ICC-ES Evaluation Report

ESR-4448

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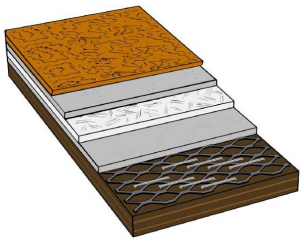
This report also contains:

- **City of LA Supplement**
- **CA Supplement**

KRETUS® WPD 2.1



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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION **Section: 07 18 13—Pedestrian Traffic Coatings**	**REPORT HOLDER:** **KRETUS, INC.**	**EVALUATION SUBJECT:** **KRETUS® WPD 2.1 SYSTEM**	

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2021, 2018, 2015 and 2012 *International Building Code®* (IBC)
- 2021, 2018, 2015 and 2012 *International Residential Code®* (IRC)

Properties evaluated:

- Durability
- Impact Resistance
- Wind Resistance
- Fire Classification
- Fire Resistance

2.0 USES

The Kretus® WPD 2.1 System is intended for use as a walking deck and classified roof covering applied over plywood decks. The system, when installed as described in Section 4.3, is used as a Class A roof covering. The WPD 2.1 System, when installed as described in Section 4.5, is used as a component of a one-hour fire-resistance-rated assembly.

3.0 DESCRIPTION

3.1 General:

The Kretus® WPD 2.1 System is produced at jobsites and consist of the components described in Sections 3.1.1 through 3.1.11.

3.1.1 Metal Lath: Metal lath is minimum 2.5-pound-per-square-yard (1.36 kg/m^2), galvanized-diamond-mesh, expanded metal lath complying with ASTM C847.

3.1.2 Staples: Staples must be corrosion-resistant, minimum No. 16 gauge [0.0598 inch (1.519 mm)] staples with 1-inch (25.4 mm) crowns and minimum $^5/_8$-inch-long (15.9 mm) legs.

3.1.3 Kretus® high-grade polyurethane sealant (caulk): Kretus® high-grade polyurethane sealant is a single-component caulk. The sealant is available in cartridge tubes and has a shelf life of 12 months when stored properly in unopened containers.

3.1.4 Fiberglass Mat: The chopped-strand fiberglass mat, weighing 3/4 ounce per square yard (25.4 g/m^2), is available in rolls of various widths.

3.1.5 Kretus® Bonder Resin: A single-component acrylic resin intended for application with the fiberglass mat. The resin is available in 1-gallon (3.8 L) pails, 5-gallon (18.9 L) pails, 50-gallon (189.3 L) drums, and 275-gallon (1041 L) totes and has a shelf life of 36 months when stored properly in unopened containers.

3.1.6 Kretus® APC Acrylic Admix: A high-solids acrylic co-polymer admixture intended for application with APC cement-sand blends to reduce curing times. The admixture is available in 1-gallon (3.8 L) pails, 5-gallon (18.9 L) pails, 50-gallon (189.3 L) drums, and 275-gallon (1041 L) totes and has a shelf life of 36 months when stored properly in unopened containers.

3.1.7 Kretus® APC Basecoat: A cement-sand blend when combined with Kretus® APC Acrylic Admix and intended as the base and screed coats in the system. Kretus® APC Basecoat is available in 50-pound (22.7 kg) bags and has a shelf life of 12 months when stored properly in unopened containers.

3.1.8 Kretus® APC Texture 2.0: A cement-sand blend when combined with Kretus® APC Acrylic Admix is intended as the optional texture coat in the system. Kretus® APC Texture 2.0 is available in 50-pound (22.7 kg) bags and has a shelf life of 12 months when stored properly in unopened containers.

3.1.9 Kretus® Acrylic Sealer WB: A water-based acrylic intended as the sealer coat in the system. Kretus® Acrylic Sealer WB is available in 5-gallon (18.9 L) pails and has a shelf life of 36 months from the date of manufacture when stored properly in unopened containers.

3.1.10 Kretus® WB Colorant: A water-based colorant intended for use with the sealer/topcoat. Kretus® WB Colorant is available in 16-ounce (0.5 L) pails and has a shelf life of 36 months when stored properly in unopened containers.

3.1.11 Metal Flashing: Metal flashing must be a minimum No. 26 gage [(0.019 inch (0.483 mm)], corrosion-resistant metal.

3.2 Substrate:

3.2.1 Plywood: Plywood must have a minimum thickness of 3/4 inch (19.1 mm) or as required by Table 2304.8 (3) of the 2021, 2018 and 2015 IBC [Table 2304.7 (3) of the 2012 IBC] and must be exterior grade complying with U.S. DOC PS-1 or PS-2.

4.0 INSTALLATION

4.1 Preparation of Substrates:

All substrates must be free of contaminants such as water, curing compounds, hardeners, bond breakers, paint, etc. Substrates must be structurally sound, free of any projections or depressions, and sloped for proper drainage. Plywood must be a minimum of 3/4 inch (19.1 mm) thick with all joints either tongue-and-groove, installed over framing members or blocked with minimum 2-by-4 blocking. Joints must be gapped 1/8 inch (3.2 mm) and filled with Kretus® high-grade polyurethane sealant in accordance with the manufacturer's published installation instructions.

4.2 Application of Kretus® WPD 2.1 System:

4.2.1 Kretus WPD 2.1 System: The Kretus® WPD 2.1 System must be installed over exterior-grade plywood using a 2 1/2-pound-per-square-yard (1.36 kg/m^2) galvanized metal lath. The 3/4-inch-thick (19.1 mm) plywood deck is prepared as described in Section 4.1 and the metal lath is fastened to the plywood substrate with a minimum overlap of ¾ inch (19 mm). The metal lath must overlap metal flashing a minimum of 1 ½ inches (38 mm). Fasteners must be No. 16 gage staples having a 1-inch (25.4 mm) crown and 5/8-inch-long (15.9 mm) legs and must be applied at the rate of approximately 12 staples per square foot (129 staples per square meter). Staples must be perpendicular to and cover caulked joints in the substrate.

The following materials must be applied when the ambient temperature is between 45 and 100°F (7.2 and 37.8°C). The materials must not be applied in inclement weather.

For the basecoat, combine 1 gallon (3.8 L) of Kretus® APC Acrylic Admix with one 50-pound (22.7 kg) bag of Kretus® APC Basecoat per batch. The mixture must be spread evenly over the metal lath at a rate of 30 ft^2 (2.8 m^2) per batch so that the basecoat completely covers all staples and voids in the metal lath.

For the bond coat, lay the fiberglass mat over the base coat with cutouts to fit around drains, vents and other penetrations of the substrate. The fiberglass mat overlaps must be between ¼ and ½ inch (6.3 and 12.7 mm). Saturate the fiberglass mat with Kretus® Bonder Resin at a rate of 45 ft^2 per gallon (1.1 m^2 per L) and let the material dry for 8 hours. After drying, any pinholes must be sealed with Kretus® Bonder Resin applied at a rate of 100 ft^2 per gallon (2.45 m^2 per L). The surface must be clean and free of embedded foreign materials, blemishes, air pockets and bubbles. Any adversely affected areas must be cut out and fiberglass mat and Kretus® Bonder Resin reapplied to cover the cutout areas. The repaired area must be allowed to cure for between 2 and 6 hours before installing the screed coat.

For the screed coat, combine 1 gallon (3.8 L) of Kretus® APC Acrylic Admix with one 50-pound (22.7 kg) bag of Kretus® APC Basecoat per batch. The mixture must be spread evenly over the bond coat at a rate of 100 ft^2 (9.3 m^2) per batch.

For the optional texture coat, combine 1 gallon (3.8 L) of Kretus® APC Acrylic Admix with one 50-pound (22.7 kg) bag of Kretus® APC Texture 2.0 per batch. The mixture must be spread evenly over the screed coat at a rate of 125 ft^2 (11.6 m^2) per batch. For a knockdown texture, apply the batch with a hopper gun at a pressure of 30 to 60 psi (2.1 to 4.2 kg/cm^2) and flatten any high points with a finishing trowel.

For the sealer/topcoat, combine 5 gallons (19 L) of Kretus® APC Acrylic Sealer WB Base with 16 ounces (0.5 L) of WB Colorant and apply with a non-shed roller at 150 ft^2 per gallon (3.7 m^2 per L) over a smooth screed coat or at 100 ft^2 per gallon (2.45 m^2 per L) over a texture coat.

After curing, if the coating is damaged, the system, including all coatings and metal lath, must be completely removed, the substrate prepared, and the system reapplied as described in Sections 4.1 and 4.2.

4.3 Fire Classification:

4.3.1 Kretus® WPD 2.1 System: When applied as described in Section 4.2.1 on a plywood deck having a maximum slope of ¼ inch to a horizontal foot (2.1 percent slope), the Kretus® WPD 2.1 System has a Class A roof classification.

4.4 Wind Resistance:

Under the 2021 and 2018 IBC, the Kretus® WPD 2.1 System may be used in areas subject to a basic wind speed (V) of 130 mph (209 km/h) on structures with a maximum height of 40 feet (12,192 mm) in Exposure B areas.

Under the 2021 IRC, 2018 IRC, 2015 IBC, 2015 IRC, and 2012 IBC, the Kretus® WPD 2.1 System may be used in areas subject to an ultimate design wind speed (V_{ult}) of 130 mph (209 km/h) on structures with a maximum height of 40 feet (12,192 mm) in Exposure B areas.

Under the 2012 IRC, 2009 IBC, and 2009 IRC, the Kretus® WPD 2.1 System may be used in areas subject to a maximum 3-second gust wind speed (V_{3s}) of 100 mph (161 km/h) on structures with a maximum height of 40 feet (12,192 mm) in Exposure B areas.

4.5 One-hour Fire-resistance-rated Construction:

When the Kretus® WPD 2.1 System is installed in accordance with Sections 4.1 and 4.2 over ¾-inch-thick (19.1 mm) exterior-grade plywood complying with PS-1, with nominally 2-by-10 wood joists spaced at a minimum of 16 inches (406 mm) on center, and all plywood joists blocked, the assembly can be used as an alternative for the double wood floor described in Item 13-1.4 of Table 721.1(3) of the 2021, 2018, 2015 and 2012 IBC, except that the ½-inch-thick Type X gypsum wallboard must be replaced with ⅝-inch-thick Type X gypsum wallboard. The design bending stress must be limited to 78 percent of the code prescribed design values for the wood joist.

5.0 CONDITIONS OF USE:

The Kretus® WPD 2.1 System described in this report complies with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The system must be installed in accordance with this report, the applicable code, and the manufacturer's published installation instructions, by an approved applicator trained by Kretus, Inc. In the event of conflict

between this report and the manufacturer's installation instructions, this report governs.

5.2 The plywood deck on which the system is installed must be adequate to resist the design wind pressures of the applicable code.

5.3 The products are manufactured in Orange, California, under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Walking Decks (AC39), dated June 2017 (editorially revised November 2020).

7.0 IDENTIFICATION

7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-4448) along with the name, registered trademark, or registered logo of the report holder (Kretus, Inc.) must be included in the product label.

7.2 In addition, all components of the Kretus® WPD 2.1 System must be identified with a label bearing the Kretus, Inc. name and address; the product name, and batch number.

7.3 The report holder's contact information is the following:

KRETUS, INC.
1055 WEST STRUCK AVENUE
ORANGE, CALIFORNIA 92867
(714) 694-2061
www.kretus.com

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 18 13—Pedestrian Traffic Coatings

REPORT HOLDER:

KRETUS, INC.

EVALUATION SUBJECT:

KRETUS® WPD 2.1 SYSTEM

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Kretus® WPD 2.1 System, described in ICC-ES evaluation report ESR-4448, has also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2023 *City of Los Angeles Building Code (LABC)*
- 2023 *City of Los Angeles Residential Code (LARC)*

2.0 CONCLUSIONS

The Kretus® WPD 2.1 System, described in Sections 2.0 through 7.0 of the evaluation report ESR-4448, comply with the LABC and the LARC and are subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The Kretus® WPD 2.1 System described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report ESR-4448.
- The design, installation, conditions of use and identification of the systems are in accordance with the 2021 *International Building Code®* (IBC) or the 2021 *International Residential Code®* (IRC) provisions, as applicable, noted in the evaluation report ESR-4448.
- The design, installation and inspection are in accordance with additional requirements of LABC Chapter 15, 16 and 17 or LARC Chapter 9, as applicable.
- The installation of the system must comply with the City of Los Angeles Information Bulletin P/BC 2020-16, “Dwellings in High Wind Velocity Areas (HWA).”

This supplement expires concurrently with the evaluation report, reissued April 2025.

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Section: 07 18 13—Pedestrian Traffic Coatings

REPORT HOLDER:

KRETUS, INC.

EVALUATION SUBJECT:

KRETUS® WPD 2.1 SYSTEM

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Kretus® WPD 2.1 System, described in ICC-ES evaluation report ESR-4448, has also been evaluated for compliance with the code*(s)* noted below.

Applicable code edition*(s)*:

- 2022 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2022 *California Residential Code* (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The Kretus® WPD 2.1 System, described in Sections 2.0 through 7.0 of the evaluation report ESR-4448, complies with CBC Chapter 15, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 15, 16 and 17, as applicable.

2.1.1 OSHPD:

The applicable OSHPD Sections of the CBC are beyond the scope of this supplement.

2.1.2 DSA:

The applicable DSA Sections of the CBC are beyond the scope of this supplement.

2.2 CRC:

The Kretus® WPD 2.1 System, described in Sections 2.0 through 7.0 of the evaluation report ESR-2125, complies with CRC Chapter 9, provided the design and installation are in accordance with the 2021 *International Residential Code*® (IRC) provisions noted in the evaluation report and additional requirements of CRC Chapter 9, as applicable.

This supplement expires concurrently with the evaluation report, reissued April 2025.