-gallon pails.
- L. **CAV-GRIP III Low-VOC Aerosol Contact Adhesive/Primer:** a low-VOC, methylene chloride-free adhesive that can be used for a variety of applications including: enhancing the bond between Carlisle's VapAir Seal 725TR and various substrates, priming unexposed asphalt prior to applying Flexible FAST Adhesive, adhering Sure-Seal EPDM, horizontally, for the field of the roof and for adhering Sure-Seal FleeceBACK and Sure-Seal EPDM membrane to vertical walls. Coverage rate is approximately 2,000-2,500 sq. ft. per #40 cylinder and 4,000-5,000 sq. ft. per #85 cylinder as a primer, in a single-sided application and 750 sq. ft. per #40 cylinder and 1,500 sq. ft. per #85 cylinder as an adhesive for vertical walls, in a double-sided application.
- M. **Carlisle Weathered Membrane Cleaner:** A clear, solvent-based cleaner used to loosen and remove dirt and other contaminants from the surface of exposed EPDM membrane (for repairs, etc.) prior to applying EPDM Primer. Weathered Membrane Cleaner can also be used when applying Splicing Cement. Available in 1 and 5-gallon pails.
- N. **Sure-Seal/Sure-White Pressure-Sensitive SecurTAPE™ (Factory Applied):** A 3" or 6" wide by 100' long splice tape used for splicing adjoining sections of EPDM membrane. Complies with the South Coast Air Quality Management District Rule 1168.
- O. **HP-250 EPDM Primer:** A solvent-based primer used to prepare the surface of EPDM membrane for application of Splice Tape or Pressure-Sensitive products. Available in 1 gallon pails.
- P. **Lap Sealant:** A heavy-bodied material used to seal the exposed edges of a membrane splice. Available in tubes.
3. Sure-Seal Lap Sealant is a black sealant for use with Sure-Seal (black) Roofing Systems.
  4. Sure-White Lap Sealant is a white sealant for use with Sure-White (white-on-black) Roofing Systems.
- Q. **Water Cut-Off Mastic:** A one-component, low viscosity, self-wetting, Butyl blend mastic used to achieve a compression seal between the EPDM membrane or Elastoform Flashing and applicable substrates. Available in tubes.
- R. **Pourable Sealer:** A black, two-component, solvent-free, polyurethane based product used for tie-ins and as a sealant around hard-to-flash membrane penetrating objects such as clusters of pipes and for a daily seal when the completion of flashings and terminations cannot be completed by the end of each work day.
- S. **One-Part Pourable Sealer:** Available in black or white, a one-component, moisture curing, elastomeric polyether sealant used for attaching lightning rod bases and ground cable clips to the membrane surface and as a sealant around hard-to-flash penetrations such as clusters of pipes.
- T. **Universal Single-Ply Sealant** A one-part polyether, non-sagging sealant designed for sealing expansion joints, control joints and counterflashings. Available in white only.

## 2.06 METAL EDGING AND MEMBRANE TERMINATIONS

- D. **General:** All metal edgings shall be tested and meet ANSI/SPRI ES-1 standards and comply with International Building Code. All metal work is to be supplied and warranted by the manufacturer.
- E. **Drip Edge:** a metal fascia/edge system with a 22- or 24-gauge continuous anchor cleat and .032-inch-thick aluminum or 24 gauge steel fascia. Metal fascia color and profile dimensions will match existing color and profile dimensions.
- F. **Termination Bar:** a 1" wide and .098" thick extruded aluminum bar pre-punched 6" on center; incorporates a sealant ledge to support Lap Sealant and provide increased stability for membrane terminations.

## 2.07 WALKWAYS

Protective surfacing for roof traffic shall be Sure-Seal (black) Pressure-Sensitive Walkway Pads (with Factory-Applied Tape on the underside of the walkway) adhered to the membrane surface in conjunction with Sure-Seal Primer.

## PART 3 EXECUTION

### 3.01 GENERAL

- A. Comply with the manufacturer's published instructions for the installation of the membrane roofing system including proper substrate preparation, jobsite considerations and weather restrictions.
- B. Position sheets to accommodate contours of the roof deck and shingle splices to avoid bucking water.

### 3.02 VAPOR RETARDERS

- E. **General:**  
  
The use of a vapor retarder to protect insulation and reduce moisture accumulation within an insulated roofing assembly should be investigated, especially on projects with high interior humidity, such as, swimming pools, breweries, pulp mills, etc.
- F. In the generally temperate climate of the United States, during the winter months, water vapor flows

upward from a heated, more humid interior toward a colder, drier exterior. Vapor retarders are more commonly required in northern climates than in southern regions, where downward vapor pressure may be expected and the roofing membrane itself becomes the vapor retarder.

- G. On cold storage/freezer facilities, the perimeter details must be selected to provide an air seal and prevent outside air from infiltrating and condensing within the roofing assembly.
- H. Consult the latest publications by ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.) and NRCA (National Roofing Contractors Association) for specific information.

### **3.03 INSULATION PLACEMENT**

- A. Install insulation or membrane underlayment over the substrate with boards butted tightly together with no joints or gaps greater than 1/4 inch. Stagger joints both horizontally and vertically if multiple layers are provided.
- B. Secure insulation to the substrate with the required mechanical fasteners in accordance with the manufacturer's specifications.

### **3.04 MEMBRANE PLACEMENT AND BONDING**

- A. Unroll and position membrane without stretching. Allow the membrane to relax for approximately 1/2 hour before bonding. Fold the sheet back onto itself so half the underside of the membrane is exposed.
- B. Apply the Bonding Adhesive in accordance with the manufacturer's published instructions and coverage rates, to both the underside of the membrane and the substrate. Allow the adhesive to dry until it is tacky but will not string or stick to a dry finger touch.
  - 1. Roll the coated membrane into the coated substrate while avoiding wrinkles. Brush down the bonded half of the membrane sheet with a soft bristle push broom to achieve maximum contact.
  - 2. Fold back the unbonded half of the membrane sheet and repeat the bonding procedure.
- C. Install adjoining membrane sheets in the same manner, overlapping edges approximately 4 inches. Do not apply bonding adhesive to the splice area.

### 3.05 MEMBRANE SPLICING

- I. Position membrane sheet to allow for required splice overlap. Mark the bottom sheets with an indelible marker approximately 1/4" to 1/2" from the top sheet edge. The pre-marked line on the membrane edge can also be used as a guide for positioning splice tape.
- J. When the membrane is contaminated with dirt, fold the top sheet back and clean the dry splice area (minimum 3" wide) of both membrane sheets by scrubbing with clean natural fiber rags saturated with Sure-Seal Weathered Membrane Cleaner. When using Sure-Seal (black) PRE-KLEENED membrane, cleaning the splice area is not required unless contaminated with field dirt or other residue.
- K. Apply EPDM Primer to splice area and permit to flash off. Primer must be applied to both the top membrane layer and the bottom membrane layer.
- L. When adhering Factory Applied Tape (FAT), pull the poly backing from FAT beneath the top sheet and allow the top sheet to fall freely onto the exposed primed surface. Press top sheet on to the bottom sheet using firm even hand pressure across the splice towards the splice edge
- M. For end laps, apply 3" or 6" SecurTAPE to the primed membrane surface in accordance with the manufacturer's specifications. Remove the poly backing and roll the top sheet onto the mating surface.
- N. Tape splices must be a minimum of 2-1/2" wide using 3" wide (Butyl/EPDM) SecurTAPE that is a minimum 25-mil thick. SecurTAPE must extend 1/8" minimum to 1/2" maximum beyond the splice edge. Field splices at roof drains must be located outside the drain sump.  
  
Note: For projects where 20-year or longer System Warranty is specified, splice enhancements are required. Refer to Carlisle Sure-Seal Roofing System Specification.
- O. Immediately roll the splice using positive pressure when using a 2" wide steel roller. Roll across the splice edge, not parallel to it. When FAT is used, Carlisle's Stand-Up Seam Roller can be used to roll parallel to the splice edge.
- P. **At all field splice intersections**, apply Lap Sealant along the edge of the membrane splice to cover the exposed SecurTAPE 2" in each direction from the splice intersection. Install Carlisle's Pressure-Sensitive "T" Joint Covers or a 6" wide section (with rounded corners) of Sure-Seal Pressure-Sensitive Elastoform Flashing over the field splice intersection.

### 3.06 FLASHING

- B. Wall and curb flashing shall be cured EPDM membrane. Continue the deck membrane as wall flashing where practicable. Use Pressure-Sensitive Curb Wrap when possible to flash curb units.

- B. Follow manufacturer's typical flashing procedures for all wall, curb, and penetration flashing including metal edging/coping and roof drain applications.

### **3.07 WALKWAYS**

- A. Install walkways at all traffic concentration points (such as roof hatches, access doors, rooftop ladders, etc.) and all locations as identified on the specifier's drawing.
- B. Adhere walkways pads or rubber pavers to the EPDM membrane in accordance with the manufacturer's specifications.

### **3.08 DAILY SEAL**

- A. On phased roofing, when the completion of flashings and terminations is not achieved by the end of the work day, a daily seal must be performed.

Note: A temporary seal should be performed at the conclusion of daily work and use of the appropriate method will vary based on project and project conditions. Contact Carlisle for various methods that may be utilized.

### **3.09 CLEAN UP**

- A. Perform daily clean-up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.
- B. Prior to the manufacturer's inspection for warranty, the applicator must perform a pre-inspection to review all work and to verify all flashing has been completed as well as the application of all caulking.

**Bid Proposal Form**  
**Kindergarten Roof Replacements**

Company Name: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Contact Name: \_\_\_\_\_

E Mail: \_\_\_\_\_

**Total Bid \$** \_\_\_\_\_ *(including 10 crew hours snow allowance)*

**Snow Allowance \$** \_\_\_\_\_ *(to be returned if unused)*

**Crew Hourly Rate for Additional Snow Removal**

**\$** \_\_\_\_\_ *(Additional snow removal requires pre-approval of owners representative.)*

Any questions or concerns can be addressed to:

David G. Totty

Director of Facilities

Rochester School District

(603) 332-3678 ext. 1145



**Addendum #1**  
**To**  
**Kindergarten Roof Replacements**  
**Rochester School District**  
**11/24/2020**

The following is addendum is being issued for clarification.

**Chamberlain:**

- Include ¼” Tapered Cricket between drains

**E. Rochester:**

- Exclude radius overhang roof on front of building from scope
- Remove reference of “Air and Vapor Barrier” from insulation step; *Furnish and install (1) layer of new 1.5” Insulbase 20 psi Insulation loose laid over **air and vapor barrier**.*

**Gonic:**

- Include additional PVC roof area in front of building, scope to mirror that of the initial PVC roof area plus the addition of walk mats.
- Remove reference of “Air and Vapor Barrier” from insulation step; *Furnish and install (1) layer of new 1.5” Insulbase 20 psi Insulation loose laid over **air and vapor barrier**.*

**All Schools:**

Dumpsters will be provided at each work location at the expense of the Rochester School District and should not be included in the bid.

Any questions or concerns can be addressed to:

David G. Totty  
Director of Facilities  
Rochester School District  
(603) 332-3678 ext. 1145

**Addendum #2**  
**To**  
**Kindergarten Roof Replacements**  
**Rochester School District**  
**11/24/2020**

1. You discussed that the town will carry the dumpsters/disposal costs. Is that at all the schools? what size could we expect for dumpsters and can we schedule the frequency? Dumpster provider?
2. Some of the existing drains have drain inserts? Should we figure on replacing those with inserts also? What about the extent of the other drains? Clean and reuse? Concern for damaged or missing drain accessory's, bolts, strainers? Who would cover any damage to existing drains, cracks or tap and die of existing bolts? **Any drains that can be salvaged should be salvaged. Any required repair or replacement of drains will be the responsibility of the contractor. Drain insert or retapping are both acceptable.**
3. East Rochester School: 1. Should we disregard the missing lightening protection cables, will we need to reinstall the clips? **Disregard and eliminate lightening rods.** 2. Small eyebrow roof on entrance covered in PVC will remain or be recovered? **See Addendum #1.**
4. Gonic School: 1. Concerned that adding 1.5" ISO will affect the masonry flashing reglet, is this a concern? **No.** 2. What is the intention of the scope on the front roof that we looked at? **See Addendum #1.** Is that what is referred to as the lower EPDM Roof on page 6 of the bid docs? **No. Page 6 refers to a small section of lower EPDM between the kindergarten PVC roof and the main building. There are three (3) separate sections of roof included at Gonic.** If we are removing to the deck should we carry tapered insulation to ensure that the roof slopes properly to the drain? **We are assuming structural slope.** Will we be able to setup a chute on the front of the bldg. to remove the debris from this roof? **Yes.**
5. Are any bonds required with this bid or project? **Yes. The successful contractor will be required to furnish a 5% Bid Bond, a 100% Performance Bond, and a 100% Payment Bond to cover execution of the contract. The successful contractor is expected to execute a contractual agreement with the Rochester School District, Rochester, New Hampshire, prior to commencement of work. Insurance Requirements: General Liability - \$1 Million; Completed Operations - \$1 Million; Workmers Compensation – Statutory Limit**

Any questions or concerns can be addressed to:

David G. Totty, Director of Facilities, Rochester School District, (603) 332-3678 ext. 1145