



5 South Main Street
P.O. Box 727
Bel Air, Maryland 21014
410-838-7900

www.frederickward.com

HCPS Jarrettsville ES Pre-K Expansion, Hickory ES Strive Suite, and Roye-Williams ES Sensory Room Project

Addendum # 02
April 22th, 2026

This addendum is to be attached to the HCPS JVES, HIES, and RWES BID drawings dated 03-27-2026. This addendum modifies and becomes part of the contract documents. Work and/or materials not specifically mentioned herein are to be as shown on the drawings and in the general notes.

Addendum #02 is the BID question responses, and supplemental information

These items in the addendum have no specific order. All contractors are responsible for checking all items.

This addendum consists of 37 pages.

List of attachments for BID Drawings (BID CAG 26-2) – Addendum 2

- Complied Bidder questions and answers for Addendum 2
- Existing roof warranty information for Hickory Elementary School
- Revised Specification Table of Contents
- Added specification section 271313 – Communications Cabling

**HCPS Jarrettsville ES Pre-K Expansion, Hickory ES Strive Suite, and Roye-Williams ES
Sensory Room Project – Bidder Questions/Answers**

1. Hickory requires some new vents thru roof. Please provide product information on the existing roofing system, whether it is under warranty and, if so, who holds the warranty.
 - A. Main existing roof area is 90mil EPDM membrane. Small sections of existing metal panel roof for canopies and main entrance. Please see attached roofing warranty for both roofing materials by Carlisle and Pac-Clad. Patching and penetrations to be installed per manufacturer's standard details.
2. Same question for Jarrettsville due to the new pipe portal.
 - A. JVES is an existing 4-ply built up roof. Warranty is expired but was previously issued by GAF. Patching and penetrations to be installed per manufacturer's standard details.
3. The specifications Table of Contents seems to be missing a page.
 - A. See attached revised table of contents
4. There is data infrastructure required in some rooms but there are no division 27 specifications provided. Please provide necessary specification sections.
 - A. See added specification section 271313 – Communications Cabling
5. Please confirm that no supplementary structural framing is required for the pipe portals.
 - A. Confirmed
6. Please address the wall padding in the calming room at Roye-Williams. It will need to be reworked at the new opening and at the abandoned opening. Please provide elevations of the required work.
 - A. Wall padding and interlocking tile floor in existing calming space will be removed by HCPS personnel. Padding and flooring will be re-installed by HCPS personnel following new work phase.
7. Please confirm that there is no sprinkler relocation required at Roye-Williams
 - A. Contractor to include provisions to relocate existing sprinkler line/head as required to install new work.
8. Please provide the deck heights for the 3 schools.
 - A. Deck heights below have been taken from existing drawings provided by HCPS. Height above floor of existing deck to be verified in field by contractor for each school.
 - 1) RWES: 12'-4" ±
 - 2) HIES: 11'-10" ±

3) JVES: 12'-8" ±

9. Please show locations of any required new fire extinguishers on the plans.

A. No new fire extinguishers to be installed on the project. Please omit specification section "104416 – Fire Extinguishers". See revised Specification table of contents with section removed

WARRANTY NO.: 1505681

BUILDING OWNER: HARFORD COUNTY PUBLIC SCHOOLS

NAME OF BUILDING: HICKORY ELEMENTARY SCHOOL ROOF REPLACEMENT

BUILDING ADDRESS: 2100 CONOWINGO ROAD BEL AIR, MD

DATE OF COMPLETION OF THE CARLISLE TOTAL ROOFING SYSTEM: 11/5/2020

DATE OF ISSUE: 11/16/2020

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 Roofing System (Carlisle Total Roofing System) installed by a Carlisle Authorized Roofing Applicator for a period of 30 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 30.5 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, 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 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. Carlisle shall have sole responsibility in determining the method of repair of the area.
3. This warranty shall not be applicable if, upon Carlisle's inspection, Carlisle determines that any of the following has occurred:
 - (a) The Carlisle Total Roofing System is damaged by: natural disasters, lightning, fire, insects, animals, windblown debris or objects, earthquakes, tornados, hail, hurricanes, and winds of (3 second) peak gust speeds of 90 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, roof top units, doors or other envelope components; or
 - (c) All associated building components, including but not limited to the deck substrate, joists, columns and foundation, must also meet wind speed design requirements.
 - (d) The Carlisle Total Roofing System is damaged by any acts, accidents, misuse, abuse, vandalism, civil disobedience or the like; or
 - (e) Deterioration or failure of building components, including, but not limited to, the roof substrate, walls, mortar, HVAC units, non Carlisle brand metal work, etc., occurs and causes a leak, or otherwise damages the Carlisle Total Roofing System; or
 - (f) Deterioration of metal materials and accessories caused by marine salt water, atmosphere, or by regular spray of either salt or fresh water; or

- (g) 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; or
- (h) The Carlisle Total Roofing System encounters leaks or is otherwise damaged by condensation resulting from any condition within the building that may generate moisture; or
- (i) The Carlisle Authorized Applicator or any additional contractor or subcontractor failed to follow Carlisle's published specifications and details for the approved system assembly or failure to correct all installation deficiencies listed in any Carlisle inspection report.

4. 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 arrays, 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 Guide which accompanies this Warranty.

5. In addition, it shall be Owner's sole responsibility to remove and re-install at Owner's expense, all obstructions, including, but not limited to, structures, fixtures, solar arrays, wind turbines, roof gardens, utilities or other overburden from the affected area as determined by Carlisle that would hinder or impede repairs being made in the most expedient and least expensive manner possible. Owner shall be responsible for all costs associated with any loss of power generation in the event that removal of a solar array is required to repair the roofing system.

6. During the term of this Warranty, Carlisle shall have free access to the roof during regular business hours.

7. Carlisle shall have no obligation under this Warranty while any bills for installation, supplies, service, and/or 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, fumes, molds, fungi, bacteria, spores, mycotoxins, 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 Carlisle representative.

12. Any dispute, controversy or claim between the Owner and Carlisle concerning this Limited Warranty shall be settled by mediation. In the event that the Owner and Carlisle do not resolve the dispute, controversy or claim in mediation, the Owner and Carlisle agree that any and all suits, proceedings, or claims shall be filed in either the state courts of Cumberland County, Pennsylvania or in the United States District Court for the Middle District of Pennsylvania. Each party irrevocably consents to the jurisdiction and venue of the above-identified courts.

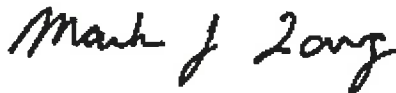
13. Roof System Design Assembly: Carlisle, as manufacturer of commercial roofing products with the sole purpose of offering products for an Owner, design professional, architect, consultant, or engineer when designing/choosing a roof system assembly, assumes no liability nor implies to the suitability of the products for any particular assembly or specific building operation or structure. The Owner, design professional, architect, consultant, or engineer is solely responsible for the assembly chosen for a particular building structure to include the responsibility to properly calculate wind uplift values, design dead loads and live loads, and suitability and condition of building envelope substrate, decking, parapets, drainage, slope, and other attributes pertaining to the performance of the roof system assembly.

14. The Carlisle Authorized Applicator or any additional contractor or subcontractor are not agents of Carlisle.

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: Mark J. Long



AUTHORIZED SIGNATURE

TITLE: Director, Technical and Warranty Services

This Warranty Expires: 11/15/2050

Carlisle Care and Maintenance Guide

In order to ensure the long-term performance of your Roofing System and continued warranty service and coverage, regular rooftop maintenance inspections are necessary. While normal aging will occur on all roofs, if not detected early, problems stemming from abuse, contamination, accidents and severe weather can result in extensive and costly repairs or premature failure of the roofing system. Single-ply Roofing Systems are typically low-slope and easy to inspect, but caution must be taken to ensure safety. Carlisle disclaims and assumes no liability for any rooftop activity.

- Owner must retain records related to the Roofing System. Such records include, but are not limited to: the warranty document and serial number, maintenance inspection logs, rooftop traffic logs, service logs, and invoices for work performed on the roofing system.
- Inspect the roof at least every six months (preferably spring and fall) and immediately following any weather event that includes excessive rainfall, high winds and/or hail warnings. Increased number of rooftop maintenance inspections may be required on some roofs as the location may dictate, such as higher trees near the building which will accumulate leaves and debris on the roof and have adverse effects on drainage. In addition, rooftop maintenance inspections should occur after regular maintenance of any rooftop unit.

When inspecting the Roofing System, pay special attention to the following:

- Walls/Parapets/Roof Edge – Wind damage often begins at the perimeter of the roof. Ensure all membrane terminations and edge metal and copings are secure.
- Roof Deck Membrane – Inspect the field of the roof, scanning for damage caused by wind-blown debris or traffic.
- Penetrations/Rooftop Units – Inspect the membrane, flashings and terminations around penetrations and roof top units for possible damage from service work. Ensure the units and terminations are secure.
- Remove debris (leaves, dirt, trash, etc.) – Good roofing practice dictates that water should drain from the roof and that ponded water should evaporate within 48 to 72 hours after a rainfall. Debris can inhibit drainage.

Additional Maintenance Items:

- Foot Traffic – Walkways must be provided if regular traffic is required or if rooftop equipment has a regular thirty (30) day or less maintenance schedule.
- Petroleum Products & Chemicals - Keep all liquids containing petroleum products or chemicals off the membrane to avoid product degradation.
- Animal Fats/Vegetable Oils: EPDM Membranes - Do not exhaust animal fats/vegetable oils directly onto EPDM roof surfaces. TPO & PVC Membranes – Animal fats/vegetable oils must be regularly removed and the rooftop surface cleaned with a mixture of soap and water.

What to do if a leak occurs:

- After verifying the leak is through the roofing system, contact Carlisle at 1-800-233-0551 or at www.carlisesyntec.com.
- If minor, emergency temporary repairs are made to a suspected leak area, use Carlisle's Lap Sealant or a good-grade rubber caulk to address the repair area (do not use asphaltic roof cement). Please note, Carlisle is not responsible for the cost associated with any emergency temporary repairs.

Alterations to the Roofing System:

- Alterations to the Roofing System must be completed by a Carlisle Authorized Applicator. The Carlisle Authorized Applicator must notify Carlisle when the revision work is complete. The necessary form can be found on the Carlisle website via the Authorized Applicators login.

Warranty Transfer:

- Warranties shall be transferable upon a change in ownership of the building when the Owner has completed certain procedures. This form can be found on the Carlisle website for additional guidelines.



PAC-CLAD® 30 Year Limited Warranty

Owner: Harford County Public Schools
Address: 102 S. Hickory Ave., Bel Air, MD 21014
Contractor: Simpson of Maryland of Hanover, MD
Customer: ABC Supply Company
Invoice Num. & Date: 02215271 dtd 11/4/20, 02215414 dtd 11/24/20, 02215618 dtd 11/12/10,
02212495 / 02212597 dtd 8/14/20 - Stone White / Mansard Brown / Slate Gray
Date Warranty Begins: April 1, 2021 Date Warranty Ends: April 1, 2051
Job Name: Hickory Elementary School - Roof Replacement, 2100 Conowingo Road,
Bel Air, MD 21014

PART I

PETERSEN ALUMINUM CORPORATION (hereinafter referred to as "PAC") hereby issues the following limited warranty to the above referenced owner (hereinafter referred to as OWNER) exclusively. Subject to the terms and conditions listed below, PAC warrants that upon delivery its standard color Fluropon® coating (hereinafter referred to as the "COATING") applied to aluminum, G-90 hot-dipped galvanized steel or AZ50 zinc-aluminum alloy steel sheet and coil that has been fabricated, roll-formed or otherwise manufactured, within one year from the date of shipment thereof by PAC, and sold for use as painted roofing panels, fascia, mansard, soffit or other building components, will for a period of thirty (30) years [ten (10) years in the case of Award Blue and Cardinal Red.] from the project completion date listed above (hereinafter referred to as the "WARRANTY PERIOD"), meet the following quality standards:

- A. WILL NOT chalk in excess of ASTM D-4214 number eight (8) rating.
- B. WILL NOT change color more than five (5.0) Hunter ΔE units [(7.0) Hunter ΔE units in the case of Award Blue and Cardinal Red.] as determined by ASTM method D-2244-02 after removal of external deposits and chalk. It is understood by all the parties herein named, that fading or color change may not be uniform in appearance between surfaces not equally exposed to the sun and other weathering elements. This paragraph is not applicable in its entirety for all PAC-CLAD® metallic colors or custom Fluropon® Classic or Fluropon® Classic II colors.
- C. WILL NOT crack, check, peel or otherwise lose adhesion. The terms, crack, check and peel, used herein shall not include minute fracturing of the COATING incurred during proper fabrication. In addition, loss of adhesion of the COATING as a result of substrate corrosion, however caused, and either from the front side or the backside of the substrate is specifically excluded from this warranty.

The following additional terms, conditions and other limitations are also included as part of this warranty:

PART II

- 1.) This warranty and all terms, conditions and exclusions contained herein apply to PAC's COATING only. In regards to either the aluminum, G-90 hot-dipped galvanized steel or AZ50 zinc-aluminum alloy steel substrates to which the COATING has been applied or any solar panels/solar film applied to the COATING, PAC makes no representations or other warranties whatsoever. ALL BASE METAL SUBSTRATES AND SOLAR PANEL/FILMS ARE SOLD AS IS. In addition, PAC makes no representations or otherwise warrants the weather tightness of the roofing panels, fascia, mansard, soffit or other building components referred to in Part I. Further, PAC is expressly to be held harmless for failures, leaks or consequential damages caused by the roofing panels, fascia, mansard, soffit or other building components.
- 2.) This warranty applies to the COATING installed on structures within the continental United States that have been exposed to normal weather and atmospheric conditions only. Failure of the COATING caused by exposure to harmful fumes, cement dust, falling sand, animal waste or its decomposition by-products, dust particles and other foreign substances in the air, chemical fumes, chemical sprays and installations with a proximity of less than a one-half mile radius from a seacoast, saltwater or other brackish water environment are all excluded from this warranty. In addition, this warranty does not apply to failure of the COATING caused by or as a result of fire, other accident or casualty, vandalism, radiation, falling objects, explosions, riots or acts of God. Also, the warranty is void for areas where materials / items such as snow guards, solar panels or solar films are attached to the COATING. In addition, the warranty is void if the COATING is perforated. Finally, this warranty does not apply to failure of the COATING caused by the following: damage incurred during shipment, improper storage, improper fabrication or improper installation, improper seaming techniques, surface scratches or other abrasions however caused, damage caused by contact with areas subject to water run-off from lead, copper or other incompatible flashings or areas in metallic contact with lead, copper or other dissimilar metals, damage caused by failure to provide free drainage of water, including internal condensation from overlaps, and all other surfaces of the roofing panels, fascia, mansard, soffit or other building components, damage caused by failure to remove debris or other accumulations of foreign substances from the surface of the roofing panels, fascia, mansard, soffit or other building components, damage caused by contact with green or wet lumber, damage caused by contact with or close proximity to damp underlayment, insulation, soil, vegetation or other corrosive materials and/or damage caused by use of unsuitable fasteners or flashings. Selection of suitable long-lasting fasteners as well as appropriate flashings rests solely with the OWNER.
- 3.) This warranty does not apply to failure of the COATING in the following additional circumstances: forming where the bend is tighter than 2T, forming which involves severe reverse bending, or which subjects the COATING to alternate compression and tension, roofing applications where the slope of the roof, or sections of the roof, are flatter than 1/2": 12", applications where the COATING is sheltered from periodic washing by natural rainfall such as underside eaves and soffits, or discoloration or damage to the COATING caused by failure to remove factory applied protective strippable film (where applicable).

PART III

- 1.) All claims filed under the provisions of this warranty must be presented by the OWNER to PAC, in writing, during the WARRANTY PERIOD and not more than thirty (30) days after discovery of any apparent defects, delivered by Registered or Certified mail to the following address:

Petersen Aluminum Corp.
1005 Tonne Rd.
Elk Grove Village, IL 60007
ATTN: Warranty Claims

In submitting a claim under the provisions of this warranty, it is the responsibility of the OWNER to provide adequate documentation of the COATING involved in the claim, including date of installation, name of installer and contractor (if different), PAC order number, PAC invoice number and proof of payment to PAC for all such materials included as part of the claim. In no event will any claims be honored under the provisions of this warranty if invoices from PAC have not been previously satisfied in full within PAC's standard credit terms. OWNER further agrees to allow PAC to inspect all such documentation.

- 2.) After receipt of claim from owner, PAC will be given a reasonable opportunity to examine or cause to be examined, the COATING claimed to be non-conforming. OWNER shall further use reasonable care to protect any disputed material until PAC has had time to conduct its own inspection and make disposition.
- 3.) If after inspection it is determined by PAC that the claim is valid under the terms of this warranty, then PAC agrees, at its option, to refinish, repair or replace the defective COATING on the following basis:
 - a. If the COATING is to be refinished then PAC shall bear the cost of materials and labor reasonably necessary to repaint those areas showing failure. Further, PAC shall use normal painting practices to apply a Kynar 500® or Hylar 5000® coating system or other suitable alternative. The choice of appropriate coating system to use rests exclusively with PAC.
 - b. In the case of repair or replacement of the defective COATING, PAC shall at its option, and F.O.B. PAC plant, furnish either replacement components or sufficient sheet to fabricate replacement components, for those areas of the building where the COATING is determined to be defective. However, in no event shall PAC be liable for the cost of labor expended by others on any nonconforming material or for any special, indirect or consequential damages to anyone by reason of the fact that such material may have been nonconforming.

This warranty shall apply to the part or parts of the COATING refinished, repaired or replaced by PAC, but only for the unexpired portion of the WARRANTY PERIOD applicable to the original COATING only. It will be at the discretion of PAC what appropriate measure shall be taken; that is whether the COATING should be refinished, repaired or replaced. However, in lieu of any of the foregoing alternatives PAC also reserves the right to refund to the OWNER a cash amount equal to PAC's original invoiced price of the nonconforming material as satisfaction in full for all claims under this warranty. In addition, should repair or replacement of the nonconforming materials necessitate the removal of solar panels/solar films PAC assumes no responsibility for either the original, replacement or reinstallation costs of these solar panels/solar films. At no time does this warranty confer upon the OWNER the right to refinish, repair or replace those areas of COATING under dispute without written notice and agreement by a duly authorized officer of PAC. Any unauthorized refinish, repair or replacement of the COATING shall result in this warranty becoming null and void.

PART IV

- 1.) Except as provided herein, PAC makes no warranty or guarantee, express or implied, including without limitation, WARRANTIES OF FITNESS AND MERCHANTABILITY. Further, OWNER acknowledges that PAC shall have no other liability to any other person, firm, or corporation with respect thereto, including, without limitations, any liability for indirect, consequential or resultant damages, whether based upon breach of warranty or negligence.
- 2.) PAC extends this warranty solely to the OWNER listed herein. This warranty is non-transferable and non-assignable.
- 3.) This warranty shall be subject to and shall be enforced and construed according to the laws of the State of Illinois. Any legal action to enforce or construe any portion of this warranty shall be brought in a Court of competent jurisdiction in Cook County, Illinois.
- 4.) If any provision of this warranty shall be held by any Court of competent jurisdiction to be invalid or unenforceable in whole or in part, the remaining provisions of this warranty shall be effective to the same extent as if such invalid or unenforceable provision had never been contained herein.
- 5.) PAC reserves the right to terminate this warranty at any time upon thirty (30) day written notice. However, termination shall not affect the rights accruing to the OWNER prior to such termination.
- 6.) Both the supplier of the PAC COATING and the applicator thereof have made certain warranties to PAC which are similar to the warranties made by PAC to the OWNER under this limited warranty. In the event that the supplier and or applicator (or its successors or assigns) of the coating can no longer perform, or is not willing to perform, its obligations to PAC, then the limited warranty contained herein shall be of no further force or effect.
- 7.) The terms hereof shall constitute the entire agreement and understanding of the parties hereto respecting the subject matter hereof and no provision or statement contained at any time in any other writing, including without limitation, OWNERS, customers and/or contractors purchase orders, architects specifications or PAC's acceptance forms shall be effective to change the provisions hereof, unless contained in a subsequent agreement, in writing, signed by both the OWNER and PAC expressly stating that it is intended thereby to modify or supplement this instrument.

PETERSEN ALUMINUM CORPORATION

By: Tom Cough

*** Not valid without Authorized Signature***

Date: May 6, 2021

Fluropon® is a registered trademark of The Valspar Corporation
Hylar 5000® is a registered trademark of Ausimont USA, Inc.

Kynar 500® is a registered trademark of Atochem N.A.
PAC-CLAD® is a registered trademark of Petersen Aluminum Corporation

The molecules on the surface of Valspar's fluoropolymer coating systems are so tightly bound together that it makes them resistant to many elements found in the environment such as air pollution, acid rain and general airborne dirt.

Although Valspar factory-applied finishes are extremely durable, a periodic cleaning to remove build-ups of resins and other residue is a good idea to extend coating life. A variety of methods for removal of surface deposits are available. Simple washing with plain water using hoses or pressure spray equipment is usually adequate. When heavy deposits of dirt or other contaminants dull surfaces, stronger methods may be needed.

PRECAUTIONS

- 1. Proper Equipment:** Do not use wire brushes, abrasives or similar cleaning tools which will mechanically abrade the coatings surface.
- 2. Test:** Always test the cleaning agents listed below in an inconspicuous area before use on a large scale.

Group A:

A. Hot or Cold Detergent Solutions

5% solution in water of commonly used commercial (non-industrial detergents will not have any deleterious effect on a paint surface. These solutions should be followed by an adequate rinse of water. Use a cloth or a soft brush for application.

B. Graffiti Removal Services Products

GRS solutions are environmentally friendly, non-toxic and water soluble. Easy application process, use a soft brush to apply and wet cloth to remove. Use only Valspar approved products from GRS - to purchase approved product contact them at 503-231-1414, product@grssupplies.com or www.grssupplies.com/collections/valspar.

Group B: Solvents

Most organic solvents are flammable and/or toxic, and must be handled accordingly. Read the manufacturer's Material Safety Data Sheet (MSDS) on solvent used. Keep away from open flames, sparks and electrical motors. Use adequate ventilation, protective clothing, and goggles. Solvents may be used to remove on-water soluble deposits such as tar, grease and oil paint.

- Isopropyl (rubbing alcohol)

Group C: Petroleum Solvents and Turpentine

(no permanent effect on surfaces)

- VM&P naphtha
- Mineral spirits

Chemical Solutions

Mildew: In areas subjected to high humidity levels, dirt and spore deposits can permit mildew growth to occur.

The following solution is recommended to remove mildew when necessary.

- 1/3 cup dry powdered laundry detergent (ex. Tide™)
- 1 qt sodium hypochlorite 5% solution (ex. Clorox™)
- 3 qts water

Rust Stains: Hydrochloric, citric or muriatic acid, diluted with ten volumes of water, may assist in removing rust stains from fluoropolymer surfaces. Limit contact to five minutes. Oxalic acid solutions or acetic acid (vinegar) may be used for the same purpose. Flush with water.

CAUTION: Acid solutions are corrosive and toxic. Flush all surfaces with copious amounts of water after use.

Graffiti

Graffiti presents a special problem because of the many possible agents used, generally aerosol paints. Valspar has approved Graffiti Removal Services solutions as our approved graffiti removal product. GRS solutions are environmentally friendly, non-toxic and water soluble. Easy application process, use a soft brush to apply and wet cloth to remove. Use only Valspar approved products from GRS - to purchase approved product contact them at 503-231-1414, product@grssupplies.com or www.grssupplies.com/collections/valspar.

Warranty

Misuse or abuse of any of the cleaning agents listed above will result in a voiding of warranty for the surface affected.

FLUOROPOLYMER COATINGS:

- Fluropon® Family
- Flurothane® Family
- Flurospar® Family
- Valflon

AT YOUR SERVICE

Do you have a unique application? We'll work with you to find a solution. Want a unique color? We'll create it for you. Need a quick turnaround? Talk to us, and we'll help you get your project completed on time. We're here to help. In fact, with our availability at coating and service centers throughout the country, we're literally always there for you. Give us a call and see how we can help with your next project.

Coil Customer Service: 888-306-2645 — coilhelp@valspar.com

Extrusion Customer Service: 866-351-6900 — extrusionhelp@valspar.com

Tremco Incorporated

3735 Green Road • Beachwood, Ohio 44122 • 216-292-5000



May 10, 2021

Mr. Chuck Grebe
Harford County Public Schools
102 South Hickory Avenue
Bel Air, MD 21014

Dear Mr. Grebe:

Thank you for specifying Tremco for your facility. The roofing system you have purchased consists of high-quality material specified by a highly trained and knowledgeable field advisor and is designed to provide you with "*Roofing and Weatherproofing Peace of Mind*". With proper maintenance, you can be confident that this roofing system will perform as intended.

Enclosed in this folder you will find the following:

1. Your Tremco Warranty covering the installed roofing system.
2. The Tremco Roofing System "Owner's Manual" outlining maintenance procedures necessary to keep your roofing system in excellent condition and warranty in force.

Please review your Owner's Manual and feel free to contact me if you have any questions.

Sincerely,

TREMCO INCORPORATED

Jamie Gill III
Tremco Representative
Roofing and Building Maintenance Division

QA NDL WARRANTY FOR ROOF RESTORATION SYSTEMS

WARRANTY PERIOD: 12 Years

WARRANTY NUMBER: 192640

OWNER: Harford County Public Schools

ADDRESS: 102 South Hickory Avenue, Bel Air, MD 21014

BUILDING: Hickory Elementary - Metal Roofs: 1, 2, 3, 4, 5, 6, 7, 8 & 9

ADDRESS: 2100 Conowingo Road, Bel Air, MD 21014

ROOF AREA: 4,100 Sq. Ft.

DATE OF JOB COMPLETION: April 12, 2021

INSTALLATION PRICE: \$55,000.00

ROOF RESTORATION SYSTEM: Solargard 6083

INSTALLATION CONTRACTOR: Simpson Of Maryland

ADDRESS: 7476 Candlewood Road, Hanover, MD 21076

SERVICE YEAR: In year two, year five, and year ten of this warranty.

Tremco Incorporated ("Tremco") hereby warrants to the Owner identified above (the "Owner") that, during the Warranty Period identified above (the "Warranty Period") and subject to the terms, conditions, and limitations stated herein, Tremco will repair roof leaks on the Tremco Roof Restoration System identified above (the "TRRS") that has been installed on the Building identified above (the "Building") that were caused by defects in workmanship or material of the TRRS at no charge to the Owner.

Tremco will also provide the Roof Inspection Services and General Rooftop Housekeeping Services as set forth in Section A to the Owner during the Warranty Period to assist the Owner in properly maintaining the TRRS and in maximizing its useful life and performance. All such services provided by Tremco will be performed in a good and workmanlike manner in accordance with good roofing practices. Any such services provided by Tremco that do not meet these standards will be corrected at no charge to the Owner.

A. SERVICES: ROOF INSPECTION AND GENERAL ROOFTOP HOUSEKEEPING

One time during every Service Year identified above (a "Service Year") that occurs during the Warranty Period, Tremco shall provide to the Owner the roof inspection services ("Roof Inspection Services") and general rooftop housekeeping services ("General Rooftop Housekeeping Services") on the TRRS, in each case, that are set forth below. (If the Owner has purchased a TremCare Service Agreement in addition to this Warranty, the Roof Inspection Services and General Rooftop Housekeeping Services, as well as the roof inspection reports contemplated by Section B, will be carried out in accordance with the TremCare Service Agreement.)

1. Roof Inspection Services shall consist of the following:
 - a. Visual inspection of the roof membrane and roof surface conditions.
 - b. Visual inspection of the flashing systems including the metal edge system, base flashings on equipment and adjoining walls, counterflashing and termination details, soil stacks and vents, and rooftop projections such as pitch pans, HVAC equipment, skylights and access hatches.

2. Roof Inspection Services do not include:
 - a. Inspection for internal or latent water damage or mold growth.
 - b. Detection or identification of mold or other latent conditions.
 - c. Any core cuts or other testing or analysis beyond visual inspection.
 - d. Any other services not expressly set forth under Section A1.
3. General Rooftop Housekeeping Services shall consist of the following: Removal of incidental debris (such as leaves, branches, paper and similar items) from the roof membrane and drainage areas. All debris will be disposed of at the Owner's approved on-site location and disposal is the sole responsibility of the Owner.
4. General Rooftop Housekeeping Services do not include:
 - a. Removal of items such as obsolete HVAC components, any construction materials left by other trades, or other equipment or tools left on the roof by the Owner or third parties.
 - b. Removal of chemical or other manufacturing or industrial pollution and discharge.
 - c. Any other services not expressly set forth under Section A3.

B. ROOF INSPECTION REPORTS

Tremco will provide roof inspection reports to the Owner based upon the Roof Inspection Services provided in accordance with Section A. The reports shall become part of the roof database maintained on the TRRS. Roof inspection reports will not address the presence of water damage to any building components other than the TRRS nor the presence of mold.

C. OWNER'S RESPONSIBILITIES

Tremco does not assume possession or control of any part of the installed TRRS or Building identified above through this Warranty or otherwise. Once payment for the TRRS and its installation is made in full, control and ownership of the TRRS are solely with the Owner, and the Owner is responsible for compliance with all applicable federal, state and local laws, ordinances, rules and regulations. The Owner is solely responsible for all repair, maintenance, rooftop housekeeping and other work with respect to the TRRS and the Building, except as expressly stated otherwise in this Warranty. This Warranty and the Roof Inspection Services and General Rooftop Housekeeping Services described above do not eliminate or replace the Owner's responsibility for following good roofing practices during the Warranty Period, such as keeping effluent and debris from the roof surface. If scheduled cleaning is insufficient to maintain the roof integrity, the Owner must pay for additional cleaning/inspections or assume responsibility for such cleanings. The Owner agrees that all debris on or removed from the roof is the sole property of the Owner, and it is the sole responsibility of the Owner to properly dispose of said debris.

The Owner shall, at all times, exercise reasonable care in the use and maintenance of the TRRS. In order to protect its investment in the TRRS, the Owner must fulfill its responsibilities as outlined in the Owner's Manual. Lack of care and maintenance, and the Owner's failure to comply with the care and maintenance guidelines, can have significantly damaging effects on the TRRS's overall performance and is cause for cancellation of this Warranty. Tremco shall not be responsible for damages or repairs caused or necessitated by the Owner's failure to perform routine maintenance, necessary repairs or rooftop housekeeping or to fulfill its responsibilities as outlined in the Owner's Manual.

Care and maintenance guidelines include, but are not limited to:

- * Regular ongoing inspection by the Owner between inspections by Tremco – this will facilitate implementation of good rooftop housekeeping practices by the Owner and early detection of problems such as any physical damage.
- * Verification that no alterations, unauthorized repairs, or repairs by anyone other than Tremco have been made to the TRRS.

If alterations to the Building's roof (including but not limited to the TRRS) are being considered, the Owner must notify Tremco in order for the proper authorized follow-up to be completed. Any alterations, unauthorized repairs or repairs by anyone other than Tremco to the TRRS will automatically terminate, cancel and void this Warranty.

As an express condition precedent to any claims under this Warranty, the Owner shall report all leaks which occur in the TRRS within the Warranty Period identified above by contacting Tremco at 1-800-422-1195, followed by written notice to Tremco Incorporated at 3735 Green Road, Beachwood, Ohio 44122, as soon as possible (however, in no event more than 30 days), in each case, after leakage is or should have been discovered. In no event is Tremco responsible for any repairs to any part of the Building other than the TRRS. The liability and expense for such repair to any part of the Building other than the TRRS is with the Owner. If a leak is not within the coverage of this Warranty, Tremco shall advise the Owner, and the Owner shall have repairs performed within 30 days according to Tremco specifications by a Tremco certified or approved applicator and upon written approval of such repairs and applicator by Tremco. The Owner shall notify Tremco prior to the commencement of, and following completion of, such repairs. Tremco reserves the right to charge the Owner in connection with responding to and inspecting building leaks that are not covered by this Warranty, including without limitation building leaks through windows, HVAC units, walls or other building components that are not part of the TRRS. Such charges will be at Tremco's standard rates then in effect and the Owner agrees to pay such charges on a net 30-day basis from the date of invoice. The Owner agrees to provide Tremco with unrestricted ready access to the TRRS and all areas of the building on which the TRRS is located.

D. WARRANTY EXCLUSIONS

This Warranty does not cover any leaks or damage or failure of the TRRS or any part thereof caused in whole or in part by any of the following:

1. Natural or accidental disasters including, but not limited to, damage caused by lightning, hailstorms, floods, winds of 74 mph or greater, hurricanes, tornadoes, earthquakes, fire, vandalism, animals, penetration of the membrane, or chemical attack by outside agents.
2. Use of materials not specified by Tremco, or repairs to the TRRS that are not approved in advance in writing by Tremco.
3. Any intentional or negligent act on the part of the Owner or any third party including, but not limited to, abuse, misuse, traffic, or storage of or discharge of materials or effluent on the roof.
4. Distortion, expansion or contraction of the TRRS caused by faulty original construction or design of building components or failure of building components such as parapet walls, copings, chimneys, skylights, vents or roof deck.
5. Lack of positive, proper, or adequate roof drainage or ponding water conditions.
6. Change in building usage without prior written approval from Tremco.

Removal of chemical or other manufacturing or industrial pollution and discharge is the sole responsibility of the Owner and is expressly excluded from coverage under this Warranty.

Under no circumstances will Tremco be responsible for removal, repair or replacement of any system or component that is not part of the TRRS including, but not limited to, overburden materials of any kind, hardscape, irrigation systems, weather station, lighting, lightning protection systems, walkways, pavers, decorative stone, glass, solar, mechanical or electrical systems, water features, artwork, telecommunications systems, security systems and railings.

This Warranty does not include extensive roof repairs, recoating, restoration or roof replacement unless those steps are determined by Tremco to be necessary in order to maintain compliance with the express terms of this Warranty. The Owner will be advised of any extensive repairs required and whether such repairs are covered under this Warranty prior to those repairs being undertaken. To the extent such repairs are not covered by this Warranty, Tremco will invoice such work at its standard rates then in effect, and the Owner agrees to pay charges for such work on a net 30-day basis from the date of invoice.

E. WARRANTY LIMITATIONS

Tremco shall have no responsibility and/or liability under this Warranty until all bills for installation, supplies and services sold in connection with the TRRS and the bill for this Warranty have been paid in full. The Owner's rights under this Warranty are specific to the Owner and are not assignable or transferable without prior written consent of Tremco. Tremco's obligations under this Warranty may be voided by Tremco based on: (i) any of the events described in Section D, (ii) the failure of the Owner to comply with its obligations described in this Warranty such as payment of all bills related to the TRRS and its installation, proper TRRS care and maintenance, leak reporting and the obligations described in Section C, (iii) repairs, alterations, penetrations of or attachments to the TRRS without the prior written approval of Tremco, or (iv) building settlement, deterioration, cracking or failure of the roof deck, coping or parapet walls, or infiltration or condensation of moisture in, through or around walls, copings, underlying structure, hardware or equipment. Tremco will be excused from performing under this Warranty if prevented or delayed by events not within its control, including events such as floods, fires, accidents, riots, acts of terrorism, wars, explosions, governmental order, acts or omissions of contractors or other third parties, inability to access the TRRS, etc.

F. EXTENDED OR RENEWED WARRANTY OPTION

The TRRS you have purchased may be eligible for warranty extension, or renewal after expiration, beyond the Warranty Period identified above. Often, extension of the existing Warranty Period can be a very cost effective option and may be preferable to allowing the warranty to expire, particularly for Owners with multiple facilities who may not want those buildings coming out of warranty coverage at or about the same time. It is Tremco's practice to contact Owners regarding our warranty and renewal options at or about 60 days prior to warranty expiration. We also invite Owners to contact their Tremco Sales Representative at any time to discuss the applicable terms, conditions and eligibility for such an extension or renewal.

G. OTHER TERMS

THIS WARRANTY IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, OBLIGATIONS OR AGREEMENTS, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE, ALL OF WHICH ARE EXPRESSLY EXCLUDED. THIS WARRANTY IS IN LIEU OF ANY AND ALL RIGHTS OR REMEDIES AGAINST ANY PERSON OR ENTITY UNDER THE UNIFORM COMMERCIAL CODE OR OTHERWISE WITH RESPECT TO THE SALE OF GOODS AND/OR SERVICES. THE REMEDIES AND OBLIGATIONS STATED IN THIS WARRANTY ARE THE SOLE AND EXCLUSIVE REMEDIES OF AND OBLIGATIONS TO THE OWNER FOR ANY AND ALL MATTERS ARISING WITH RESPECT TO OR IN ANY WAY CONNECTED WITH THE TRRS, OR ITS COMPONENT PRODUCTS, OR ANY GOODS OR SERVICES RELATED THERETO, REGARDLESS OF THE SOURCE OR PROVIDER OF SUCH GOODS OR SERVICES. THE OWNER SHALL PROVIDE WAIVERS OF SUBROGATION UPON REQUEST. NO REPRESENTATIVE OF TREMCO OR ANY EMPLOYEE, AGENT OR AFFILIATED COMPANY ("AFFILIATE") HAS AUTHORITY TO VARY OR ALTER THESE TERMS WITHOUT THE EXPRESS WRITTEN PERMISSION OF A TREMCO OFFICER. IN NO EVENT SHALL TREMCO OR ANY AFFILIATE BE LIABLE FOR ANY DAMAGE TO THE BUILDING ITSELF (OTHER THAN THE TRRS SOLELY TO THE EXTENT EXPRESSLY PROVIDED FOR IN THIS WARRANTY), THE CONTENTS OF THE BUILDING, OR ANY OTHER SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. NEITHER TREMCO NOR ANY AFFILIATE SHALL BE LIABLE FOR ANY DAMAGES WHICH ARE BASED UPON NEGLIGENCE, BREACH OF WARRANTY, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY OTHER THAN THE EXCLUSIVE LIABILITY SET FORTH IN THIS WARRANTY.

Notwithstanding anything in any surety bond or other applicable contractual documents to the contrary, it is expressly understood and agreed by the parties, and anyone asserting a claim pursuant to this Warranty, that the liability of any surety under any performance, maintenance, warranty or other bond relating to the project involving the Building or the TRRS, as well as the obligations and/or liabilities also covered by this Warranty shall be limited to a one-year period, which shall begin when the customer accepts delivery or makes final payment in accordance with the terms of the applicable contract, whichever occurs first. All Warranty claims against any surety are irrevocably waived and released unless all notices are delivered in accordance with the express terms of this Warranty and any applicable bonds, and suit is commenced against the surety in a court or other tribunal of competent jurisdiction within such one-year period. Tremco, its successors and/or assigns shall honor and be solely responsible for the balance of the Warranty Period (if any) in accordance with the terms of this Warranty.

The Owner agrees that this Warranty, and the services and remedies set forth herein, are exclusive, and there are no other warranties between the Owner and Tremco or any of their respective affiliates. Any unresolved issues under this Warranty shall be submitted to the exclusive jurisdiction of the courts of Cuyahoga County, Ohio. The terms, conditions, interpretation and enforcement of this Warranty shall be governed by Ohio law, without regard to any conflict of laws principles.

TREMCO INCORPORATED
ROOFING & BUILDING MAINTENANCE DIVISION

By: Ashley Silver

Title: Warranty Administrator

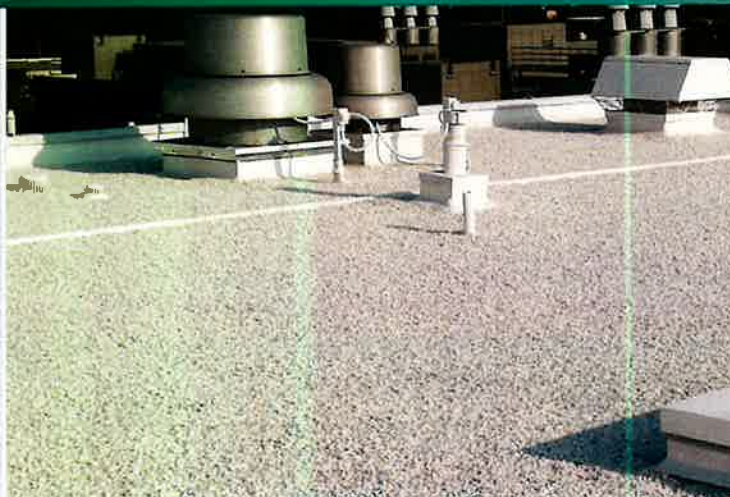
Date: May 10, 2021

Tremco Roof System Quality Assurance



Tremco Owner's Manual

Owner's Manual



TREMCO.
ROOFING & BUILDING MAINTENANCE

Tremco Roof System Quality Assurance

Owner's

Congratulations on Your Purchase of a Tremco Warranted Roof System!

Your Tremco roof system has been specified to meet your roofing and weatherproofing needs. Installed with quality Tremco materials by Tremco approved contractors, every effort has been made to ensure long-lasting performance when properly maintained.

This system, although warranted, only reaches its full performance potential when regular inspections and maintenance occur. This preventive action is the responsibility of the building owner and is a requirement of this quality assurance warranty.

Lack of care and maintenance can have significantly damaging effects on the System's overall performance and is cause for cancellation of the warranty.

Designed to help protect your building, the Tremco roof system warranty provides repairs of actual leaks into the building when caused by specific covered conditions as outlined in the warranty agreement. Additionally, it may provide quality inspections and housekeeping services during the warranty term.

Guidelines to Ensure Long- of Your Tremco Roofing Sys

REGULAR ROOF MAINTENANCE:

During the life of your roof system, periodic maintenance is required on a regular basis to prevent water entry and provide continued performance. The cost of preventive maintenance is not included under the provisions of the warranty.

At a minimum, the roof must be inspected immediately after being exposed to harsh weather conditions and in anticipation of winter. Bi-annual visual inspections, as well as cleaning, are also recommended and should be performed by the building owner or their designee.

WHEN INSPECTING YOUR ROOF:

- Look for any abnormalities in the roof surface and have them investigated promptly.
- Remove any debris, such as leaves, small branches and dirt, that has accumulated.
- Examine the roof for damage from vandalism, severe environmental exposure, interior catastrophes such as fire and burst piping.
- Clean gutters, downspouts, drains and surrounding areas. Make sure there is positive drainage. The warranty does not cover leaks caused by ponding water.
- Examine all metal flashings and gutters for rust damage. Make sure they are well attached and sealed. Any loose or poorly sealed materials must be repaired by an approved Tremco Roofing contractor. Sealants are not covered under your warranty.
- Examine areas that abut the roof. Repair defective items such as damaged masonry, poorly mounted counterflashings, loose caulking and bad mortar joints.

Tremco works with you to assure any rooftop equipment installations and or emergency repairs do not result in damage to your roof. Notification to Tremco is essential prior to such action.



The benefit of preventive maintenance will be a roof system which will continue to perform long after the warranty has expired.





asting Performance m

- Examine the edges of the roof. Wind damage often occurs in these areas. Materials that have been lifted or displaced by the wind need to be corrected.
- Examine any rooftop equipment such as air conditioners, evaporative coolers, antennas, etc. Make certain the supporting members do not move excessively, causing wear. Make sure the equipment does not cause a roof problem by leaking materials onto the roof.
- Check the building exterior for settlement and movement. Structural movement can cause cracks and other problems which may cause the roof to leak.
- Examine protective coatings and surfaces. Coatings used as a protective surfacing over a new primary roofing system are not covered under your warranty and may require maintenance over the course of the warranty.
- Warranted Restoration Coating Systems and Liquid Applied Waterproofing Systems are covered per the terms of their warranty document and must be examined on a routine basis following the maintenance and inspection guidelines outlined in the Owner's Manual.
- Check plumbing components. Reseal cracked fittings and replace or tighten loose components.
- Check adjacent tree landscaping to prevent the build-up of leaf debris or damage from movement of branches.
- Check for ice damage and for hidden damage from excessive snow drifting or snow loading. Snow accumulation may necessitate occasional removal to reduce structural loading. Be careful with shovels. Do not use sharp pointed objects such as ice scrapers.

ADDITIONAL RECOMMENDATIONS

Control foot traffic. Do not step on debris which could puncture the roof surface. Walkway protection pads are available if roof mounted equipment requires frequent service.

IN AN EVENT OF A LEAK

Within 30 days after the leak is or should have been discovered, Tremco must be contacted either in writing or by phone. Notifying the contractor does not relieve you of the responsibility of notifying Tremco within the required 30 days of a leak discovery.

EMERGENCY REPAIRS

Prior to making any emergency repairs, Tremco must approve the repair procedures, including sealants at warranted flashings and adjoining construction. Unauthorized repairs to your roof membrane may void your warranty.

NEW EQUIPMENT INSTALLATIONS

In the event that a new HVAC or other rooftop equipment is to be installed, Tremco must approve the work. Installation of new equipment of any kind on the roof must be approved by Tremco in order to keep the warranty valid.

PRECAUTIONS FOR REPAIRS/INSTALLATIONS OF ROOFTOP EQUIPMENT:

Repairmen are frequently in possession of tools or equipment such as sheet metal, screwdrivers, and utility knives which could damage the roof membrane. Such damage is not covered under the terms of your warranty, and the cost to repair such damage is your responsibility. Therefore, it is in your best interest to take the following precautions:

- Insist a member of your maintenance staff accompany repairmen or other visitors to the roof.
- Take photographs of equipment and surrounding roof area immediately prior to repair.
- Insist repairmen agree in writing to be responsible for any damage to the roof during the equipment repair period. It is important that repairmen understand that any repairs must be approved and accepted by Tremco under the terms of your agreement.
- Insist repairmen cover work area with plywood sheeting to protect the roof surface while equipment repairs are performed.

NOTIFY TREMCO:

- In the event of a leak
- Prior to any emergency repairs
- Prior to installation of any rooftop equipment

Call 1.800.422.1195



Thank you for choosing Tremco.

Tremco Roof System Quality Assurance



www.tremcoroofing.com

3735 Green Road • Beachwood, Ohio • 44122 • 1.800.852.6013
50 Beth Neilson Drive • Toronto, Ontario • M4H 1M6 • 1.800.668.9879

6186
10/15



May 10, 2021

Simpson of Maryland, Inc.
7476 Candlewood Road
Hanover, MD 21076

RE: Hickory Elementary School Replacement
Bel Air, MD
Kalwall #200293-TB

We hereby guarantee all properly maintained materials supplied by Kalwall Corporation in accordance with approved shop drawings #K20-0293 at the above referenced project to be free from defects in material and workmanship for a period of five years. Further, we warrant the panels against:

- A. Delamination affecting structural strength
- B. Noticeable surface fiber exposure of the exterior face
- C. Color change in excess of 8 Delta E units caused by normal weathering of the exterior face

for an additional five years.

We also warrant the Kalwall Corrosion Resistant Finish on our aluminum clampite installation system against cracking, peeling and adhesion failure for a period of twenty years.

Claims must be in writing. Proof of purchase is required. Keep dated invoices. This warranty is valid only after receipt of payment in full and in no event shall this warranty be honored after December 1, 2040. Acts of God, vandals, accidents, improper storage or installation, and substructure movement are not covered by this warranty.

Should the product fail to meet the above warranty within the twenty years from date of delivery, the liability of the company is limited, at its option, to repair or replacement of the product, pro rata after five years.

Very truly yours,

KALWALL CORPORATION


Richard R. Keller
President

RRK/dl

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PART 1 - GENERAL

1.1 Section Includes

- A. Equipment shall include, but not be limited to:
 - 1. Local Area Network (LAN) cabling
 - 2. Telephone Cabling
 - 3. Termination Equipment for Telecommunications

1.2 Definitions

- A. Backbone Cabling refers to telecommunications cabling that provides interconnections between telecommunications rooms, equipment rooms, and entrance facilities.
- B. Communications Network Outlet (CNO) refers to a collection of one or more mechanical cable termination device for horizontal cable in the work area.
- C. Drop refers to the vertical transition to a location of one or more CNOs.
- D. Horizontal Cabling refers to the cabling between and including the work area communications network outlet and the horizontal cross-connect in the telecommunications room.
- E. Jack refers to a female-style telecommunication receptacle.
- F. Telecom Room (TR) refers to an enclosed space for housing telecommunications equipment, cable terminations, and cross-connects. The room is the recognized cross-connect between the backbone or trunk cabling and horizontal cabling.
- G. Telecom Equipment Room (TER) refers to a centralized space for telecommunications equipment that serves the occupants of the building, usually containing the headend equipment for the distribution systems found in the building.

1.3 References

- A. Industry Codes, Standards and Methods shall be observed, including the following:
 - 1. ANSI/TIA/EIA-568-B.1: Commercial Building Telecommunications Cabling Standard Part 1 – General Requirements
 - 2. ANSI/TIA/EIA-568-B.2: Commercial Building Telecommunications Cabling Standard Part 2 – Balanced Twisted Pair Cabling Components
 - 3. ANSI/TIA/EIA-568-B.3: Commercial Building Telecommunications Cabling Standard Part 3 – Optical Fiber Cabling Components

4. ANSI/TIA/EIA-569-A: Commercial Building Standard for Telecommunications Pathways and Spaces
5. ANSI/TIA/EIA-570-A: Residential Telecommunications Cabling Standard
6. ANSI/TIA/EIA-606: Administration Standard for Telecommunications Infrastructure of Commercial Buildings
7. ANSI/TIA/EIA-607: Commercial Building Grounding and Bonding Requirements for Telecommunications
8. ANSI/TIA/EIA-758: Customer-Owned Outside Plant Telecommunications Cabling Standard
9. BICSI Telecommunications Distribution Methods Manual (TDMM), Latest Edition
10. National Fire Protection Agency (NFPA-70): National Electrical Code (NEC)

B. Comply with all local, state and federal codes for telecommunications installations.

1.4 System Description

A. Design Requirements

1. LAN and Telephone Distribution:
 - a. Provide labor, materials, equipment, services and operations required for rough-in to serve communication systems by others, Cat 6 wiring to serve system equipment, and patch panels.
 - b. Conduit to serve future network cables routed from distribution racks throughout building as shown on power plans. Drop to outlet installed in conduit and wall box as indicated on Drawings.
 - 1) Refer to notes on each drawing to determine exact installation methods.
 - 2) Note and record all cable lengths to the nearest foot.
 - 3) Replace any cable exceeding 90 meters (295 feet) and route to reduce length to a minimum of 90 meters. Complete all cable rerouting for compliance at no additional cost to the Owner.
 - 4) Identify to the design consultant prior to installation of any cables that cannot be reduced to 90 meters or less in total length (rise and run).
 - 5) Strictly adhere to most current version of TIA/EIA Telecommunications cabling standards.
 - 6) Install "waterfall" device providing sweep from cable tray to

data rack/cabinet and other vertical transitions.

- c. Data and Telephone outlets: Category 6 rated RJ-45 type connectors with all four copper pairs terminated and tested in accordance with EIA 568B wiring standard.
- d. Permanently identify and label all cables and termination devices, at distribution rack and workstation in accordance with ANSI TIA/EIA-606 Standard or as agreed by the design consultant and Owner.
- e. Remove and replace any cables failing to meet end-to-end testing requirements; do not abandon cable in place. All cable shall be terminated at both ends, unless noted in Drawings.

B. Performance Requirements

1. Comply with applicable requirements in Local, State and Federal Codes, TIA/EIA Standards, and BICSI methodology.
2. Conform to all applicable HCPS standards.

1.5 Submittals

A. Product Data: Submit manufacturer's product literature, technical specifications and similar information for the following items demonstrating compliance with the specified requirements. Product data shall include but not be limited to:

1. Communications outlets, faceplates, and accessories.
2. Copper cable, patch cables and termination devices.
3. Inner duct and accessories.
4. Outlets

B. Shop Drawings

1. Provide scaled drawings to show proposed equipment locations and administrative labeling of equipment. All equipment and devices shall be methodically documented and permanently labeled agreed upon by Owner.
2. Shop drawings must be approved by the designer and owner prior to purchase and installation of any equipment.
3. The Contractor shall submit line drawings of all systems showing major components of the systems. Submit wiring diagrams showing typical connections for all systems and equipment in AutoCad 2015 or later format. PDFs inserted into AutoCAD files are not acceptable.

C. Quality Control Submittal

1. Test Reports: Submit complete sample test data and reports with exact labels used on cables, patch panels and faceplates.
2. Certificates
 - a. Manufacturer Certification: Submit certification from manufacturer of products to be installed under this contract certifying that Installer is authorized by manufacturer to install specified products.
 - b. Installer Experience Listing: Submit list of at least 5 completed projects as specified below in "Quality Assurance – Qualifications – Installer."

- D. Contract Closeout Submittal: Comply with requirements of Division 0, including submission of operating and maintenance instructions as item in "Operation and Maintenance Data" manual described in that Section.

1.6 Quality Assurance

- A. All Work shall be installed in a first class, neat and workmanlike manner by skilled Technicians. The quality of the workmanship shall be subject to inspection and approval by authorized Owner personnel. Any work found to be of inferior quality and/or workmanship shall be replaced and/or reworked until the approval of Owner is obtained.
- B. Installer Qualifications: Qualified to cable, terminate and test data network cabling system specified in this Section, certified by manufacturer of products to be installed, and completed at least 5 computer network installations of similar size, nature and complexity as specified for this project.

1.7 Warranty

- A. Installer's Warranty: Provide manufacturer's system warranty against electrical or mechanical defects for 2 year from date of final acceptance.
- B. A two (2) year Product Warranty for this wiring system shall be provided by the Manufacturer as follows:
 1. System Certification: Upon successful completion of the installation and subsequent inspection, the Owner shall be provided with a numbered certificate, from the manufacturing company, registering the installation.

PART 2 - PRODUCTS

2.1 Materials – All materials shall be new and unused.

A. SYSTEM COMPONENTS CABLING

1. General:

- a. System wiring and equipment installation shall be in accordance with good engineering practices as established by the EIA and the NEC. Wiring shall meet all state and local electrical codes. All wiring shall test free from all grounds and shorts.
 - b. Velcro straps shall be used for bundling wires. Wires shall be bundled loosely. Zip tie style wire ties are not acceptable and shall not be used on the project.
 - c. All cables shall be left with 10' of slack in the telecom room and 3' in ceiling above each drop.
2. Data Cabling: Provide a complete data communications wiring system consisting of the following:
- a. Accessories
 - b. Cable Management Devices
 - c. Copper and Fiber Patch cables
 - d. Remote Jacks
 - e. Termination/Patch Panels
 - f. Twisted Pair Data Cables
 - g. The Category 6 portion of the cabling system shall comply with the link and channel performance requirements of ANSI/TIA/EIA 568-B.2-1 "Performance Specifications for 4-pair 100 Ohm Category 6 Cabling". The cabling system shall be backed by a 25- Year System Warranty where possible.
 - h. The system will include, but not be limited to, data jacks, fiber cabling, UTP cable, etc. Equipment shall be compact, modular and IEEE standards compliant.
 - i. Data Cable - Category 6, Plenum-Rated:
 - 1) Data cables shall be extended between the data outlet location and its associated TR and consist of Category 6, 4 pair, 24 gauge, UTP, and shall be terminated on the 8 pin modular jacks provided at each outlet. Cable jacket shall comply with Articles 800 and 725 NEC for use as a plenum cable as required. The 4 pair UTP cable shall be UL® and c (UL®) Listed Type CMP (plenum). Interior individual conductors shall have all four pairs 100% F.E.P. (Teflon) insulated. Cable shall meet the requirements of UL910 and NFPA 262-1985.
 - 2) Color of the data-cabling jacket shall be blue. Category 6 cabling: plenum horizontal cabling shall be 23 awg, 4-pair

utp, UL/NEC/NFPA /CMP rated, with a plenum-rated PVC jacket. Individual conductors shall be FEP insulated. Cable jacketing shall be lead-free. Cable shall meet the performance requirements listed in table 3 in addition to all other standard Category 6 performance requirements. Cable shall be supplied on wooden reels or in reel-in-box. Cable shall be safety listed to NFPA 262/ul910. Cable shall be UL listed for safety, and UL verified for performance as well as be a part of the UL verification program.

- j. Provide one home run cable from each data and telephone jack to appropriate wiring closet.
- k. Cable length of home run cable shall not exceed 90 meters.
- l. Data Patch Panels
 - 1) Panels shall contain the number of TIA/EIA 568B verified Category 6 ports necessary to connect all data jacks shown on the drawings plus 15% spare capacity. Panels shall comply with TIA/EIA 568B and 606 and be UL verified. Patch Panels shall meet or exceed all EIA/TIA Specifications, including TSB 40 “worst case pair” requirements. DC resistance shall be less than 100 milliohms.
 - 2) The patch panel shall support the appropriate Category 6 applications, including 10 Gbps, and facilitate cross connection and inter connection using modular patch cords.
 - 3) All Modular jack panels shall be wired to EIA/TIA 568B and meet the following specifications:
- d. Provide 2 RU horizontal and 6” vertical patch cord organizers for each patch panel for proper management of patching system and cable strain relief.
- e. Data Outlets:
 - 1) For each data jack location designation serving equipment, provide a non-keyed RJ45, 8 pin, 8- conductor, Category 6 modular jack with compatible faceplate. All data jacks shall be *T568B* wiring pin-pair configuration – no other configuration is acceptable. Jack shall be compatible for use with Unshielded Twisted Pair (UTP) cable. Provide cover caps to complete the termination and provide for a reliable connection for the UTP cable.
- f. All Category 6 outlets shall conform to TIA/EIA 568B Commercial Building Telecommunications Cabling Standard, Horizontal Cable Section, and be part of the UL® LAN Certification and Follow-up , and shall meet or exceed the following electrical and mechanical

specifications:

- 1) Electrical Specifications:
 - (a) TIA/EIA 568B Category 6 minimum requirements.
 - (b) Insulation resistance: 500 ohms minimum.
 - (c) Dielectric withstands voltage 1,000 VAC RMS, 60 Hz minimum, contact-to- contact and 1,500 VAC RMS, 60 Hz minimum from any contact to exposed conductive surface.
 - (d) Contact resistance: 20 ohms maximum.
 - (e) Current rating: 1.5 A at 68E F(20EC) per IEC Publication 512-3, Test 5b.
 - (f) Mechanical Performance:
 - (g) Plug Insertion Life: 750 insertions minimum.
 - (h) Plug/jack contact force: 100 grams minimum.
 - (i) Contact Force: 3.5oz (99.2 g) minimum using FCC-Approved modular plug.
 - (j) Plug Retention Force: 30 lb (133 N) minimum between modular plug and jack.
 - (k) Temperature Range: -40° to 150°F (-40° to 66°C).
 - 2) UL7 Verified Category 6 Electrical Performance. Comply with FCC Part 68.
 - 3) ISO 9001 Certified Manufacturer.
- g. Blank Covers shall be used for all open ports.
 - h. Termination/Patch panels shall be identically numbered by the connection to respective jack and shall be arranged in sequential ascending order from left to right and top to bottom.
 - i. Labeling scheme by contractor shall be coordinated with Owner's telecom provider serving greater telecommunications system.
 - j. Refer to drawings for outlet type details and quantities, and additional labeling requirements

PART 3 - EXECUTION

3.1 Examination

- A. Verification of Conditions: Examine conditions under which telecommunications cabling and equipment and related components are to be installed in coordination with Installer of materials and components specified in this Section and notify affected contractors and design consultant in writing of any conditions detrimental to proper and timely installation. Do not proceed with installation until unsatisfactory conditions have been corrected to ensure a safe and timely installation.
 1. When Installer confirms conditions as acceptable to ensure proper and timely installation and to ensure requirements for applicable warranty or guarantee can be satisfied, submit to design consultant written confirmation from applicable Installer. Failure to submit written confirmation and subsequent

installation will be assumed to indicate conditions are acceptable to Installer.

2. Visit Site to identify and become familiar with existing field conditions and specific requirements of each Site.
3. Verify all dimensions in field and confirm condition of existing hardware to be utilized.
4. Confirm space requirements and physical confines of all work areas to ensure that all materials can be installed in indicated spaces.
5. Confirm all outlet locations and cable pathways and advise design consultant in writing of any discrepancies or issues in Design described in Contract Documents.

3.2 Preparation

- A. Protection: Provide adequate protection of equipment and hardware before and after installation.
- B. Existing Communications Services: Ensure all telecommunications systems (voice, video and data) remain operational throughout the project.
 1. Identify any additional telecommunications outlets, circuits, and wiring at the site not shown on T-Drawings and interfering with installation of specified equipment.
 2. Contact local telephone, network and CATV companies to identify all circuits providing existing services.
 3. Remove all accessible portions of abandoned communications cabling per NEC 800.52. Tag all communications cabling not terminated at both ends but retained for future use.

3.3 Installation

- A. Provide and install all components necessary to install complete telecommunications cabling and equipment systems, including (but is not limited to) connectors, patch cables, terminators, etc...
 1. Cable runs shall be continuous and unbroken from end to end. Splicing of any Telephone, LAN, or coaxial video distribution cable is prohibited. Horizontal cabling for LAN and telephone shall end in rack-mounted patch panels.
 2. Secure all horizontal cables within ceiling cavities to building structure.
 3. Loosely bundle all cables and support from structure at unequal intervals from 5 to 6 feet with spring steel fasteners and cable clip rated for use with high performance cables where cable tray or other support structure has not been provided as indicated on Drawings. All mounting clips shall be seismic type as per BOCA.

4. Do not violate manufacturer's recommended loadings. Leave 30% capacity for future use of pathway.
5. Verify all horizontal cable run lengths prior to installation. Re-distribute horizontal cabling to maintain distance requirements and maintain pathway route accessibility.
6. Do not support cables from ceiling grid T-Bars, grid wire supports or bridle rings. Do not allow cables to touch ceiling grid.
7. Do not secure cables with permanent cable ties. Do not tighten cable bundles in such a way as to cause jacket deformation or damage.
8. Provide a 10-foot service loop in all fiber optical cables to permit future cable splice and repair at all building entrance points and termination points.
9. Place cables in compliance with TIA/EIA-568.B standards and BICSI recommended methods.
10. Tight 90-degree bends are unacceptable, and use of plastic "cinch-type" tie-wraps are not permitted, in order to prevent damage to cable jacket and compromise the cable's electrical or optical characteristics.
11. Cable bundles shall be neatly routed with a service loop to provide 10 feet of slack at the cross-connect end and as noted in the T-drawings. Cable bundles shall be secured using only black Velcro cable wraps.
12. 10 feet of service loop shall be provided in the ceiling at each workstation and at in the telecom room. Contractor shall not secure service loop in coils, but route in such a manner as to minimize EMI.

B. Wireless outlet locations

1. Ceiling shall be marked and as-builts shall reflect the location of all terminated ends and service loops.
2. Cable shall be terminated and left with a service loop as described in T-series drawings. Cable shall be tested and documented per previous requirements.
3. After completion of wireless site survey, outlet shall be re-terminated for connection to Wireless Access Point.

C. Interior Fiber Optical Cable Installation Requirements

1. Install all interior fiber optic backbone cables in 1-inch plenum-rated inner duct, similar to Pyramid Industries #PLM100(T) where fiber optical cable placed in cable tray or otherwise fully supported in accordance with manufacturer's requirements.
2. Install all outdoor rated communications cables not rated for plenum placement in interior environments in metallic conduit, according to NEC Articles 770 and 800.

3. Install inner duct for fiber optic cabling in all conduits, as necessary for proper support of cables, or where required to assure pull-in tension not exceeding manufacturer's recommendations.
4. Provide pull strings or ropes in all conduit and inner duct used for communications cables.

D. Cabling System

1. Where not provided as part of the electrical work or the data/voice work, the Contractor shall furnish and install necessary conduit, raceways, pull boxes, outlet boxes and cable to provide a complete system as herein specified. All wiring shall be tested for continuity and freedom of all grounds and short-circuits. All outlet boxes shall be as specified for other wiring devices; size as required by equipment manufacturer.
2. Cables shall be installed in raceways or EMT, as detailed on the drawings and/or as specified, above non-accessible ceilings, where exposed, and wherever it may be subject to physical damage. Where not provided as part of the electrical work or the data/voice work, the contractor shall provide a raceway (conduit) from each outlet to above the accessible ceiling. Otherwise, cable shall be installed above accessible suspended tile ceilings and attached to building structure with approved bridle rings or J-hooks, cable is not permitted to rest on ceiling. The cable routes used shall avoid steam lines, power wiring and other utilities that may adversely affect the system's performance or result in damage to the cable. If the routes required place the cable in proximity to these utilities, the cable shall be suitably protected. Under no circumstances shall cable be run in hangers used for pipes or electric conduits nor shall the cable be supported in any way by attachment to these pipes, conduits or ceiling hangers.
3. During the installation work, improper bending, stretching, twisting, kinking, pinching or any other improper handling must not deform the cable. All cable runs shall contain "S" loops or other means to accommodate expansion and contraction. Coaxial cables shall not bend at any point of installation to a radius of less than ten times the diameter of the cable or less than the value recommended by the cable manufacturer. Cable connected to electronic equipment in the system shall be tagged to show its function and the location of its other end. All labels shall be of durable material and securely fastened to the cable.
4. All cables shall be fastened securely with suitable hardware so as to avoid sharp bends and to prevent rubbing against sharp corners and in a manner to prevent injury or physical distortion.
5. Wiring for all wall-mounted equipment shall be concealed in raceway (conduit) from outlet to above removable ceilings, unless noted otherwise.
6. Wiring installed above removable ceilings shall be installed on bridle rings. No cables shall be installed on roof or exterior of building.

7. Infrastructure properly terminated on backboard, neatly arranged in orderly fashion and accurately identified.
 8. Equipment cabinet(s) anchored to wall or floor utilizing an approved method.
 9. Install all exposed cabling in surface raceway by Wiremold, Hubbell or Panduit where in- wall conduit has not been provided. Follow all manufacturers' guidelines requirements regarding bending radius and slack. All bends, offsets and fittings shall be appropriately sized to provide 30% capacity after installation.
- E. Install all cable in accordance with National, state and local codes and TIA/EIA Standards, and BICSI methods.
1. Follow manufacturer's guidelines and requirements for all cable termination.
 2. Install and connect a minimum #6 AWG conductor to bond all equipment racks, conduits and cable trays to busbar in each telecom room. Each telecom room shall be interconnected to TER with a minimum #3 AWG bonding backbone to TMGB per Telecommunications Grounding Diagram. It shall be left to licensed electrician to interconnect TMGB with lowest point of building ground. Contractor shall verify TMGB has been bonded to building ground before declaring completion.
- F. Permanently identify all system components following TIA/EIA-606A "Administration Standard for Commercial Telecommunications Infrastructure" with identification format:
1. Identification: Provide permanent identification labels for outlets, faceplates, patch panels, access panels and entrance facilities.
 2. Each individual cable shall be labeled on both ends of cable terminations regardless of cable intended use. Labels must be machine printed with permanent black ink on laminated white label material. Contractors must check with appropriate Owner personnel for appropriate labeling scheme. The intended format and labeling material must be approved by Owner's Technology Department before labeling begins.

3.4 Testing

- A. LAN and Telephone
1. Upon completion of work, all parts of the telecommunications installation shall be tested by the Telecommunications Contractor and demonstrated free of any defects. Preliminary testing will be permitted but shall not be accepted in lieu of obtaining final test results. Final test results shall be accomplished by the use of proper test equipment for the system being tested.
 2. Re-terminate and re-test any cables or pairs of cables failing end-to-end testing requirements. Replace any faulty cables/pairs or termination devices.

Remove all defective cables completely from pathways.

3. Test results must include full test parameters
4. Link Layer Discovery Protocol (LLDP) results must be provided as part of the test results for each phase of the construction as soon as network electronics are installed.
5. Submit test results to design consultant for review and approval.

B. As-Builts

1. Accurate as-built drawings shall be provided in electronic and hard copy format.
 - a. Drawings shall accurately show and describe all cable routing and equipment location in redline format.
 - b. 3 copies of electronic (CAD) drawings shall be distributed on appropriate media: 1 to construction management, 1 to designers and 1 to the Owner.
 - c. 3 hard copies of CAD drawings shall be plotted on full size sheets and test results of every installed cable have been given to the construction management for appropriate distribution.

3.5 Acceptance

- A. Contractor's work shall be considered complete after the following conditions have been met:
1. Cable installation is complete and all cable runs have been tested and documented to be installed according to specifications and drawings.
 2. An owner representative has successfully tested the "LIVE" system.
 3. All punch list items have been reconciled.
 4. All disturbed ceiling panels, fire-stopping materials, covers, etc. have been properly reinstalled.
 5. All materials and trash have been removed from the site.
 6. Installers warranty information has been given to an owner representative.

END OF SECTION 27 1313

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