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UL ONLINE CERTIFICATIONS DIRECTORY

XHBN.HW-D-0194
Joint Systems

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Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Listed or Classified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer and/or the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guides Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered as Classified, Listed, or Recognized.

Joint Systems

See General Information for Joint Systems

System No. HW-D-0194

May 21, 2009

Assembly Rating — 2 Hr

Joint Width— 1 in. Max

L Rating At Ambient — Less Than 1 CFM/Lin Ft (See Item 3B)

L Rating At 400°F — Less Than 3 CFM/Lin Ft (See Item 3B)

Class II Movement Capabilities— 25 Percent Compression or Extension

1. **Floor Assembly** — The 4 1/2 hr. (114 mm) thick, restrained lightweight or normal weight (100 - 150 pcf or 1600-2400 kg/m^3) concrete.

2. **Shaft Wall Assembly** — With the exception of the ceiling runner, the 2 hr fire-rated shaft wall assembly shall be constructed of the materials and in the manner described in the individual UWALL or UWYA System Wall and Partition Design in the UL Fire Resistance Directory. The wall shall include the following nonstructural features:

A. **Floor and Wall Runners** — (Not Shown) - "J"-shaped runner, min 2-1/2 in. (64 mm) wide with vertical legs of 1 in. (25 mm) and 2 in. (51 mm), fabricated from min 24 MSG galv steel. Runners positioned with short leg toward finished side of wall. Runners attached to walls and floor with steel fasteners spaced max 24 in. (610 mm) OC. As an alternate to the "J"-shaped runners, a min 2-1/2 in. (64 mm) wide by 1- 5/16 in. (25 or 32 mm) deep channel formed from min 24 MSG galv steel may be used for the floor runner.

B. **Light Gauge Framing* - Slotted Ceiling Track** — Slotted ceiling track shall consist of galv steel channels with slotted flanges. Slotted ceiling track used to accommodate steel "C" H" studs (Items 2C). Attached to concrete or ceiling with steel fasteners spaced max 12 in. OC (305 mm).

BRADY CONSTRUCTION INNOVATIONS INC.

DBA SLIPTRACK SYSTEMS — SLP-TRK

CALIFORNIA EXPANDED METAL PRODUCTS CO — CSI

CLARKWESTERN BUILDING SYSTEMS INC — Type SLT, SLT-H

SCAFCO STEEL STUD MANUFACTURING CO

STEELER INC — Steeler Slotted Ceiling Runner

C. **Steel Studs** — "C-H"-shaped steel studs to be min 2-1/2 in. (64 mm) wide and formed of min 24 MSG galv steel. Studs cut 1/2 in. (13 mm) min to length, thus nominally height with bottom leveling in unit resting on floor runners and with top leveling in slotted ceiling track. Studs spaced 24 in. (610 mm) OC. After installation of gypsum board liner panels (Item 2D), studs

secured to flange of floor runner on finished side of wall only with No. 6 by 1/2 in. (13 mm) long self-drilling, self-tapping steel screws. Studs secured to flange of slotted ceiling track on finished side of wall only with No. 8 by 1/2 in. (13 mm) long self-drilling, self-tapping wafer head steel screws at slot midlength.

D. **Gypsum Board*** — 2 in. (25 mm) thick by 24 in. (610 mm) wide gypsum board liner panels as specified in the individual U400 or V400 Series Wall and Partition Designs. Panels cut 1 in. (25 mm) less in length than floor to ceiling height. Vertical edges inserted in "H" shaped section of "C-H" studs. Side edge of end panels attached to long leg of "J" runner (Item 2A) with 1- 5/8 in. (41 mm) long Type S steel screws spaced max 12 in. (305 mm) OC.

E. **Gypsum Board*** — Gypsum board sheets, 1/2 or 5/8 in. (12 or 16 mm) thick, applied vertically to both sides of wall with long dimension parallel to studs. Where required by the fire rating, the Steel Stud and Partition Design, a max 1 in. (25 mm) gap shall be maintained between the top of the gypsum board and the bottom surface of the concrete floor. The screws attaching the gypsum board liners to the C-H studs shall be located 1 in. (25 mm) below the bottom of the slotted ceiling track (Item 2C). The gypsum board attachment screws are to penetrate the slotted ceiling track

3. **Joint System** — Max separation between bottom of floor and top of liner panel (Item 2D) and between bottom of floor and top of gypsum board sheets (Item 2E) at time of installation of joint system is 1 in. (25 mm). The joint system is designed to accommodate a maximum 25 percent compression or extension from its installed width. The joint system consists of bond breaker tape and sealant, as follows:

A. **Bond Breaker Tape** — Polyethylene tape supplied in rolls. Tape applied to flanges of slotted ceiling track (Item 2C) to prevent bonding of the sealant at points other than the top and bottom of the linear gap. Bond breaker tape is optional when movement capability of the joint is limited to compression only.

B. **Fill, Void or Cavity Material* - Sealant** — Min 1 in. (25 mm) depth of sealant to be installed to fill linear gap between top of gypsum board liner panel (Item 2D) and top inside surface of slotted ceiling track (Item 2C) prior to installation of gypsum board sheets to fastened side of wall. Min 1 in. (25 mm) depth of sealant to be installed to fill linear gap between top of gypsum board sheets (Item 2E) and bottom of concrete floor.

SPECIFIED TECHNOLOGIES INC — SpecSeal ES Elastomeric Sealant or SpecSeal LCI Sealant. **L Ratings apply when SpecSeal ES Elastomeric Sealant is used. When SpecSeal LCI Sealant is used, the movement capability of the joint is limited to 25 percent in compression only.**

*Bearing the UL Classification Mark

Last Updated on 2009-05-21

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BRADY CONSTRUCTION INNOVATIONS INC.

DBA SLIPTRACK SYSTEMS — SLP-TRK

CALIFORNIA EXPANDED METAL PRODUCTS CO — CSI

CLARKWESTERN BUILDING SYSTEMS INC — Type SLT, SLT-H

METAL-LITE INC — The System

SCAFCO STEEL STUD MANUFACTURING CO

STEELER INC — Steeler Slotted Ceiling Runner

C. **Studs** — Steel studs to be min 3-1/2 in. (89 mm) wide. Studs cut 3/4 to 1 in. (19 to 25 mm) less in length than assembly height with bottom resting in and resting on floor runner and with top nesting in slotted ceiling runner. Stud shall be secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at midheight of slot on each side of wall. Stud spacing not to exceed 24 in. (610 mm) OC.

C1. **Light Gauge Framing* --Slotted Studs** — Slotted steel stud to be used in conjunction with **Light Gauge Framing* --Floor and Ceiling Runners** (Item 2B1). Slotted steel studs to be min 3-1/2 in. (89 mm) wide and formed of min 25 MSG galv steel. Studs cut 1/2 in. (13 mm) less than assembly height with bottom resting in and secured to both ceiling and floor runners. Ceiling runner secured to perforated stud web(s) steel stud by means of No. 10 by 3/4 in. (19 mm) long hex profile head steel screw. Floor runner attached to bottom of stud stud by means of No. 8 by 1/2 in. (13 mm) long pan head steel screws. Slotted steel stud spacing not to exceed 24 in. (610 mm) OC.

STEELER INC — Steeler Slotted Stud

D. **Gypsum Board*** — Gypsum board sheets installed to a max total 5/8 in. (16 mm) or 1-1/4 in. (32 mm) thickness on each side of wall for 1 and 2 hr rated assemblies, respectively. Wall to be constructed as specified in the individual U400 Series Design in the UL Fire Resistance Directory, except that a max 1 in. (25 mm) gap shall be maintained between the top of the gypsum board and the lower surface of the steel floor or roof deck and the top row of screws shall be installed into the studs 3 to 3-1/2 in. (76 to 89 mm) below the lower surface of the floor or roof.

The hourly fire rating of the joint system is equal to the hourly fire rating of the wall.

3. **Joint System — Max separation between bottom of floor or roof deck and top of gypsum board (at time of installation of joint system) is 1 in. (25 mm). The joint system is designed to accommodate a max 18.75 percent compression or extension from it's installed width.** The joint consists steel panels of forming and fill materials, as follows:

A. **Forming Material* —** Min 5/8 in. (16 mm) or 1-1/4 in. (32 mm) wide sections of mineral wool batt insulation for 1 or 2 hr rated assemblies, respectively. Sections of mineral wool compressed 50 percent in thickness and installed cut edge first to fill the gap between the top of the gypsum board and the bottom of the steel deck or the concrete floor slab. The forming material shall be installed flush with both surfaces of wall.

FIBREX INSULATIONS INC — FRX Rating Insulation

ITG MINWOOL L L C — MinWool-1200 Safing

ROCK WOOL MANUFACTURING CO — Delta Board

ROXUL ASIA SDN BHD — SAFE

ROXUL INC — SAFE

THERMAFIBER INC — Type SAF

B. **Fill, Void or Cavity Material*--Sealant** — Min 5/8 in. (15.7 mm) wet thickness or 1/16 in. (1.6 mm) dry thickness of fill material spray applied on each side of the wall between the top of the wall and the bottom of the steel floor or roof deck and overlap a min 1/2 in. (12 mm) onto gypsum board on both sides of wall. Additional 1/8 in. (3.2 mm) wet thickness or 1/16 in. (1.6 mm) dry thickness of fill material shall overlap a min 1/2 in. (13 mm) onto the steel deck or concrete on both sides of the wall.

SPECIFIED TECHNOLOGIES INC — SpecSeal AS200 Elastomeric Spray

*Bearing the UL Classification Mark

Last Updated on 2009-05-21

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Joint Systems

See General Information for Joint Systems

System No. HW-D-0137

May 21, 2009

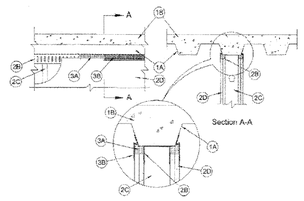
Assembly Ratings— 1 and 2 Hr (See Item 2)

Nominal Joint Width — 1 in.

L Rating At Ambient — Less Than 1 CFM/Lin Ft

L Rating At 400°F — Less Than 1 CFM/Lin Ft

Class II Movement Capabilities— 19% Compression or Extension



1. **Floor Assembly** — The fire-rated fluted steel deck/concrete floor assembly shall be constructed of the materials and in the manner described in the individual Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:

A. **Steel Floor and Form Units*** — Min 3 in. (76 mm) deep galv steel fluted floor units having a rest widths width of 4 3/4 in. (121 mm).

B. **Concrete** — Min 2-1/2 in. (64 mm) thick reinforced concrete, as measured from the top plane of the floor units.

As an alternate to the steel deck/concrete floor, the floor assembly may consist of a min 4-1/2 in. (114 mm) thick steel-reinforced lightweight or normal-weight (90-150 pcf or 1605-2400 kg/m^3) concrete slab.

1A. **Roof Assembly** — (Not Shown) — As an alternate to the floor assembly (Item 1), a fire-rated fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P900 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly fire rating of the roof assembly shall be equal to or greater than the hourly fire rating of the wall assembly. The roof assembly shall include the following construction features:

A. **Steel Roof Deck** — Min 3 in. (76 mm) deep galv steel fluted roof deck having a rest widths width of 4 3/4 in. (121 mm).

B. **Roof Insulation** — Min 2-1/4 in. (57 mm) thick poured insulating concrete, as measured from the top plane of the steel roof deck.

C. **Roof Covering*** — Mat-stripped or cold-application materials compatible with insulation concrete.

2. **Wall Assembly** — The 1 or 2 hr fire-rated gypsum board/steel stud assembly shall be constructed of the materials and in the manner described in the individual U400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. **Floor Runners** — (Not Shown)—"J"-shaped runners of wall assembly steel consist of min No. 25 gauge galv steel channels sized to accommodate steel studs.

B. **Light Gauge Framing*—Slotted Ceiling Runner** — Ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs. Ceiling runner to be centered beneath webs of steel floor or roof deck where steel deck/concrete floor is used. Ceiling runner secured with steel fasteners spaced max 24 in. (610 mm) OC.

D3 UL DESIGN HW-D-0137
NTS

FKP Architects

ARCHITECT OF RECORD
Paul C. Gloriod

LICENSED ARCHITECT
PAUL CHRISTOPHER GLORIOD
C-31500
4/30/2011
STATE OF CALIFORNIA
01/27/2010

REVISIONS

APPROVAL

REVIEWED IN ACCORDANCE WITH THE REQUIREMENTS OF T24, CCR
APPROVED
JAN 28 2010

Office of Statewide Health
Planning & Development
FACILITIES DEVELOPMENT DIVISION

PROJECT NAME
CHILDREN'S HOSPITAL OF ORANGE COUNTY
455 S. Main St.
Orange, CA 92868-3874

TOWER II

CHOC SM HOSPITAL

PROJECT NUMBER
12011.00
Increment #7

OSHPD - PROJECT NUMBER
IL 072072-30

ISSUE
OSHPD PERMIT

DATE
01/27/2010

SCALE
NTS

DRAWING TITLE
TYPICAL PARTITION DETAILS

DRAWING NUMBER
A11.3.4

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1/25/2010
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