Architectural Specification: Siding
SECTION 07 46 00 Composite Siding

PART 1: GENERAL

1.1 SECTION INCLUDES

- **A.** Siding Panels
- **B.** Accessories & Trim

1.2 RELATED SECTIONS

- **A.** Section 06 10 00 – Rough Carpentry, Framing and Wall Sheathing
- **B.** Section 06 65 00 – Plastic Trim
- **C.** Section 07 40 00 – Roofing and Siding Panels

1.3 REFERENCES

- **A.** ASTM D4226: Standard Test Methods for Impact Resistance of Rigid Poly Vinyl Chloride (PVC) Building Products
- **B.** ASTM D5420: Gardner Impact Test
- **C.** ASTM D648: Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position
- **D.** ASTM D696: Test Method for Coefficient of Linear Expansion of Plastics
- **E.** ASTM D3679 - 21: Specification for Rigid Poly Vinyl Chloride (PVC) Siding
- **F.** ASTM D5026: Standard Test Method for Wind Load Resistance of Rigid Plastic Siding
- **G.** ASTM D635: Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self Supported Plastics in a Horizontal Position
- **H.** ASTM D1929: Standard Test Method for Determining Ignition Temperature of Plastics
- **I.** ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials
- **J.** ASTM D790: Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
- **K.** ASTM D570: Water Absorption of Plastics
- **L.** ASTM E90: Acoustics Sound Transmission Loss
- **M.** ASTM 7254: Film Adhesion Evaluation of Vinyl Siding
- **N.** ASTM C1363 Per ASTM D7793: Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus
- **O.** ASTM D5206 - 19: Standard Test Method for Wind Load Resistance of Rigid Plastic Siding
- **P.** NFPA 268-2-22: Testing Standard Test Method for Determining Ignitibility of Exterior Wall Assemblies Using a Radiant Heat Energy Source
- **Q.** ICC-ES AC227: Section 3.1 and 4.1.1 Exterior Weather Resistance per G155
- **R.** ICC-ES AC227: Section 3.1 and 4.1.2 Exterior Weather Resistance / Freeze Thaw
- **S.** ICC-ES AC227: Section 4.1.3 Exterior Weather Resistance / Water Absorption
- **T.** ICC-ES AC227: Section 3.6 and 4.6 Material Properties / ASTM D792 Density
- **U.** ICC-ES AC227: Section 3.7 and 4.7 Corrosion / AWPA E12

1.4 PERFORMANCE REQUIREMENTS

A. Fire Resistance: Provide siding materials that meet or exceed the following ratings:

1. Flame spread index less than or equal to 10.0 - Class "A" per ASTM E84 Smoke development rating greater than or equal to 450 per ASTM E84

2. Self-ignition temperature: 430°C or 806°F degrees per ASTM D1929

3. No self-sustained burn per ASTM D635

1.5 SUBMITTALS

A. Submit under provisions of Section 01 30 00: Administrative Requirements

B. Manufacturers data sheets on each product to be used, showing compliance with requirements

C. Selection Samples: Two complete sets of color cards representing manufacturers full range of available colors and patterns

D. Manufacturers installation instructions, showing required preparation and installation procedures

1.6 QUALITY ASSURANCE

A. Minimum Installer Qualifications:

1. Installers shall have a minimum of two years' experience installing like products specified in this section on projects of similar scope and size.

B. Contractor Meeting:

1. A meeting will be scheduled prior to but no later than one week before the scheduled siding installation start date.

2. The meeting can be held on site or offsite at a location accessible to the contractor and siding installation crew.

3. Mandatory Attendees: Contractor and Siding Installer.

4. Optional Attendees: Architects representative and owners' representative.

5. Objective: Meet or exceed installation requirements necessary to achieve warranty, specified in 1.8 below.

6. Scaled mockup shall be done showing all components of the siding installation, including fasteners and nail hem brackets.

C. Always follow local building codes.

D. Set approximate date for final warranty inspection.

1.7 DELIVERY, STORAGE, HANDLING

A. Keep siding in manufacturers packaging until time of installation.

B. Siding should be lifted out of the "U" shaped box, not pulled across another piece of siding.

C. If there are multiple units of siding on site, never stack more than 3 high.

D. Do not store siding boxes on blacktop driveways.

E. Do not store siding boxes vertically.

F. Best if stored in a cool, dry place.

G. When possible, carry product on edge to minimize deflection.

1.8 WARRANTY

A. Issue manufacturers standard limited lifetime siding warranty that is transferrable to the second homeowner and provides color fade protection on capped siding.

PART 2: PRODUCTS

2.1 MANUFACTURER

A. Versatex Building Products, LLC.
400 Steel Street, Aliquippa, PA. 15001 Tel: 724-857-1111.
Website: www.versatex.com
E-mail: XCEEDSiding@versatex.com

2.2 MATERIALS

A. Manufacturer to provide cellular products made from extruded PVC. Siding comprised of an inorganic substrate with a proprietary co-extruded cap designed to maintain color and durability.
B. Substrate comprised of various micro-ingredients for improved heat stability and durability.
C. Provide trim components designed specifically for complementing the siding at grade water table, corners, door & window surrounds, and frieze board with pocket depths designed to accommodate movement due to temperature changes.
D. Provide nail slots 8" O.C. to allow siding to move like traditional vinyl siding.
E. Provide nail hem bracket to join siding at butt joints allowing panels to move as one piece.
F. Engagement hook on back of siding panel for ease of installation and to keep panels level.

2.3 XCEED CELLULAR COMPOSITE HORIZONTAL LAP SIDING:

A. 4 ½" Reveal

1. Panel Thickness (main body): 0.210"
2. Panel Thickness Tolerance: +/- 0.015"
3. Panel Projection: 0.720" (thickness protrusion from the wall)
4. Width: 6.25"
5. Width Tolerance: + 0.00"/ - 0.020"
6. Exposure: 4 ½"
7. Standard Length: 16' - 0"
8. Length tolerance: + /- 1/32" @ 70°F
9. Warp/Camber: < 1/16"
10. Squareness: < 1/16"
11. Approx. Weight: 8.14 lbs. per 16'-0" length or 0.509 lbs/ft
12. Finish: Matt, Low Gloss with Muted Linear Embossing.
13. Gloss @ 60°: Range 2.0 to 4.0 (color dependent)
14. Heat Shrinkage: 0% per ASTM D3679
15. Static Wind load: See test pressure and wind load results in chart (below)
16. Surface Distortion: Passed. No bulges, waves or ripples at 1200°F (passed)
17. Coefficient of Linear Thermal Expansion (in/in/F) [capped siding]: 1.60 x 10-5 in/in/°F

18. Coefficient of Linear Thermal Expansion (in/in/F) [uncapped siding]: 1.77 x 10-5 in/in/°F
19. Impact Resistance ASTM D4226: 17.2 in-lb_f
20. Heat Deflection Temperature:
    1. 66 PSI: 68°C (154.4°F)
    2. 264 PSI: 60.9°C (141.6°F)
21. Weathering & Flexural ASTM G-155: Average Flexural strength > 90% of the control panel (passed)
22. Freeze Thaw & Flexural per ASTM G-155: Average Flexural strength > 90% of the control panel (passed)
23. Thermal Performance of cellular PVC siding per ASTM C1363-19: R value – 0.89
24. Water Absorption per ASTM D750: Passed. No leakage for 5 hours
25. Termite Resistance (AWPA) E1-E23 Formosan Subterranean Termites – Complete resistance to Formosan termite attack. XCEED approved for installation at grade. Follow local code requirements for XCEED installed at grade.
26. Chemical Resistance: Excellent
27. Acoustics Sound Transmission Loss:
    1. STC 34 – 38
    2. OTC 25 – 28
    3. Rw 34 – 38
28. NFPA 268-2-22: Wall assembly of OSB & Zip Sheathing with Versatex Heritage blue 4 ½" lap siding passed with no sustained burning over a period of 20 minutes.
29. ASTM D3679:
    1. Burn Rate: Passed. No sustained burn
    2. Heat Shrinkage: Passed. 0% shrinkage
    3. Impact Resistance (ASTM D5420): Passed. Impact resistance 53.2 in-lb_f
    4. Coefficient of Linear Thermal Expansion: Passed. Machine direction 1.95 x 10-5 in/in/°F
    5. Surface Distortion: Passed. No bulges, waves, or ripples at 120°F
    6. Accelerated Weathering: Passed. Greater than 90% of the control sample
    7. Freeze/Thaw Resistance: Passed. Greater than 90% of the control sample
    8. Water Absorption (ASTM D 570): Passed. No leakage for 5 hours
    9. Density (uncapped siding painted): 927.32 kg/m3
    10. Corrosion: Passed. Weight loss 0.55%. No visual effects at 5X magnification
    11. Film Adhesion Painted Uncapped Siding (ASTM D7254): Passed. Total rating of 50 with no coating removed.
30. Colors:
    1. Sand Castle
    2. Simple Sage
    3. Vail White
    4. Stonewall Shade
    5. Monument Gray
    6. Quick Silver
    7. Sequoia Green
    8. Heritage Blue
    9. Centennial Stone
    10. Mojave Tan

PART 3: IMPLEMENTATION

3.1 EXAMINATION

A. Prior to installation, confirm building dimensions and condition of framing / substrate.

3.2 PREPARATION

A. If necessary, examine, clean, and repair all substrate conditions which could negatively impact proper installation.

B. Do not initiate installation until ALL unacceptable conditions have been corrected and comply with XCEED Siding installation recommendations.

3.3 INSTALLATION

A. General:

1. Install XCEED Siding in accordance with the latest version of installation instructions found at www.VERSATEX.com

B. Accessory Trims

1. Install XCEED Siding accessory trim components in accordance with VERSATEX installation recommendations.

2. Install XCEED Siding into pockets of pocketed stealth accessories.

3.4 CLEANING

A. Once the XCEED Siding installation is complete, dispose of any XCEED Siding debris remaining at the site.

B. If necessary, clean XCEED Siding in accordance with VERSATEX recommendations.

ASTM D5206 - Standard Test Method for Wind Load Resistance of Rigid Plastic Siding

XCEED Siding Allowable Design Pressures [1]

Product	Profile		Fastener Description	OC Spacing	Substrate	Design Pressure	MPH
	Exposure Width	Nominal Thickness					
Horizontal Lap Siding	4-1/2"	0.210"	10 ga. x 2" Long, 5/16" Head Diameter Ring Shank Roofing Nail	16"	Each Fastener penetrating through 1/2" OSB sheathing and penetrating a framing member a minimum of 1-1/4"	125 psf [2]	220
			#8 x 2" Long, 5/16" Washer Head Diameter Wood Screw	16"	Each Fastener penetrating through 1/2" OSB sheathing and penetrating a framing member a minimum of 1-1/4"	150 psf [2]	242
			#8 x 2" Long, 7/16" Head Diameter Modified Truss Head Self Tapping Metal Screw	16"	Each Fastener penetrating through 1/2" OSB sheathing and penetrating a framing member a minimum of 1-1/4"	150 psf [2]	242

[1] A PEF (pressure equalization factor) was not applied to reduce the required test pressure

[2] Testing terminated prior to XCEED failure due to framework and substrate mechanical failure limits