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Legacy report on the 1997 *Uniform Building Code*™

DIVISION: 07—THERMAL AND MOISTURE PROTECTION
Section: 07180—Traffic Coatings

EXCEL-COAT® WALKING AND ROOF DECK SYSTEM

EXCELLENT COATINGS, INC.
1285 DISTRIBUTION WAY
VISTA, CALIFORNIA 92083-8817

1.0 SUBJECT

Excel-Coat® Walking and Roof Deck System.

2.0 DESCRIPTION

2.1 General:

The Excel-Coat Walking and Roof Deck System consists of a multilayer acrylic latex polymer coating for application to plywood substrates. The roof decks must have a minimum 1/4-inch-per-foot (6.4 mm per 305 mm) slope for drainage. Components in the system consist of a proprietary cementitious powder called Excel-Crete and a liquid acrylic binder. The Excel-Coat System is applied in three coats, identified as the base, texture and sealer coats. The three coats are applied to a sub-base layer, 1/4 inch (6.4 mm) thick, reinforced with expanded metal lath. The shelf life of the products is 24 months when stored at temperatures between 55°F (12.8°C) and 90°F (32.2°C).

2.2 Preparation of Substrates:

The plywood substrates must be free of all contamination that may impair proper installation. The surface must be clean, dry and free of dust at the time of application of the Excel-Coat system. Plywood must be minimum 5/8-inch-thick (15.9 mm), Exterior grade, structural plywood having a maximum span of 16 inches (406 mm) between supports with all edges blocked. Face plies extend perpendicular to the supports. The plywood is installed in accordance with the 1997 *Uniform Building Code*™ (UBC). The joints of 5/8-inch (15.9 mm) plywood substrate must be filled with Excel-Crete cementitious material. The material is prepared by mixing Excel-Crete powder with liquid Excel-Crete additive in a 5 to 1 ratio by weight. The resulting mixture is brush-applied until all the joints are completely filled.

2.3 Application:

The Excel-Coat system is applied when the ambient temperature is between 55°F (12.8°C) and 95°F (35°C). A layer of galvanized expanded metal lath with openings 1/4 inch (6.4 mm) wide by 1/8 inch (3.2 mm) high, and with a minimum weight of 2.7 pounds per square yard (1.0 kg per m²) is first

installed and mechanically fastened to the plywood deck by staples having a minimum leg length of 5/8 inch (15.9 mm) and crown of 1 inch (25.4 mm). The metal lath must comply with ASTM C 847.

The Excel-Crete powder is mixed thoroughly with the latex adhesive binder liquid at a rate of 1 gallon (3.785 L) of liquid to 50 pounds (22.68 kg) of powder. The resulting mix is then trowel-applied over the metal lath at a rate of 360 pounds (163.29 kg) per 100 square feet (9.29 m²). This application is allowed to dry a minimum of 24 hours, resulting in a dry thickness of 1/4 inch (6.4 mm).

Woven fiberglass mat with a minimum thickness of 0.03 inch (0.76 mm) and weight of 5.2 pounds (2.36 kg) per 100 square feet (9.29 m²) is placed over the Excel-Crete substrate.

The base coat of Excel-Coat is then applied over the fiberglass mat at a rate of 1.7 gallons (6.44 L) per 100 square feet (9.29 m²) using a brush or roller. The application reacts with the mat and bonds to the Excel-Crete mixture. It is then allowed to dry a minimum of 24 hours, resulting in a dry thickness of 0.03 inch (0.02 mm). A texture coat of Excel-Coat is then applied at a rate of 1.4 gallons (5.3 L) per 100 square feet (9.29 m²). This application is allowed to dry a minimum of 4 hours, resulting in a dry thickness of 0.015 inch. The sealer coat of Excel-Coat is applied as a finish coat 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 coating thickness is 0.05 inch (1.27 mm) above the fiberglass mat. Overall thickness of all layers of the Excel-Coat system is a minimum of 0.28 inch (7.1 mm).

2.4 Method of Repair:

If damage occurs, repairs may be made using the same materials and methods of application described above.

2.5 Roof Classification:

The Excel-Coat walking and roof deck system described and applied as noted in this report is a Class A roof covering, provided the slope does not exceed 1/2 inch (12.7 mm) per horizontal foot (305 mm). All plywood joints must be blocked.

2.6 One-hour Fire-resistive Assembly:

The following floor/ceiling assembly has a one-hour, fire-resistive rating when it is constructed as follows:

1. Ceiling membrane: The ceiling must be, at a minimum, a single layer of 1/2-inch-thick (12.7 mm), Type X gypsum wallboard that is attached to the underside of the wood joists with 5d nails. The nails measure 1 1/2 inches (38 mm)



long and have a 0.099-inch-diameter (2.51 mm) shank and a $\frac{1}{4}$ -inch-diameter (6.4 mm) head. The nail schedule is 6 inches (152 mm) on center along all joists and end boards. The joints and nail heads must be covered with paper tape and gypsum joint compound in an approved manner.

2. Floor/deck joists: Minimum 2-by-10 solid-sawn wood joists at 16 inches (406 mm) on center. Alternatively, minimum 2-by-8 solid-sawn wood joists spaced 16 inches (406 mm) on center are permitted to be used provided the maximum flexural design stress of the joists is 78 percent of the UBC-prescribed design value.
3. Floor/deck substrate: The floor substrate is minimum $\frac{5}{8}$ -inch-thick (15.9 mm) exterior-grade structural plywood, fastened to the joists in accordance with the UBC.
4. Walking deck material: The walking deck material consists of the Excel-Coat Walking and Roof Deck System recognized in this evaluation report. Installation of the walking deck must comply with Sections 2.1, 2.2 and 2.3 of this evaluation report.

2.7 Identification:

Each component container has a label bearing the Excellent Coatings, Inc., name and address, product name, batch

number, expiration date, ICBO ES evaluation report number (ER-4804) and the name of the quality control agency (SGS U.S. Testing Company Inc.).

3.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Interim Criteria for Walking Decks (AC39), dated March 2000, and report of reduced-scale fire tests based on UBC Standard 7-1.

4.0 FINDINGS

That the Excel-Coat® Walking and Roof Deck System described in this report complies with the 1997 *Uniform Building Code*™, subject to the following conditions:

- 4.1 **Materials are applied in accordance with this report and the manufacturer's instructions, by applicators approved by the manufacturer.**
- 4.2 **The products are manufactured at the Excellent Coatings, Inc., plant in Vista, California, under a quality control program with inspections by SGS U.S. Testing Company Inc. (AA-651).**

This report is subject to re-examination in two years.