PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Cellular PVC Millwork and sheets for the following applications:
   1. Column covers.
   2. Fascias.
   3. Trim.
   4. Frieze Boards.
   5. Drip Caps.
   6. Recessed infill Panels.
   7. Soffits.
   8. Miscellaneous trim, astragals and other items indicated on the drawings.

1.02 REFERENCES

A. ASTM D792 - Density and Specific Gravity of Plastics by Displacement.

B. ASTM D570 - Water Absorption of Plastics.

C. ASTM D638 - Tensile Properties of Plastics.

D. ASTM D790 - Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

E. ASTM D1761 - Mechanical Fasteners in Wood.

F. ASTM D5420 - Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by means of a Striker Impacted by a Falling Weight.

G. ASTM D256 - Determining the Pendulum Impact Resistance of Plastics.

H. ASTM D696 - Coefficient of Linear Thermal Expansion of Plastics Between -30°C and 30°C with a Vitreous silica Dilatometer.

I. ASTM D635 - Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.

J. ASTM E84 - Surface Burning Characteristics of Building Materials.

K. ASTM D648 - Deflection Temperature of Plastics under Flexural Load in the Edgewise Position.

L. ASTM D3679 - Standard Specification for Rigid Poly Vinyl Chloride (PVC) Siding.

1.03 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.

B. Product Data: Submit product data, manufacturer's catalogs and SPEC-DATA® product sheet, for specified products.

C. Samples: Submit three material samples representative of the texture, thickness and widths shown and specified herein.

1.04 QUALITY ASSURANCE

A. Regulatory Requirements: Check with Local Building Code for installation requirements.

B. Allowable Tolerances:
   1. Variation in component length: -0.00 / +1.00”
   2. Variation in component width: ± 1/16”
   3. Variation in component thickness: ± 1/16”
   4. Variation in component edge cut: ± 2°
   5. Variation in Density -0% + 10%

C. Workmanship, Finish, and Appearance:
   1. Free foam cellular PVC that is homogeneous and free of voids, holes, cracks, and foreign inclusions and other defects. Edges must be square and top and bottom surfaces shall be flat with no convex or concave deviations.
   2. Uniform surface free from cupping, warping, and twisting.

1.05 DELIVERY, STORAGE AND HANDLING

A. Trim materials should be stored on a flat and level surface on a full shipping pallet. Handle materials to prevent damage to product edges and corners. Store materials under a protective covering to prevent job site dirt and residue from collecting on the boards.

1.06 WARRANTY

A. Provide manufacturer’s 25 year warranty against defects in manufacturing that cause the products to rot, corrode, delaminate, or excessively swell from moisture.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Acceptable products:
   1. Royal Building Products, RoyalBuildingProducts.com 855-769-2585
   2. AZEK® Trimboards manufactured by Vycom Corporation, 801 Corey Street, Moosic, PA 18507; or approved equal

B. Material: Free foam cellular PVC material with a small-cell micro structure and a density of 0.55 grams/cm3.
   1. Material shall have a minimum physical and performance properties specified herein.

C. Performance and physical characteristic requirements:

PROPERTY / UNITS	**VALUE**	**ASTM METHOD**
PHYSICAL:		
Density g/cm3	0.55	D 792
Water Absorption (%)	0.15	D 570
MECHANICAL:		
Tensile Strength (psi)	2256	D 638
Tensile Modulus (psi)	144,000	D 638
Flexural Strength (psi)	3329	D 790
Flexural Modulus (psi)	144,219	D 790
Nail Hold lbf/in of penetration	35	D 1761

Screw Hold lbf/in of penetration	680	D 1761
Staple Hold lbf/in of penetration	180	D 1761
Gardner Impact (in-lbs.)	103	D 5420
Charpy Impact (@23°C) (ft-lbs)	4.5	D 256
THERMAL:		
Coefficient of Linear Exp. (in/in/°F)	3.2 x 10-5	D 696
Burning Rate (in/min)	No burn when flame removed	D 635
Flame Spread Index --	25	E 84
Heat Deflection Temp 264 psi °F	150	D 648
Oil Canning (@140°F) °F	Passed	D 648

2.02 ACCESSORY PRODUCTS

A. Fasteners:
1. In unexposed locations: use fasteners designed for wood trim and wood siding (thinner shank, blunt point, full round head) with Cellular PVC Millwork.
2. Hidden Fastening System shall be utilized for exposed Trim conditions: Cortex Hidden Fastening system with TORX TTAP Drive System. Dual lead thread design in 2” and 2 ¾” lengths as required for 1 ½” penetration into substrate. System shall include screws, plugs and setting tools.
3. Fasteners shall be stainless steel or hot-dipped galvanized.
4. Staples, small brads and wire nails shall not be used as fastening members.
5. Fasteners shall be long enough to penetrate the solid wood substrate a minimum of 1 1/2”.
6. In unexposed locations, standard nail guns may be utilized in accordance with material manufacturer’s recommendations.
7. Use 2 fasteners per every framing member for Cellular PVC Millwork applications. Cellular PVC Millwork 12” or wider, as well as sheets, will require additional fasteners. Consult material manufacturer’s recommendations.
8. Fasteners shall be installed no more than 2” from the end of each board.
9. Cellular PVC Millwork shall be fastened into a flat, solid substrate. Fastening Cellular PVC Millwork into hollow or uneven areas must be avoided.
10. Pre-drilling is typically not required unless a large fastener is used or product is installed in low temperatures.
11. 3/8” and 1/2” sheet product is not intended to be ripped into trim pieces. These profiles must be glued to a substrate and mechanically fastened.

B. Adhesives:
1. Glue all Cellular PVC Millwork to Cellular PVC Millwork joints such as window surrounds, long fascia runs, etc. with Cellular PVC Millwork Adhesive, Cellular PVC cement, recommended by the material manufacturer, to prevent joint separation.
2. The glue joint should be secured with a fastener and/or fastened on each side of the joint to allow adequate bonding time.
3. Cellular PVC Millwork Adhesive has a working time of 10 minutes and will be fully cured in 24 hours.
4. If standard PVC cements are used, keep in mind these products typically cure quickly which will result in limited working time and may result in reduced adhesive strength.
5. Surfaces to be glued should be smooth, clean and in complete contact with each other.
6. To bond Cellular PVC Millwork to other substrates, various adhesives may be used. Consult adhesive manufacturer to determine suitability.

C. Sealants:
1. Use urethane, polyurethane or acrylic based sealants without silicone.

2.03 EXECUTION FINISHING

A. Cellular PVC Millwork may be painted to achieve a custom color.

B. Preparation:
   1. No special surface preparations are required prior to painting - sanding is not necessary for paint adhesion.
   2. Surface must be clean and dry.
   3. If desired, nail holes may be filled with polyurethane or acrylic based caulk in un exposed locations. Hidden fastening system shall be utilized in exposed locations.
   4. Use a 100% acrylic latex paint with a Light Reflective Value (LRV) of 55 or higher.
   5. Follow the paint manufacturer's recommendations to apply.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Manufacturer's instructions:
   1. Comply with manufacturer's product catalog installation instructions and product technical bulletin instructions.

B. Cutting:
   1. Cellular PVC Millwork products shall be cut using the same tools used to cut lumber as recommended by the material manufacturer.
   2. Carbide tipped blades designed to cut wood work shall be utilized as recommended by the material manufacturer. Avoid fine tooth metal cutting blades.
   3. Rough edges from cutting may be caused by excessive friction, poor board support, or worn or improper tooling.

C. Drilling
   1. Cellular PVC Millwork products shall be drilled using the same tools used to drill lumber as recommended by the material manufacturer.
   2. Drilling Cellular PVC Millwork products is similar to drilling a hardwood. Care should be taken to avoid frictional heat buildup.
   3. Use standard woodworking drills. Do not use drills made for normal rigid PVC unless recommended by the material manufacturer.
   4. Remove shavings of Cellular PVC Millwork from drill holes as work progresses.

D. Milling
   1. Cellular PVC Millwork products shall be milled using standard milling machines used to mill lumber as recommended by the material manufacturer.
   2. Relief Angle 20° to 30°
   3. Cutting speed to be optimized with the number of knives and feed rate.

E. Routing
   1. Cellular PVC Millwork products shall be routed using standard router bits and the same tools used to rout lumber unless noted otherwise by the material manufacturer.
   2. Utilize Carbide tipped router bits as recommended by the material manufacturer.

F. Edge Finishing
   1. Edges shall be finished by sanding, grinding or filing with traditional woodworking tools as recommended by the material manufacturer.

G. Fastener Locations

1. Use 2 fasteners per every framing member for Cellular PVC Millwork applications. Use Hidden fastener system where fasteners will be exposed in completed work.
2. Cellular PVC Millwork over 12” or wider, as well as sheets, will require additional fasteners.
3. Fasteners must be installed no more than 2” from the end of each board.

H. Thermal Expansion and Contraction
1. Cellular PVC Millwork products expand and contract with changes in temperature.
2. Properly fastening Cellular PVC Millwork material along its entire length will minimize expansion and contraction.
3. Allow for 1/8” per 18 foot of Cellular PVC Millwork product for expansion and contraction.
4. Joints between pieces of Cellular PVC Millwork should be glued to eliminate joint separation. When gaps are glued on a long run of Cellular PVC Millwork, allow expansion and contraction at ends of the run.

3.02 ERECTION TOLERANCES

A. Maximum Variation from True Position: 1/32-inch.

B. Maximum Offset from True Alignment with Abutting Materials: 1/32-inch

END OF SECTION