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Legacy report on the 2000 *International Building Code*[®], the BOCA[®] *National Building Code* 1999, the 1999 *Standard Building Code*[®], and the 1997 *Uniform Building Code*[™]

DIVISION: 07—THERMAL AND MOISTURE PROTECTION
Section: 07450—Fiber-Reinforced Cementitious Panels

EVALUATION SUBJECT:

**UTIL-A-CRETE[®] CONCRETE GLASS FIBER MESH
REINFORCED PANELS**

REPORT HOLDER:

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1.0 SUBJECT

UTIL-A-CRETE[®] Concrete Glass Fiber Mesh Reinforced Panels.

2.0 PROPERTY FOR WHICH EVALUATION IS SOUGHT

- 2.1 Nonstructural tile backerboard and underlayment
- 2.2 Fire-resistance rated assembly
- 2.3 Surface-burning characteristics

3.0 DESCRIPTION

3.1 General

UTIL-A-CRETE[®] panels are used as interior and exterior nonstructural backerboard and underlayment for ceramic tile, slate, marble, stone, thin brick, and panels of exposed aggregates and thin latex modified stucco panels on building exteriors.

The UTIL-A-CRETE[®] panels are a precast portland cement product consisting of an expanded lightweight aggregate, meeting the requirements of ASTM C331, in a portland cement core with a fiberglass mesh bonded on each side using a portland cement slurry.

The panels are $\frac{7}{16}$ inch (11.1 mm) thick and are available in widths of 36 inches (914 mm) and lengths of 48, 60, 64, 72 and 96 inches (1219, 1524, 1625, 1829 and 2438 mm).

4.0 INSTALLATION

4.1 General

UTIL-A-CRETE[®] panels are either scored and snapped or sawn. When installed over studs (wall framing members), the studs shall be spaced not more than 16 inches (406 mm) on center (O.C.). When installed on a floor, the joists shall be spaced not more than 16 inches (406 mm) O.C. and a subfloor (complying with the applicable code) shall be installed prior to the installation of the UTIL-A-CRETE[®] panels.

UTIL-A-CRETE[®] panels are installed using galvanized roofing nails to wood studs or joists or buglehead self-tapping screws to metal studs or joists. The galvanized roofing nails have a $\frac{3}{8}$ -inch (9.6 mm) head, $\frac{5}{32}$ -inch (4.0 mm) diameter shank and are $1\frac{1}{2}$ inches (38 mm) long. The self-tapping screws have an $1\frac{1}{32}$ -inch (8.7 mm) head, a $\frac{5}{32}$ -inch (4.0 mm) diameter shank, Type S thread and a length of $1\frac{1}{4}$ inches (32 mm). The seams, edges, corners and all openings around fixtures shall be sealed with 2-inch-wide (51 mm) coated glass fiber UTIL-A-TAPE[®] and dryset or latex portland cement mortar.

All finishes applied to UTIL-A-CRETE[®] panels shall be bonded with dry-set portland cement mortars (ANSI A118), latex portland cement mortars (ANSI A118.4), Type 1 organic adhesives (ANSI A136.1) or epoxy (ANSI A118.3). All bonding materials must be of a type and brand that are approved and recommended for use on UTIL-A-CRETE[®] cementitious units by the manufacturer of the adhesive or bonding agent.

The manufacturer's installation instructions shall be adhered to and a copy of these instructions shall be available at all times on the job site during installation.

4.2 One-hour Nonload-bearing Fire-resistance-rated Assembly

One layer of UTIL-A-CRETE[®] panels is installed horizontally to the fire exposed side of a steel stud wall and one layer of $\frac{5}{8}$ -inch-thick (15.9 mm) Type X gypsum wallboard, complying with ASTM C36, is installed vertically to the unexposed side.

In jurisdictions utilizing the *Uniform Building Code*[™], either side can be considered the fire exposed side, UTIL-A-CRETE panel covering or $\frac{5}{8}$ -inch (15.9 mm) Type X gypsum.

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The stud wall is constructed of No. 20 gauge $3\frac{5}{8}$ -inch (92 mm) steel studs on 16-inch (406 mm) centers with 3-inch-thick (76 mm) mineral fiberboard insulation friction fitted between studs.

The UTIL-A-CRETE® panels are installed with vertical joints located over studs with a $\frac{1}{8}$ inch (3.2 mm) clearance maintained between the panels along the vertical and horizontal joints. The panels are secured to each stud with $1\frac{1}{4}$ -inch-long (32 mm) Type S high-low drywall screws located 2 inches (51 mm) from horizontal joints and spaced 8 inches (203 mm) along studs. At vertical joints, the same type of screws and spacing are used with $\frac{5}{8}$ -inch-diameter (15.9 mm) steel washers. Joints are sealed with 2-inch-wide (51 mm) coated glass fiber UTIL-A-TAPE® and dryset mortar mix. A skim coat of mortar mix is applied over all exposed screws heads.

The $\frac{5}{8}$ -inch-thick (15.9 mm) Type X gypsum wallboard shall be installed vertically with $1\frac{1}{4}$ -inch-long (32 mm) Type S high-low drywall screws spaced 8 inches (203 mm) o.c. The wallboard joints are covered with paper tape and joint compound. Exposed screws heads are covered with a coat of joint compound.

4.3 Surface-burning Characteristics

UTIL-A-CRETE® panels were tested in accordance with ASTM E84 and demonstrated a flame spread index of 25 or less and a smoke-developed index of 450 or less.

5.0 IDENTIFICATION

Each panel shall bear the manufacturer's name and/or trademark, address, product name and this report number for field identification.

6.0 EVIDENCE SUBMITTED

6.1 Test reports evaluating UTIL-A-CRETE® panels, prepared by Construction Technology Laboratories, Inc., dated September, 1988, Supplemental January 12, 1989 signed by G. Russell Hall and Ronald G. Burg, P.E.

- a. ASTM E119, nonload-bearing unsymmetrical UTIL-A-CRETE® Wall System.
- b. ASTM C947, Flexural Properties of Thin Section Glass-Fiber Reinforced Concrete (using simple beam with third-point loading). Wet and dry.
- c. ASTM D1037 Subsection 91, Falling Ball Impact Test.
- d. ASTM D1037 Subsection 107, Linear Variation with Changes in Moisture Content.

6.2 Test Reports in accordance with ASTM E84, prepared by Commercial Testing Company, Report No. 61847, Test No. 1919-2711, dated March 14, 1988, signed by Jonathan Jackson.

7.0 CONDITIONS OF USE

The ICC-ES Subcommittee for the National Evaluation Service finds that FIN-PAN Incorporated's UTIL-A-CRETE® panels described in this report comply with 2000 *International Building Code*®, the BOCA® *National Building Code*®, the 1999 *Standard Building Code*®, and the 1997 *Uniform Building Code*™, subject to the following conditions:

- 7.1 UTIL-A-CRETE® panels are installed in accordance with this report and the manufacturer's installation instructions.
- 7.2 UTIL-A-CRETE® panels are not used structurally as load-bearing members (axial, transverse and racking loads).
- 7.3 All walls, ceilings and floor framing shall be designed for deflections of less than L/360.
- 7.4 Steel studs are not less than No. 20 gauge.
- 7.5 UTIL-A-CRETE® panels are not waterproof. If water penetration prevention is desired, use of a water proof membrane is required.
- 7.6 In jurisdictions utilizing the BOCA® *National Building Code*, the *Standard Building Code*® and the *International Building Code*®, the one-hour fire-resistance-rated wall assembly, described in Section 4.2 of this report, shall not be used with a horizontal separation (distance from common property line or assumed property line) of less than 5 feet (1.5 m).
- 7.7 This report is subject to periodic re-examination. For information on the current status of this report, contact the ICC-ES.