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ESR-2505

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Reissued 09/2015
This report is subject to renewal 09/2016.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
SECTION: 07 18 13—PEDESTRIAN TRAFFIC COATINGS

REPORT HOLDER:

URETHANE POLYMERS INTERNATIONAL, INC.

**10880 POPLAR AVENUE
FONTANA, CALIFORNIA 92337**

EVALUATION SUBJECT:

DEXCELLENT II WALKING AND ROOF DECK SYSTEM



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Reissued September 2015

Revised March 2016

This report is subject to renewal September 2016.

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**DIVISION: 07 00 00—THERMAL AND MOISTURE
PROTECTION**
Section: 07 18 13—Pedestrian Traffic Coatings
REPORT HOLDER:
URETHANE POLYMERS INTERNATIONAL, INC.
 10880 POPLAR AVENUE
 FONTANA, CALIFORNIA 92337
 (909) 357-7200
www.urethanepolymers.com
EVALUATION SUBJECT:
DEXCELLENT II WALKING AND ROOF DECK SYSTEM
ADDITIONAL LISTEES:
**EXCELLENT COATINGS INTERNATIONAL, a division of
Urethane Polymers International, Inc.**
 10880 POPLAR AVENUE
 FONTANA, CALIFORNIA 92337
 (909)823-8800
www.excellentcoatings.com
SYSTEM NAME: EXCEL-COAT
**TUFFLEX POLYMERS, a division of Urethane Polymers
International, Inc.**
 10880 POPLAR AVENUE
 FONTANA, CALIFORNIA 92337
 (909)349-2016
www.tufflexpolymers.com
SYSTEM NAME: TUFFLEX II

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2012 and 2009 *International Building Code*® (IBC)
- 2012 and 2009 *International Residential Code*® (IRC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)[†]

[†]The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Properties evaluated:

- Durability
- Fire resistance
- Fire classification
- Wind resistance

2.0 USES

The Dexcellent II system is used as a walking deck and classified Class A roof covering system when installed over plywood substrates in accordance with Section 4.5. The Dexcellent II system is also used as a one-hour fire-resistance-rated assembly, when installed in accordance with Section 4.6.

3.0 DESCRIPTION

3.1 General:

The Dexcellent II system consists of sub base, base, texture and sealer coats. The minimum overall dry thickness of the system, excluding the metal lath, must be 0.30 inch (7.62 mm) when installation is over plywood substrates. See Table 1 for a correlation of product names between the products of the report holder and those of the additional listee.

The Dexcellent II system materials have a shelf life of one year when the materials are stored in unopened containers elevated off the ground, kept dry, kept out of direct sunlight, and stored at temperatures maintained between 55°F and 90°F (12.8°C and 32.2°C).

3.2 Materials:

3.2.1 Metal Lath: The metal lath must be a minimum 2.5-pound-per-square-yard (1.46 kg/m²), hot-dipped galvanized metal lath, with openings 1/4 inch wide (6.4 mm) by 1/8 inch high (3.2 mm). The lath must comply with ASTM C847.

3.2.2 Staples: The staples must be No. 16, 1-inch-crown (25.4 mm), 5/8-inch-long (15.9 mm), corrosion-resistant staples complying with ASTM F1667.

3.2.3 Dexcelcrete Liquid Polymer: The Dexcelcrete Liquid Polymer is a single-component, acrylic polymer additive for use with Dexcelcrete Powder.

3.2.4 Dexcelcrete Powder: The Dexcelcrete Powder is a cementitious powder available in 50-pound (22.7 kg) bags.

3.2.5 Woven Fiberglass Sheet: The woven fiberglass sheet must be 0.03 inch (0.76 mm) thick and weigh 5.2 pounds per 100 square feet (0.25 kg/m²).

3.2.6 Dexcellent II Basecoat Resin: Dexcellent II Basecoat Resin is a water-based, single-component acrylic polymer.

3.2.7 Dexcellent II Texture Powder and Liquid Polymer: Dexcellent II Texture Powder and Liquid Polymer is a single-component, acrylic texture material.

3.2.8 Dexcellent II Final Coat: Dexcellent II Final Coat is an acrylic polymer, single-component, color top sealer coat.

3.3 Plywood Substrates:

Plywood substrates must have a minimum thickness of $\frac{5}{8}$ inch (15.9 mm) and must be exterior-grade plywood complying with U.S. DOC PS-1 or PS-2.

4.0 INSTALLATION

4.1 General:

The Dexcellent II system materials must be installed by applicators trained and approved by Urethane Polymers International, Inc. The report holder's or the additional listee's published installation instructions must be available at the jobsite during installation. The Dexcellent II system materials must be applied when the weather is dry and the ambient temperature and surface temperature are between 55°F and 95°F (12.8°C and 35°C). Each component of the Dexcellent II system must be allowed to fully dry before the next component is applied.

4.2 Preparation of Plywood Substrates:

At the time of material application, the plywood substrate surface must be clean, dry and free of dust and any other contamination. The plywood substrate must be attached to framing in accordance with the requirements of the applicable code. The plywood substrate must be sloped a minimum of $\frac{1}{4}$ unit vertical in 12 units horizontal (2 percent slope) for drainage. All edges must be blocked. All penetrations and terminations of the sheathing must be protected with metal flashing in accordance with the requirements of the applicable code and the manufacturer's published installation instructions.

The joints of plywood substrates must be filled with a mixture of five parts of Dexcelcrete Powder to one part Dexcelcrete Liquid Polymer (5:1 ratio by weight). The resulting mixture is brush-applied until all the joints are completely filled.

4.3 Application over Plywood Substrates:

4.3.1 Metal Lath: The metal lath must be installed over plywood substrates with ends butted together. The metal lath seams are staggered a minimum of 2 inches (51 mm) from plywood joints. The metal lath ends are staggered a minimum of 12 inches (305 mm) from any adjacent metal lath ends and a minimum of 1 inch (25.4 mm) from any deck edge or vertical juncture. The attachment of metal lath to the plywood substrate must be accomplished with a minimum of 25 staples (see Section 3.2.2) per square foot (270 staples per square meter), uniformly distributed. The attachment of the metal lath seams is accomplished with a minimum number of 12 staples per linear foot (38 staples per linear meter), equally spaced. The attachment of metal lath to plywood substrates must start at the center and move out towards the edges to prevent bulging. All staples must be driven flush with the top of the metal lath.

4.3.2 Excel-Crete (Sub Base): The sub base is a mixture of 1 gallon (3.8 L) of Dexcelcrete Liquid Polymer per 50-pound (22.7 kg) bag of Dexcelcrete Powder. This mixture is trowel-applied over the metal lath at a rate of 360 pounds (163 kg) per 100 square feet (9.3 m²). The mixture must be allowed to dry for 24 hours to a minimum dry thickness of $\frac{1}{4}$ inch (6.4 mm).

4.3.3 Dexcellent II Basecoat Resin (Base Coat): The woven fiberglass sheet is installed over the sub base with ends butted together. The Dexcellent II Basecoat Resin is brush- or roller-applied over the woven fiberglass sheet at a rate of 1.7 gallons (6.44 L) per 100 square feet (9.29 m²). The base coat must be allowed to dry for 24 hours to a minimum dry thickness of 0.03 inch (0.8 mm).

4.3.4 Dexcellent II Texture Powder and Liquid Polymer (Texture Coat): The Dexcellent II Texture Powder and Liquid Polymer is brush- or roller-applied, as the texture coat, at a rate of 1.4 gallons (5.3 L) per 100 square feet (9.29 m²). The texture coat must be allowed to dry for four hours to a minimum dry thickness of 0.015 inch (0.4 mm).

4.3.5 Dexcellent II Final Coat (Sealer Coat): The Dexcellent II Final Coat must be applied at a rate of 0.5 gallon (1.89 L) per 100 square feet (9.29 m²). After final drying of approximately 24 hours, the overall minimum coating thickness for the base coat, texture coat and seal coat must be 0.05 inch (1.27 mm) over the woven fiberglass sheet.

4.4 Method of Repair:

Any loose or damaged material must be removed and replaced following the installation procedures outlined in Sections 4.1 through 4.3 of this report. When substrate damage occurs, the fire-resistance roof classification, and strength properties of the Dexcellent II system, must be investigated.

4.5 Roof Covering Fire Classification:

When installed in accordance with this report at a slope of $\frac{1}{2}$ inch per foot (4 percent slope), the Dexcellent II system has a Class A roof classification.

4.6 One-hour Fire-resistance-rated Construction:

The Dexcellent II system installed in accordance with this report over $\frac{5}{8}$ -inch-thick (15.9 mm) exterior-grade plywood, with minimum 2-by-10 solid sawn lumber joists spaced at 16 inches (406 mm) on center and a single layer of $\frac{1}{2}$ -inch-thick (12.7 mm), Type X gypsum wallboard attached to the underside of the wood joists, and with all substrate joints blocked, may be substituted for the double wood floor denoted as Assembly 13 in IBC Table 720.1 (3).

When installation is over 2-by-8 joists, the design bending stress assigned to the joists must be limited to 78 percent of the code-prescribed design values.

4.7 Wind Resistance:

When the Dexcellent II system is installed over plywood substrates in accordance with this report, installation is limited to buildings with a maximum height of 40 feet (12.2 m) above grade, in Exposure B areas with a maximum ultimate design wind speed of 130 mph (209 kph) under the 2012 IBC and a maximum 3-second-gust basic wind speed of 100 miles per hour (161 km/h) under the 2012 IRC and the 2009 IBC and IRC.

5.0 CONDITIONS OF USE

The Dexcellent II system described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 Installation must comply with this report, the manufacturer’s published installation instructions and the applicable code. If there is a conflict between the report holder’s or the additional listee’s published installation instructions and this report, this report governs.
- 5.2 The Dexcelcrete Liquid Polymer, Dexcelcrete Powder, Dexcellent II Basecoat Resin, Dexcellent II Texture Powder and Liquid Polymer and Dexcellent II Final Coat are manufactured in Fontana, 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 October 2013.

7.0 IDENTIFICATION

Each container bears the name and address of the report holder or the additional listee (Urethane Polymers International, Inc.; Excellent Coatings International, a division of Urethane Polymers International, Inc.; or Tufflex Polymers, a division of Urethane Polymers International, Inc.) and the applicable product name as shown in Table 1, a batch number keyed to the date of manufacture, the shelf life, and the evaluation report number (ESR-2505).

TABLE 1—CORRELATION OF PRODUCT NAMES

APPLICATION	URETHANE POLYMERS INTERNATIONAL, INC.	EXCELLENT COATINGS INTERNATIONAL, a division of Urethane Polymers International, Inc.	TUFFLEX POLYMERS, a division of Urethane Polymers International, Inc.
System	Dexcellent II	Excel-Coat	Tufflex II
Sub base	Dexcelcrete Liquid Polymer	Excel-Coat Clear Additive	Tuffcrete II Liquid Polymer
	Dexcelcrete Powder	Excel-Crete Powder	Tuffcrete Powder
Base coat	Dexcellent II Basecoat Resin	Excel-Coat #1	Tufflex II Basecoat Resin
Texture coat	Dexcellent II Texture Powder and Liquid Polymer	Excel-Coat #200	Tufflex II Texture Powder and Liquid Polymer
Sealer coat	Dexcellent II Final Coat	Excel-Coat #300	Tufflex II Final Coat