

Purchasing Department
P.O. Box 13145 ◆ Roanoke, VA 24031
PHONE (540) 853-1348
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July 12, 2022

IFB 3090 RUFFNER PROFESSIONAL DEVELOPMENT AND OPERATIONS CENTER REPURPOSING SERVICES

Addendum #2
Questions and Answers
(Answers Bold and Italicized)

This addendum provides answers to questions received from contractors as of July 8, 2022.

- Q1: Is the Panduit certified contractor required to have an RCDD on staff or will the company history and references be sufficient? We have seen this in the past and RCPS IT department declared the Panduit Certified contractor was sufficient
- A1: Panduit Certified contractor is sufficient. RCPS has the right to inspect the project at any time to ensure proper workmanship.
- Q2: Will RCPS be excepting an approved equal for the Intercom? Valcom or approved equal meeting school district standards. Basis of design is Valcom.
- A2: RCPS is standardized on Valcom. Equal must be approved by RCPS Technology Department.
- Q3: Will a PanGen 25-year warranty be required on the structured cabling and fiber?
- A3: Yes.
- Q4: Section 281500 Page 3 states that the contractor is required to supply enough credential cards for all personnel to be enrolled at the site plus an extra 50% for future use. Can you confirm the quantity of personnel as well as the manufacturer and model number of the credentials to be supplied?

A4: Number supplied will be 200 units, other cards are acceptable but card specification to be the following minimum:

HID ProxCard II Clamshell HID P/N 1326LSSMV HID S/O 11102067677-1 Format H10301 Facility Code: 34

- Q5: Section 281500 Page 3 states that the Access Control Contractor must have on staff an RCDD certified by BICSI. Is this required or will company history and references be sufficient?
- A5: RCDD certification is not required.
- Q6: Section 283100 Page 4 states that the Intrusion Detection Contractor's Testing Agency's field supervisor must be currently certified by BICSI as an RCDD to supervise on site testing. Is this required or will company history and references be sufficient?
- A6: RCDD certification is not required.
- Q7: Will any of the electrical gear be purchased by the owner and furnished to the contractor? (We have been told that large electrical gear lead times now exceed 12 months.)
- A7: RCPS agrees that this is a good idea. We will generate a list of owner furnished / contractor installed equipment and provide that information in a later Addendum.
- Q8: Will the \$1,000 per day liquated damages be assessed to the contractor for long lead item delays that are outside of our control?
- A8: No, liquidated damages will not be assessed due to lead times of items beyond the contractor's control. This applies to owner furnished equipment as well as any component where the contractor can provide documentation of excessive lead time. That documentation will need to include order dates, evidence of contact with multiple vendors, and a letter or email from the specific vendor. The contractor will need to show the impact of the lead time to the critical path.
- Q9: It was mentioned in the pre-bid meeting that food service equipment was likely going to be procured directly by the Owner please clarify our responsibilities with respect to food service equipment.
- A9: At this point in the project timeline there does not seem to be any benefit to the owner purchasing the equipment for the Culinary Arts lab. The complexity of a separate solicitation for furnishing and installing the equipment precludes any time savings. All specified equipment on the K series sheets and specified under Division 11 shall be furnished and installed by the contractor. Our consultant has confirmed that kitchen hoods have a 6-to-8-week lead time and refrigeration equipment has a 4-to-6-month lead time. Other kitchen equipment is readily available.

- Q10: Food Service #38 Char Broiler and #39 Fryer, both list 2 each in the Specs but only 1 each is shown on the drawing and schedule. Please clarify quantity required.
- A10: One of each is to be provided.
- Q11: Food Service specifications call for 20 each of the #57 Induction Cook Tops but the drawing schedule calls for only 10 each. Please clarify quantity required.
- A11: 10 of each is required.
- Q12: Item #24 in Food Service specification calls for an Over Shelf but the drawings call #24 as a Spare Number. Please clarify.
- A12: Item #24 is a spare number. Nothing is to be provided.
- Q13: Sheet AD1.5 references note D63 in two bathrooms but that not is not listed in the demolition legend on AD1.4. Please provide description of work.
- A13: Note 63 should read: "Contractor to remove portions of existing masonry at chase wall and reinstall new to match existing as required for installation of new plumbing system components."
- Q14: It appears the scale listed on several of the reflected ceiling plans is incorrectly listed as 1/8"=1' when it should be 3/16"=1'. Please confirm scale.
- A14: Corrected reflected ceiling plan sheets will be issued with a later addendum.
- Q15: Specification table of contents list Section 123616 Metal Countertops but the specification section is not included.
- A15: Metal countertops are included in culinary kitchen requirements. Section 123616 will be deleted from the table of contents in an upcoming addendum.
- Q16: Paragraph 1.6 of specification section 051200 requires steel fabricator be AISC Certified. Since there are no local AISC certified fabricators, would a third-party fabrication inspection be acceptable in lieu of AISC certification as long as AISC's standards are adhered to?
- A16: No AISC certification is required.
- Q17: Paragraph 2.2.G.2 of Specification Section 122413 references an extruded aluminum recessed shade pocket but they are not indicated on the plans. Are any recessed shade pockets required?
- A17: No recessed shade pockets are required however front fascias are required for all punched window openings per specification.
- Q18: What is the partition type dividing Vending 100L and Boys Toilet 100J?
- A18: Per original construction drawings and site observations, it is a 6" masonry wall to remain.

- Q19: The following Specification Sections seem to be missing:
 - 1. Landscaping
 - 2. Seeding / sodding
 - 3. Chain Link Fencing
 - 4. Segmental Walls
 - 5. Signage
 - 6. Toilet Accessories
 - 7. LED Display Sign

A19:

- 1. Landscaping Specifications can be found on sheet C25
- 2. <u>Seeding / sodding</u> Section 329200 will be included in later addendum
- 3. Chain Link Fencing Section 323113 will be included in later addendum
- 4. Segmental Walls Section 323223 will be included in later addendum
- Signage HC sign detail on sheet C17. Fire Marshall sign specifications are per the City of Roanoke (Will be added to sheet C25 in later addendum).
 Section 101400 will be included in later addendum.
- 6. <u>Toilet Accessories</u> Some toilet accessories will be owner furnished / contractor installed. Specification and schedule will be provided in later addendum. Typically grab bars, mirrors, hand dryers, Sanitary Napkin disposal receptacle, toilet tissue dispenser, and utility shelf shall be contractor furnished / contractor installed. Soap, paper towel, and sanitary napkin dispenser shall be owner furnished/contractor installed.
- 7. <u>LED Display Sign</u> Sign to be owner furnished / owner installed. Details on raceways for power and data will be provided in later addendum. Specification reference to be removed from table of contents.
- Q20: Please indicate where the segmental retaining wall is located.
- A20: Segmental wall detail is on sheet C17.
- Q21: Please provide a range of colors for the site concrete. Certain colors cost more than others.
- A21: Anticipated colors based on final sample approval are as follows: Basis of design Davis Concrete Colors- Color C1: "lighter shade of Dune" as approved by Architect, Color C2: "Dune".
- Q22: Section 23-0713, Duct Insulation, 3.12, Indoor Field Applied Jacket Paragraphs C&D specify that both indoor concealed and exposed duct and plenums receive painted aluminum jacket. Please confirm.
- A22: The field applied jacket is not required. Paragraph to be deleted.

- Q23: Section 23-800, Commissioning of HVAC The specification refers us to Section 01-9113 General Commissioning Requirements in multiple places. I was unable to find this section. Please Provide.
- A23: General commissioning is not required. The HVAC systems and HVAC system controls shall be commissioned in accordance with ASHRAE 202.
- Q24: Section 23-3113, Metal Ducts, 3.4 and 3.14.D.3 Both of these sections refer to "wet and other high-humidity locations". Please clarify these other locations and or delineate the specific duct on the drawings.
- A24: The requirements refer to the commercial dishwasher exhaust only.
- Q25: Section 23-3113, Metal Ducts, 3.11.B, Leakage Test. Please specify which duct systems and at what pressures and percentages are required.
- A25: VAV ductwork between the rooftop unit and the VAV boxes, the welding exhaust system, dust collection system, vehicle exhaust system, and kitchen hood exhaust systems shall be leak tested in accordance with SMACNA's "Air Duct Leakage Test Manual" as specified. Representative sections totaling not less than 25 percent of the total installed duct area shall be tested.
- Q26: Plumbing Drawing P2.4. Please provide a description of Plan Note #3 as called out on this sheet. No sheet notes are currently provided.
- A26: Sheet Note #3 should read "Contractor to field verify location of existing underground storm piping and adjust tie-in locations as required." Note will be added to sheet in later addendum.
- Q27: Will the Owner or Contractor be required to provide the Builder's Risk property insurance?
- A27: The Owner.
- Q28: What is the cost of the HVAC equipment that RCPS has pre-purchased?
- A28: The total amount for the scope of work included in HVAC equipment proposal is Eight Hundred Twenty Thousand, Four Hundred Forty-Six Dollars (\$820,446.00). Sales Tax is not included in the proposal.
- Q29: Is the existing Ruffner roof under warranty?
- A29: The existing roof was installed in 2017 and has a 20-year warranty. All roof work shall be completed by a Carlisle certified roofing installer and the contractor should provide the owner with documentation indicating that Carlisle accepts the new work and the warranty is maintained. Shop drawings and warranty information attached to this addendum.
- Q30: Will the bid/contract for this project include a contingency allowance for cost escalation?
- A30: No.



Industrial & Commercial

TRANSMITTAL LETTER April 20, 2022

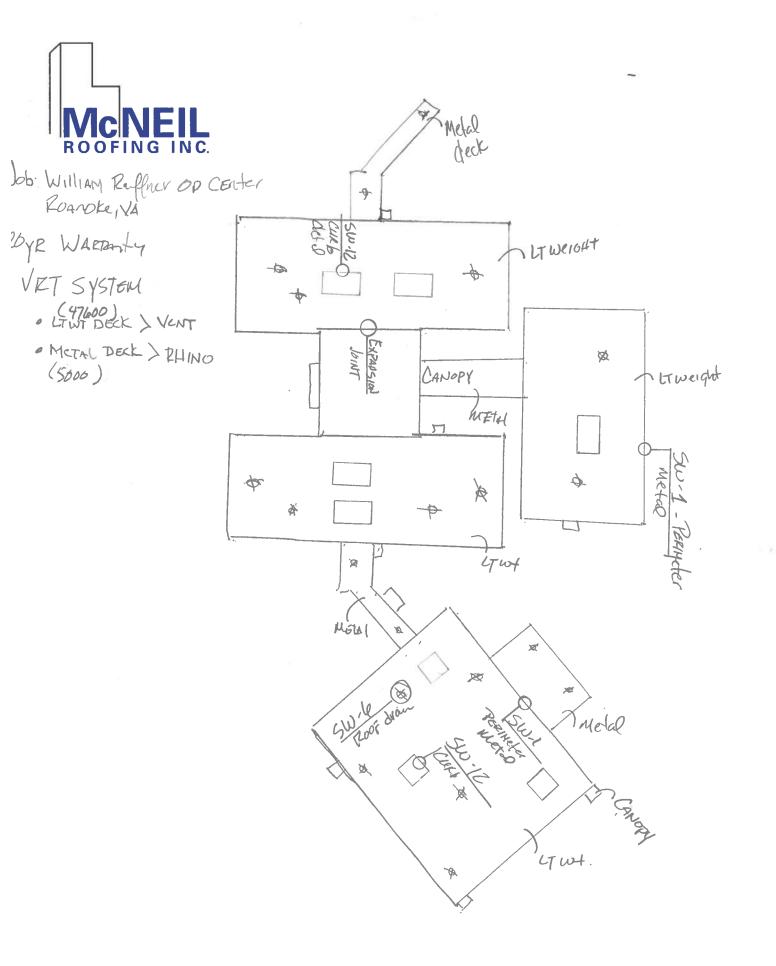
PROJECT: William Ruffner

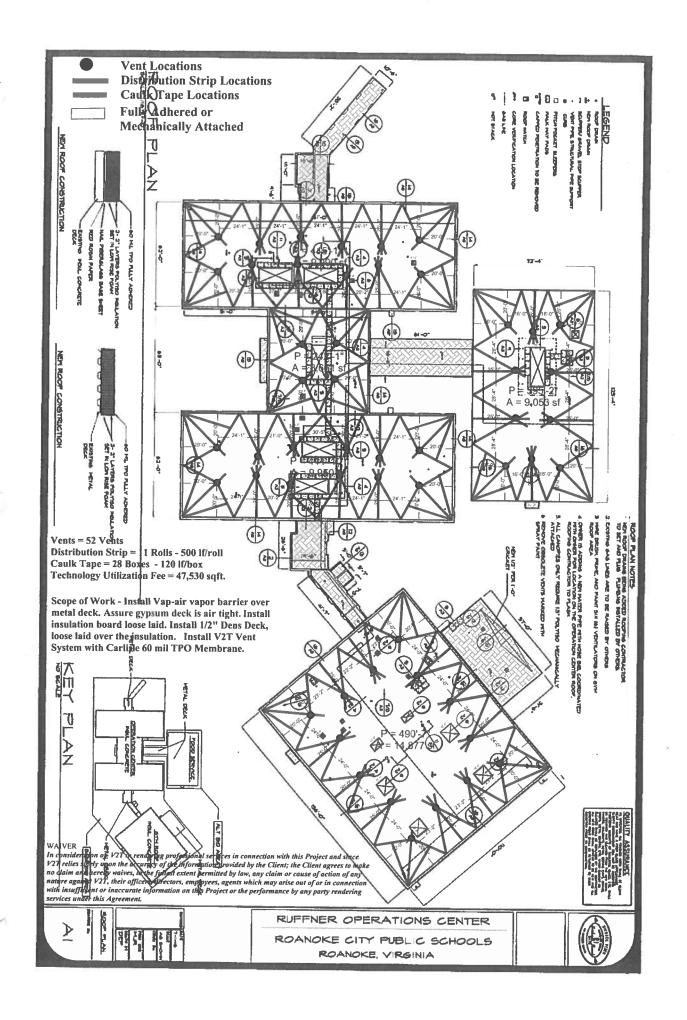
TO: Greg Cupka

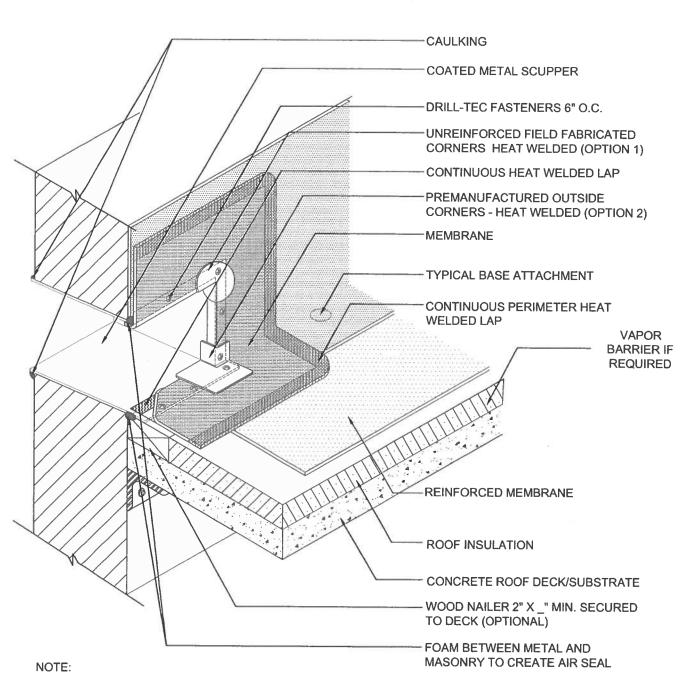
ITEMS:	QTY:	SECTION #:	DESCRIPTION:
Roofing documents			V2T layout and roof plan, details and product data
documents			

Tony Hendricks				
	_			
		PO BOX 973		

PO BOX 973 ROANOKE, VA 24005

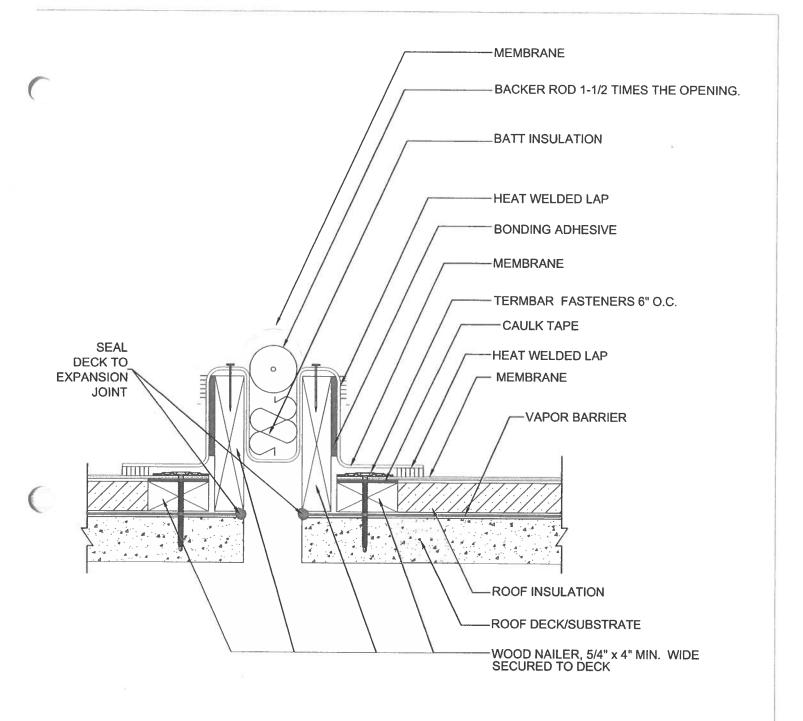






- 1. REMEMBER TO INSTALL UNREINFORCED OR PREMANUFACTURED OUTSIDE CORNERS TO THE SCUPPERS' FOUR ROOF SIDE CORNERS.
- 2. OPTIONS 1 & 2 EITHER PRE-FAB OR FIELD FAB.
- 3. PLATES & SCREWS 6" O.C. REQUIRED FOR BA SYSTEMS.
- 4. APPLY TPO AND PVC CUT EDGE SEALANT TO ALL CUT REINFORCED TPO AND PVC EDGES (REFER TO DETAIL MA/FA/BA 115) IF NEEDED.

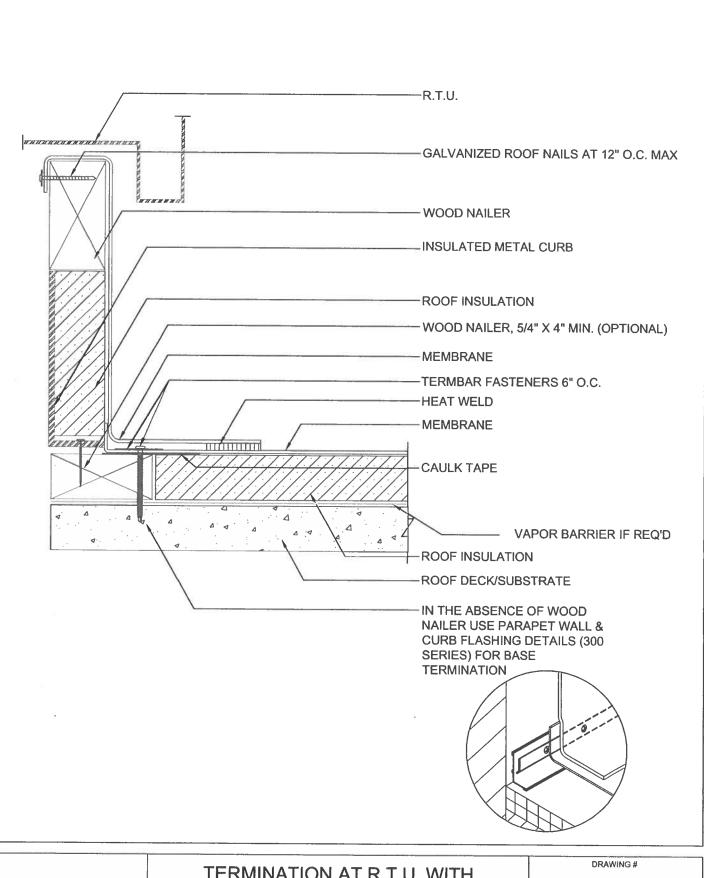
ACRYLIFE, Inc.	COATED METAL WALL SCUPPER DETAIL		B11-C
	PARAPET WALL & CURB SERIES	N.T.S.	7/31/2010



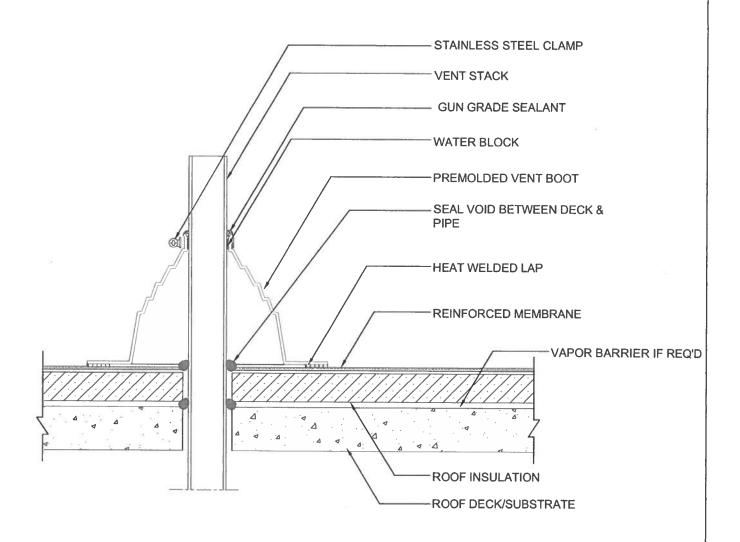
NOTE:

- 1. FIELD FABRICATED EXPANSION JOINT SHOULD NOT BE FLEECE-BACK OR SELF ADHERING MEMBRANE.
- 2. APPLY TPO CUT EDGE SEALANT TO ALL CUT REINFORCED TPO

ACRYLIFE, Inc. V ² T VENT	FIELD FABRICATED EXPANSION JOINT DETAIL - CURB TYPE		DRAWING #	
VIVENI	EXPANSION JOINT	RAPID SEAM AND	SCALE	ISSUE/ REVISION DATE
	SERIES	HEATWELD	N.T.S.	8/8/2012



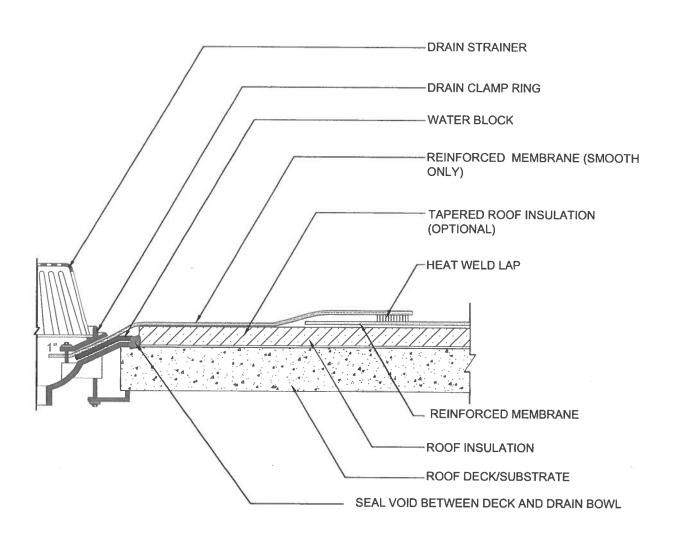
ACRYLIFE, Inc.	TERMINATION AT R.T.U. WITH WELDED LAP		03-C
A I AEMI	ROOF PENETRATION	SCALE	ISSUE/ REVISION DATE
	SERIES	N.T.S.	8/3/2012



NOTE:

- 1. DO NOT CUT PREMOLDED BOOT. IT MUST BE PULLED OVER VENT PIPE.
- 2. TPO SELF-ADHERED PIPE BOOTS AND PRIMER MAY BE USED WITH TPO SYSTEMS FOR UP TO A 15 YEAR GUARANTEE.

ACRYLIFE, Inc.	PREMOLDED VENT BOOT FLASHING		PAWING #
VIVENI	ROOF PENETRATION SERIES	SCALE N.T.S.	ISSUE/ REVISION DATE 7/31/2012
	o Entre	14.1.0.	170172012



NOTE:

- 1. A FIELD WELD CANNOT PASS WITHIN 9" OF THE CLAMPING, OR WITHIN THE DRAIN SUMP ITSELF.
- 2. MEMBRANE MUST EXTEND MINIMUM 1" BEYOND THE BOLT HOLES, THE CLAMPING RING BOLTS MUST PENETRATE THE MEMBRANE.
- 3. TAPERED INSULATION TO CREATE A ROOF SUMP MINIMUM 36" X 36" IN SIZE (OPTIONAL).
- 4. DO NOT RUN SEPARATION SHEET INTO BOWL AREA IF USED IN SYSTEM.
- 5. APPLY TPO AND PVC CUT EDGE SEALANT TO ALL CUT REINFORCED TPO AND PVC EDGES

ACRYLIFE, Inc. V ² T VENT	DRAIN - POST TARGET		DRAWING# 520-C
V I VENI	ROOF PENETRATION SERIES	N.T.S.	ISSUE/REVISION DATE 8/8/2012

CARLISLE

GOLDEN SEAL TOTAL ROOFING SYSTEM WARRANTY

SERIAL NO. 10146677

923

DATE OF ISSUE: April 21, 2017

BUILDING OWNER: ROANOKE CITY PUBLIC SCHOOL

NAME OF BUILDING: RUFFNER OPERATION CENTER

BUILDING ADDRESS: 3601 FERNCLIFF AVE, ROANOKE, VA

DATE OF COMPLETION OF THE CARLISLE TOTAL ROOFING SYSTEM: 03/31/2017

DATE OF ACCEPTANCE BY CARLISLE: 04/21/2017

(EB Warranty)

CMD1207698

Carlisle Roofing Systems, Inc., (Carlisle) warrants to the Building Owner (Owner) of the above described building, that; subject to the terms, conditions, and limitations stated in this warranty, Carlisle will repair any leak in the Carlisle Golden Seal™Total Roofing System (Carlisle Total Roofing System) installed by a Carlisle Authorized Roofing applicator for a period of 20 years commencing with the date of Carlisle's acceptance of the Carlisle Total Roofing System installation. However, in no event shall Carlisle's obligations extend beyond 20.5 years subsequent to the date of substantial completion of the Carlisle Total Roofing System. See below for exact date of warranty expiration.

The Carlisle Total Roofing System is defined as the following Carlisle brand materials: Membrane, Flashings, Adhesives and Sealants, Insulation, Cover Boards, Fasteners, Fastener Plates, Fastening Bars, Metal Work, Insulation Adhesives, and any other Carlisle brand products utilized in this installation.

TERMS, CONDITIONS, LIMITATIONS

- 1. Owner shall provide Carlisle with written notice via letter, fax or email within thirty (30) days of the discovery of any leak in the Carlisle Total Roofing System. Owner should send written notice of a leak to Carlisle's Warranty Services Department at the address set forth at the bottom of this warranty, By so notifying Carlisle, the Owner authorizes Carlisle or its designee to investigate the cause of the leak. Should the investigation reveal the cause of the leak to be outside the scope of this Warranty, investigation and repair costs for this service shall be paid by the Owner.
- 2. If, upon inspection, Carlisle determines that the leak is caused by a defect in the Carlisle Total Roofing System's materials, or workmanship of the Carlisle Authorized Roofing Applicator in installing the same, Owner's remedies and Carlisle's liability shall be limited to Carlisle's repair of the leak.
- This warranty shall not be applicable if, upon Carlisle's inspection, Carlisle determines that any of the following has occurred:
 - (a) The Cartisle Total Roofing System is damaged by natural disasters, including, but not limited to, lightning, fire, insect infestations, earthquake, tomado, hail, hurricanes, and winds of (3 second) peak gust speeds of fifty-five mph or higher measured at 10 meters above ground; or
 - (b) Loss of integrity of the building envelope and, or structure including, but not limited to partial or complete loss of roof decking, wall siding, windows, doors or other envelope components or from roof damage by wind-blown objects, or:
 - (c) The Carlisle Total Roofing System is damaged by any intentional or negligent acts, accidents, misuse, abuse, vandalism, civil disobedience, or the like
 - (d) Deterioration or failure of building components, including, but not limited to, the roof substrate, walls, mortar, HVAC units, non-Cartisle brand metal work, etc., occurs and causes a leak, or otherwise damages the Carlisle Total Roofing System; or
 - (e) Acids, oils, harmful chemicals and the like come in contact with the Carlisle Total Roofing System and cause a leak, or otherwise damage the Carlisle Total Roofing System.
 - (f) The Carlisle Total Roofing System encounters leaks or is otherwise damaged by condensation resulting from any condition within the building that may generate moisture
- This Warranty shall be null and void if any of the following shall occur:
 - (a) If, after installation of the Carlisle Total Roofing System by a Carlisle Authorized Roofing Applicator there are any alterations or repairs made on or through the roof or objects such as, but not limited to, structures, fixtures, solar panels, wind turbines, roof gardens or utilities are placed upon or attached to the roof without first obtaining written authorization from Carlisle; or
 - (b) Failure by the Owner to use reasonable care in maintaining the roof, said maintenance to include, but not be limited to, those items listed on Carlisle's Care & Maintenance Information sheet which accompanies this Warranty.
- Only Carlisle brand insulation products are covered by this warranty. Carlisle specifically disclaims liability, under any theory of law, for damages sustained by or caused by non-Carlisle brand insulation products.
- During the term of this Warranty, Carlisle shall have free access to the roof during regular business hours.
 Carlisle shall have no obligation under this Warranty while any bills for installation, supplies, service, and warranty charges have not been paid in full to the Carlisle Authorized Roofing Applicator,
- Carlisle, or material suppliers.

 8. Carlisle's failure at any time to enforce any of the terms or conditions stated herein shall not be construed to be a waiver of such provision.

 9. Carlisle shall not be responsible for the cleanliness or discoloration of the Carlisle Total Roofing System caused by environmental conditions including, but not limited to, dirt, pollutants, or biological
- agents.

 10 Carlisle shall have no liability under any theory of law for any claims, repairs, restoration, or other damages including, but not limited to, consequential or incidental damages relating, directly or indirectly,
- to the presence of any irritants, contaminants, vapors, furnes, molds, fungi, bacteria, spores, mycoloxins, or the like in the building or in the air, land, or water serving the building.

 11. This warranty shall be transferable upon a change in ownership of the building when the owner has completed certain procedures including a transfer fee and an inspection of the Roofing System by a Carlistic representative

CARLISLE DOES NOT WARRANT PRODUCTS UTILIZED IN THIS INSTALLATION WHICH IT HAS NOT FURNISHED; AND SPECIFICALLY DISCLAIMS LIABILITY, UNDER ANY THEORY OF LAW, ARISING OUT OF THE INSTALLATION AND PERFORMANCE OF, OR DAMAGES SUSTAINED BY OR CAUSED BY, PRODUCTS NOT FURNISHED BY CARLISLE OR THE PRIOR EXISTING ROOFING MATERIAL OVER WHICH THE CARLISLE ROOFING SYSTEM HAS BEEN INSTALLED

THE REMEDIES STATED HEREIN ARE THE SOLE AND EXCLUSIVE REMEDIES FOR FAILURE OF THE CARLISLE TOTAL ROOFING SYSTEM OR ITS COMPONENTS. THERE ARE NO WARRANTIES EITHER EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY, WHICH EXTEND BEYOND THE FACE HEREOF. CARLISLE SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR OTHER DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS OR DAMAGE TO THE BUILDING OR ITS CONTENTS UNDER ANY THEORY OF LAW.

BY: Robert H. McNeill
AUTHORIZED SIGNATURE

TITLE: Vice President, Technical and Warranty Services

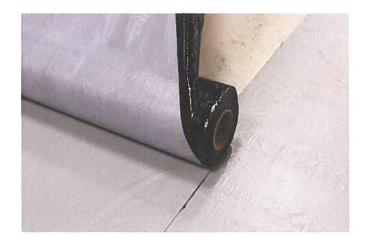
This Warranty Expires: April 20, 2037

P.O. Box 7000 Carlisle, PA 17013 Phone: 800.233 0551 Fax: 717.245.7121 www.carlislesyntec.com

WA-F0001 (1/15)



VapAir Seal 725TR Air and Vapor Barrier/Temporary Roof



Overview

Carlisle's VapAir Seal 725TR Air and Vapor Barrier/Temporary Roof is a 40-mil composite consisting of 35 mils of self-adhering rubberized asphalt laminated to a 5-mil woven polypropylene film. A one-piece silicone poly release liner is applied to the SBS adhesive to prevent the material from bonding to itself. VapAir Seal 725TR is available in a 325-square-foot roll with dimensions of 39" x 100'. The factory-controlled thickness of the membrane ensures uniform barrier properties on the job; the woven polypropylene film increases strength and has a non-skid surface suitable for the bonding of subsequent layers. Approved Carlisle adhesives for attaching insulation to VapAir Seal 725TR are:

- Flexible FAST™ Adhesive
- » OlvBond 500™

VapAir Seal 725TR can be used on concrete, plywood, exterior gypsum, DensDeck® Prime, SECUROCK® or other approved substrates in conjunction with Carlisle SynTec roofing systems. Gypsum decks may require additional securement with mechanical fasteners. Use of CAV-GRIP™ III Low-VOC Adhesive/Primer, CCW-702 or CCW-702LV is required on all substrates. VapAir Seal 725TR may be installed directly over a nailed Carlisle Modified Base Sheet when primed with CAV-GRIP III.

VapAir Seal 725TR must be covered with roofing membrane within 120 days. T-joints must be sealed with an internal bead of Carlisle Lap Sealant. Carlisle does not accept responsibility for the watertight integrity of the VapAir Seal 725TR related to workmanship issues or physical damage.

For unusual situations, contact the Project Review and Warranty Services Department prior to specifying this material.

Installation

Surface Preparation: The concrete surface shall be completely dry; dryness shall be determined by a qualified owner's representative. The surface shall have a smooth finish and be free of voids, spalled areas. sharp protrusions, loose aggregate, laitance and form-release agents. Some curing compounds may interfere with proper adhesion, so an adhesion test is recommended. In the event of rain, concrete must be allowed to dry before the application of primer. Artificial drying methods such as torches are not acceptable.

Adhesive: Surfaces to receive VapAir Seal 725TR must be clean and dry. Use of CAV-GRIP III, CCW-702 or CCW-702LV is required on all substrates. Approved Carlisle adhesives for attaching insulation to VapAir Seal 725TR are: Flexible FAST Adhesive and OlyBond 500.

Application: VapAir Seal 725TR material must be stored and kept above 60°F prior to installation. Apply VapAir Seal 725TR from low to high points in a shingle fashion so that the laps will shed water. Overlap all edges by at least 2". End laps should be staggered. Position the membrane carefully to avoid fish-mouths and wrinkles. Roll the VapAir Seal 725TR membrane immediately after installation with a 100 - 150-pound roller wrapped in a resilient material. When the VapAir Seal 725TR is applied to a vertical surface, hand-rolling with a 2" or 4" hand roller is required. Vertical surfaces must be prepared in the same fashion as horizontal surfaces.

Note: For applications below 40°F - all materials must be kept above 60°F prior to installation and CAV-GRIP III Primer must be used.

Seaming: Apply a 2"-long bead of lap sealant internally along any T-joints or step-offs. Use a hand roller or stand-up seam roller to mate the entire seam together, ensuring the seam's leading edge is rolled properly. Be sure to pay particular attention to the T-joints and step-offs. If seam surface is contaminated, clean and prime with CCW-702, CCW-702LV, or CAV-GRIP III.

Review Carlisle specifications and details for complete installation information.



VapAir Seal 725TR Air and Vapor Barrier/Temporary Roof

Precautions

- Use proper stacking procedures to ensure sufficient stability of the
- Exercise caution when walking on wet membrane. Membranes are slippery when wet.
- VapAir Seal 725TR must be clean and dry prior to installation of subsequent layers.
- VapAir Seal 725TR should be installed using CAV-GRIP III adhesive when temperatures are below 40°F.
- VapAir Seal 725TR membrane and primers must be stored above 60°F prior to installation.
- Avoid moving or stacking heavy loads on the installed membrane, particularly in hot weather. This could thin out the self-adhering barrier layer.
- Refer to applicable Safety Data Sheets before using any Carlisle
- Do not apply CAV-GRIP III, CCW-702 or membrane to damp or contaminated surfaces.
- Do not apply CAV-GRIP III, CCW-702 or membrane to frozen substrates.
- Primers must be allowed to completely flash off. Refer to the primer PDS for flash-off times.

Dhysical Drenarty	Test Method	Tunioni
Physical Property	Test method	Typical
Thickness	ASTM D1970	40 mils
Tensile Strength	ASTM D412	250 psi
Elongation	ASTM D412	250%
Peel Adhesion	ASTM D903	5 lbs/in
Puncture Resistance	ASTM E154	60 lbs
Permeability	ASTM D1970*	0.015 perms
Air Permeance	ASTM E2178	0.000 L*m² @ 75 Pa
Shelf Life	N/A	1 year

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

^{*}D1970 is tested to E96 standards for permeability.

LEED® Information		
Pre-consumer Recycled Content	0%	
Post-consumer Recycled Content	0%	
Manufacturing Location	Terrell, TX	
VOC Content	0 g/L	
Solar Reflectance Index	N/A	

Packaging			
Product	725TR Air & Vapor Barrier/Temporary Roof		
Size/Weight	39" x 100' / 89 lbs		
Actual Coverage Rate	305 ft ²		
Part Number	330170		