



## CORNERSTONE SPECIALTY WOOD PRODUCTS, LLC®

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## RESINDEK® PANELS FOR FLOORING AND SHELVING APPLICATIONS

CSI Section:

09 64 19 Wood Composition Flooring

### 1.0 RECOGNITION

ResinDek® panels are recognized for use as interior floor finish and floor covering materials for installation on corrugated metal decking where noted in Table 1. The panels are also recognized for use in flooring and shelving applications in Types I-V construction. ResinDek® panels are recognized as part of a fire-resistance rated assemblies when constructed in accordance with Section 3.1.2 or 3.1.3 of this report. The physical, structural, surface burning, fire-resistance and ignition properties of the panels have been evaluated for compliance with the following codes:

- 2018, 2015, 2012, 2009 and 2006 International Building Code® (IBC)
- 2018, 2015, 2012, 2009 and 2006 International Residential Code® (IRC)

### 2.0 LIMITATIONS

Use of ResinDek® panels recognized in this report is subject to the following limitations:

**2.1** The design of the supporting floor, metal deck and structure has not been evaluated and is outside the scope of this report. Documentation shall be prepared and submitted to the building official by a design professional to demonstrate that the supporting floor, metal deck and structure will carry the required load.

**2.2** ResinDek® panels shall be limited to interior use.

**2.3** ResinDek® panels shall be stored in a dry location and kept in a flat position.

**2.4** ResinDek® panels shall not be subject to prolonged and extensive soaking, hosing down, or wetting.

**2.5** Use of the panels as part of a floor diaphragm to resist lateral loading is outside the scope of this review.

**2.6** Evaluation for high-piled combustible storage as defined in the International Fire Code is beyond the scope of this review.

**2.7** Design of the rack and shelving frames are beyond the scope of this review.

**2.8** ResinDek solid shelving system shall not be used as part of building elements as noted in Table 601 of the IBC.

**2.9** ResinDek panels and solid shelving systems are produced in Louisville, Kentucky under a quality control program with inspections under the supervision of IAPMO UES.

### 3.0 PRODUCT USE

Use of ResinDek® panels shall comply with the applicable codes, the manufacturer's installation instructions, and this report. Where conflicts occur, the most restrictive shall govern.

#### 3.1 ResinDek Flooring Applications:

**3.1.1 Design:** ResinDek® panels are designed to be used as a floor covering material applied over corrugated metal decking located in mezzanines, equipment platforms, industrial work platforms, pick modules and self-storage facilities. Decking examples include B and N deck profiles. More than one layer of ResinDek® flooring panels may be installed to achieve specific height or performance conditions. Floor loading shall not exceed the load carrying capacity of the metal deck or the supporting structure.

**3.1.2 One-hour fire-resistance-rated floor/ceiling assembly:** ResinDek® panels may be used as part of a one-hour fire-resistance rated assembly when used as described in this section (Section 3.2) and in IBC Table 721.1(3), Item 22-1.1.

**3.1.2.1 Floor Construction:** When using IBC Table 721.1(3), Item 22-1.1 steel joists or floor trusses spaced at maximum of 24 inches (610 mm) on center shall be covered with corrugated metal decking. ResinDek® Floor Panels shall be installed over the metal decking in accordance with Section 3.1.4.

**3.1.2.2 Ceiling:** The base layer shall be 5/8-inch (15.9 mm) Type X gypsum board applied at right angles to 24-inch-on-center (610 mm) steel framing with 1-inch-long (25.4 mm) Type S drywall screws spaced 24 inches (610 mm) on center. A face layer of 5/8-inch (15.9 mm) Type X gypsum board shall be applied at right angles to the steel framing with the joints of the face layer offset 24 inches (610 mm) from the joints of the base layer. The face layer shall be attached through the base layer with 1<sup>5</sup>/<sub>8</sub>-inch (41.3 mm) Type S drywall screws spaced at a maximum 12 inches (305 mm) on center at each side of the end joints and at intermediate supports. The gypsum board layers shall be fastened together using 1<sup>1</sup>/<sub>2</sub>-inch (38-mm) Type G drywall screws at a maximum spacing of 12 inches (305 mm) on center and placed 2 inches (51 mm) back on either side of face layer end joints.



**3.1.3 Additional Floor/Ceiling Assemblies:** ResinDek® flooring panels are also recognized for use in 1, 1½, and 2-hour restrained and unrestrained fire-resistance-rated assemblies as described in UL Design No. L701 (BXUV.L701). Steel beam and joists shall be spaced as per design.

**3.1.4 Installation:** ResinDek® panels are for installation on corrugated metal decking located in mezzanines, equipment platforms, industrial work platforms, pick modules and self-storage facilities.

**3.1.4.1 General:** ResinDek® shall be installed with the label side of the panel facing upward. The panels shall be installed on corrugated metal deck by using a screw gun with operable clutch. The screw heads shall be driven to just below the panel surface (Noted in Figure 1 of this report).



FIGURE 1

The ends of the panels shall meet over the ribs of the corrugated metal deck (Noted in Figure 2 of this report). In cases where the panel ends cannot be located over a rib, a 6-inch-wide (152 mm), minimum No. 20-gauge steel shim shall be connected to the metal deck to support the load over the valley.

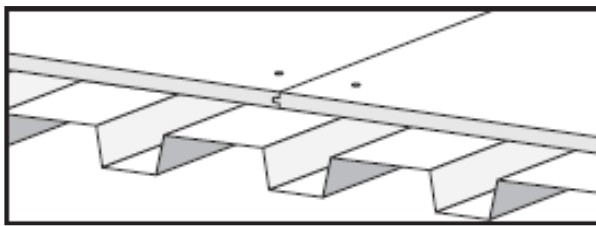


FIGURE 2

The panels shall be installed with a 1/8-inch (3.18 mm) space between the panels and a 3/8-inch (9.53 mm) space around the outside edges of the floors (Noted in Figure 3 of this report).

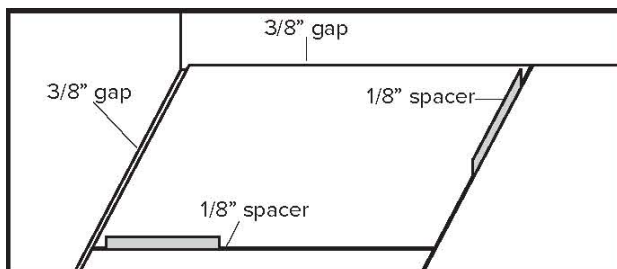


FIGURE 3

**3.1.4.2 Fasteners:** Proprietary ResinDek® screws shall be used to attach the panels to the metal decking. The ResinDek® screw is a No.10-gauge screw, 2 inches (51 mm) long, with a number 2 square drive head. The fasteners have self-piercing points, a zinc coating, and are available in gray or beige colors. A minimum of 20 fasteners (24 for 10-foot panels) shall be equally spaced throughout each 4-foot x 8-foot panel as shown in Figure 4 of this report. Edge fasteners shall be located a minimum of one inch (25.4 mm) from the panel edges.

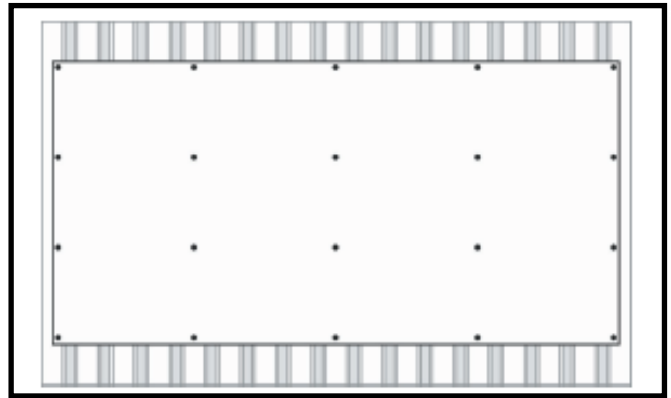


FIGURE 4

### 3.2 ResinDek® Solid Shelving System:

**3.2.1 General:** ResinDek® Solid Shelving System, as shown in Figure 5, can be used to store and support case goods in a rack or shelving structure inside a warehouse, distribution or manufacturing center.

**3.2.2 Design:** The 44½-inch long lumber supports for the solid shelving system are designed to support a maximum of 25 psf at a maximum spacing of 24 inches between lumber supports. The load carrying capacity of the ResinDek panels is beyond the scope of this review. Cornerstone shall be contacted for the load carrying capacity of the ResinDek® panels.

**3.2.3 Installation:** When using lumber supports, they shall be fastened to the step beam at 3/8 inch (9.5 mm) from the edge with one 1 5/8-inch Tek screw on each end.

### 4.0 PRODUCT DESCRIPTION

**4.1 ResinDek Panels as Coverings over Metal Deck:** ResinDek® panels are considered as finished floor covering materials as noted in Section 603.1, Item 5 and Section 804 of the IBC. ResinDek® panels are produced from a proprietary blend of moisture resistant Medium Density Fiberboard (MDF) and High Density Fiberboard (HDF). The panels are available with a variety of wear surfaces and coatings, such as Gray Diamond Seal 2™, ESD, MetaGard and TriGard®. The panels are also available uncoated.



The panels used as a floor covering are nominally 3/4-inch-thick and 4 feet wide by 8 feet long (19 mm by 1219 mm by 2438 mm). Ten-foot (3048-mm) lengths are also available. Panel options and weights are noted in Table 1 of this report.

**4.1.1 Flame spread index:** When tested in accordance with ASTM E84, the ResinDek® panels installed over a corrugated metal deck, have an interior finish classification of Class A with a flame-spread index not exceeding 25 and a smoke developed index not exceeding 450.

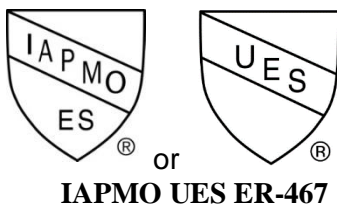
**4.1.2 Ignition Characteristics:** ResinDek® panels meet the requirements of Section 804.4 of the 2018, 2015 and 2012 IBC when tested in accordance with ASTM D2859 for ignition characteristics.

**4.2 ResinDek® Solid Shelving System:** The ResinDek® Solid Shelving System is composed of ResinDek® Horizontal Shelving, ResinDek® Vertical Dividers and a lumber or steel support system. Steel supports are provided by others and are beyond the scope of this report. The lumber supports are milled from 2x4 No. 2 Southern Pine lumber and are oriented in the strong axis. The lumber supports are milled to have notches that are 1/2-inch vertically and 27/32-inch horizontally. The notches allow the lumber supports to fit into the step beams of the racking or shelving system. The shelving system can be installed in Types I through V construction, where not part of a building element as noted in Table 601 of the IBC.

The horizontal shelving and vertical dividers are produced from a proprietary blend of moisture resistant Medium Density Fiberboard (MDF) and High-Density Fiberboard (HDF). The vertical dividers are available in thicknesses of 1/4 inch to 3/4 inch and heights ranging from 6 inches to 30 inches. The panels listed in Table 1 are used as the horizontal shelving and are available in widths of 16 inches to 60 inches, a thickness of 1/2 inch to 1 1/8 inches and lengths up to 144 inches.

### 5.0 IDENTIFICATION

ResinDek® panels are identified by the Cornerstone Specialty Wood Product’s name and trademark, product name and evaluation report number (ER-467). The identification includes the IAPMO Uniform Evaluation Service Mark of Conformity. Either Mark of Conformity may be used as shown below:



### 6.0 SUBSTANTIATING DATA

**6.1** Manufacturer’s descriptive literature and installation instructions.

**6.2** Report of testing in accordance with ASTM E84 for Surface Burning Characteristics of Building Materials.

**6.3** Report of testing in accordance with ASTM E648 Critical Radiant Flux of Floor Covering Systems.

**6.4** Report of testing in accordance with ASTM D2859 Ignition Characteristics of Finished Textile Floor Covering Materials.

**6.5** Report of floor load testing in accordance with ASTM E661 Standard Test Method for Performance of Wood and Wood-Based Floor and Roof Sheathing Under Concentrated Static and Impact Loads.

**6.6** Engineering calculations for the ResinDek® Solid Shelving System supports.

**6.7** Quality Documentation.

**6.8** Test reports submitted are from laboratories in compliance with ISO/IEC 17025.

### 7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research carried out by IAPMO Uniform Evaluation Service on Cornerstone Specialty Wood Product’s ResinDek® Panels to assess conformance to the codes shown in Section 1.0 of this report and serves as documentation of the product certification.

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For additional information about this evaluation report please visit [www.uniform-es.org](http://www.uniform-es.org) or email us at [info@uniform-es.org](mailto:info@uniform-es.org)



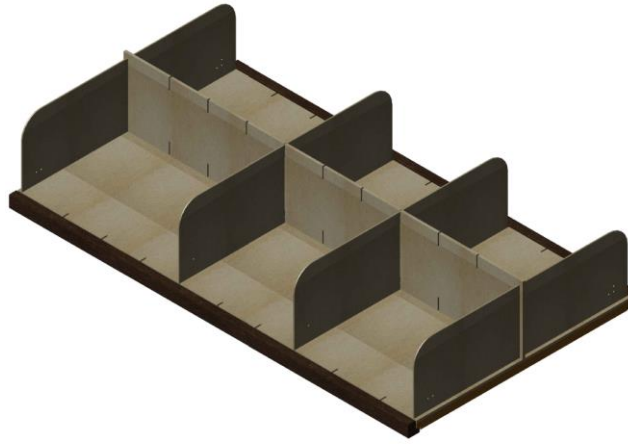
**TABLE 1  
RESINDEK® SPECIFICATIONS**

Panel	Thickness (inches)	Self-Weight (psf)
<b>ResinDek® XLD50</b>	1/2	2.10
<b>ResinDek® LD</b>	3/4	2.85
<b>ResinDek® SD</b>	3/4	3.18
<b>ResinDek® MD</b>	3/4	3.52
<b>ResinDek® HD</b>	3/4	3.83

SI Units: 1 inch = 25.4 mm, 1 psf = 47.9 Pa

<sup>1</sup>For use with shelving system only.

<sup>2</sup>For use with both shelving and flooring systems.



**FIGURE 5 – RESINDEK® SOLID SHELVING SYSTEM**