

**DATE:** November 5, 2024  
**TO:** Invited Roofing Contractor Bidder  
**RE:** Addendum Four (4)  
**PROJECT:** **Michener Library Roof Replacement – Phase I & 2**  
1400 22nd St, Greeley, CO 80631  
**PROJECT NO.:** 2024-080M23

To Whom it May Concern:

The following changes, clarifications and/or corrections to the bid documents and schedule are made following the pre-bid meeting on-site. Please review the following items/modifications to the scope of project to be included as part of the bid:

1. Submitted Questions and Answers
2. Revised Specification Section 01 1000-Statement of Work
3. Revised Specification Section 07 2210-Roof and Deck Insulation
4. Revised Specification Section 07 5300-EPDM Membrane Roofing

This Addendum does not include a date change for submission of proposals.

This Addendum does not include a time extension for the performance of work described herein.

Receipt of this addendum is to be acknowledged on the bid form.

Sincerely,  
Robert Piane, AIA  
Vice President of Architectural Services  
Email: [robertpiane@amtechsls.com](mailto:robertpiane@amtechsls.com)

**End of Addendum 4**

**DATE:** November 5, 2024  
**TO:** Invited Roofing Contractor Bidder  
**RE:** Questions and Answers  
**PROJECT:** **Michener Library Roof Replacement – Phase I & 2**  
1400 22nd St, Greeley, CO 80631  
**PROJECT NO.:** 2024-080M23

To Whom it May Concern:

The following questions were submitted in accordance with the project requirements. Please review the provided answers and take them into consideration while developing your bid responses.

1. Will we be allowed to return to the site with a plumbing contractor? After walking the site yesterday, I feel we need to have our plumber review the site conditions.
  - a. **Answer:** Yes. Refer to Addendum 3.
2. In section 07 5300 the specs state, "Current proof of Installers status letter from the proposed Manufacturer, showing that the installer is a:1. Carlisle Centurion Contractor. 2. Elevate Master Contractor. 3. Johns Manville Summit Level Contractor." Will you be allowing substitutions? If no, are you wanting us to submit one of these qualifications with our bid? If a contractors submits a bid and does not meet this requirement will there bid be accepted?
  - a. **Answer:** No submitted substitutions have been accepted. Contractors must show proof that they meet the minimum requirements of the project within their bid submittals.
3. On the walk it was noticed Front Range Roofing Systems was not in attendance at the start of the mandatory meeting then showed up at the site visit, will UNC be allowing them to submit a bid?
  - a. **Answer:** The late attending contractor will not receive any review of information that was presented before they signed in. The contractor can bid on the project as long as all the other minimum qualifications are met.
4. Has the roof and relevant interior spaces been tested for hazardous materials? Is a clearance letter available?
  - a. **Answer:** The roofing system was tested in 2023 for hazardous materials and received negative results. This report will be shared with the awarded contractor.
  - b. The interior spaces were recently tested. We will share this info with the awarded contractor. The awarded contractor would not be responsible for any testing or abatement, if any are needed.
5. Is the project subject to Liquidated Damages? if so, what is the amount (per calendar day)?
  - a. **Answer:** For this project Liquidated Damages are Non-Applicable.
6. What is the Warranty period?
  - a. **Answer:** Refer to Roof Replacement Notes on R-101 and Specifications 07 5300-EPDM Membrane Roofing item 1.13 and 07 6200-Sheet Metal Flashing and Trim line 1.8.
7. Is the project tax exempt except for supplies and equipment not a permanent part of the work?
  - a. **Answer:** Correct. Supplies, equipment and materials that do NOT become a permanent part of the work are Not tax exempt.
8. Are there any building rules/work hour restrictions? (Aside from the proposed start and completion dates.)
  - a. **Answer:** No work hour restrictions. Weekends are OK.
9. What is the on-site OAC meeting frequency (e.g. weekly, bi-weekly)?
  - a. **Answer:** We will conduct OAC meetings onsite every two weeks with representatives of the Client and Contractor teams to assess progress.

10. Will space in the building or a nearby building be made available for the superintendent/construction office, or will a trailer be required?
  - a. **Answer:** Refer to drawing sheet R-201 for the Contractor Staging Plan. No interior space will be provided by UNC. The need for a trailer is not anticipated for this project but would need to be provided by the Contractor and placement coordinated with UNC.
11. Article 9 states all permit fees are to be paid by contractor. Can you confirm that is the expectation or will the University be covering the direct permit fees and only the associated procurement costs are assumed by the contractor?
  - a. **Answer:** The contractor will be responsible for the State Permit Requirements and Inspections of Plumbing. Roofing will be inspected by UNC's 3<sup>rd</sup> Party Inspection Service SAFEbuilt.
12. On the second floor where the new roof drain and overflow drain are to be routed through the existing soffit above the bookshelves, who is responsible for moving books or book shelf/ves to provide access while hanging the drain lines?
  - a. **Answer:** The Contractor will be responsible for protecting or moving all interior assets/objects and returning all interior finishes and assets to pre-construction condition, in coordination with UNC.
13. Can as-built drawings be provided prior to the bid submission deadline?
  - a. **Answer:** As-built drawings are available and can be provided to the selected contractor.
14. According to the Bid Documents one RTU curb is to be raised. Will the adjacent duct penetration curb also need raised? Will the conduit coming out of the adjacent curb also need relocation or modification?
  - a. **Answer:** The contractor is responsible for field verifying all existing conditions, measurements/dimensions, quantities, locations, etc. Contractor shall extend existing HVAC roof top units and interior ductwork that will be disturbed due to new work, including but not limited to curbs, ductwork, piping, electrical, etc. in order to maintain an 8-inch minimum flashing height, due to installation of new roof system.
15. To provide GPR: roofing material will need to be removed down to flat clean concrete in order to determine the locations for the new drain penetrations. Is it acceptable to clear the current roofing material, conduct the GPR scanning, and patch the area prior to the new roofing system installation?
  - a. **Answer:** Yes.
16. Is Versigard 90-MIL EPDM system an acceptable alternate? (See attached proposed alternate documents).
  - a. **Answer:** At this time, the Owner will not be accepting the Versico single ply membrane as an alternative for the Michener Library Roof project.
17. Would the University like to include any scope for addressing the rusted metal panel screens?
  - a. **Answer:** No.
18. Section 01 1000 Statement of work 1.4 A: This specification section contradicts the plans and specifications to remove the existing gravel leave the and existing insulation before application of the new roof assembly. Confirm this is not a "Complete Tear Off" to the substrate board and Vapor barrier, and it's the only the removal of the existing gravel surface.
  - a. **Answer:** Refer to the revised specification section attached.
19. Section 01 1000 Statement of work 3.1 A Reference PVC flashings? No PVC on the job.
  - a. **Answer:** Refer to the revised specification section attached.
20. Section 07 0150-1 F1. Test Reports. Fastener Pull Tests. The new insulation assembly is adhered in foam adhesive and the membrane is adhered. What is required for Pull out tests as no fasteners

are used?

- a. **Answer:** This line item is not applicable to the project scope at this time but is retained to address any potential unforeseen conditions that may arise during construction.
21. Section 07 0150-3 Part 2 2.1 Infill Materials. Our understanding and is shown in the Roof assemblies R-101 that the deck is Concrete in all locations. Where would steel deck infill be required?
- a. **Answer:** This line item is not applicable to the project scope at this time but is retained to address any potential unforeseen conditions that may arise during construction.
22. Section 07 0150-6 3.6 ROOF RE-COVER PREPARATION. If in the "spudding" operation to remove the gravel, the gravel is to adhered to the felts and this results in the removal of the felt what are we to figure to get to an acceptable condition to adhere the new insulation? A new 3 or 4 ply?
- a. **Answer:** Contractor will be required to repair all damage to the remaining BUR surface caused by spudding as required by the manufacturer for adhesion.
23. Section 07 0150-7 3.7 DECK PREPERATION. Is any deck preparation pertinent?
- a. **Answer:** This line item is not applicable to the project scope at this time but is retained to address any potential unforeseen conditions that may arise during construction.
24. Section 07 0150-7 3.9 DECK & SUPPORT REPLACEMENT & REPAIR. Is any of this pertinent? The deck is Concrete.
- a. **Answer:** This line item is not applicable to the project scope at this time but is retained to address any potential unforeseen conditions that may arise during construction.
25. Section 07 0150-8 TEMPORARY ROOFING. Is temporary roofing required for this project: A. "install temporary roofing membrane over area to be reroofed"
- a. **Answer:** This line item is not applicable to the project scope at this time but is retained to address any potential unforeseen conditions that may arise during construction.
26. Section 07 0150-9 ABABDONED EQUIPMENT CURBS AND VENTS. Is There a plan that shows the extent of abandoned equipment and vents?
- a. **Answer:** This line item is not anticipated for the project scope at this time but is retained to address any potential unforeseen conditions that may arise during construction.
27. Section 07 0150-10 3.18 ASBESTOS REMOVAL. Is there an Asbestos report for our use?
- a. **Answer:** Refer to Question & Answer 4 above.
28. Section 07 2210-1 1.1 GENERAL. Removal is of gravel only, Please clarify.
- a. **Answer:** Refer to the revised specification section attached.
- Insulation to be used is a composite insulation of 2.5" Polyisocyanurate insulation with a '1b" HD Polyisocyanurate cover board laminated to the base foam. Please clarify
- Answer:** Reference not found in the specification, but it is referring to a "1/2-inch" HD polyisocyanurate cover board.
29. Section 07 2210-3 3.2 C METAL ROOF DECKS. C.1 Description of removal is incorrect.
- a. **Answer:** This line item is not applicable to the project scope at this time but is retained to address any potential unforeseen conditions that may arise during construction.
30. Section 07 5300 1.1 C. Is 6" Seam cover tape required for the base bid or just the 90 mil option?
- a. **Answer:** Seam cover tape is required for the base bid. Refer to detail A/R-101.
31. Section 07 5300-2 1.8B 3 Compliance to 2021 International Energy Code. The reroof includes leaving the existing insulation and we do not know its thickness or R-Value however the 3.0" Composite Insulation that is being added is an R-value of 16.9. The above Code for Climate Zones

- 4 and 5 requires R-30. Can we assume what is designed to be installed for the 3 roof assemblies on sheet R-101 is in conformance to this specified code requirement.
- a. **Answer:** Roof recover projects are not required by the 2021 IECC to meet the energy requirements of new construction per section C503.1. However, for this project the R-value will be increased to meet current codes. Refer to Roof Replacement Note 2 on drawing sheet R-101 for the approximate R-value of the existing system based on cores taken during Amtech's roof assessment.
32. Section 07 5300-4 1.10 B Will Membrane that has been manufactured greater than 3 months from mobilization be acceptable?
- a. **Answer:** No.
33. Section 07 5300-4 1.10 C. Has criteria to load daily. Is this a requirement. It mentions loading enough roofing for 2 days work, although it says load daily as well? Also states that Visqueen is not an acceptable weather protection and the section on roll storage says Unvented polyethylene tarpaulins are not acceptable. Can you provide additional information on what acceptable material protection will be acceptable?
- a. **Answer:** Materials can be stored on the roof, so long as they are on pallets/cribbing, covered with tarps (no plastic) and the roof structure is not overloaded. Specifics of material loading and storage will be discussed and coordinated with the selected Contractor during the pre-construction meeting. Clean canvas tarpaulins are acceptable.
34. Section 07 5300a 1.10 E Maximum Allowable loading of 20 pounds per square foot. Each roll of .060 mil EPDM Membrane is 430 lbs, and unrolled will exceed 20 lb /sqft. A typical person standing is greater than 20 lb / sqft.
- a. **Answer:** Weights of EPDM rolls vary by roll width and the weight can be distributed to the roof structure via pallets or cribbing if needed. An unrolled 60-mil EPDM membrane has a weight of approximately 0.4 lb/sqft. The weight of a person is a concentrated load, not a distributed load which is what the 20 psf allowable loading is referring to.
35. Section 07 5300-7 EPDM. The membrane is specific as self-adhered. Is that correct that standard membrane that uses bonding adhesive to adhere is not acceptable? Section 3.3 B of this specification relates to the application of Bonding adhesive.
- a. **Answer:** The design intent was to utilize a standard membrane and bonding adhesive. Refer to the attached revised specification section that includes Non-Reinforced EPDM Membranes.
36. Section 07 5300-11 3.6.A1 Is a non-working superintendent a requirement?
- a. **Answer:** Contractor is to provide daily supervision of the project, performed by the contractor's field superintendent in addition to the project foreperson, who is to always be on site.
37. Section 00 7303 supplementary conditions Add Alt #3 Does the existing coating need to be sand blasted off or can it be primed?
- a. **Answer:** The existing coating needs to be removed prior to recoating. The means and methods of the removal is the contractor's responsibility.
38. R-300 has notes that the caps at the mechanical pit are to be removed. There are caps under the large unit that can't be removed, can these be left in place.
- a. **Answer:** Yes.
39. Is coating required at the roof side back of parapet walls? Detail F sheet R-301 shows legend hatching.
- a. **Answer:** Yes. Refer to legend hatching description and Detail F for Alternate #3.
40. Please clarify keynote 7 and 8 on sheet R-300.
- a. **Answer:** Keynotes 7 & 8 are not anticipated for the project scope this time but are retained

to address any potential unforeseen conditions that may arise during construction.

41. Work at skylights will require removal of domes for membrane and metal flashing as shown in detail 6 R-501. This removal may affect the seals of the dome to the extruded frame of the skylight, and we won't know if that's the case.
  - a. **Answer:** Contractor to include installation of new gaskets or sealants after reinstalling domes to preserve the integrity of the seal as recommended by manufacturer.
42. Why is there a note of New EPDM when the scope is to use Liquid membrane to reflash these skylights.
  - a. **Answer:** The "(N) EPDM and sheet metal trim" may be omitted from detail 5/R-501.
43. If adding new EPDM and Sheet metal closures, there is no guarantee the dome frame will fit back over the curb.
  - a. **Answer:** Refer to the response for Question 42.
44. Can a trash chute be installed at the stair scaffold for trash removal?
  - a. **Answer:** Means and methods of debris removal will be the responsibility of the selected Contractor in coordination with UNC.
45. There are several field conditions that when the new 3" Insulation is added we will not be able to achieve an 8" Vertical Minimum noted. The current condition at the louvers is only 7 inches now to the bottom of the louver. How should we address this?
  - a. **Answer:** Height below the bottom of the louvers varies slightly across the roof areas. Where needed, the Contractor and project team can work with the selected manufacturer to request a reduced flashing height acceptance.
46. Detail 4 R-501 for the RTU curbs requires that all Units be lifted in order to install the new 2 x nailer at the top of the curb and the continuous bead of sealant under the unit. There is adequate vertical height with the added 3-inch insulation to provide 8" Minimum flashing height. Are we still required to install this nailer, vertical insulation and sealant? Or can we use 2B & 2C sheet. R-501 at RTU Curbs?
  - a. **Answer:** For bidding, plan to detail the curb as identified in Detail 4/R-501.
47. Please clarify the contradiction from Key note 1 sheet R-300 that requires cleaning and liquid coating the curb caps to Detail 2A Sheet R-501 that states new pre finished curb caps.
  - a. **Answer:** There are two different conditions to address. Keynote 1 refers to liquid flashing existing sheet metal curb caps to remain and exposed steel beams. Keynote 2 refers specifically to the metal curb caps in the pit roof to be removed and roofed over. Refer to keynote callouts.
48. Detail (B) R-500 with new Metal-Era Facia just a blow up of Detail 3 R-500?
  - a. **Answer:** B/R-500 is the typical perimeter metal assembly and is referenced in Detail 3/R-500.
49. Detail 4 R-500 shows added nailers at overflow scuppers to the deck. Are we to remove the existing roof to the deck at scuppers and install nailers?
  - a. **Answer:** Yes.
50. Are the nailers in Detail 4/R-501 new or existing?
  - a. **Answer:** Contractor may reuse existing nailers if they are in good condition and add new nailers to meet overflow scupper detail intent.
51. New Drain sumps require removal of all membrane and insulation to the deck and then the added tapered panels per detail 1/R-501. The tapered panels are 4 x 4 panels. On the roof plan the sumps scale 10 x 10. Would 8 x 8 sumps be acceptable, or should we go 12 x 12 to match the size of the panels.

- a. **Answer:** Refer to detail 1/R-501 for sump dimensions. The 4-foot sump starting from the centerline of the drain bowl would also be acceptable.

Sincerely,  
Robert Piane, AIA  
Vice President of Architectural Services  
Email: [robertpiane@amtechsls.com](mailto:robertpiane@amtechsls.com)

**SECTION 01 1000  
STATEMENT OF WORK**

**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
  - 1. Project Contacts.
  - 2. Work covered by the Contract Documents.
  - 3. Work under other contracts.
  - 4. Use of premises.
  - 5. Owner's/Tenant's occupancy requirements.
  - 6. Work restrictions.

1.3 PROJECT CONTACTS

- A. Project Identification:
  - Michener Library Roof Replacement
  - UNC Project Number: 2024-080M23
  - Amtech Project Number: DEN.2023.001048
  - University of Northern Colorado
  - 1400 22<sup>nd</sup> Street
  - Greeley, CO 80639
- 1. Owner's Representative:
  - University of Northern Colorado
  - Alejandro Garcia
  - Project Manager
  - Parsons Hall 501 20<sup>th</sup> St.
  - Campus Box 59
  - Greeley, CO 80639
  - Office Phone: (970) 351-1982
  - Mobile Phone: (303)-726-2192
- B. Design Professional:
  - Amtech Solutions, Inc.
  - 1720 South Bellaire Street, Suite 1200
  - Denver, Colorado 80222
  - Office Phone: (303) 738-0823

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work generally consists of the following at the subject property:
  - 1. This project is for a **roof recover** at the Michener Library. Refer to the Roof Plans and Detail Drawings, as well as Divisions 06, and 07 within the Specifications for roof assembly installation.
  - 2. Removal of the existing **embedded gravel as required by selected manufacturer**.
  - 3. Installation of new insulation, hard boards, and roofing membrane.
  - 4. Removal and replacement of wall flashings.
  - 5. Removal and replacement of curb flashings.
  - 6. Removal and replacement of electrical penetration flashings.
  - 7. Removal and disposal of unused items as noted by the Owner and where shown on the drawings.



#### Addendum 4

##### 1.5 WORK UNDER OTHER CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.

##### 1.6 USE OF PREMISES

- A. General: Each Contractor shall have limited use of premises for construction operations, including use of Project site, during construction period. Each Contractor's use of premises is limited only by Owner's/Tenant's occupancy and right to perform work or to retain other contractors on portions of Project.
- B. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
  - 1. Limits: Confine constructions operations to building areas where work is indicated and immediately surrounding site areas, as agreed upon by Owner/Tenant.
- C. Use of Existing Building: Maintain existing building in a weathertight condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.

##### 1.7 OWNER'S/TENANT'S OCCUPANCY REQUIREMENTS

- A. The site and building will be occupied during entire construction period. Cooperate with Owner/Tenants during construction operations to minimize conflicts and facilitate usage. Perform the Work so as not to interfere with users' day-to-day operations. Maintain existing exits, unless otherwise indicated.
  - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner.
  - 2. Provide not less than 72 hours' notice to Owner of activities that will affect users' operations.

##### 1.8 WORK RESTRICTIONS

- A. On-Site Work Hours: Work shall be generally performed outside the existing building during normal business working hours of:
  - 1. 7:00 a.m. to 7:00 p.m., Monday through Friday, except otherwise indicated.
  - 2. Weekend Hours: 8:00 a.m. to 5:00 p.m. Contractor must coordinate with Owner and given approval for both weekend work and interior access if required.
  - 3. Early Morning Hours: Comply with City Ordinances.
  - 4. Hours for Utility Shutdowns: Only with Owner's written permission.
  - 5. Interior Work: As scheduled with Owner and Tenant.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by users or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
  - 1. Notify Consultant and Owner not less than four (4) days in advance of proposed utility interruptions.
  - 2. Do not proceed with utility interruptions without Owner's written permission.

#### PART 2 - PRODUCTS (NOT USED)

#### PART 3 - EXECUTION

##### 3.1 DESIGN NOTES

- A. Base Bid:
  - 1. Furnish and install a new 60-mil fully adhered EPDM membrane and new coverboard recover over the existing roof assembly, with new **EPDM** flashings and new sheet metal (fascia metal,

#### **Addendum 4**

parapet cap, counter-flashings, roof jacks, etc.) as shown per deck assemblies on drawings. Perform all work as specified in accordance with the design drawings, specifications, and governing building code.

**B. Additive Alternate #1:**

1. In lieu of the proposed 60-mil EPDM membrane, furnish and install a new 90-mil black EPDM membrane fully adhered to the proposed base bid roof assemblies at all in-scope roof areas.

**C. Additive Alternate #2:**

1. Remove existing coating, patch repair damaged concrete, and clean and prepare concrete curbs and interior/top of concrete where coating exists for installation of a new silicone coating per the requirements of the project drawings and specifications.

**D. Additive Alternate #3:**

1. Clean and prepare uncoated concrete parapet walls, patching damaged concrete, for installation of a new silicone coating per the requirements of the project drawings and specifications.

**END OF SECTION 01 1000**



#### Addendum 4

- A. Polyisocyanurate Insulation Composite Board with Coated Glass Facers.
1. Cover Board Insulation:
    - a. ASTM C1289, Type II, Class 4, Grade 1 (80-psi) minimum, Standard Specification for Polyurethane and Polyisocyanurate Roof Insulation.
  2. Base Insulation:
    - a. ASTM C1289, Type II, Class 2, Grade 2 (20-psi) minimum, Standard Specification for Polyurethane and Polyisocyanurate Roof Insulation.
  3. Maximum board size to be 48-inches x 48-inches in size.
  4. Insulation board thicknesses:
    - a. High Density Board: 0.5-inches.
    - b. Insulation Board: 2.5-inches.
    - c. Total Board Thickness: 3.0-inches.
  5. Minimum composite board thermal resistance value:
    - a. R-16.9
  6. Approved flat polyisocyanurate insulation are:
    - a. Carlisle – SecurShield HD Composite
    - b. Elevate – ISOGUARD HD Composite
    - c. Johns Manville – ProtectoR HD Cover Board adhered with low-rise foam to ENRGY 3 CGF Polyisocyanurate insulation. Refer to 2.1.B and 2.1.C below.
- B. Flat High Density Polyisocyanurate Insulation with Coated Glass Facers:
1. ASTM C1289, Type II, Class 4, Grade 1 (80-psi) minimum, Standard Specification for Polyurethane and Polyisocyanurate Roof Insulation.
  2. ASTM D1621 Standard for Compressive Properties of Polyisocyanurate Roof Insulation.
  3. FM Severe Hail Rating (SH)
  4. Overall Thickness: Zero-point-five inches (0.5-inches) thick.
  5. Maximum board size: 48-inches x 48-inches.
  6. Minimum R-Value: 2.5.
  7. Approved flat high density polyisocyanurate insulation are:
    - a. Carlisle – SecurShield HD Polyisocyanurate
    - b. Elevate – ISOGARD HD Cover Board.
    - c. Johns Manville – ProtectoR HD Polyisocyanurate
- C. Flat and Fully Tapered Polyisocyanurate Insulation with Glass Facers:
1. ASTM C1289, Type II, Class 1 Standard Specification for Polyurethane and Polyisocyanurate Roof Insulation.
  2. Fill Taper Board Thickness: Maximum thickness of fill boards is 2-inches thick with a maximum board size to be 48-inches x 48-inches in size.
  3. Taper Slope shall be by the design documents to provide positive drainage off of the roof surfaces. Typical slopes are:
    - a. ¼-inch to 12-inches slope.
    - b. ½-inch to 12-inches slope.
  4. Minimum Board Thickness:
    - a. Zero-point-five-inch (0.5-inch) thick.
  5. Approved taper polyisocyanurate insulation are:
    - a. Carlisle – SecurShield Flat and Tapered Polyisocyanurate
    - b. Elevate – ISOGUARD GL Flat and Tapered Polyisocyanurate
    - c. Johns Manville – ENRGY 3 CGF Flat and Tapered Polyisocyanurate

## Addendum 4

### 2.2 TAPERED OVERLAY CRICKETS:

- A. Where shown on drawings and behind the high side of all roof curbs.
- B. Tapered Polyisocyanurate Overlay Crickets with Glass Facers:
  - 1. ASTM C1289, Type II, Class 2 Standard Specification for Polyurethane and Polyisocyanurate Roof Insulation.
  - 2. Minimum Thickness: ½-inch or one slope greater than the existing roof slope, whichever is more stringent.
    - a. Tapered Insulation panels are to be pre-fabricated sloped panels with a slope of ½-inch to 12-inches slope (where indicated on roof plans and at the high side of all curbs).
    - b. Install 6-inch T.E.S. (tapered edge strip) at the low side of the tapered crickets.
  - 3. Approved cricket polyisocyanurate insulation are:
    - a. Carlisle – SecurShield Tapered Polyisocyanurate
    - b. Elevate – ISOGUARD GL Tapered Polyisocyanurate
    - c. Johns Manville – ENRGY 3 CGF Tapered Polyisocyanurate

### 2.3 ACCESSORIES

- A. Tapered Edge Strip (TES):
  - 1. 1½-inch x 18-inch tapered edge strip (at high side of roof curbs, at scuppers/roof drains, etc.)
  - 2. ½-inch x 6-inch tapered edge strip at start of taper cricket system.
- B. Low-Rise Foam Insulation and Cover Board Adhesive:
  - 1. Two-part manufacturer provided Low Rise, Low VOC foam adhesive in cartridges, 5-gal jugs, 15-gal drums, or 50-gal drums for installation of polyisocyanurate insulation, tapered insulation, and cover board:
    - a. Carlisle – Flexible FAST Adhesive.
    - b. Elevate – I.S.O. Spray R Adhesive.
    - c. Johns Manville – JM Two-Part Urethane Insulation Adhesive

## PART 3 - EXECUTION

### 3.1 SUBSTRATE EXAMINATION:

- A. Verify that deck/substrate is dry, clean, smooth and free of sharp edges, burrs, deep depressions, loose material, oil, grease or other foreign material.
- B. Verify proper placement of all roof openings, pipes, curbs, sleeves, ducts, vents and drains.
- C. Beginning installation means acceptance of all existing surfaces conditions.

### 3.2 SUBSTRATE PREPARATION:

- A. Comply with manufacturer's instructions for preparation of substrate to receive elastomeric sheet roofing.
- B. Preparation (or removal) of existing roof insulation.
- C. Metal Roof Decks:
  - 1. Remove existing roof membrane, wood fiber board, and insulation, down to the existing metal roof deck. Prepare the existing metal roof deck to receive the proposed new roof assembly.
- D. Clean substrate of dust, debris, and other substances detrimental to elastic sheet roofing work.
- E. Beginning of installation means acceptance of conditions as satisfactory.
- F. Remove old membrane flashings, pitch pans, metal and lead flashings.
- G. A positive slope is recommended to provide adequate drainage. No ponding water should remain on the roofing system 48 hours after rain has stopped.



**SECTION 07 5300  
EPDM MEMBRANE ROOFING**

**PART 1 - GENERAL**

1.1 SECTION INCLUDES

A. Membrane Installation:

1. Furnish and install new fully adhered 0.060-inch (60 mil) non-reinforced Black EPDM roof membrane with factory applied seam tape.

B. Membrane Flashing:

1. Furnish and install new elastomeric roof flashings per contract documents and manufacturers requirements.

C. Install new 6-inch "semi-cured" cover tape over all vertical and horizontal EPDM seams.

D. Installation of new EPDM base, curb, and penetration flashings.

1.2 RELATED SECTIONS:

A. Section 06 1000 – Rough Carpentry.

B. Section 06 1600 – Roof Sheathing.

C. Section 07 0150 – Minor Demolition, Renovation Work, and Roof Recover Preparation.

D. Section 07 6200 – Sheet Metal Flashing and Trim.

1.3 SUBSTITUTIONS

A. Substitutions shall comply with procedures specified in Division One.

1.4 SEQUENCING AND SCHEDULING

A. Coordinate work with owner so as to not disrupt tenants.

B. Access to roof areas for construction, disposal, etc., will be as directed by the owner.

C. Coordinate the work of installing associated metal flashing while roofing operations proceed.

1.5 REFERENCES

A. ASTM D4637-87 Standard Specification for Vulcanized Rubber Sheet Used in Single-Ply Roof Membrane.

B. Underwriters Laboratories, Inc. (UL).

C. Local and National Regulatory Agencies.

D. ICC Evaluation Service Reports.

1.6 SYSTEM DESCRIPTION

A. EPDM Membrane Roofing System – Fully Adhered.

1.7 QUALITY ASSURANCE

A. All materials used in the Work shall meet the requirements of the respective Specification and shall be new materials and no material shall be used until it has been approved by the Owner. All materials not otherwise specifically indicated shall be furnished by the Contractor.

B. Current proof of Installers status letter from the proposed Manufacturer, showing that the installer is a:

1. Carlisle Centurion Contractor.
2. Elevate Master Contractor.
3. Johns Manville Summit Level Contractor.

C. Installer:

1. Roofing Contractor shall be approved in writing by manufacturer of accepted roofing system prior to submitting bid for the project.
2. Contractor must have completed a minimum of ten (10) 0.060-inch (60 mil), manufacturer warranty issued, installations, within the last 10-years, prior to bidding this project.

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- a. **Additive Alternate #1 Only** – Contractor must have completed a minimum of ten (10) 0.090-inch (90 mil), manufacturer warranty issued, installations, within the last 10-years, prior to bidding this project.
3. A single Installer with a minimum of 10-years previous successful experience in installation of similar systems with five (5) roofs of like size completed within the past 2-years.
- D. A technical representative of the approved manufacturer shall visit the job site on a weekly basis during the application of the roofing system to confirm its application is proceeding in compliance with the specifications and in a manner that will permit issuance of the specified manufacturer's system warranty.
- E. Upon completion of the installation and the delivery to the manufacturer by the Installer of a certification that all work has been done in strict accordance with the contract specifications, building permit, and the manufacturer's requirements, an inspection shall be made by a Technical Representative of the manufacturer to review the installed roof system.
- F. There shall be no deviation made from the Project Specification or the approved shop drawings without prior written approval by the Owner, the Owner's Representative, and the manufacturer.
- G. All work pertaining to the installation of the manufacturer membrane and flashings shall only be completed by Installer's personnel trained and authorized by the manufacturer in those procedures.
- H. Daily Job Reports:
  1. Contractor is responsible for providing daily job reports which will include a minimum of the following information: Crew size, weather conditions, description of work completed, date, change order items, job problems, etc. Contractor will email daily job reports daily to the roof consultant.
- I. Work in this Section to conform to:
  1. Manufacturer's instructions.
  2. National Roofing Contractors Association (NRCA): Roofing Manual Consisting of:
  3. NRCA Roofing Manual: Membrane Roof Systems 2019
  4. NRCA Roofing Manual: Architectural Metal Flashing, Condensation & Air Leakage, and Reroofing 2022
  5. Sheet Metal and Air Conditioning Contractor's National Association (SMACNA): Architectural Sheet Metal Manual, 7 Edition, 2012.

#### 1.8 CODE REQUIREMENTS

- A. The Installer shall submit evidence that the proposed roof system meets the requirements of the local building code, project code requirements, and has been tested and approved or listed by the following test organizations. These requirements are minimum standards and no roofing work shall commence without written documentation of the system's compliance, as required in the "Submittals" section of this specification.
- B. Governing Building Department is the Colorado Office of the State Architect, meeting all applicable local, state and national building code requirements. The Colorado Office of the State Architect has codified the 2021 family of "Codes" by International Code Council (ICC).
  1. 2021 International Existing Building Code.
  2. 2021 International Building Code.
    - a. Class A Exterior Fire Exposure Rating
    - b. Severe Hail (SH) exposure rating.
  3. 2021 International Energy Conservation Code.
- C. Roof Membrane shall meet or exceed the requirements of ASTM D4637, Type I, Grade I, Class U.
- D. Factory Mutual Research Corporation (FM) - Class 1-90 (for high wind exposure)
- E. Underwriters Laboratories, Inc. - Class A assembly
- F. ICC-ES ESR Report stating the roof system meets the wind loads defined on Drawing.



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### 1.9 SUBMITTALS

#### A. Shop Drawings:

1. Digitally submit, in PDF format, roof drawing indicating roof size, location and type of penetrations, perimeter and penetration details. Hard copies are to be available upon request at no expense to the Owner or Owner's Consultant. Indicate complete installation details of roofing and flashing, including roof slopes, flashing details, penetration details and accessories. Reproduced copies of the consultant's drawings and details do not constitute acceptable shop drawings.
  - a. Dimensioned shop drawings which shall include:
    - 1) Outline of roof with roof size and elevations above grade shown.
    - 2) Details of flashing methods for penetrations.
    - 3) Technical acceptance from approved Manufacturer.
2. Digitally submit, in PDF format, MSDS data directly to the owner for their files, on all roofing, insulation and flashing materials. Hard copies are to be available upon request at no expense to the Owner or Owner's Consultant.
3. Submit samples of:
  - a. Roof Membrane and Flashing: Three (3) pieces each, 12-inch x 12-inch, taken from rolls on the roof.
  - b. Insulation Board: Two (2) pieces, 6-inch X 6-inch.
  - c. Sheet metal in conjunction with roofing: Two pieces of each type, 4-inch X 4-inch.
  - d. Cover Tape: Two (2) pieces, minimum 3-inch wide.
  - e. Provide "Lot Numbers" from roll goods taken from rolls on the roof.

#### B. Product Data:

1. Digitally submit, in PDF format, the latest edition of manufacturer's roofing and flashing specifications (deleting non-applicable information), including list of materials proposed for use, and manufacturer's data sheets for other products. Hard copies are to be available upon request at no expense to the Owner or Owner's Consultant.

#### C. Progress Schedule Plan:

1. At the Pre-Construction Conference on site the Installer shall provide their Work Plan defining the areas they are to work from the start to the end defined by work week.
2. Submit a complete progress schedule and phasing plan indicating complete sequence of removal and replacement of roofing for each area.
3. Include roof plan with layout indicating amount of roof area included in each day's work.
4. Indicate dates for beginning and completing each activity.
5. Identify other related work affecting roof replacement and phasing.

#### D. Warranty:

1. Submit specimen copy of contractor and/or manufacturer's roofing warranty with Product Data submittal, including evidence of application/approval for guaranty to maintain existing warranties.

#### E. Manufacturer's Review:

1. Concurrent with Shop Drawings submittal; submit (in writing) roof manufacturer's review and acceptance of Contract Documents (plans, specifications, application requirements, etc.) and approval of Installer. Certifications by manufacturers of roofing and insulating materials that all materials supplied exceed the requirements of the identified ASTM and industry standards or practices.
2. Certification from the Installer that the system specified meets all identified code and insurance requirements as required by the Specification.

#### F. Manufacturer's Reports:

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1. Concurrent with Shop Drawing submittal; submit roof manufacturer's review of Contract Documents and acceptance of applicator.

#### G. Maintenance Data:

1. Compile and submit maintenance instructions in accordance with General Provisions. Include complete manufacturer's instructions for periodic inspection and maintenance of roofing system, including precautions and warnings to prevent damage and deterioration to roofing system.

#### 1.10 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in manufacturer's original, unopened containers or packages with labels intact and legible, including required fire resistance classification labels.
- B. Materials utilized are to be newly manufactured and project specific. Materials with fabrication dates greater than three (3) months of age from the mobilization date for construction shall be marked and removed from the project site.
- C. Store broken down stacked bundles and rolled goods on end on clean raised palleted platforms with weather protective covering. Load roof daily to prevent damage to the existing roof system. Visqueen/plastic is not an acceptable watertight material for protecting roof materials.
- D. Provide continuous protection of materials against wetting and absorption; remove wet materials and marked materials that have been wet, from project site.
- E. Materials loaded on roof levels for immediate (same week) use shall be:
  1. Broken down and distributed across the roof surface to prevent concentrated loads that would impose excessive strain on deck or structural members. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of the deck.
    - a. Do not store more materials on roof than can be installed within two days.
    - b. Maximum Allowable Loading on Roof: 20 pounds per square foot.
  2. Positively secured to prevent displacement by excessive wind forces.
- F. Deliver materials in sufficient time and quantity to allow continuity of work.
- G. All materials, except membrane and metal, must be stored between 60° F and 80° F. If exposed to lower temperatures, restore at 60° F minimum temperature before using.
  1. Bonding adhesives, caulking, mastics, low-rise foams, etc. are not allowed to freeze. Materials exposed to prolonged freezing temperatures are to be marked and removed from the project site and replaced at no cost to the Owner.
- H. Material rolls and bundles shall be stored lying down on pallets and fully protected from the weather and UV exposure with clean canvas tarpaulins. Unvented polyethylene tarpaulins are not accepted due to the accumulation of moisture beneath the tarpaulin in certain weather conditions that may affect the ease of membrane weldability.
- I. Tarpaulins shall be installed in a manner that prevents ponding of moisture on top of and at the base of the stored materials goods and promotes positive drainage away from all stored materials.
- J. Provide continuous protection of materials against wetting and absorption. All materials which are determined to be damaged (i.e. wet materials and marked materials that have been wet) by the Owner's Representative or the manufacturer are to be removed from the job site and replaced at no cost to the Owner.
- K. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material manufacturer/supplier.
- L. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing manufacturer. Protect stored liquid material from direct sunlight.
  1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

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### 1.11 JOB CONDITIONS

- A. Consult Material Safety Data Sheets (MSDS) for applicable cautions and warnings prior to the use of materials.
  - 1. Complete roof installation during dry weather on a roof surface that is free of ponded water, ice, or snow.
    - a. Proceed with roofing only when existing forecasted weather conditions are in compliance with manufacturer's recommendations and warranty requirements.
  - 2. Avoid traffic on completed work.
- B. Existing Conditions:
  - 1. Examine existing building and existing roofing to determine existing physical conditions that affect removal of existing roofing and installation of new roofing.
  - 2. Photographically document all work areas prior to starting the work.
- C. Only as much of the new roofing as can be made weathertight each day, including all flashing and detail work, shall be installed. Do not remove existing roofing and flashing in inclement weather or when rain is predicted (30% or more possibility). All seams shall be cleaned, and fully adhered together before leaving the job site that day.
- D. All work shall be scheduled and executed without exposing the interior building areas to the effects of inclement weather. The existing building and its contents shall always be protected against all risks at ALL times.
- E. All surfaces to receive new insulation, membrane, or flashings shall be dry. Should surface moisture occur, the Installer shall provide the necessary equipment to dry the surface prior to application.
- F. All new and temporary construction, including equipment and accessories, shall be secured in such a manner as to preclude wind blow-off and subsequent roof or equipment damage.
- G. Uninterrupted water-stops shall be installed at the end of each day's work and shall be completely removed before proceeding with the next day's work. Water-stops shall not emit dangerous or unsafe fumes and shall not remain in contact with the finished roof as the installation progresses. Contaminated membrane shall be replaced at no cost to the Owner.
- H. The Installer is cautioned that certain roof membranes are incompatible with asphalt, coal tar, heavy oils, roofing cements, creosote and some preservative materials. Such materials shall not remain in contact with the manufacturer membranes. The Installer shall consult the manufacturer regarding compatibility, precautions and recommendations.
- I. Arrange work sequence to avoid use of newly constructed roofing as a walking surface or for equipment movement and storage. Where such access is absolutely required, the Installer shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. A substantial protection layer consisting of plywood over tarps or plywood over insulation board shall be provided for all new and existing roof areas that receive rooftop traffic during construction.
- J. Prior to and during application, all dirt, debris and dust shall be removed from surfaces by vacuuming, sweeping, blowing with compressed air and/or similar methods.
- K. The Installer shall follow all safety regulations as required by OSHA and any other applicable authority having jurisdiction.
- L. All roofing, insulation, flashings and metal work removed during construction shall be immediately taken off site to a legal dumping area authorized to receive such materials. Hazardous materials, such as materials containing asbestos, are to be removed and disposed of in strict accordance with applicable City, State and Federal requirements.
- M. All new roofing waste material (i.e., scrap roof membrane, empty cans of adhesive) shall be immediately removed from the site by the Installer and properly transported to a legal dumping area authorized to receive such material.
- N. The Installer shall take precautions that storage and/or application of materials and/or equipment does not overload the roof deck or building structure.
- O. Flammable adhesives and deck primers shall not be stored and not be used in the vicinity of open flames, sparks and excessive heat.

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- P. All rooftop contamination that is anticipated or that is occurring shall be reported to the manufacturer to determine the corrective steps to be taken.
- Q. The Installer shall verify that all roof drain pipe/lines are functioning correctly (not clogged or blocked) before starting work. Installer shall report any such blockages in writing (letter copy to the manufacturer) to the Owner's Representative for corrective action prior to installation of the roof system.
- R. Installer shall immediately notify the owner's representative if any unusual or concealed condition is discovered that adversely affects the work, for determination of how to proceed.
- S. Site cleanup, including both interior and exterior building areas that have been affected by construction, shall be completed to the Owner's satisfaction.
- T. All landscaped areas damaged by construction activities shall be repaired at no cost to the Owner.
- U. The Installer shall conduct fastener pullout and/or adhesive pull tests in accordance with the latest revision of the SPRI/ANSI Fastener Pullout Standard to help verify condition of deck/substrate prior to beginning the reroof work, and to confirm expected pullout values.
- V. Precautions shall be taken when using adhesives at or near rooftop vents or air intakes. Adhesive odors could enter the building. Coordinate the operation of vents and air intakes in such a manner as to avoid the intake of adhesive odor while ventilating the building. Keep lids on unused cans at all times.
- W. Protective wear shall be worn when using solvents or adhesives or as required by job conditions.
- X. Emergency Equipment:
  - 1. Maintain on-site equipment necessary to apply emergency temporary edge seal in the event of sudden storms or inclement weather.
- Y. Restrictions: Comply with requirements of Division One on use of site.
  - 1. Smoking is prohibited on roof areas, in existing buildings, and on property grounds.
  - 2. Radios, boom boxes, etc. are not allowed on the job site.
- Z. Continuation of Services: Comply with requirements of Division One.

#### 1.12 BIDDING REQUIREMENTS

- A. Pre-Bid Meeting:
  - 1. A mandatory onsite pre-bid meeting shall be held with the Owner, Owner's Representative, Manufacturer's Representative, and any other involved trades to discuss all aspects of the project. The Installer's representative for the work shall be in attendance.
- B. Site Visit:
  - 1. Bidders shall visit the site and carefully examine the areas in question as to conditions that may affect proper execution of the work. All dimensions and quantities shall be determined or verified by the Contractor. No claims for extra costs will be allowed because of lack of full knowledge of the existing conditions unless agreed to in advance with the Owner or Owner's Representative.

#### 1.13 WARRANTY

- A. Installer/Roofing Contractor two-year (2) Year Craftsmanship Warranty - The Installer shall supply the Owner with a separate materials and workmanship warranty. In the event any work related to roofing, flashing, or metal is found to be within the Installer warranty term, defective or otherwise not in accordance with the Contract Documents, the Installer shall repair that defect at no cost to the Owner. The Installer's warranty obligation shall run directly to the Owner.
  - 1. The Contractor shall warrant all materials and workmanship furnished for a period of two (2) years for the date placing the Work in service regardless of the terms of any manufacturer or supplier warranties. This warranty is in addition to and not a replacement of Owner's statutory rights under Colorado law to discover a construction defect and take action to correct same.
- B. The Manufacturer shall provide (for all products furnished and installed) beginning at the date of final acceptance by the owner:



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Brittleness Temperature	D-746	-
67° F Ozone Resistance	D-1149 (7 days @ 100pphm @ 104° F, 50% Ext.)	No Cracks @ 7X Mag.
Water Absorption	D-471 (7 days @ 158° F)	1%
Permanent Set @ Break	D-412	10%
Permeability (24 hours)	E-96 Proc. A	1.8g/m2
*Aging = 7 Days		

- C. Roof Flashing: Manufacturer's Uncured EPDM Membrane
- D. Accessories: Contact Manufacturer for a complete listing of accessories.

#### 2.2 RELATED MATERIALS AND ATTACHMENT COMPONENTS

- A. Membrane flashings will be 0.060-inch (60 mil) thick EPDM.
- B. Russ-Strip:
  - 1. 6-inch pressure sensitive 45-mil reinforced EPDM membrane strip with a 3-inch wide adhesive strip along one side.
- C. Russ-Strip Plates:
  - 1. 2-inch round stamping of SAE 1010 steel with an AZ 55 Galvalume coating.
- D. Russ-Strip Fasteners:
  - 1. Number 15 (minimum) corrosion-resistant fastener with a buttress thread, used with seam fastening plates to attach the russ-strip to the appropriate vertical substrate:
    - a. Carlisle – HP-X Fastener
    - b. Elevate – Heavy Duty Fastener
    - c. Johns Manville – All Purpose Fasteners.
  - 2. Insulation fasteners protruding through an exposed roof decks SHALL best match the existing inside color of the roof deck.
- E. Bonding Adhesive for Horizontal and Vertical Membrane Application:
  - 1. Low-VOC, solvent-based contact adhesive for bonding of EPDM membranes to appropriate substrates, with the use of minimum 9-inch-wide medium nap rollers.
  - 2. Approved manufacturers are:
    - a. Carlisle – Low-VOC Bonding Adhesive.
    - b. Elevate – RubberGard EPDM Solvent-Free Bonding Adhesive
    - c. Johns Manville – JM LVOC Membrane Adhesive.
- F. Liquid Flashing:
  - 1. A two-component polyurethane-based resin or polymethyl methacrylate-based resin, cold-applied with a reinforced flashing fleece.
    - a. Carlisle – LIQUISEAL Liquid Flashing.
    - b. Elevate – UltraFlash One-Part Liquid Flashing.
    - c. Johns Manville – JM SP Liquid Flashing Resin.
- G. Seam Tape:
  - 1. Factory applied tape wherever possible (supplied by the roofing system manufacturer).
- H. Cover Tape:
  - 1. 6-inch Semi-cured self-adhered cover tape.
- I. Seam adhesive:
  - 1. Supplied by the roofing system manufacturer.

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- J. Caulks and sealants for use at T-Joint laps, membrane laps, and terminations as supplied by the roofing manufacturer for use with the approved system.
- K. Pourable Sealer and Sealer Pockets:
  - 1. Pourable Sealer – A one-component or two-component, solvent-free, polyurethane-based product compatible with EPDM membranes.
  - 2. Sealer Pocket – A prefabricated pressure-sensitive sealer pocket for irregular and close grouped roof penetrations in conjunction with EPDM membrane systems.
  - 3. Refer to the manufacturer for additional materials and installation requirements to ensure watertight and warrantable conditions are met.
- L. Concrete Roof Paver:
  - 1. Refer to Section 07 0150 – Minor Demolition, Renovation Work, and Roof Recover Preparation.

#### **2.3 MISCELLANEOUS ACCESSORIES**

- A. Miscellaneous accessories for the project are as follows, but not limited to:
  - 1. Manufacturer Approved – Termination Bar, Prefabricated Vent Pipe Flashings, T-Joint Membrane Patches, Urethane Sealants, Prefabricated Inside and Outside Corner Flashings, Sealing Tape Strip, Multi-Purpose Tape, Solvent Cleaner, Caulking/Sealant.

#### **2.4 MISCELLANEOUS FASTENERS AND ANCHOR**

- A. All fasteners, anchors, nails, straps, bars, etc. shall be post-galvanized steel, aluminum or stainless steel. Mixing metal types and methods of contact shall be assembled in such a manner as to avoid galvanic corrosion. Fasteners for attachment of metal to masonry shall be expansion type fasteners with stainless steel pins. All concrete fasteners and anchors shall have a minimum embedment of 1¼-inch and shall be approved for such use by the fastener manufacturer. All miscellaneous wood fasteners and anchors used for flashings shall have a minimum embedment of 1-inch and shall be approved for such use by the fastener manufacturer.

### **PART 3 - EXECUTION**

#### **3.1 SUBSTRATE CONDITION/EXAMINATION**

- A. Installer shall be responsible for acceptance or provision of proper substrate to receive new roofing materials.
  - 1. Beginning installation means acceptance of all existing surfaces conditions.
- B. Installer shall verify that the work done under related sections meets the following conditions:
  - 1. Roof drains and/or scuppers have been reconditioned and/or replaced and installed properly.
  - 2. Roof curbs, nailers, equipment supports, vents and other roof penetrations are properly secured, prepared to receive new roofing materials, and have proper placement.
  - 3. All deck/substrate surfaces are dry, clean, smooth and free of sharp edges, burrs, deep depressions, loose material, oil, grease or other foreign material.
  - 4. All roof surfaces shall be free of water, ice and snow.

#### **3.2 SUBSTRATE PREPARATION**

- A. Comply with manufacturer's instructions for preparation of substrate to receive repair elastomeric sheet roofing.
- B. Preparation (or removal) of existing roof insulation, flashing, etc. down to the existing substrate.
- C. Inspect existing roof insulation, (that is scheduled to remain) and repair/replace all deteriorated/damaged roof insulation to ensure that the substrate is suitable to receive the new roofing system.
- D. Clean substrate of dust, debris, and other substances detrimental to elastic sheet roofing work.
- E. Beginning of installation means acceptance of conditions as satisfactory.

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- F. Thoroughly clean all surfaces against or into which work will be installed. Ensure that all surfaces are clean and dry before starting and during performance of work. Follow roofing system manufacturer's recommendations.
- G. The roof deck and existing roof construction must be structurally sound to provide support for the new roof system. The Installer shall load materials on the rooftop in such a manner to eliminate risk of deck overload due to concentrated weight.
- H. Reroofing with Removal of Existing Roofing:
  - 1. All existing roofing, base flashing, deteriorated wood blocking or deteriorated metal flashings shall be removed down to the existing structural substrate diaphragm. Remove only that amount of roofing and flashing which can be made weathertight with new materials during a one-day period and before the onset of inclement weather.
  - 2. Exercise care in removal so as not to damage existing roof deck or adjacent surfaces.
  - 3. Do not stockpile debris on roof surface. Promptly remove debris each day. Use chutes to transfer debris from roof surface.
  - 4. Do not haul debris over newly installed roof membranes. Keep debris well downwind of prevailing wind.
  - 5. Provide a clean tarp over the previous days roofing, prior to tear-off start, to protect new roofing from dust, dirt, debris, etc., and from current days tear-off.
  - 6. Poured Structural Concrete Deck:
    - a. The roof deck shall be smooth, even, free of dust, dirt, excess moisture or oil and be structurally sound. Sharp ridges, other projections and accumulations of bitumen above the surface shall be removed to ensure a smooth surface before roofing. Any deteriorated decking shall be repaired.
  - 7. Poured Lightweight Structural Concrete Substrate:
    - a. The roof deck shall be smooth, even, free of dust, dirt, excess moisture or oil and be structurally sound. Sharp ridges, other projections and accumulations of bitumen above the surface shall be removed to ensure a smooth surface before roofing. Any deteriorated decking shall be repaired.
  - 8. Precast/Prestressed Concrete Deck:
    - a. The roof deck shall be smooth, even, free of dust, dirt, excess moisture or oil and be structurally sound. All joints between precast units shall be grouted. Any differentials in height between precast units shall be feathered for a smooth transition. Any deteriorated decking shall be repaired.
  - 9. Insulating Fill Substrate:
    - a. All wet or deteriorated insulating fill shall be removed and replaced. All accumulations of bitumen shall be removed, and the surface of the deck shall be smooth, and free of ridges and depressions. See steel/concrete requirements.

#### 3.3 EPDM MEMBRANE APPLICATION

- A. Install elastomeric sheet roofing in accordance with manufacturer's current instructions.
- B. Loosely lay sheet membrane over roof insulation and allow the membrane to relax 30 minutes minimum before bonding, splicing or attaching. Evenly fold sheet back on itself after it is in its final position, to expose the underside. Apply bonding adhesive evenly to both the substrate and the membrane. Apply simultaneously to allow equal drying time; allow to dry until tacky (not to stick or string by touch of a dry finger). Starting at the fold, slowly roll the coated membrane into the coated substrate evenly, so as to prevent wrinkles. Compress with a clean stiff push broom to assure full contact. Splice adjoining sheets by lapping the edges and splicing with 3" splice tape.
- C. Over top of 3-inch taped splice, install one layer of 6-inch semi-cured cover-tape.
- D. Complete splice between flashing and sheet roofing before bonding the flashing to vertical surface. Flash all penetrations passing through the sheet membrane.
- E. Shingle joints on sloped substrate in direction of drainage.
- F. Extend membrane up onto vertical surfaces minimum required by roofing manufacturer.
- G. Seal membrane around roof penetrations.



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- H. Temporarily seal any loose edges of membrane at the completion of each day's application to prevent moisture from entering the system.

#### **3.4 FLASHING AND ACCESSORIES**

- A. When feasible, flash all penetrations and walls with cured EPDM membrane. Uncured EPDM flashing shall be limited to; overlay vertical seams (as required at angle changes) or to flash inside and outside corners, scuppers, pourable sealer pockets, and other penetrations or unusually shaped walls where the use of cured membrane flashing is not practical. EPDM manufacturer's prefabricated accessories should be used whenever feasible.

- 1. Pourable Sealer Pockets:

- a. Pitch pans are not allowed.
- b. Sealer pockets filled with roof cement are not allowed.
- c. Sealer pockets with one-part or two-part pourable sealants produced by the manufacturer are allowed:
  - 1) Install only where specifically indicated or approved by Consultant.
  - 2) Fill with pourable sealant to below top of flange.
  - 3) Top off with pourable sealant creating a flow off non-ponding surface.

- B. Apply EPDM membrane flashing as recommended by the EPDM Manufacturer per their standard roofing details and project documents.

#### **3.5 INSPECTION**

- A. Verify that all work of subcontractors which penetrates the roof deck or requires men and equipment to traverse the roof deck, has been completed.
- B. Examine all surfaces for inadequate anchorage, foreign material, moisture, unevenness or other conditions which would prevent execution and quality of installation of specified roofing and flashing system and accessory items.

#### **3.6 FIELD QUALITY CONTROL:**

- A. Roofing Contractor's Quality Control:

- 1. During construction, contractor is to provide daily supervision of the project, performed by the contractor's field superintendent (not to be confused with the project foreperson who is to be on site at all times).
- 2. Contractor's project manager is to perform regular site inspections at the minimum rate of one site visit per week.
- 3. Upon completion of installation, contractor is to perform their own final inspection by their quality control person to confirm that roofing system has been installed in accordance with the construction documents and manufacturer's requirements. Contractor is to produce a written punch list and roof diagram of deficiencies found during their final inspection. Correct identified defects and/or irregularities. A copy of this punch list, diagram and signed completion letter along with confirming digital photos, will be provided to the consultant prior to the owner and consultant performing their final inspection.

- B. Manufacturer's Field Service:

- 1. Roofing system manufacturer shall provide on-site observation (a minimum of two site visits during installation) and instructions during installation, and as the manufacturer deems necessary.
- 2. Upon completion of installation, provide a final inspection by a technical representative of roofing manufacturer to confirm that roofing system has been installed in accordance with manufacturer's requirements. The roofing contractor, owner and roof consultant are required to be present for this inspection. The manufacturer is to produce a written punch list and roof diagram of deficiencies found during their final inspection. A copy of this punch list, diagram and signed completion letter, will be provided to the owner's roof consultant prior to the owner and consultant performing their final inspection. Consultant and owner to attend final inspection. Installer is responsible for notifying both the owner and consultant

