Design No. U465 BXUV.U465 Fire-resistance Ratings - ANSI/UL 263

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ONLINE CERTIFICATIONS DIRECTORY

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

fied 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 noted for 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 Guide Information includes specifics concerning alternate materials and alternate Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada See General Information for Fire-resistance Ratings - ANSI/UL 263 See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

Design No. U465 August 25, 2016

Nonbearing Wall Rating — 1 HR. * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (sucl as Canada), respectively

> 1. Floor and Ceiling Runners — (Not Shown) — Channel shaped runners, 3-5/8 in. deep (min), 1-1/4 in. legs, formed from min No. 25 MSG galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. 1A. Framing Members* — Floor and Ceiling Runners — (Not Shown) — As an alternate to Item 1 — Channel shaped, ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME Framing System

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV - Type SUPREME Framing System

QUAIL RUN BUILDING MATERIALS INC — Type SUPREME Framing System

SCAFCO STEEL STUD MANUFACTURING CO - Type SUPREME Framing System STEEL CONSTRUCTION SYSTEMS INC - Type SUPREME Framing System

 ${f UNITED}$ ${f METAL}$ ${f PRODUCTS}$ ${f INC}$ — Type SUPREME Framing System

1B. Framing Members* — Floor and Ceiling Runners — Not Shown — In lieu of Item 1 — For use with Item 2B, roprietary channel shaped runners, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel, ttached to floor and ceiling with fasteners spaced 24 in. OC max. CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper20™ Track

CRACO MFG INC — SmartTrack20™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track

 $1C. \ \textbf{Floor and Ceiling Runners} - (Not \ Shown) - For \ use \ with \ Item \ 2C - Channel \ shaped, \ fabricated \ from \ min \ 20 \ MSG$ corrosion-protected or galv steel, min depth to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC. 1D. Framing Members* - Floor and Ceiling Runners - Not Shown - In lieu of Items 1 through 1C - For use with Item 2D and 4G only, proprietary channel shaped runners, 1-1/4 in. deep by min 3-5/8 in. wide fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. CLARKDIETRICH BUILDING SYSTEMS — CD ProTRAK

DMFCWBS L L C — ProTRAK

MBA METAL FRAMING — ProTRAK

RAM SALES L L C — Ram ProTRAK

STEEL STRUCTURAL PRODUCTS L L C - Tri-S Protrak

1E. Framing Members* — Floor and Ceiling Runners — Not Shown — In lieu of Items 1 through 1D — For use with Item 2E and 4I only, proprietary channel shaped runners, 1-1/4 in. deep by min 3-5/8 in. wide fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. TELLING INDUSTRIES L L C — TRUE-TRACK™

1F. Framing Members* — Floor and Ceiling Runners — Not Shown — In lieu of Items 1 through 1E — For use with KIRII (HONG KONG) LTD - Type KIRII

1G. Framing Members* — Floor and Ceiling Runners — Not Shown — In lieu of Items 1 through 1F — For use with Item 2, channel shaped runners, 1-1/4 in. deep by min 3-5/8 in. wide, attached to floor and ceiling with fasteners spaced STUDCO BUILDING SYSTEMS — CROCSTUD Track

1H. Floor and Ceiling Runners — (Not Shown) — Channel shaped, fabricated from min 0.02 in. galv steel, min width to MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track VT100

1I. **Framing Members* — Floor and Ceiling Runners —** Not Shown — In lieu of Item 1 — For use with Item 2H, channel shaped runners, 1-1/4 in, wide by min 3-5/8 in, deep fabricated from min 0.020 in, thick galy steel, attached to floor and ceiling with fasteners spaced 24 in. OC max. **TELLING INDUSTRIES L L C** — Viper 20^{TM} Track

2. Steel Studs — Channel shaped, 3-5/8 in. deep (min), formed from min No. 25 MSG galv steel spaced 24 in. OC max. 2A. **Framing Members* — Steel Studs —** As an alternate to Item 2 — Channel shaped studs, min 3-5/8 in. deep, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME Framing System

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV - Type SUPREME Framing System

 ${f QUAIL\ RUN\ BUILDING\ MATERIALS\ INC}-{f Type\ SUPREME\ Framing\ System}$

SCAFCO STEEL STUD MANUFACTURING CO - Type SUPREME Framing System

STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME Framing System

 ${f UNITED}$ ${f METAL}$ ${f PRODUCTS}$ ${f INC}$ — Type SUPREME Framing System

2B. Framing Members* — Steel Studs — Not Shown — In lieu of Item 2 — For use with Item 1B, proprietary channel 1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel. Studs cut 3/4 in. less in length than assembly height. CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper20™

CRACO MFG INC — SmartStud20™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™

2C. **Steel Studs** — (As an alternate to Item 2, For use with Item 4E) — Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, 3-1/2 in. min depth, spaced a max of 16 in. OC. Studs friction-fit into floor and ceiling runners. Studs to be cut 5/8 to 3/4 in. less than assembly height. 2D. Framing Members* - Steel Studs - As an alternate to Items 2 through 2C - For use with Item 1D and 4G only annel shaped studs, min 3-5/8 in. wide fabricated from min 0.018 in. thick galv steel, spaced a max of 24 in. OC. Studs to be cut 1/2 in. less than assembly height.

CLARKDIETRICH BUILDING SYSTEMS — CD ProSTUD DMFCWBS L L C — ProSTUD

MBA METAL FRAMING — ProSTUD

 ${f RAM}$ ${f SALES}$ ${f L}$ ${f C}$ — ${f Ram}$ ${f ProSTUD}$

STEEL STRUCTURAL PRODUCTS L L C - Tri-S ProSTUD

TELLING INDUSTRIES L L C — TRUE-STUD™

2E. **Framing Members* — Steel Studs —** As an alternate to Items 2 through 2D — For use with Item 1E and 4I only, channel shaped studs, min 3-5/8 in. wide fabricated from min 0.018 in. thick galv steel, spaced a max of 24 in. OC. Studs to be cut 1/2 in. less than assembly height.

2F. Framing Members* — Steel Studs — As an alternate to Items 2 through 2E — For use with Item 1F, channel shaped studs, min 3-5/8 in. wide fabricated from min 25 MSG steel, spaced a max of 24 in. OC. Studs to be cut 1/2 in. less than assembly height. KIRII (HONG KONG) LTD - Type KIRII

2G. Framing Members* - Steel Studs - Not Shown - In lieu of Item 2 through 2F - For use with Item 1G. ry channel shaped studs, minimum 3-5/8 in. wide, Studs to be cut 1/2 in. less than the assembly heigh STUDCO BUILDING SYSTEMS — CROCSTUD

2H. Framing Members* — Steel Studs — Not Shown — In lieu of Item 2 — For use with Item 1I, proprietary channel shaped steel studs, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel. Studs cut 3/4 in. less in length than assembly height. **TELLING INDUSTRIES L L C** — Viper 20^{TM}

2I. Framing Members* — Steel Studs — In lieu of Item 2 — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, 3-5/8 in. deep (min), spaced 24 in. OC max. Studs to be cut 3/4 in. less than **EB MéTAL INC** — EB Stud

J. Framing Members* - Steel Studs - In lieu of Item 2 - For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, 3-5/8 in. deep (min), spaced 24 in. OC max. Studs to be cut 3/4 in. less than assembly height. **OLMAR SUPPLY INC** — PRIMESTUD

2K. Framing Members* — Steel Studs — As an alternate to Item 2 — For use with Item 1B (3-5/8 in. wide track),

channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, 1-1/4 in. wide by 3-5/8 in. deep, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height. $\textbf{MARINO/WARE, DIV OF WARE INDUSTRIES INC} - \mathsf{StudRite^{tM}}$

3. Batts and Blankets* — (Optional) — Mineral wool or glass fiber batts partially or completely filling stud cavity. See **Batts and Blankets** (BZJZ) category for names of Classified companies. 3A. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 3) — (100% Borate Formulation) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft³. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft³, in accordance with the application instructions

3B. Fiber. Sprayed* — As an alternate to Batts and Blankets (Item 3) and Item 3A — Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft. **NU-WOOL CO INC** — Cellulose Insulation

U S GREENFIBER L L C — INS735& INS745 for use with wet or dry application. INS765LD and INS770LD are to be used

 ${\tt 3C.} \ \textbf{Fiber, Sprayed*-A} \ \text{Sa an alternate to Batts and Blankets (Item 3)-Spray applied cellulose fiber. The fiber is } \\$ applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft³. INTERNATIONAL CELLULOSE CORP - Celbar-RL

3D. Batts and Blankets* — For use with Item 8. Nom 3 in. thick, minimum 3.4 pcf mineral wool batts, friction fit See Batts and Blankets (BZJZ) category for names of manufacturers.

3E, Batts and Blankets* — For use with Item 4P, Placed in stud cavities, any min. 3-1/2 in, thick glass fiber insulation See Batts and Blankets (BKNV or BZJZ) Categories for names of Classified companies. 4. **Gypsum Board*** – 5/8 in. thick, 4 ft wide, attached to steel studs and floor and ceiling track with 1 in. long, Type S steel screws spaced 8 in. OC. along edges of board and 12 in. OC in the field of the board. Joints oriented vertically and staggered on opposite sides of the assembly. When attached to Items 6 (resilient channels) or 6A, 6B or 6C (furring channels), gypsum board is screw attached to furring channels with 1 in. long, Type S steel screws spaced 12 in. O $\!$

ACADIA DRYWALL SUPPLIES LTD — Type X, 5/8 Type X, Type Blueglass Exterior Sheathing **AMERICAN GYPSUM CO** — Types AG-C, AGX-1, M-Glass

for dry application only

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO - Type DBX-1

CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, USGX, WRC or WRX (Joint tape and compound, Item 5,

CERTAINTEED GYPSUM INC — Types 1, EGRG, GlasRoc, Type X, Type X-1, Type C, SilentFX, 5/8" Easi-Lite Type X

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Types LGFC2A, LGFC6A, LGFC-C/A, LGFC-WD, LGLLX **GEORGIA-PACIFIC GYPSUM L L C** — Types 5, 6, 9, C, DAP, DD, DA, DAPC, DGG, DS, GPFS6, LS, Type X, Veneer Plaster Base - Type X, Water Rated - Type X, Sheathing - Type X, Soffit - Type X, TG-C, GreenGlass Type X, Type X ComfortGuard Sound Deadening Gypsum Board, Type LWX, Veneer Plaster Base-Type LWX, Water Rated-Type LWX, Sheathing Type-LWX, Soffit-Type DGLW, Water Rated-Type DGLW, Sheathing Type-DGLW, Soffit-Type DGLW, Type DGLW, Type

Type LW2X, Veneer Plaster Base - Type LW2X, Water Rated - Type LW2X, Sheathing - Type LW2X, Soffit - Type LW2X, Type DGL2W, Water Rated - Type DGL2W, Sheathing - Type DGL2W NATIONAL GYPSUM CO — Types eXP-C, FSK, FSK-C, FSK-G, FSMR-C, FSW-C, FSW-G, FSW, FSW-3, FSW-5, FSW-6,

PABCO BUILDING PRODUCTS L L C. DBA PABCO GYPSUM — Types PG-C. PG-9. PG-11. PGS-WRS

PANEL REY S A — Types GREX, PRC, PRC2, PRX, RHX, MDX, ETX

SAINT-GOBAIN GYPROC MIDDLE EAST FZE — Type Gyproc FireStop, Gyproc FireStop MR, Gyproc FireStop M2TECH Line MR, Gyproc DuraLine M2TECH, Gyproc DuraLine ACTIV'Air, Gyproc DuraLine MR ACTIV'Air, Gyproc DuraLine

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1

THAI GYPSUM PRODUCTS PCL — Type X, Type C

UNITED STATES GYPSUM CO - Type AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC, WRX, USGX (Joint

USG BORAL ZAWAWI DRYWALL L L C SFZ — Types C, SCX USG MEXICO S A DE C V — Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, USGX, WRC or WRX (Joint tape and

CERTAINTEED GYPSUM INC — Type X, Type X-1, Type C, Type EGRG/ GlasRoc

4A. **Gypsum Board*** — (As alternate to Item 4) — Nom 5/8 in, thick gypsum panels with beyeled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered or backed by steel framing. Panels attached to steel studs and floor runner with 1 in. long Type S steel screws spaced 8 in. OC when applied horizontally, or 8 in, OC along vertical and bottom edges and 12 in, OC in the field when panels are applied vertically. When used in widths other than 48 in., gypsum panels to be installed horizontally

CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, USGX, WRC or WRX (Joint tape and compound, Item 5,

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C - Types LGFC2A, LGFC6A, LGFC-V/A, LGFC-WD **GEORGIA-PACIFIC GYPSUM L L C** - Types DAP, DAPC, DGG, DS

SAINT-GOBAIN GYPROC MIDDLE EAST FZE — Type Gyproc FireStop, Gyproc FireStop MR, Gyproc FireStop M2TECH, Gyproc FireStop ACTIV'Air, Gyproc FireStop MR ACTIV'Air, Gyproc DuraLine, Gyproc DuraLine MR, Gyproc DuraLine M2TECH, Gyproc DuraLine M2TECH ACTIV'Air, Gyproc DuraLine M3TECH ACTIV'Air, Gyproc DuraLine M3TECH ACTIV'Air, Gyproc DuraLine M3TECH ACTIV'Air

THAI GYPSUM PRODUCTS PCL — Type X, Type C

UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC, WRX, USGX (Joint

USG BORAL ZAWAWI DRYWALL L L C SFZ — Types C, SCX

USG MEXICO S A DE C V — Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, USGX, WRC or WRX (Joint tape and

4B. Gypsum Board* — (As an alternate to Items 4 or 4A) — Nom 3/4 in. thick, 4 ft wide, installed as described in Item **CGC INC** — Types AR, IP-AR

 $\mathbf{UNITED\ STATES\ GYPSUM\ CO}-\mathsf{Types\ AR,\ IP-AR}$

USG MEXICO S A DE C V — Types AR, IP-AR

4C. **Gypsum Board*** — As an alternate to Items 4, 4A, and 4B - Nom. 5/8 in. thick gypsum panels, with square edges, applied horizontally. Gypsum panels fastened to framing with 1 in. long bugle head steel screws spaced a max 8 in. OC, with last 2 screws 3/4 in. and 4 in. from each edge of board. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs on interior walls need not be staggered or backed by steel framing. **GEORGIA-PACIFIC GYPSUM L L C** — Type DGG, GreenGlass Type X

4D. **Gypsum Board*** — As an alternate to Items 4, 4A, 4B, and 4C — Nom. 5/8 in. thick gypsum panels applied vertically or horizontally. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered or backed by steel framing. Gypsum panels fastened to framing with 1 in. long Type S steel screws 8 in. OC along vertical edges and 12 in. OC in the field when panels are applied vertically. When gypsum panels applied horizontally, fasten to raming with 1 in. long Type S steel screws spaced 8 in. OC along vertical edges and in the field. Screws spaced a max 12 in. along the top and bottom edges of the wall for both vertical and horizontal applications. NATIONAL GYPSUM CO — Types eXP-C, FSK, FSK-C, FSK-G, FSL, FSW-C, FSW-G, FSW, FSW-3, FSW-5, FSW-6, FSW-8,

4E. **Gypsum Board*** — (As an alternate to Items 4 through 4D) — Installed as described in Item 4. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically only and fastened to the studs and plates with 1 in. long, Type S steel screws spaced, 8 in, OC. Not to be used with item 6. **NATIONAL GYPSUM CO** — SoundBreak XP Type X Gypsum Board

4F. **Gypsum Board*** — (Not Shown) — (As an alternate to Item 4 when used as the base layer on one or both sides of wall. For direct attachment only to steel studs Item 2C) - Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Gypsum board secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. RAY-BAR ENGINEERING CORP — Type RB-LBG

of board and 12 in. OC in the field of the board. Joints oriented vertically and staggered on opposite sides of the

4G. **Gypsum Board*** — (As an alternate to Items 4 through 4F) — For use with Items 1D and 2D only, 5/8 in. thick, 4 ft wide, attached to steel studs and floor and ceiling track with 1 in. long, Type S steel screws spaced 8 in. OC. along edges

CONTINENTAL BUILDING PRODUCTS OPERATING CO. L. L. C. — Type I GEC6A. I GEC-C/A

NATIONAL GYPSUM CO — Types FSW

UNITED STATES GYPSUM CO - Type SCX

USG BORAL ZAWAWI DRYWALL L L C SFZ — Type SCX

4H. Gypsum Board* — (As an alternate to Items 4 through 4G) — Nominal 5/8 in. thick, 4 ft wide panels, applied PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock ES

4I. **Gypsum Board*** — (As an alternate to Items 4 through 4F) — For use with Items 1E and 2E only, 5/8 in. thick, 4 ft wide, attached to steel studs and floor and ceiling track with 1 in. long, Type S steel screws spaced 8 in. OC. along edges of board and 12 in. OC in the field of the board. Joints oriented vertically and staggered on opposite sides of the UNITED STATES GYPSUM CO — Type SCX

USG BORAL ZAWAWI DRYWALL L L C SFZ — Type SCX

4]. **Gypsum Board*** — (Not Shown) — (As an alternate to Item 4 when used as the base layer on one or both sides of wall. For direct attachment only to steel studs Item 2C) — Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Gypsum board secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. To be used with Lead Batten Strips (see Item 9A) or Lead Discs (see Item 10A) MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum

4K. Gypsum Board* - (As an alternate to Item 4 and 4A, not for use with Items 1D, 1E, 2D and 2E) - Nom. 5/8 in. thick gypsum panels with beveled, square or tapered edges installed as described in Item 4 and 4A.

UNITED STATES GYPSUM CO - Type ULX

USG MEXICO S A DE C V - Type ULX

4L. **Gypsum Board*** — (Not Shown) — (As an alternate to Item 4 when used as the base layer on one or both sides of direct attachment only to steel studs Item 2C). Nom 5/8 in, thick lead backed gypsum panels with beve square or tabered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed psum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in, wide, max 8 ft long with a max ickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. lon-pe S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3, in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

4M. **Gypsum Board*** – (For use with Item 8) – 5/8 in. thick, 4 ft wide, applied vertically over Mineral and Fiber Board tem 8) with vertical joints located anywhere over stud cavities. Secured to mineral and fiber boards with 1-1/2 in. T Screws spaced 8 in. OC along edges of each vertical joint and 12 in. OC in intermediate field of the Mineral and Fibe Board (Item 8). Secured to outermost studs and floor and ceiling runners with 2 in. long Type S screws spaced 8 in. OC. Gypsum Board joints covered with paper tape and joint compound. Screw heads covered with joint compound. AMERICAN GYPSUM CO — Type AG-C

CERTAINTEED GYPSUM INC — Type FRPC, Type C

CGC INC — Types C, IP-X2, IPC-AR

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Type LGFC-C/A

GEORGIA-PACIFIC GYPSUM L L C — Types 5, DAPC, TG-C

NATIONAL GYPSUM CO — Types eXP-C, FSK-C, FSW-C

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type PG-C

PANEL REY S A — Types PRC, PRC2

SAINT-GOBAIN GYPROC MIDDLE EAST FZE — Type Gyproc FireStop, Gyproc FireStop MR, Gyproc FireStop M2TECH, Gyproc FireStop ACTIV'Air, Gyproc FireStop MR ACTIV'Air, Gyproc FireStop M2TECH ACTIV'Air, Gyproc DuraLine, Gyproc DuraLine MR, Gyproc DuraLine M2TECH, Gyproc DuraLine ACTIV'Air, Gyproc DuraLine M2TECH, Gyproc Dura

THAI GYPSUM PRODUCTS PCL — Type C

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR

USG BORAL ZAWAWI DRYWALL L L C SFZ — Type C

panels, applied vertically and secured as described in Item 4

NATIONAL GYPSUM CO — Type FSW

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 527 40. Gypsum Board* — As an alternate to Items 4, 4A, 4B, and 4C — Two layers Nom, 5/16 in, thick gypsum panels applied vertically or horizontally. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered or backed by steel framing. Horizontal joints on the same side need not be staggered. When applied horizontally, both layers of gypsum board fastened to each side of framing with 1 in. long Type S steel screws spaced 8 in. OC and staggered 4 in. OC between layers. When applied vertically, both layers of gypsum board fastened to each side of framing with 1 in. long Type S steel screws spaced 8 in. OC along vertical edges and 12 in. OC in the field, staggered 4 in. OC between layers. Screws spaced a max 12 in. along the top and bottom edges of the wall.

4N. Wall and Partition Facings and Accessories* — (As an alternate to Item 4) — Nominal 5/8 in. thick, 4 ft wide

4P. **Gypsum Board*** — As an alternate to Item 4. For use with Item 3E, **Batts and Blankets*** — 5/8 in. thick, 4 ft wide attached to steel studs and floor and ceiling track with 1 in. long, Type S steel screws spaced 8 in. OC. along edges of board and 12 in. OC in the field of the board. Joints oriented vertically and staggered on opposite sides of the assembly. When attached to item 6 (resilient channels) or 6A, 6B or 6C (furring channels), gypsum board is screw attached to furring channels with 1 in. long, Type S steel screws spaced 12 in. OC. UNITED STATES GYPSUM CO - Types ULIX

5. **Joint Tape and Compound** — Vinyl, dry or premixed joint compound, applied in two coats to joints and screw heads; paper tape, 2 in, wide, embedded in first layer of compound over all joints. As an alternate, nominal 3/32 in, thick psum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced, Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges. 6. Resilient Channel — (Optional — Not Shown) — 25 MSG galv steel resilient channels spaced vertically max 24 in. OC flange portion attached to each intersecting stud with 1/2 in. long type S-12 pan head steel screws. May not be used with Item 4F or 4J. 6A. **Steel Framing Members*** — (Not Shown) — As an alternate to Item 6, furring channels and Steel Framing Member

a. Furring Channels — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be verlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. b. Framing Members* — Used to attach furring channels (Item a) to studs (Item 2). Clips b. Flaming Heinbers — Osed to attach forming challenges (term a) to study (term b). Clips spaced 48 in. OC., and secured to study with 1-5/8 in. wafer or hex head Type S steel screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring

6B. **Framing Members*** — (Not Shown) — (Optional on one or both sides) — As an alternate to Item 6, furring channel and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced nax. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 4. b. Steel Framing Members* — Used to attach furring channels (Item 6Ba) to studs (Item 2). Clips spaced max. 48 in. OC. GENIECLIPS secured to studs with No. 8 \times 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into **PLITEQ INC** — Type Genie Clip

6C. **Steel Framing Members*** — (Optional, Not Shown) — Furring channels and Steel Framing Members as described a. **Furring Channels** — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured together with four self-tapping No. 8x1/2 Self Drilling screws (2 per side 1 in. and

PAC INTERNATIONAL L C — Types RSIC-1, RSIC-1 (2.75)

237R located approximately 2 in. from each end of length of channel. Both Gypsum Boards a side joints fastened into channel with screws spaced 8 in. OC, approximately 1/2 in. from joint b. Steel Framing Members* — Used to attach furring channels (Item 6Ca) to studs. Clips spaced 24 in. OC., and secured to studs with No. 10×2 -1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. **STUDCO BUILDING SYSTEMS** — RESILMOUNT Sound Isolation Clips - Type A237R

4 in. from overlap edge). Gypsum board attached to furring channels as described in Item 4. Side joint furring channels shall be attached to study with RESILMOUNT Sound Isolation Clips - Type

. Wall and Partition Facings and Accessories* — (Optional, Not Shown) — Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-500 or QR-510 panel is installed between the steel framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board. PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock QR-500 and QR-510

8. Mineral and Fiber Board* — (Optional, Not Shown) — For optional use as an additional layer on one side of wall. Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to studs and floor and ceiling runners with 1-5/8 in. long Type S steel screws, spaced 12 in. OC and 24 in. OC along all intermediate framing. The required UL Classified gypsum board layer (Item 4M) is to be installed over the Mineral and Fiber Boards. Batts and Blankets, Item 3D, and Adhesive, Item 11, are required. **HOMASOTE CO** — Homasote Type 440-32

9. Lead Batten Strips — (Not Shown, For Use With Item 4E) — Lead batten strips, min 1-1/2 in, wide, max 10 ft long stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips quired behind vertical joints of lead backed gypsum board (Item 4E) and optional at remaining stud locations. Required 9A. **Lead Batten Strips** — (Not Shown, for use with Item 41) — Lead batten strips, 2 in. wide, max 10 ft long with a mathickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federal cification OO-L-201f, Grades "B, C or D". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4J) and optional at remaining stud locations. 10. **Lead Discs or Tabs** — (Not Shown, For Use With Item 4E) — Used in lieu of or in addition to the lead batten strips (Item 8) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered

over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 4E) rneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C" 10A. **Lead Discs** — (Not Shown, for use with Item 4J) — Max 5/16 in. diam by max 0.140 in. thick lead discs Specification QQ-L-201f, Grades "B, C or D".

11. **Adhesive** — Not Shown — (For use with Item 8) — Construction grade adhesive applied in vertical, serpentine, nominal 3/8 in. wide beads down the length of both vertical edges of Mineral and Fiber Board (Item 8). 12. Wall and Partition Facings and Accessories* — (Optional, Not Shown) — For use with Items 1 to 1I, Items 2 to 22, Item 3, Items 4 to 41, Item 5 and Item 6. For maximum fire rating of 1 hour. On one side of the wall, over the first layer of Gypsum Board (Item 4 to Item 41), install RefleXor membrane with the gold side facing outwards. Membrane installed with T50 staples spaced 12 inches on center in both directions as per manufacturer's instructions, seams in membrane to be overlapped by 2 inches. When RefleXor membrane is used an additional layer of Gypsum Board that is identical to the one used in the first layer and as specified in Item 4 to Item 4I shall be installed over the membrane. Th additional layer of Gypsum Board to be installed through the membrane to the stud as specified in Item 4 to Item 4I except the fastener length shall be increased by a minimum of 5/8 inch. Install Batts and Blankets in the stud cavity as per Item 3. On the other side of the wall, prior to the installation of the Gypsum Board, install Resilient Channels as per Item 6. Over the Resilient Channels install 3/4 inch thick SONOpan panel secured to the Resilient Channels with drywall screws and washers spaced at 16 in. OC on the perimeter of the panel and 8 in. OC in the field of the panel. Over the SONOpan panel install the same Gypsum Board as specified in Item 4 to Item 41 with the fastener length increased by minimum 3/4 inch. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Boar MSL — RefleXor membrane, SONOpan panel

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification

XHBN.BW-S-0003 - Joint Systems

ONLINE CERTIFICATIONS DIRECTORY System No. BW-S-0003

Design/System/Construction/Assembly Usage Disclaimer

XHBN.BW-S-0003

Joint Systems

· Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified 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 fie When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product
manufacturer noted for 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 Guide Information includes specifics concerning alternate materials and alternate Only products which bear UL's Mark are considered Certified.

XHBN - Joint Systems

See General Information for Joint Systems System No. BW-S-0003

> November 18, 2008 Assembly Ratings — 1 and 2 Hr (See Item 2) L Rating At Ambient — Less Than 1 CFM/Lin Ft (See Item 3B)

L Rating At 400°F — Less Than 1 CFM/Lin Ft (See Item 3B)

Joint Width - 3/4 In. Max

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1. Floor Assembly - Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) structural concrete. Floor may also be constructed of any 6 in. (152 mm) thick UL Classified hollow-core **Precast Concrete Units*.** See Precast Concrete Units category in the Fire Resistance Directory for names of

 Wall Assembly — The 1 or 2 h fire-rated gypsum board/steel stud wall assembly shall be constructed of the materials
and in the manner specified in the individual U400 or V400 Series Wall or Partition Design in the UL Fire Resistance
Directory. In addition, the wall may incorporate a head-of-wall joint system constructed as specified in the HW Series Joint Systems in the UL Fire Resistance Directory. The wall shall include the following construction features: A. **Steel Floor Runner** — Floor runners of wall assembly shall consist of min No. 25 gauge galv steel channels sized to accommodate steel studs (Item 2B). Floor runners to be provided with min 1-1/4 in. (32 mm) flanges. Runners secured with steel fasteners spaced 12 in. (305 mm) OC. B. Studs — Steel studs to be min 3-1/2 in. (89 mm) wide. Studs cut 1/2 to 3/4 in. (13 to 19 mm) less in length than assembly height with bottom nesting in, resting on and fastened to floor runner with sheet metal screws. Stud spacing not to exceed 24 in. (610 mm) OC. C. **Gypsum Board*** — Gypsum board installed to a min total thickness of 5/8 in. (16 mm) or -1/4 in. (32 mm) on each side of wall for a 1 or 2 hr fire rated wall, respectively. Wall to be constructed as specified in the individual U400 or V400 Series Design in the UL Fire Resistance Directory except that a max 3/4 in. (19 mm) gap shall be maintained between the bottom of the gypsum board and the top of the concrete floor. The hourly fire rating of the joint system is equal to the hourly fire rating of the wall.

3. Joint System — Max separation between top of floor and bottom of gypsum board is 3/4 in. (19 mm). The joint system consists of a packing material and a fill material, as follows A. Packing Material — (Optional, Not Shown) - Mineral wool batt insulation, polyethylene backer rod or glass fiber insulation firmly packed into the gap between the bottom of the gypsum board and the top of the concrete floor and recessed from each surface of the wall to accommodate the required thickness of fill material. B. Fill, Void or Cavity Material*-Sealant — Min 1/2 in. (13 mm) thickness of fill material installed on each side of the wall between the bottom of the gypsum board and the top of the concrete floor, flush with each surface of the wall. When mineral wool batt insulation is used as a packing material, min thickness of fill material on each side of the wall is 1/4 in. (6 mm).

SPECIFIED TECHNOLOGIES INC — SpecSeal ES Sealant, SpecSeal LCI Sealant, SpecSeal

Note: L Ratings apply when SpecSeal ES Sealant is used.

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ONLINE CERTIFICATIONS DIRECTORY

System No. HW-D-0044 XHBN.HW-D-0044 Joint Systems

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Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified 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 noted for 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 Guide Information includes specifics concerning alternate materials and alternate Only products which bear UL's Mark are considered Certified.

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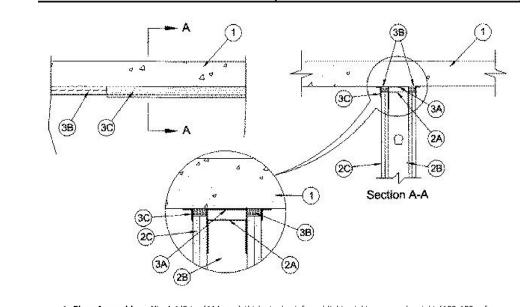
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Page 1 of 2

System No. HW-D-0044

December 08, 2015 ANSI/UL2079 CAN/ULC S115 Assembly Ratings -1, 2, 3 and 4 Hr (See Item 2) Jominal Joint Widths — 1-1/2 and 2-1/2 In. (See Item 3) FT Ratings — 1, 2, 3, and 4 Hr (See Item 2) Class II Movement Capabilities — 40 or 50% Compression or Extension (See Item 3) FH Ratings - 1, 2, 3, and 4 Hr (See Item 2) Rating At Ambient — Less Than 1 CFM/Lin Ft FTH Ratings — 1, 2, 3, and 4 Hr (See Item 2) Rating At 400 F — Less Than 1 CFM/Lin Ft ominal Joint Widths -1-1/2 and 2-1/2 In. (See Item 3) L Rating At Ambient — Less Than 1 CFM/Lin Ft L Rating At 400 F — Less Than 1 CFM/Lin Ft



1. Floor Assembly — Min 4-1/2 in. (114 mm) thick steel-reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) structural concrete. 2. Wall Assembly - 1, 2, 3 or 4 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U400, V400 or W400 Series Wall and Partition Design in the UL Fire

A. Steel Floor and Ceiling Runners — Floor and ceiling runners of wall assembly shall consist of galv steel channels sized to accommodate steel studs (Item 2B). When deflection channel (Item 3A) is used, flange height of ceiling runner is to be equal to or greater than flange height of deflection channel and the ceiling runner is to nest within the deflection channel with a 3/4 to 1 in. (19 to 25 mm) gap maintained between the top of the ceiling runner and the top of the deflection channel. When deflection channel is not used, flange height of ceiling runner shall be min 3/4 in. (19 mm) greater than nom joint width. Ceiling runner is secured to concrete floo slab with steel masonry anchors spaced max 24 in. (610 mm) OC. A1. Light Gauge Framing* - Slotted Ceiling Runner — When nom joint width is less than or equal to 1-3/4 in. (45 mm), slotted ceiling runner may be used as an alternate to the ceiling runner in Item 2A. Slotted ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2B). Ceiling runner secured to concrete floor slab with steel masonry anchors spaced max 24 in. (610 mm) OC. When slotted ceiling runner is used, deflection channel (Item 3A) shall not be used.

BRADY CONSTRUCTION INNOVATIONS INC, DBA SLIPTRACK SYSTEMS — SLP-TRK

CALIFORNIA EXPANDED METAL PRODUCTS CO — CST

Resistance Directory and shall include the following construction features:

SCAFCO STEEL STUD MANUFACTURING CO

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Type SLT METAL-LITE INC — The System

TELLING INDUSTRIES L L C — True-Action Deflection Track THE STEEL NETWORK INC — VertiTrack VT series, 250VT, 362VT, 400VT, 600VT and 800VT A2. Light Gauge Framing* - Vertical Deflection Ceiling Runner — When nom joint width is less than or equal to 1 in. (25 mm), vertical deflection ceiling runner may be used as an alternate to the ceiling runner in Items 3A and 3A1., Vertical deflection ceiling runner to consist of galv steel channel with slotted vertical deflection clips mechanically fastened within runner.

THE STEEL NETWORK INC — VertiTrack VTD362, VTD400, VTD600 and VTD800

Slotted clips, provided with step bushings, for permanent fastening of steel studs. Vertical deflection ceiling runner secured to concrete floor slab with steel masonry anchors spaced max

4 in. (610 mm) OC. When vertical deflection ceiling runner is used, deflection channel (Item

A4. Light Gauge Framing* —Vertical Deflection Clip* — (Optional) Steel clips can be used

A3. **Light Gauge Framing*- Notched Ceiling Runner —** As an alternate to the ceiling runners in Items 2A through 2A3, notched ceiling runners to consist of C-shaped galv steel channel with notched return flanges sized to accommodate steel studs (Item 2B). Notched ceiling runner secured to concrete floor slab with steel masonry anchors spaced max 24 in. (610 mm) OC. When notched ceiling runner is used, deflection channel (Item 3A) shall not be used. OLMAR SUPPLY INC — Type SCR

n conjunction with steel studs (Item 2B), ceiling runner (Item 2A) or deflection channel (Item 3A). Clips installed over the top of studs and inserted within the ceiling runner or deflection channel. Clip shall be secured to the ceiling runner or deflection channel with No. 8 self drilling, self tapping steel fasteners through holes provided within the clip. Clip may be secured to the stud with No. 6 pan head steel screw through holes provided within the clip. As an alternate, the legs of the clip may be installed over the top of the stud without attachment in accordance with manufacturer's installation instructions. **FLEX-ABILITY CONCEPTS L L C** — Three Legged Dog Deflection Clip A5. Steel Framing Members* — Sound Isolation Clips — (Not Shown, For Max 2 Hr Rating)

- As an alternate attachment means for the ceiling runner to the underside of the floor when no deflection channel (Item 3A) is used, sound isolation clips installed in accordance with the diam hole in ceiling runner and attached to top of ceiling runner using four min No. 8 by 1/2 in. floor assembly using min 3/16 in. (5 mm) diam by 2-1/2 in. (64 mm) long steel masonry PAC INTERNATIONAL L L C — Type RSIC-U-HD B. **Studs** — Steel studs to be min 3-1/2 in. (89 mm) wide. Studs cut 1/2 to 1 in. (13 to 25 mm) less in length than assembly height with bottom nesting in and secured to floor runner.

deflection channel is not used, studs to nest in ceiling runner without attachment. When slotted ceiling runner (Item 2A1) is used, steel studs secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at mid-height of slot on each side of wall. When vertical deflection ceiling runner (Item 2A2) is used, steel studs secured to slotted vertical deflection clips, through the bushings, with steel screws at mid-height of each slot. Stud spacing not to exceed 24 in. (610 mm) OC. C. **Gypsum Board*** — Gypsum board sheets installed to a min total 5/8 in., 1-1/4 in., 1-1/2 in. or 2 in. (16, 32, 38 or 51 mm) thickness on each side of wall for 1, 2, 3 or 4 hr rated assemblies, respectively. Wall to be constructed as specified in the individual U400, V400 or W400 Series Design in the UL Fire Resistance Directory, except that a max 1 or 2-1/2 in. (25 or 64 mm) gap (See Item 3) shall be maintained between the top of the gypsum board and the lower surface of the floor. The screws attaching the gypsum board to the studs along the top of

When deflection channel (Item 3A) is used, steel studs attached to ceiling runner (Item 2A) with sheet metal screws located 1/2 in. (13 mm) below the bottom to the deflection channel. When

the wall shall be located 1 in. (25 mm) below the bottom of the ceiling runner. No gypsum board attachment screws shall be driven into the ceiling runner or into the optional deflection The hourly fire rating of the joint system is equal to the hourly fire rating of the wall. . Joint System $oldsymbol{-}$ Max separation between bottom of floor and top of gypsum board (at time of installation of joint system) is 2-1/2 in. (64 mm) for 1 and 2 hr ratings and 1 in. (25 mm) for 3 and 4 hr ratings. The joint system is designed to accommodate a max 50 percent compression or extension from its installed width for max 1-1/2 in. (38 mm) wide joints and a max 40 percent compression or extension from its installed width for max 1-1/2 in. (34 mm) wide joints and a max 40 percent compression or extension from its installed width

> A. **Deflection Channel** — (Optional) - Max 3 in. (76 mm) deep min 24 gauge galv steel channel sized to accommodate ceiling runner (Item 2A). Deflection channel secured to concrete floor slab with steel masonry anchors spaced max 24 in. (610 mm) OC. The ceiling runner (Item 2A) is installed within the deflection channel to maintain a 1/2 to 3/4 in. (13 to 19 mm) gap between the top of the ceiling runner and the top of the deflection channel. The ceiling runner nests inside the deflection channel without attachment compressed 50 percent in thickness and installed cut edge first to completely fill the gap between the top of the gypsum board and the bottom of the concrete floor. When sound isolation clips (Item 2A6) are used, the space between the top of the ceiling runner and the underside of the floor shall be tightly packed with mineral wool batt insulation. The forming

for max 2-1/2 in. (64 mm) wide joints. The joint system shall consist of forming and fill materials, with or without a

ROCK WOOL MANUFACTURING CO — Delta Board ROCKWOOL MALAYSIA SDN BHD — Safe

material shall be installed flush with both surfaces of wall.

INDUSTRIAL INSULATION GROUP L L C — MinWool-1200 Safing

deflection channel (Item 3A), as follows:

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

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification Last Updated on 2015-12-08

SPECIFIED TECHNOLOGIES INC — SpecSeal AS200 Elastomeric Spray

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1710 Wyandotte

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MEP CONSULTANT IMEG Corp.

Licensee's Certificate of Authority Number:

Missouri: #000958

1600 Baltimore, Suite 300

Kansas City, Missouri 64108 T: 816.842.8437 Licensee's Certificate of Authority Number: Missouri: #F001325536

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