



SECTION 06730 (06 73 00)

COMPOSITE DECKING AND FASTENERS

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**** NOTE TO SPECIFIER **** Eva-Last; Bamboo Composite Building Materials

This section is based on the products of Eva-Last, which is located at:

8560 Belleview Drive Suite 225
Plano, TX 75024
Phone: 325-933-2701
Email: _____
Web: www.eva-last.com/us/

Over a decade ago, Eva-Last was founded by a passionate and driven team that recognized the need for environmentally conscientious, practical, and durable construction solutions. Years of research and continual product refinement have resulted in Eva-Last gaining recognition as a leader in the international composite construction industry.

CHANGING THE WAY BUILDING CAN BE DONE

Eva-Last is revolutionizing how building can be done by offering eco-friendly composite products that do the job of timber or other traditional outdoor building materials in a smarter and more sustainable way. The Eva-Last brand is built on the principles of eco-consciousness, quality, and innovation, and our ever-growing success stands as testament to the care we put into all aspects of our business.

A BRAND YOU CAN TRUST

Eva-Last is a globally reputable brand that utilizes a solution driven business model to create innovative, sustainable building materials and systems that add value to customers' lives. At the heart of Eva-Last is a team of highly capable, creative specialists united by a passion to promote environmental consciousness through eco-friendly building products and operations. By embracing low environmental impact manufacturing and cutting-edge composite technology, Eva-Last is changing the status quo. We design and deliver beautiful, long-lasting green alternatives that make our customers' lives easier, healthier, and just plain better.

A HASSLE-FREE ALTERNATIVE TO WOOD

Eva-Last composite offers the beauty of timber, but in a hassle-free, durable option that's longer lasting, virtually maintenance-free, and eco-friendly. Cutting-edge engineering is bringing even greater structural advancements and lifestyle benefits to composite, and thoughtful detail to aesthetics now gives it an even more natural appearance in an expanded range of products, colors, and textures.

PART 1 GENERAL

1.1 SECTION INCLUDES

**** NOTE TO SPECIFIER **** Delete items below not required for project.

- A. Composite decking (PIONEER) (APEX) (APEX PLUS) (INFINITY) (INFINITY IS) (EVA-TECH).
- B. Decking system components.

1.2 RELATED SECTIONS

**** NOTE TO SPECIFIER ** Delete any sections below not relevant to this project; add others as required.**

- A. Section 06 10 00 - Rough Carpentry.
- B. Section 07 46 43 - Composite Cladding and Decking.

1.3 REFERENCES

**** NOTE TO SPECIFIER ** Delete references from the list below that are not actually required by the text of the edited section.**

- A. ASTM International (ASTM):
 - 1. ASTM D696 - Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30 and 30 degrees C with a Vitreous Silica Dilatometer.
 - 2. ASTM D1037 - Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials.
 - 3. ASTM D2395 - Standard Test Methods for Density and Specific Gravity (Relative Density) of Wood and Wood-Based Materials.
 - 4. ASTM D2565 - Standard Practice for Xenon-Arc Exposure of Plastics Intended for Outdoor Applications.
 - 5. ASTM D4060 - Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
 - 6. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials.
 - 7. ASTM D7031 - Standard Guide for Evaluating Mechanical and Physical Properties of Wood-Plastic Composite Products.
 - 8. ASTM D7032 - Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite and Plastic Lumber Deck Boards, Stair Treads, Guards, and Handrails.
 - 9. ASTM D790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
 - 10. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 11. ASTM G154 - Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Materials.
 - 12. ASTM G155 - Standard Practice for Operating Xenon Arc Lamp Apparatus for Exposure of Materials.
 - 13. ASTM D2017 - Standard Test Method of Accelerated Laboratory Test of Natural Decay Resistance of Woods.
- B. European Standards Organization (EN):
 - 1. EN 13501 - Fire Test for Building Materials.
 - 2. EN 15534 - Composites made from cellulose-based materials and thermoplastics (usually called wood-polymer composites (WPC) or natural fibre composites (NFC)).
 - 3. EN 13823 - Single Burning Item evaluates a building products fire properties regarding heat release rate, smoke production, flame spread and burning droplets/particles.
 - 4. EN 13329 - Laminate floor coverings. Specifications, requirements, and test methods.
 - 5. EN 9239 - Determination of the burning behavior of flooring products using a radiant heat source.

6. EN 321 - Wood-based panels - Determination of conditions moisture resistance under cyclic test.
- C. Ford Motor Company (FORD):
 1. FORD FLTM B0 162-01 - Resistance to Scratch or Marr.
- D. International Code Council (ICC):
 1. ICC-ES AC 174 - Deck Board Span Ratings and Guardrail Systems (Guards and Handrails) - Approved January 2012, editorially revised April 2021.
- E. International Organization for Standardization (ISO):
 1. ISO 24345 - Resilient floor coverings Determination of peel resistance.
 2. ISO 868 - Plastics and ebonite Determination of indentation hardness by means of a durometer (Shore hardness).
 3. ISO 11359-1 and 2(A) - Plastics - Thermomechanical analysis (TMA) - Part 2: Determination of coefficient of linear thermal expansion and glass transition temperature.
 4. ISO 11925 - Reaction to fire tests Ignitability of products subjected to direct impingement of flame.
 5. ISO 16869 - Plastics. Assessment of the effectiveness of fungistatic compounds in plastics formulations.
 6. ISO 7784 - Test methods for the determination of the resistance to abrasion of coatings using abrasive wheels.
 7. ISO 178 - Test method for determining the flexural properties of rigid and semi-rigid plastics under defined conditions.
- F. European Union Registration, Evaluation, Authorization and Restriction of Chemicals (EU REACH).
- G. CEN Technical Specification (CEN/TS):
 1. CEN/
 2. TS 15676 - Wood Flooring Slip Resistance Pendulum Test.
- H. National Standard of the Peoples Republic of China:
 1. GBT 17657 - Test methods of evaluating the properties of wood-based panels and surface decorated wood-based panels.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00.
- B. Product Data:
 1. Manufacturer's data sheets on each product to be used.
 2. Preparation instructions and recommendations.
 3. Storage and handling requirements and recommendations.
 4. Typical installation methods.

**** NOTE TO SPECIFIER ** Delete if not applicable to product type.**

- C. Verification Samples: Two representative units of each type, size, pattern, and color.
- D. Shop Drawings: Include details of materials, construction, and finish. Include relationship with adjacent construction.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum of five years documented experience.
- B. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
- C. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

**** NOTE TO SPECIFIER **** Include mock-up if the project size or quality warrant the expense. The following is one example of how a mock-up might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

- D. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
 - 1. The intent of a mock-up is to demonstrate quality of workmanship and visual appearance.
 - 2. If the mock-up is not acceptable, rebuild the mock-up until satisfactory results are achieved.
 - 3. Retain mock-up during construction as a standard for comparison with completed work.
 - 4. Do not alter or remove mock-up until work is completed or removal is authorized.

1.6 PRE-INSTALLATION CONFERENCE

- A. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
- B. Protect from damage due to weather, excessive temperature, and construction operations.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.9 WARRANTY

- A. Manufacturer's standard limited warranty unless indicated otherwise.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Eva-Last, which is located at: 6600 Chase Oak Blvd. Suite 150, Plano, TX 75023; Phone: 325-933-2701; Email: _____; Web: www.eva.last.com/us/

**** NOTE TO SPECIFIER **** Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

- B. Substitutions: Not permitted.

- C. Requests for substitutions will be considered in accordance with the provisions of Section 01 60 00.

2.2 COMPOSITE DECKING

**** NOTE TO SPECIFIER **** Primarily used in decking, fascia, and similar applications. Delete paragraph not required.

- A. Basis of Design: Pioneer Foamed Mineral-PVC and Glass Fiber Reinforced Decking System with photorealistic print as manufactured by Eva-Last. Low-maintenance. More stable with less expansion and contraction. Requires basic cleaning for optimal longevity. The protective cap is PMMA, offering long-term fade, scratch, and stain resistance. Decay resistant against insects, moisture, and the elements.

1. Material: Co-extruded profiles with PMMA cap around a foamed mineral-polymer composite core.
 - a. Core:
 - 1) Poly chloroethylene (PVC): 50 percent of mass.
 - 2) Calcium carbonate: 30 percent of mass.
 - 3) Acrylonitrile styrene acrylate copolymer (ASA): 10 percent of mass.
 - 4) Glass Fiber: 1 percent of mass.
 - b. Additional Additives: 9 percent of mass.
 - c. Cap: PMMA.
2. Physical Properties:
 - a. Density According to ASTM D2395: 40.58 to 47.45 lb per cu ft (650 to 760 kg per sq m).
3. Profile Properties:

**** NOTE TO SPECIFIER **** Delete profile options not required.

- a. Profile STFM101A: Grooved deck board.
 - 1) Width x Thickness: 5.71 x 0.83 inches (145 x 21 mm).
 - 2) Mass: 1.48 lbs per ft (2.2 kg per m).
- b. Profile STFM102A: Square edged deck board.
 - 1) Width x Thickness: 5.55 x 0.97 inches (141 x 24.5 mm).
 - 2) Mass: 1.75 lbs per ft (2.6 kg per m).
- c. Profile STFM103A: Grooved deck board.
 - 1) Width x Thickness: 5.55 x 0.97 inches (141 x 24.5 mm).
 - 2) Mass: 1.68 lbs per ft (2.5 kg per m).
- d. Profile STFM104A: Deck board.
 - 1) Width x Thickness: 5.71 x 0.84 inches (145 x 21.3 mm).
 - 2) Mass: 2.3 lbs per ft (1.55 kg per m).
- e. Profile STFM105A: Deck board.
 - 1) Width x Thickness: 7.49 x 0.83 inches (190 x 21 mm).
 - 2) Mass: 2.09 lbs per ft (3.1 kg per m).
- f. Profile STFM106A: Deck board.
 - 1) Width x Thickness: 7.49 x 0.83 inches (190 x 21 mm).
 - 2) Mass: 2.09 lbs per ft (3.1 kg per m).
- g. Profile STFM106: Fascia board.
 - 1) Width x Thickness: 5.96 x 0.49 inches (151 x 12.5 mm).
 - 2) Mass: 1.4 lbs per ft (0.94 kg per m).
4. Mechanical Properties.
 - a. Material Specific:
 - 1) Abrasion Resistance, Material Loss: ISO 7784, 0.06 g.
 - 2) Abrasion Resistance, Cap Wear: EN 13329, 5000 cycles.
 - 3) Modulus of Elasticity: 382365 lbs per sq inch (2637 MPa).
 - b. Flexural Performance: Profile STTHMZQ103.
 - 1) Three Point Test: BS EN 15534-1.
 - a) Span: 11.81 inches (300 mm).
 - 1) Ultimate Load: 2405.36 lbf (10.7 kN).

- 2) Modulus of Rupture: 8758 lbf / sq inch (60.4 MPa).
 - 3) Modulus of Elasticity: 420978.5 lbf / sq inch (2903.3 MPa).
 - b) Span: 15.75 inches (400 mm).
 - 1) Ultimate Load: 1910.80 lbf (8.5 kN).
 - 2) Modulus of Rupture: 9222 lbf / sq inch (63.6 MPa).
 - 3) Modulus of Elasticity: 381277.5 lbf / sq inch (2629.5 MPa).
 - c) Span: 19.69 inches (500 mm).
 - 1) Ultimate Load: 1663.52 lbf (7.4 kN).
 - 2) Modulus of Rupture: 10077.5 lbf / sq inch (69.5 MPa).
 - 3) Modulus of Elasticity: 391877 lbf / sq inch (2702.6 MPa).
 - 2) Four Point Test: BS EN 15534-1
 - a) Span: 11.81 inches (300 mm).
 - 1) Ultimate Load: 3866.56 lbf (17.2 kN).
 - 2) Modulus of Rupture: 9367 lbf / sq inch (64.6 MPa).
 - 3) Modulus of Elasticity: 287164.5 lbf / sq inch (2670.1 MPa).
 - b) Span: 15.75 inches (400 mm).
 - 1) Ultimate Load: 2877.44 lbf (12.8 kN).
 - 2) Modulus of Rupture: 9265.5 lbf / sq inch (63.9 MPa).
 - 3) Modulus of Elasticity: 372505 lbf / sq inch (2569 MPa).
 - c) Span: 19.69 inches (500 mm).
 - 1) Ultimate Load: 1933.28 lbf (8.6 kN).
 - 2) Modulus of Rupture: 7786.5 lbf / sq inch (53.7 MPa).
 - 3) Modulus of Elasticity: 339633.5 lbf / sq inch (2342.3 MPa).
5. Weathering Impact on Flexural Performance: Test methods: ASTM D7032, ASTM D2565 and ASTM D790.
- a. High Temperature Effect:
 - 1) Flexural Strength: 18 percent.
 - 2) Flexural Stiffness: 24 percent.
 - 3) Adjustment Factor: 0.76.
 - b. Low Temperature Effect:
 - 1) Flexural Strength: -26 percent.
 - 2) Flexural Stiffness: -14 percent.
 - 3) Adjustment Factor: 1.00.
 - c. Moisture Effect:
 - 1) Flexural Strength: -3 percent.
 - 2) Flexural Stiffness: 4 percent.
 - 3) Adjustment Factor: 0.96.
 - d. UV Resistance:
 - 1) Flexural Strength: -6 percent.
 - 2) Flexural Stiffness: 1 percent.
 - 3) Adjustment Factor: 1.00.
 - e. Freeze-Thaw Resistance:
 - 1) Flexural Strength: 1 percent.
 - 2) Flexural Stiffness: 13 percent.
 - 3) Adjustment Factor: 0.97.
 - f. Overall End-Use Adjustment Factor: 0.76.
6. Thermal Expansion Coefficient, ASTM D696: 35.0×10^{-6} mm/mm degrees C.
7. Fire Reaction Properties:
- a. Apex Single Cap, EN 13501 and tested according to EN 9239 and ISO 11925:
 - 1) Critical Heat Flux: 11 kW per sq m.
 - 2) Smoke Production: 254.0 percent minimum.
 - 3) Flame Spread (Fs): Yes.
 - 4) Class: Bfl-s1.
 - b. Apex Plus, EN 13501 and tested according to EN 9239 and ISO 11925:
 - 1) Class: Efl.

8. Fire Reaction Properties: Apex Dual Tone, ICC-ES AC 174 and tested according to ASTM E84.
 - a. Flame Spread Index: 35, Pass. Smoke Development Index: 1300.
 - 1) Smoke Production: 728.0 percent minimum.
 - 2) Flame Spread (Fs) 10 minute: 500 mm.
 - 3) Flame Spread (Fs) 20 minute: 660 mm.
 - 4) Flame Spread (Fs) 30 minute: 760 mm.
 - 5) Critical Heat Flux: 1.8 kW per sq m.
 - 6) Heat Flux (HF) 10 minutes: 3.8 kW per sq m.
 - 7) Heat Flux (HF) 20 minutes: 2.4 kW per sq m.
 - 8) Heat Flux (HF) 30 minutes: 1.8 kW per sq m.
 - 9) Maximum Light Attenuation: 92 percent.
 - 10) Class: Efl-s1.

**** NOTE TO SPECIFIER ** Delete color options not required.**

9. Color: Grey Fraxinus (X20001-GFN).
 - a. Fading Properties, ASTM G154 4k Hours: Delta E: 3.21.
10. Color: Exotic Canary Wood (W2002ECN-Y).
 - a. Fading Properties, ASTM G154 4k Hours: Delta E: 3.39.
11. Surface Properties: Slip Resistance.

**** NOTE TO SPECIFIER ** Delete finish option not required.**

- a. Finish: Matt Texture.
 - 1) Test Method: CEN/TS 15676: SRV: 40. Class: P4.
- b. Finish: Matt B Texture.
 - 1) Test Method: CEN/TS 15676: SRV: 55. Class: P5.

B. Basis of Design: Apex Plus Mineral Foamed-PVC and Glass Fiber Reinforced Core Decking System as manufactured by Eva-Last. Low-maintenance. More stable with less expansion and contraction. Requires basic cleaning for optimal longevity. The protective cap is PMMA, offering long-term fade, scratch, and stain resistance. Decay Resistant against insects, moisture, and the elements.

1. Material: Co-extruded profiles with acrylic cap around a foamed mineral-polymer composite core.
 - a. Core:
 - 1) Poly chloroethylene (PVC): 50 percent of mass.
 - 2) Calcium carbonate: 31 percent of mass.
 - 3) Acrylonitrile styrene acrylate copolymer (ASA): 9 percent of mass.
 - 4) Glass Fiber: 1 percent of mass.
 - b. Additional Additives: 9 percent of mass.
 - c. Cap: PMMA.
2. Physical Properties:
 - a. Density According to ASTM D2395: 40.58 to 47.45 lb per cu ft (650 to 750 kg per sq m).
3. Profile Properties:

**** NOTE TO SPECIFIER ** Delete profile options not required.**

- a. Profile STTHMZQ128: Grooved deck board.
 - 1) Width x Thickness: 5.71 x 0.83 inches (144.9 x 21 mm).
 - 2) Mass: 1.48 lbs per ft (2.2 kg per m).
- b. Profile STTHMZQ102: Square edged deck board.
 - 1) Width x Thickness: 5.52 x 0.97 inches (140 x 24.4 mm).
 - 2) Mass: 1.75 lbs per ft (2.6 kg per m).
- c. Profile STTHMZQ103: Grooved deck board.
 - 1) Width x Thickness: 5.52 x 0.95 inches (140 x 24 mm).
 - 2) Mass: 1.68 lbs per ft (2.5 kg per m).
- d. Profile STTHMZQ116: Grooved deck board.
 - 1) Width x Thickness: 7.49 x 0.95 inches (190 x 24 mm).

- 2) Mass: 2.36 lbs per ft (3.5 kg per m).
- e. Profile STTHMZQ123 Square edged deck board.
 - 1) Width x Thickness: 7.49 x 0.95 inches (190 x 24 mm).
 - 2) Mass: 2.42 lbs per ft (3.6 kg per m).
- f. Profile STTHMZQ134 Grooved deck board.
 - 1) Width x Thickness: 5.52 x 0.89 inches (140 x 22.5mm).
 - 2) Mass: 1.62 lbs per ft (2.4 kg per m).
- g. Profile STTHMZQ135 Grooved deck board.
 - 1) Width x Thickness: 7.49 x 0.89 inches (190 x 22.5 mm).
 - 2) Mass: 2.22 lbs per ft (3.3 kg per m).
- h. Profile STTHMZQ136 Starter deck board
 - 1) Width x Thickness: 5.52 x 0.9 inches (140 x 22.8 mm).
 - 2) Mass: 1.68 lbs per ft (2.5 kg per m).
- i. Profile STTHMZQ137 Starter board.
 - 1) Width x Thickness: 7.49 x 0.9 inches (190 x 22.8 mm).
 - 2) Mass: 2.29 lbs per ft (3.4 kg per m).
4. Mechanical Properties.
 - a. Material Specific:
 - 1) Abrasion Resistance, ASTM D4060: 0.004092 oz/c (116 mg/c); 1,000 cycles.
 - 2) Shore D Hardness: 82.
 - 3) Modulus of Elasticity: 339,880 to 420,978.5 lbs per sq inch (2344 to 2903.3 MPa).
 - b. Flexural Performance: Profile STTHMZQ103.
 - 1) Three Point Test: BS EN 15534-1.
 - a) Span: 11.81 inches (300 mm).
 - 1) Ultimate Load: 2405.36 lbf (10.7 kN).
 - 2) Modulus of Rupture: 8758 lbf / sq inch (60.4 MPa).
 - 3) Modulus of Elasticity: 420978.5 lbf / sq inch (2903.3 MPa).
 - b) Span: 15.75 inches (400 mm).
 - 1) Ultimate Load: 1910.80 lbf (8.5 kN).
 - 2) Modulus of Rupture: 9222 lbf / sq inch (63.6 MPa).
 - 3) Modulus of Elasticity: 381277.5 lbf / sq inch (2629.5 MPa).
 - c) Span: 19.69 inches (500 mm).
 - 1) Ultimate Load: 1663.52 lbf (7.4 kN).
 - 2) Modulus of Rupture: 9367 lbf / sq inch (64.6 MPa).
 - 3) Modulus of Elasticity: 391877 lbf / sq inch (2702.6 MPa).
 - 2) Four Point Test: BS EN 15534-1.
 - a) Span: 11.81 inches (300 mm).
 - 1) Ultimate Load: 3866.56 lbf (17.2 kN).
 - 2) Modulus of Rupture: 9367 lbf / sq inch (64.6 MPa).
 - 3) Modulus of Elasticity: 387164.5 lbf / sq inch (2670.1 MPa).
 - b) Span: 15.75 inches (400 mm).
 - 1) Ultimate Load: 2877.44 lbf (12.8 kN).
 - 2) Modulus of Rupture: 9265.5 lbf / sq inch (63.9 MPa).
 - 3) Modulus of Elasticity: 372505.0 lbf / sq inch (2569.0 MPa).
 - c) Span: 19.69 inches (500 mm).
 - 1) Ultimate Load: 1933.28 lbf (8.6 kN).
 - 2) Modulus of Rupture: 7786.5 lbf / sq inch (53.7 MPa).
 - 3) Modulus of Elasticity: 339655.5 lbf / sq inch (2342.3 MPa).
5. Weathering Impact on Flexural Performance: Test methods: ASTM D7032, ASTM D2565 and ASTM D790.
 - a. High Temperature Effect:
 - 1) Flexural Strength: 18 percent.
 - 2) Flexural Stiffness: 24 percent.
 - 3) Adjustment Factor: 0.76.

- b. Low Temperature Effect:
 - 1) Flexural Strength: -26 percent.
 - 2) Flexural Stiffness: -14 percent.
 - 3) Adjustment Factor: 1.00.
- c. Moisture Effect:
 - 1) Flexural Strength: -3 percent.
 - 2) Flexural Stiffness: 4 percent.
 - 3) Adjustment Factor: 0.96.
- d. UV Resistance:
 - 1) Flexural Strength: -6 percent.
 - 2) Flexural Stiffness: 1 percent.
 - 3) Adjustment Factor: 1.00.
- e. Freeze-Thaw Resistance:
 - 1) Flexural Strength: 1 percent.
 - 2) Flexural Stiffness: 13 percent.
 - 3) Adjustment Factor: 0.97.
- f. Overall End-Use Adjustment Factor: 0.76.
- 6. Thermal Expansion Coefficient, ASTM D696: 35.0×10^{-6} mm/mm degrees C.
- 7. Fire Reaction Properties:
 - a. Apex Plus, EN 13501 and tested according to EN 9239 and ISO 11925: Class Efl.
 - b. Apex Single Cap, EN 13501 and tested according to EN 9239 and ISO 11925:
 - 1) Critical Heat Flux: 11 kW per sq m.
 - 2) Smoke Production: 254.0 percent minimum.
 - 3) Flame Spread (Fs): Yes.
 - 4) Class: Bfl-s1.
 - c. Apex Dual Tone, EN 13501 and tested according to EN 9239 and ISO 11925:
- 8. Fire Reaction Properties: Apex Dual Tone ICC-ES AC 174 and material tested according to ASTM E84.
 - a. Flame Spread Index (FSI): 35, Pass. Smoke Development Index: 1300.
 - 1) Smoke Production: 728.0 percent minimum.
 - 2) Flame Spread (Fs) 10 minute: 500 mm.
 - 3) Flame Spread (Fs) 20 minute: 660 mm.
 - 4) Flame Spread (Fs) 30 minute: 760 mm.
 - 5) Critical Heat Flux: 1.8 kW per sq m.
 - 6) Heat Flux (HF) 10 minutes: 3.8 kW per sq m.
 - 7) Heat Flux (HF) 20 minutes: 2.4 kW per sq m.
 - 8) Heat Flux (HF) 30 minutes: 1.8 kW per sq m.
 - 9) Maximum Light Attenuation: 92 percent.
 - 10) Class: Efl-s1.

**** NOTE TO SPECIFIER ** Delete color options not required.**

- 9. Color: Arctic Birch (CG005).
 - a. Fading Properties, ASTM G155 4k Hours: Delta E: 1.3.
- 10. Color: Brazilian Teak (CB010).
 - a. Fading Properties, ASTM G154 3k Hours: Delta E: 1.1.
- 11. Color: Himalayan Cedar (CL014).
 - a. Fading Properties, ASTM G154 3k Hours: Delta E: 1.72.
- 12. Color: Hawaiian Walnut (CB013).
 - a. Fading Properties, ASTM G154 3k Hours: Delta E: 2.26.
- 13. Surface Properties: Slip Resistance.
 - a. Finish: L- Lateral orientation.
 - 1) Test Method: DIN 51097: SRV: 28.1. Class: C.
 - 2) Test Method: DIN 51130: SRV: 40.1. Class: R13.
 - b. Finish: L - Longitudinal orientation.
 - 1) Test Method: DIN 51097: SRV: 28.4. Class: C.
 - 2) Test Method: DIN 51130: SRV: 27.5. Class: R12.

- c. Finish: L - Longitudinal orientation.
 - 1) Test Method: AS 4586 - A: SRV: 62.0. Class: P5.
 - 2) Test Method: AS 4586 - B: SRV: 0.95. Class: D1.
 - 3) Test Method: AS 4586 - C: SRV: 34.0. Class: C.
 - 4) Test Method: AS 4586 - D: SRV: 28.4. Class: R11.
 - d. Finish: L - Longitudinal orientation.
 - 1) Test Method: AS 4586 - A: SRV: 47.0. Class: P5.
- C. Basis of Design: Apex Mineral Foamed-Bamboo PVC Core Decking System as manufactured by Eva-Last. Low-maintenance. More stable with less expansion and contraction. Requires basic cleaning for optimal longevity. The protective cap is a resilient acrylic polymer, offering long-term fade, scratch, and stain resistance. Decay Resistant against insects, moisture, and the elements.
- 1. Material: Co-extruded profiles with acrylic cap around a foamed mineral-polymer composite core.
 - a. Core:
 - 1) Poly chloroethylene (PVC): 51 percent of mass.
 - 2) Calcium carbonate: 30 percent of mass.
 - b. Cap: Acrylonitrile styrene acrylate copolymer (ASA): 10 percent of mass.
 - c. Additional Additives: 9 percent of mass.
 - 2. Physical Properties:
 - a. Density According to ASTM D2395: 40.58 to 48.82 lb per cu ft (650 to 750 kg per sq m).
 - 3. Profile Properties:

**** NOTE TO SPECIFIER ** Delete profile options not required.**

 - a. Profile STPVB101: Grooved deck board.
 - 1) Width x Thickness: 5.51 x 0.95 inches (140 x 24 mm).
 - 2) Mass: 1.68 lbs per ft (2.5 kg per m).
 - 3) Cap: Single tone.
 - b. Profile STPVB102:
 - 1) Width x Thickness: 5.51 x 0.95 inches (140 x 24 mm).
 - 2) Mass: 1.68 lbs per ft (2.5 kg per m).
 - 3) Cap: Single tone.
 - c. Profile STPVB103: Grooved deck board.
 - 1) Width x Thickness: 5.51 x 0.95 inches (140 x 24 mm).
 - 2) Mass: 1.68 lbs per ft (2.5 kg per m).
 - 3) Cap: Single tone.
 - d. Profile STTHM116: Grooved deck board.
 - 1) Width x Thickness: 7.48 x 0.95 inches (190 x 24 mm).
 - 2) Mass: 2.29 lbs per ft (3.4 kg per m).
 - 3) Cap: Dual tone.
 - e. Profile STTHM106: Square edged deck board.
 - 1) Width x Thickness: 5.91 x 0.47 inches (150 x 12 mm).
 - 2) Mass: 0.94 lbs per ft (1.4 kg per m).
 - 3) Cap: Dual tone.
 - f. Profile STTHM111:
 - 1) Width x Thickness: 7.25 x 0.55 inches (184 x 14 mm).
 - 2) Mass: 1.28 lbs per ft (1.9 kg per m).
 - 3) Cap: Dual tone.
 - g. Profile STTHM112:
 - 1) Width x Thickness: 11.22 x 0.63 inches (285 x 16 mm).
 - 2) Mass: 2.29 lbs per ft (3.4 kg per m).
 - 3) Cap: Dual tone.
 - h. Profile STPVB104: Joist.
 - 1) Width x Thickness: 1.18 x 1.58 inches (30 x 40 mm).
 - 2) Mass: 0.61 lbs per ft (0.9 kg per m).

4. Mechanical Properties.
 - a. Material Specific:
 - 1) Abrasion Resistance, ASTM D4060: 0.004092 oz/c (116 mg/c); 1,000 cycles.
 - 2) Shore D Hardness: 82.
 - 3) Modulus of Elasticity: 254,620 to 299,869 lbs per sq inch (1756 to 2068 MPa).
 - b. Flexural Performance:

**** NOTE TO SPECIFIER ** Delete profile options not required.**

 - 1) Profile STTHM102 half cap, square edge profile.
 - a) Test Method: ASTM D7032.
 - 1) Span: 12 inches (304.8 mm).
 - a) Ultimate Load: 1730.96 lbf (7.7 kN).
 - b) Modulus of Rupture: 4074.5 lbf / sq inch (28.1 MPa).
 - c) Modulus of Elasticity: 251807 lbf / sq inch (1736.6 MPa).
 - 2) Profile STTHM103 half cap, grooved profile.
 - a) Test Method: ASTM D7032.
 - 1) Span: 12 inches (304.8 mm).
 - a) Ultimate Load: 1686 lbf (7.5 kN).
 - b) Modulus of Rupture: 4176 lbf / sq inch (28.8 MPa).
 - c) Modulus of Elasticity: 260840.5 lbf / sq inch (1798.9 MPa).
 5. Stair Tread Performance: ASTM D7032, ASTM D2565 and ASTM D790.
 - a. Profile STTHM102.
 - 1) Span: 12 inches (304.8 mm).
 - 2) Concentrated Loads: Deflection Under 1.35 kN Load: 0.10 in (2.6 mm).
 - 3) Concentrated Loads: Ultimate Load: 1326.32 lbf (5.9 kN).
 6. Creep Recovery:
 - a. Profile STTHM102.
 - 1) Average Recovery: 96 percent.
 - 2) Total Deflection: 0.03 inch (0.0 mm).
 - 3) Maximum Allowable Unrecoverable Deflection: 0.001 inch (0.001 mm).
 7. Weathering Impact on Flexural Performance: Test methods: ASTM D7032, ASTM D2565 and ASTM D790.
 - a. High Temperature Effect:
 - 1) Flexural Strength: 18 percent.
 - 2) Flexural Stiffness: 24 percent.
 - 3) Adjustment Factor: 0.76.
 - b. Low Temperature Effect:
 - 1) Flexural Strength: -26 percent.
 - 2) Flexural Stiffness: -14 percent.
 - 3) Adjustment Factor: 1.00.
 - c. Moisture Effect:
 - 1) Flexural Strength: -3 percent.
 - 2) Flexural Stiffness: 4 percent.
 - 3) Adjustment Factor: 0.96.
 - d. UV Resistance:
 - 1) Flexural Strength: -6 percent.
 - 2) Flexural Stiffness: 1 percent.
 - 3) Adjustment Factor: 1.00.
 - e. Freeze-Thaw Resistance:
 - 1) Flexural Strength: 1 percent.
 - 2) Flexural Stiffness: 13 percent.
 - 3) Adjustment Factor: 0.97.
 - f. Overall End-Use Adjustment Factor: 0.74.

8. Mechanical Fastener Testing:

**** NOTE TO SPECIFIER ** Delete profile and application options not required.**

- a. Profile STTHM102: Timber Application:
 - 1) Holding Capacity (Safety Factor of 3.0): 13488 lbf (0.6 kN).
 - b. Profile STTHM102:
 - 1) Metal Application: Composite Deck Screw - Top Fixed - M4.8 x 45 mm:
 - a) Ultimate Wind Uplift: 469.91 psf (22.5 kN sq m).
 - b) Wind Upload Resistance: 150.37 psf, 7.2 kN/square meter.
 - 2) Timber Application: Composite Deck Screw - Top Fixed - M4.8 x 63 mm:
 - a) Ultimate Wind Uplift: 469.91 psf (22.5 kN sq m).
 - b) Wind Upload Resistance: 150.37 psf (7.2 kN sq m).
 - c. Profile STTHM103:
 - 1) Metal Application: Hidden Deck Fastener S9 - M4.2 x 40 mm and clip:
 - a) Ultimate Wind Uplift: 461.56 psf (22.1 kN sq m).
 - b) Wind Upload Resistance: 150.37 psf (7.2 kN sq m).
 - 2) Timber Application: Hidden Deck Fastener S9 - M4.2 x 40 mm and clip:
 - a) Ultimate Wind Uplift: 461.56 psf (22.1 kN sq m).
 - b) Wind Upload Resistance: 150.37 psf (7.2 kN sq m).
9. Thermal Expansion Coefficient, ASTM D696: 46.2 x 10e-6 mm/mm degrees C.
10. Fire Reaction Properties:
- a. Apex Plus, EN 13501 and tested according to EN 9239 and ISO 11925: Class Efl.
 - b. Apex Single Cap, EN 13501 and tested according to EN 9239 and ISO 11925:
 - 1) Critical Heat Flux: 11 kW per sq m.
 - 2) Smoke Production: 254.0 percent minimum.
 - 3) Flame Spread (Fs): Yes.
 - 4) Class: Bfl-s1.
 - c. Apex Dual Tone, EN 13501 and tested according to EN 9239 and ISO 11925:
11. Fire Reaction Properties: Apex Double Tone material tested according to ASTM E84.
- a. Flame Spread Index: 35, Pass. Smoke Development Index: 1300.
 - 1) Smoke Production: 728.0 percent minimum.
 - 2) Flame Spread (Fs) 10 minute: 500 mm.
 - 3) Flame Spread (Fs) 20 minute: 660 mm.
 - 4) Flame Spread (Fs) 30 minute: 760 mm.
 - 5) Critical Heat Flux: 1.8 kW per sq m.
 - 6) Heat Flux (HF) 10 minutes: 3.8 kW per sq m.
 - 7) Heat Flux (HF) 20 minutes: 2.4 kW per sq m.
 - 8) Heat Flux (HF) 30 minutes: 1.8 kW per sq m.
 - 9) Maximum Light Attenuation: 92 percent.
 - 10) Class: Efl-s1.

**** NOTE TO SPECIFIER ** Delete color options not required.**

- 12. Color: Arctic Birch (CG005).
 - a. Fading Properties, ASTM G155 4k Hours: Delta E: 1.3.
- 13. Color: Brazilian Teak (CB010).
 - a. Fading Properties, ASTM G154 3k Hours: Delta E: 1.1.
- 14. Color: Himalayan Cedar (CL014).
 - a. Fading Properties, ASTM G154 3k Hours: Delta E: 1.72.
- 15. Color: Hawaiian Walnut (CB013).
 - a. Fading Properties, ASTM G154 3k Hours: Delta E: 2.26.
- 16. Surface Properties: Slip Resistance.
 - a. Finish: L - Longitudinal Orientation: Apex Single Tone Test Results:
 - 1) Test Method: AS 4586-A: SRV: 62. Class: P5.
 - 2) Test Method: AS 4586-B: SRV: 0.95. Class: D1.
 - 3) Test Method: AS 4586-C: SRV: 34. Class: C.
 - 4) Test Method: AS 4586-D: SRV: 26.4. Class: R11.

- b. Finish: L - Longitudinal Orientation: Apex Dual Tone Test Results:
 - 1) Test Method: AS 4586 - A: SRV: 47. Class: P5.
- D. Basis of Design: Infinity Co-Extruded Profiles with Cellulose-Polymer Composite Core Decking System as manufactured by Eva-Last. Low-maintenance. More stable with less expansion and contraction. Requires basic cleaning for optimal longevity. The protective cap is resilient acrylic polymer and cellulose fibre, offering long-term fade, scratch, and stain resistance. Decay Resistant against insects, moisture, and the elements.
 1. Material: Co-extruded profiles with a cellulose-polymer composite core.
 - a. Cap and Core:
 - 1) Polyethylene (PE): 62 percent of mass.
 - 2) Cellulose Fibre (Bamboo Fibres): 28 percent of mass.
 - 3) Calcium Carbonate: 4 percent of mass.
 - b. Additional Additives: 6 percent of mass.
 2. Physical Properties:
 - a. Density According to EN 15534-1: 78.04 to 81.16 lb per cu ft (1250 to 1300 kg per sq m).
 3. Profile Properties:

**** NOTE TO SPECIFIER ** Delete profile options not required.**

 - a. Profile STGJ131: Grooved deck board, half cap.
 - 1) Width x Thickness: 5.36 x 0.91 inches (136 x 23 mm).
 - 2) Mass: 2.62 lbs per ft (3.9 kg per m).
 - b. Profile STGJ132: Starter board, single sided starter.
 - 1) Width x Thickness: 6.83 x 0.91 inches (177.3 x 23 mm).
 - 2) Mass: 2.69 lbs per ft (4 kg per m).
 - c. Profile STGJ04XX: Grooved deck board, full cap.
 - 1) Width x Thickness: 5.51 x 0.91 inches (140 x 23 mm).
 - 2) Mass: 3.02 lbs per ft (4.5 kg per m).
 - d. Profile STGJ02AEN: Solid, square edge board, full cap.
 - 1) Width x Thickness: 5.51 x 1.00 inches (140 x 25.5 mm).
 - 2) Mass: 2.96 lbs per ft (4.4 kg per m).
 - e. Profile STGJ30: Square edged deck board, full cap.
 - 1) Width x Thickness: 5.51 x 0.91 inches (140 x 23 mm).
 - 2) Mass: 2.62 lbs per ft (3.9 kg per m).
 - f. Profile STGJ0.5: Square edge deck board, half cap.
 - 1) Width x Thickness: 5.51 x 1.00 inches (140 x 25.4 mm).
 - 2) Mass: 2.69 lbs per ft (4 kg per m).
 - g. Profile STGJ20X: Square edge stair board, full cap.
 - 1) Width x Thickness: 12.80 x 1.18 inches (325 x 30 mm).
 - 2) Mass: 8.19 lbs per ft (12.2 kg per m).
 - h. Profile STGJ14: Fascia board, full cap.
 - 1) Width x Thickness: 5.91 x 0.47 inches (150 x 12 mm).
 - 2) Mass: 1.55 lbs per ft (2.3 kg per m).
 - i. Profile STGJ40: Fascia board, half cap.
 - 1) Width x Thickness: 7.25 x 0.65 inches (184 x 16.5 mm).
 - 2) Mass: 2.55 lbs per ft (3.8 kg per m).
 - j. Profile STGJ41: Fascia board, half cap.
 - 1) Width x Thickness: 11.98 x 0.71 inches (304.3 x 18 mm).
 - 2) Mass: 4.57 lbs per ft (6.8 kg per m).
 - k. Profile STGJ77: Screen board, full cap.
 - 1) Width x Thickness: 2.76 x 0.63 inches (70 x 16 mm).
 - 2) Mass: 0.94 lbs per ft (1.4 kg per m).
 - l. Profile STGJ58: Joist, full cap.
 - 1) Width x Thickness: 1.38 x 1.38 inches (35 x 35 mm).
 - 2) Mass: 0.87 lbs per ft (1.3 kg per m).
 4. Mechanical Properties.

- a. Material Specific:
- 1) Abrasion Resistance, ASTM D4060: 36 x 10-6 oz/c (13 mg/c); 1,000 cycles.
 - 2) Shore D Hardness: 71.
 - 3) Flexural Performance: Test Method: ASTM D7032, ASTM D2565, ASTM D790.

**** NOTE TO SPECIFIER ** Delete profile options not required.**

- a) Profile STGJ02AE, deck board.
 - 1) Span: 16 inches (406.4 mm).
 - a) Ultimate Load: 869.98 lbf (3.87 kN).
 - b) Modulus of Rupture: 2581 lbf / sq inch (17.8 MPa).
 - c) Modulus of Elasticity: 485895 lbf / sq inch (3351 MPa).
 - b) Profile STGJ04AE, deck board.
 - 1) Span: 16 inches (406.4 mm).
 - a) Ultimate Load: 793.55 lbf (3.53 kN).
 - b) Modulus of Rupture: 2350.5 lbf / sq inch (16.21 MPa).
 - c) Modulus of Elasticity: 458635 lbf / sq inch (3163 MPa).
 - c) Profile STGJ02AEN, stair tread board.
 - 1) Span: 16 inches (406.4 mm).
 - a) Ultimate Load: 1175.71 lbf (5.23 kN).
 - b) Modulus of Rupture: 3423.5 lbf / sq inch (23.61 MPa).
 - c) Modulus of Elasticity: 574780 lbf / sq inch (3964 MPa).
 - d) Profile STGJ30, deck board.
 - 1) Span: 16 inches (406.4 mm).
 - a) Ultimate Load: 1189.20 lbf (5.29 kN).
 - b) Modulus of Rupture: 4103.5 lbf / sq inch (28.3 MPa).
 - c) Modulus of Elasticity: 542010 lbf / sq inch (3738 MPa).
- 4) Flexural Performance: Test Method: EN ISO 15534, ISO 178.

**** NOTE TO SPECIFIER ** Delete profile options not required.**

- a) Profile STGJ113, deck board.
 - 1) Span: 11.8 inches (300 mm).
 - a) Modulus of Rupture: 3085 lbf / sq inch (21.3 MPa).
 - b) Modulus of Elasticity: 503000 lbf / sq inch (3400 MPa).
- b) Profile STGJ113, deck board.
 - 1) Span: 13.8 inches (350 mm).
 - a) Modulus of Rupture: 2900 lbf / sq inch (20.1 MPa).
 - b) Modulus of Elasticity: 536000 lbf / sq inch (3700 MPa).
- c) Profile STGJ113, deck board.
 - 1) Span: 16 inches (406 mm).
 - a) Modulus of Rupture: 2650 lbf / sq inch (18.6 MPa).
 - b) Modulus of Elasticity: 906000 lbf / sq inch (6200 MPa).
- d) Profile STGJ02AE, deck board.
 - 1) Span: 16 inches (406 mm).
 - a) Modulus of Rupture: 3150 lbf / sq inch (21.8 MPa).
 - b) Modulus of Elasticity: 732000 lbf / sq inch (5000 MPa).

5. Stair Tread Performance: ASTM D7032, ASTM D2565 and ASTM D790.
 - a. Profile STGJ02AE.
 - 1) Span: 16 inches (406.4 mm).
 - 2) Concentrated Loads: Deflection Under 1.35 kN Load: 0.11 in (2.88 mm).
 - 3) Concentrated Loads: Ultimate Load: 845.25 lbf (3.76 kN).
6. Creep Recovery:
 - a. Profile STGJ04AE.
 - 1) Average Recovery: 83 percent.
 - 2) Total Deflection: 0.06 inch (1.6 mm).
 - 3) Maximum Allowable Unrecoverable Deflection: 0.02 inch (0.36 mm).
7. Weathering Impact on Flexural Performance: Test methods: ASTM D7032, ASTM D2565 and ASTM D790.
 - a. High Temperature Effect:
 - 1) Flexural Strength: 96.8 percent.
 - 2) Flexural Stiffness: 90.3 percent.
 - 3) Adjustment Factor: 0.9.
 - b. Low Temperature Effect:
 - 1) Flexural Strength: 145.6 percent.
 - 2) Flexural Stiffness: 137.5 percent.
 - 3) Adjustment Factor: 1.00.
 - c. Moisture Effect:
 - 1) Flexural Strength: 108.3 percent.
 - 2) Flexural Stiffness: 108.5 percent.
 - 3) Adjustment Factor: 1.0.
 - d. UV Resistance:
 - 1) Flexural Strength: 92.7 percent.
 - 2) Flexural Stiffness: 94.4 percent.
 - 3) Adjustment Factor: 1.00.
 - e. Freeze-Thaw Resistance:
 - 1) Flexural Strength: 104.8 percent.
 - 2) Flexural Stiffness: 100.7 percent.
 - 3) Adjustment Factor: 1.0.
 - f. Overall End-Use Adjustment Factor: 0.9.
8. Mechanical Fastener Testing:

**** NOTE TO SPECIFIER ** Delete profile and application options not required.**

- a. Profile SGJ02AEN: Timber Application: Composite Deck Screw - Top Fixed - M5.0 x 63 mm.
 - 1) Holding Capacity (Safety Factor of 3.0): 202.32 lbf (0.9 kN).
 - 2) Maximum Load: 584.48 lbf (2.6 kN).
- b. Profile STGJ02AEN: Wind Uplift:
 - 1) Metal Application: Composite Deck Screw - Top Fixed - M4.8 x 45 mm:
 - a) Ultimate Wind Uplift: 451.1 psf (21.6 kN square meter).
 - b) Wind Upload Resistance: 154.6 psf, (7.4 kN square meter).
 - 2) Timber Application: Composite Deck Screw - Top Fixed - M4.8 x 63 mm:
 - a) Ultimate Wind Uplift: 438.6 psf (21.0 kN square meter).
 - b) Wind Upload Resistance: 150.4 psf (7.2 kN square meter).
9. Thermal Expansion Coefficient, ISO 11359-1 and 2 (A): 45.0 x 10e-6 mm/mm degrees C.
10. Fire Reaction Properties:
 - a. Infinity, ICC-ES AC 174 and tested according to ASTM E84.
 - 1) Flame Spread Index: 110.
 - 2) Smoke Development Index: 500.
 - b. Infinity FR, EN 13501 and tested according to EN 13823 and ISO 11925:
 - 1) Critical Heat Flux: 8.2 kW per sq m.
 - 2) Smoke Production: 19.9 percent minimum.

3) Flame Spread (Fs): Yes.

4) Class: B-s1.

**** NOTE TO SPECIFIER ** Delete color options not required.**

11. Color: Baltic Nero (C02).
 - a. Fading Properties, ASTM G155 4k Hours: Delta E: 2.46.
12. Color: Caribbean Coral (C70).
 - a. Fading Properties, ASTM G155 4k Hours: Delta E: 2.48.
13. Fungal Resistance: ICC - ES AC 174: Test Method: ASTM D2017.
 - a. Fungal Strand:
 - 1) G. trabeum (change in mass) 0.77 percent.
 - 2) P. placenta (change in mass) 0.91 percent.
 - 3) T. versicolor (change in mass) 0.90 percent.
 - 4) I. lacteus (change in mass) 0.91 percent.
14. Termite Resistance: ICC - ES AC 174: Test Method: ASTM D2017.
 - a. G. trabeum (change in mass) 0.77 percent.

E. Basis of Design: Infinity Co-Extruded Profiles with Cellulose-Polymer Composite Core Decking System as manufactured by Eva-Last. Low-maintenance. More stable with less expansion and contraction. Requires basic cleaning for optimal longevity. The protective cap is resilient acrylic polymer and cellulose fibre. Decay Resistant against insects, moisture, and the elements.

1. Material: Co-extruded profiles with a cellulose-polymer composite core.
 - a. Cap and Core:
 - 1) Polyethylene (PE): 62 percent of mass.
 - 2) Cellulose Fibre (Bamboo Fibres): 28 percent of mass.
 - 3) Calcium Carbonate: 4 percent of mass.
 - b. Additional Additives: 6 percent of mass.
2. Physical Properties:
 - a. Density According to EN 15534-1: 78.04 to 81.16 lb per cu ft (1250 to 1300 kg per sq m).
3. Profile Properties:

**** NOTE TO SPECIFIER ** Delete profile options not required.**

- a. Profile STGJ06AE: I - Series, grooved deck board, half cap.
 - 1) Width x Thickness: 5.36 x 0.91 inches (136 x 23 mm).
 - 2) Mass: 1.81 lbs per ft (2.7 kg per m).
 - b. Profile STGJ07AE: I - Series grooved deck board, half cap.
 - 1) Width x Thickness: 6.83 x 1 inches (177.3 x 23 mm).
 - 2) Mass: 2.01 lbs per ft (3 kg per m).
 - c. Profile STGJ02AE: I - Series grooved deck board, half cap.
 - 1) Width x Thickness: 5.36 x 1 inches (136 x 25.4 mm).
 - 2) Mass: 2.01 lbs per ft (3 kg per m).
 - d. Profile STGJ03AE: I - Series square edge board, half cap.
 - 1) Width x Thickness: 5.36 x 1 inches (136 x 25.4 mm).
 - 2) Mass: 1.95 lbs per ft (2.9 kg per m).
 - e. Profile STGJ04AE: I - Series edge grooved board, half cap.
 - 1) Width x Thickness: 5.36 x 1 inches (136 x 25.4 mm).
 - 2) Mass: 1.88 lbs per ft (2.8 kg per m).
 - f. Profile STGJ113: I - Series grooved deck board, half cap.
 - 1) Width x Thickness: 5.28 x 1 inches (134.1 x 25.4 mm).
 - 2) Mass: 1.61 lbs per ft (2.4 kg per m).
4. Mechanical Properties.
 - a. Material Specific:
 - 1) Abrasion Resistance, ASTM D4060: 36 x 10-6 oz/c (13 mg/c); 1,000 cycles.
 - 2) Shore D Hardness: 71.

- 3) Flexural Performance: Test Method: ASTM D7032, ASTM D2565, ASTM D790.

**** NOTE TO SPECIFIER ** Delete profile options not required.**

- a) Profile STGJ02AE, deck board.
 - 1) Span: 16 inches (406.4 mm).
 - a) Ultimate Load: 869.98 lbf (3.87 kN).
 - b) Modulus of Rupture: 2581 lbf / sq inch (17.8 MPa).
 - c) Modulus of Elasticity: 485895 lbf / sq inch (3351 MPa).
- b) Profile STGJ04AE, deck board.
 - 1) Span: 16 inches (406.4 mm).
 - a) Ultimate Load: 793.55 lbf (3.53 kN).
 - b) Modulus of Rupture: 2350.5 lbf / sq inch (16.21 MPa).
 - c) Modulus of Elasticity: 458635 lbf / sq inch (3163 MPa).

- 4) Flexural Performance: Test Method: EN ISO 15534, ISO 178.

**** NOTE TO SPECIFIER ** Delete profile options not required.**

- a) Profile STGJ113, deck board.
 - 1) Span: 11.8 inches (300 mm).
 - a) Modulus of Rupture: 3085 lbf / sq inch (21.3 MPa).
 - b) Modulus of Elasticity: 503000 lbf / sq inch (3400 MPa).
- b) Profile STGJ113, deck board.
 - 1) Span: 13.8 inches (350 mm).
 - a) Modulus of Rupture: 2900 lbf / sq inch (20.1 MPa).
 - b) Modulus of Elasticity: 536000 lbf / sq inch (3700 MPa).
- c) Profile STGJ113, deck board.
 - 1) Span: 16 inches (406 mm).
 - a) Modulus of Rupture: 2650 lbf / sq inch (18.6 MPa).
 - b) Modulus of Elasticity: 906000 lbf / sq inch (6200 MPa).
- d) Profile STGJ02AE, deck board.
 - 1) Span: 16 inches (406 mm).
 - a) Modulus of Rupture: 3150 lbf / sq inch (21.8 MPa).
 - b) Modulus of Elasticity: 732000 lbf / sq inch (5000 MPa).

5. Stair Tread Performance: ASTM D7032, ASTM D2565 and ASTM D790.

- a. Profile STGJ02AE.
 - 1) Span: 16 inches (406.4 mm).
 - 2) Concentrated Loads: Deflection Under 1.35 kN Load: 0.11 in (2.88 mm).
 - 3) Concentrated Loads: Ultimate Load: 845.25 lbf (3.76 kN).

6. Creep Recovery:

- a. Profile STGJ04AE.
 - 1) Average Recovery: 83 percent.
 - 2) Total Deflection: 0.06 inch (1.6 mm).
 - 3) Maximum Allowable Unrecoverable Deflection: 0.02 inch (0.36 mm).

7. Weathering Impact on Flexural Performance: Test methods: ASTM D7032, ASTM D2565 and ASTM D790.

- a. High Temperature Effect:
 - 1) Flexural Strength: 96.8 percent.
 - 2) Flexural Stiffness: 90.3 percent.
 - 3) Adjustment Factor: 0.9.

- b. Low Temperature Effect:
 - 1) Flexural Strength: 145.6 percent.
 - 2) Flexural Stiffness: 137.5 percent.
 - 3) Adjustment Factor: 1.00.
 - c. Moisture Effect:
 - 1) Flexural Strength: 108.3 percent.
 - 2) Flexural Stiffness: 108.5 percent.
 - 3) Adjustment Factor: 1.0.
 - d. UV Resistance:
 - 1) Flexural Strength: 92.7 percent.
 - 2) Flexural Stiffness: 94.4 percent.
 - 3) Adjustment Factor: 1.00.
 - e. Freeze-Thaw Resistance:
 - 1) Flexural Strength: 104.8 percent.
 - 2) Flexural Stiffness: 100.7 percent.
 - 3) Adjustment Factor: 1.0.
 - f. Overall End-Use Adjustment Factor: 0.9.
8. Mechanical Fastener Testing:
- ** NOTE TO SPECIFIER ** Delete profile and application options not required.**
- a. Profile STGJ03AE: Timber Application: Composite Deck Screw - Top Fixed - M5.0 x 63 mm.
 - 1) Holding Capacity (Safety Factor of 3.0): 167.36 lbf (0.7kN).
 - 2) Maximum Load: 157.36 lbf (0.7 kN).
 - b. Profile STGJ03AE: Wind Uplift:
 - 1) Metal Application: Hidden Deck Fastener S9 - M4.2 x 40 mm and clip:
 - a) Ultimate Wind Uplift: 248.5 psf (11.9 kN square meter).
 - b) Wind Upload Resistance: 85.6 psf (4.1 kN square meter).
 - 2) Timber Application: Hidden Deck Fastener S9 - M4.2 x 40 mm and clip:
 - 3) Ultimate Wind Uplift: 300.7 psf (14.4 kN square meter).
 - a) Wind Upload Resistance: 102.4 psf (4.9 kN square meter).
 - c. Profile STGJ04AE: Wind Uplift:
 - 1) Metal Application: Hidden Deck Fastener S9 - M4.2 x 40 mm and clip:
 - a) Ultimate Wind Uplift: 248.5 psf (11.9 kN square meter).
 - b) Wind Upload Resistance: 85.6 psf (4.1 kN square meter).
 - 2) Timber Application: Hidden Deck Fastener S9 - M4.2 x 40 mm and clip:
 - 3) Ultimate Wind Uplift: 300.7 psf (14.4 kN square meter).
 - a) Wind Upload Resistance: 102.4 psf (4.9 kN square meter).
9. Thermal Expansion Coefficient, ISO 11359-1 and 2 (A): 45.0 x 10e-6 mm/mm degrees C.
10. Fire Reaction Properties:
- a. Infinity, ICC-ES AC 174 and tested according to ASTM E84.
 - 1) Flame Spread Index: 110.
 - 2) Smoke Development Index: 500.
 - b. Infinity FR, EN 13501 and tested according to EN 13823 and ISO 11925:
 - 1) Critical Heat Flux: 8.2 kW per sq m.
 - 2) Smoke Production: 19.9 percent minimum.
 - 3) Flame Spread (Fs): Yes.
 - 4) Class: B-s1.
- ** NOTE TO SPECIFIER ** Delete color options not required.**
- 11. Color: Baltic Nero (C02).
 - a. Fading Properties, ASTM G155 4k Hours: Delta E: 2.46.
 - 12. Color: Caribbean Coral (C70).
 - a. Fading Properties, ASTM G155 4k Hours: Delta E: 2.48.
 - 13. Fungal Resistance: ICC - ES AC 174: Test Method: ASTM D2017.
 - a. Fungal Strand:

- 1) G. trabeum (change in mass) 0.77 percent.
 - 2) P. placenta (change in mass) 0.91 percent.
 - 3) T. versicolor (change in mass) 0.90 percent.
 - 4) I. lacteus (change in mass) 0.91 percent.
14. Termite Resistance: ICC - ES AC 174: Test Method: ASTM D2017.
- a. G. trabeum (change in mass) 0.77 percent.

F. Basis of Design: Eva-Tech HDPE Polymer and Bamboo Cellulose Fibre Composite Decking System as manufactured by Eva-Last. Low-maintenance. More stable with less expansion and contraction. Requires basic cleaning for optimal longevity. Decay Resistant against insects, moisture, and the elements.

1. Material: Profiles made from cellulose polymer composite.
 - a. Core:
 - 1) Polyethylene (PE): 25 percent of mass.
 - 2) Cellulose Fibre (Bamboo Fibre): 56 percent of mass.
 - 3) Calcium Carbonate: 15 percent of mass.
 - b. Additional Additives: 4 percent of mass.
2. Physical Properties:
 - a. Density According to EN 15543: 68.67 to 81.16 lb per cu ft (1100 to 1300 kg per sq m).
3. Profile Properties:

**** NOTE TO SPECIFIER ** Delete profile options not required.**

- a. Profile ST01AEF: Decking, I - Series board.
 - 1) Width x Thickness: 5.40 x 0.93 inches (137.9 x 23.4 mm).
 - 2) Mass: 1.55 lbs per ft (2.3 kg per m).
- b. Profile ST01AEN: Decking, I - Series single sided.
 - 1) Width x Thickness: 5.4 x 0.93 inches (137 x 23.4 mm).
 - 2) Mass: 1.55 lbs per ft (2.3 kg per m).
- c. Profile ST02AEN: Decking, I - Series single sided.
 - 1) Width x Thickness: 5.4 x 0.93 inches (137 x 23.4 mm).
 - 2) Mass: 1.82 lbs per ft (2.7 kg per m).
- d. Profile ST02AD: Decking board.
 - 1) Width x Thickness: 5.75 x 0.95 inches (148 x 24 mm).
 - 2) Mass: 2.83 lbs per ft (4.2 kg per m).
- e. Profile STR07B: Decking fascia board.
 - 1) Width x Thickness: 5.83 x 0.44 inches (148 x 11 mm).
 - 2) Mass: 1.55 lbs per ft (2.3 kg per m).
- f. Profile ST02AF: Decking fascia board.
 - 1) Width x Thickness: 9.69 x 0.63 inches (246 x 16 mm).
 - 2) Mass: 3.63 lbs per ft (5.4 kg per m).
- g. Profile ST08L: Batten.
 - 1) Width x Thickness: 1.58 x 1.19 inches (40 x 30 mm).
 - 2) Mass: 0.88 lbs per ft (1.3 kg per m).
- h. Profile STR03Q: Batten.
 - 1) Width x Thickness: 1.38 x 1.38 inches (35 x 35 mm).
 - 2) Mass: 0.95 lbs per ft (1.4 kg per m).
4. Mechanical Properties.
 - a. Material Specific:
 - 1) Abrasion Resistance, ASTM D4060: 0.0005 oz/c (16 mg/c); 1,000 cycles.
 - 2) Modulus of Elasticity: GB/T 17657, 3838.997 lbs per sq inch (25.09 MPa).
 - b. Flexural Performance:

**** NOTE TO SPECIFIER ** Delete profile options not required.**

- 1) Profile ST01AEF: BS EN 15534-1-2014 + A1 - 2017.

- a) Span: 16 inches (400 mm).
 - 1) Ultimate Load: 0.51 lbf (2.3 kN).
 - 2) Modulus of Rupture: 2943 lbf / sq inch (20.3 MPa).
 - 3) Modulus of Elasticity: 430679 lbf / sq inch (2970.2 MPa).
- 2) Profile ST01AEF: BS EN 15534-1-2014 + A1 - 2017.
 - a) Span: 22 inches (550 mm).
 - 1) Ultimate Load: 0.38 lbf (1.73 kN).
 - 2) Modulus of Rupture: 3045 lbf / sq inch (21 MPa).
 - 3) Modulus of Elasticity: 384525 lbf / sq inch (2651.9 MPa).
- 3) Profile ST01AEN: BS EN 15534-1-2014 + A1 - 2017.
 - a) Span: 16 inches (400 mm).
 - 1) Ultimate Load: 0.52 lbf (2.34 kN).
 - 2) Modulus of Rupture: 3056 lbf / sq inch (21.1 MPa).
 - 3) Modulus of Elasticity: 480689 lbf / sq inch (3315.1 MPa).
- 4) Profile ST01AEN: BS EN 15534-1-2014 + A1 - 2017.
 - a) Span: 22 inches (550 mm).
 - 1) Ultimate Load: 0.36 lbf (1.64 kN).
 - 2) Modulus of Rupture: 2940 lbf / sq inch (20.3 MPa).
 - 3) Modulus of Elasticity: 483227 lbf / sq inch (3332.6 MPa).
- 5) Profile STR07B: BS EN 15534-1-2014 + A1 - 2017.
 - a) Span: 16 inches (400 mm).
 - 1) Ultimate Load: 0.21 lbf (0.98 kN).
 - 2) Modulus of Rupture: 3616 lbf / sq inch (24.9 MPa).
 - 3) Modulus of Elasticity: 333500 lbf / sq inch (2300 MPa).
- 6) Profile STR07B: BS EN 15534-1-2014 + A1 - 2017.
 - a) Span: 22 inches (550 mm).
 - 1) Ultimate Load: 0.18 lbf (0.81 kN).
 - 2) Modulus of Rupture: 4162 lbf / sq inch (28.7 MPa).
 - 3) Modulus of Elasticity: 755145 lbf / sq inch (5207.9 MPa).
- 7) Profile ST02AF: BS EN 15534-1-2014 + A1 - 2017.
 - a) Span: 16 inches (400 mm).
 - 1) Ultimate Load: 0.8 lbf (3.59 kN).
 - 2) Modulus of Rupture: 3336 lbf / sq inch (23 MPa).
 - 3) Modulus of Elasticity: 418310 lbf / sq inch (2884.9 MPa).
- 8) Profile ST02AF: BS EN 15534-1-2014 + A1 - 2017.
 - a) Span: 22 inches (550 mm).
 - 1) Ultimate Load: 0.6 lbf (2.67 kN).
 - 2) Modulus of Rupture: 3414 lbf / sq inch (23.6 MPa).
 - 3) Modulus of Elasticity: 518317 lbf / sq inch (3574.6 MPa).
- 9) Profile ST08L: BS EN 15534-1-2014 + A1 - 2017.
 - a) Span: 16 inches (400 mm).
 - 1) Ultimate Load: 0.64 lbf (2.86 kN).
 - 2) Modulus of Rupture: 4667 lbf / sq inch (32.2 MPa).
 - 3) Modulus of Elasticity: 579666 lbf / sq inch (3997.7 MPa).
- 10) Profile ST08L: BS EN 15534-1-2014 + A1 - 2017.
 - a) Span: 22 inches (550 mm).
 - 1) Ultimate Load: 0.5 lbf (2.23 kN).
 - 2) Modulus of Rupture: 5001 lbf / sq inch (34.5 MPa).
 - 3) Modulus of Elasticity: 528104 lbf / sq inch (3642.1 MPa).
- 11) Profile STR03Q: BS EN 15534-1-2014 + A1 - 2017.
 - a) Span: 16 inches (400 mm).
 - 1) Ultimate Load: 0.75 lbf (3.37 kN).
 - 2) Modulus of Rupture: 4061 lbf / sq inch (28 MPa).
 - 3) Modulus of Elasticity: 505789 lbf / sq inch (3488.2 MPa).

5. Weathering Impact: Test method: EN 321.

**** NOTE TO SPECIFIER ** Delete profile options not required.**

- a. Profile: ST02AD: Wyde (fluted) finish.
 - 1) Span: 12 inches (300 mm).
 - 2) Deflection at 500N: 0.1 inches (0.5 mm).
 - 3) Maximum Breaking Load: 1866589 lbf (8303 kN).
 - 4) Maximum Breaking Load After Cyclic Wearing: 1721362 lbf (7657 kN).
 - 5) Reduction Factors: 0.92.
- b. Profile: ST02AD: Tread finish.
 - 1) Span: 12 inches (300 mm).
 - 2) Deflection at 500N: 0.1 inches (0.4 mm).
 - 3) Maximum Breaking Load: 1942349 lbf (8640 kN).
 - 4) Reduction Factors: 0.92.
- 6. Thermal Expansion Coefficient, ASTM D696: 45 x 10e-6 mm/mm degrees C.
- 7. Fire Reaction Properties:
 - a. EN 13501 and tested according to EN 13501:
 - 1) Critical Heat Flux: 3.5 kW per sq m.
 - 2) Smoke Production: 212 percent minimum.
 - 3) Flame Spread (Fs): Yes.
 - 4) Class: Dfl-s1.
 - b. Eva - Tech Dual Tone (FR), EN 13501 and tested according to EN 13501:
 - 1) Critical Heat Flux: 5.8 kW per sq m.
 - 2) Smoke Production: 31.5 percent minimum.
 - 3) Flame Spread (Fs): No.
 - 4) Class: Cfl-s1.

**** NOTE TO SPECIFIER ** Delete color options not required.**

- 8. Color: Xavia Dark Grey (C11).
 - a. Fading Properties, ASTM G155 1300 Hours: Delta E: 8.2.
- 9. Color: Rusteak Brown (C04).
 - a. Fading Properties, ASTM G155 1300 Hours: Delta E: 4.3.
- 10. Fungal Resistance: ICC - ES AC 174: Test Method: ASTM D2017.
 - a. Fungal Strand:
 - 1) G. trabeum (change in mass) 0.77 percent.
 - 2) P. placenta (change in mass) 0.91 percent.
 - 3) T. versicolor (change in mass) 0.90 percent.
 - 4) I. lacteus (change in mass) 0.91 percent.
- 11. Termite Resistance: ICC - ES AC 174: Test Method: ASTM D2017.
 - a. G. trabeum (change in mass) 0.77 percent.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until the substrates have been properly constructed and prepared and are level and secure.
- B. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with local engineering and code requirements, local occupational health and safety regulations, ventilation requirements, manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.
 - 1. Install decking and decking components using manufacturer's recommended cross cutting, cutting, and ripping methods and lengths, spans, expansion gaps, top fixings, fasteners, and fastener distances.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

**** NOTE TO SPECIFIER **** Include if manufacturer provides field quality control with onsite personnel for instruction or supervision of product installation, application, erection, or construction. Delete if not required.

- B. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.

3.5 CLEANING AND PROTECTION

- A. Clean products in accordance with the manufacturer's recommendations.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION