



## BXUV.U436 -

## 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 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 methods of construction.
- Only products which bear UL's Mark are considered Certified.

## BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States

## BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States  
Design Criteria and Allowable Variances

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada  
Design Criteria and Allowable Variances

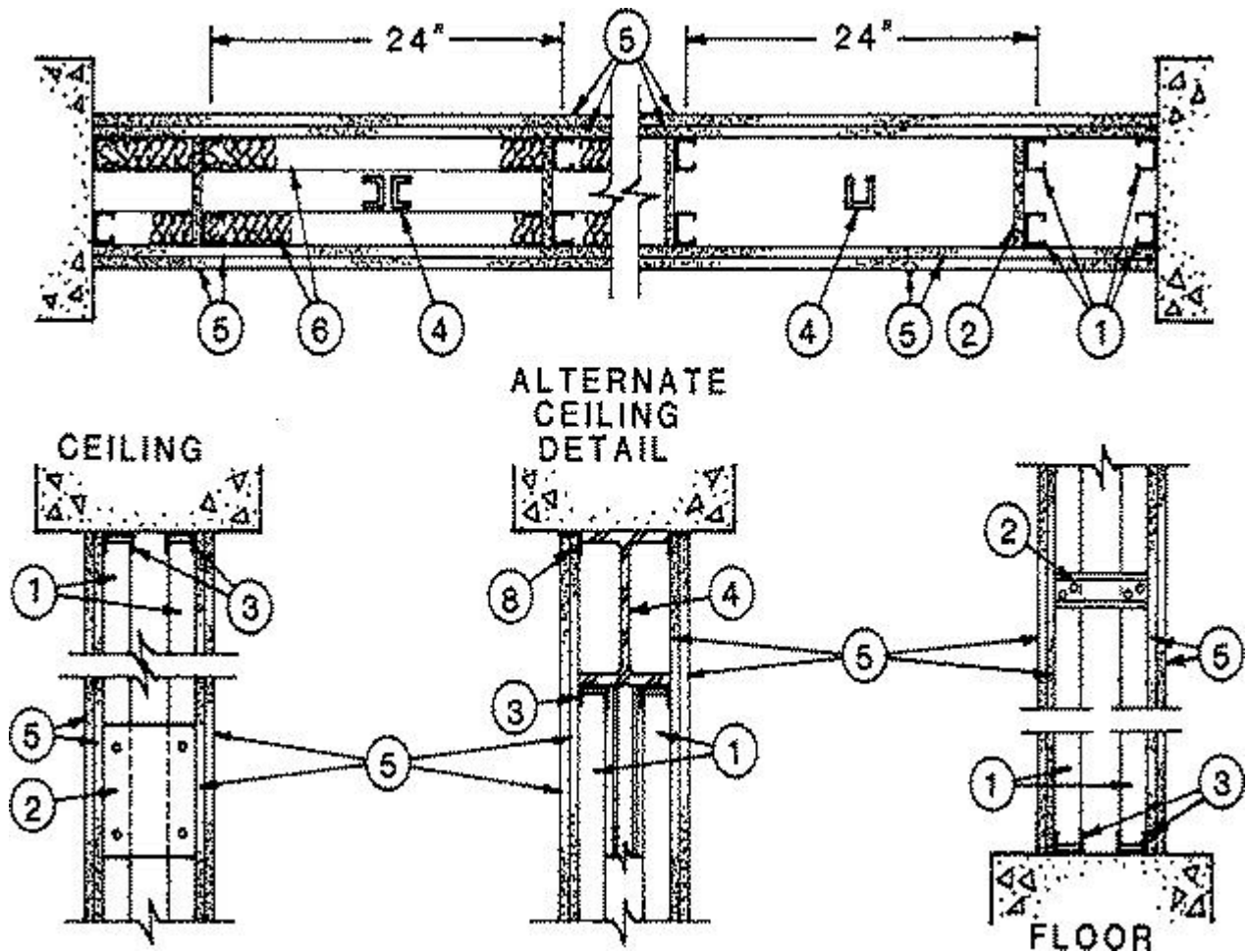
**Design No. U436**

March 12, 2020

**Nonbearing Wall Rating — 1, 2 or 3 HR.**

**(See Items 5 and 5A)**

**\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



1. **Studs** — Channel-shaped, 1-5/8 in. wide by 1 in. deep, with 1/4 in. folded back return flange legs. Fabricated from No. 25 MSG galv steel. Studs spaced max 24 in. OC. Studs to be cut 1/2 in. less than assembly height.

1A. **Framing Members\* — Steel Studs** — Not Shown — In lieu of Item 1 — For use with Item 3A, proprietary channel shaped steel studs, 1-1/4 in. deep by min 1-5/8 in. wide fabricated from min 0.018 in. thick galv steel, spaced max 24 in. OC. Studs cut 1/2 in. less in length than assembly height.

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — Viper20™

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

**FUSION BUILDING PRODUCTS** — Viper20™

**IMPERIAL MANUFACTURING GROUP INC** — Viper20™

1B. **Framing Members\* — Steel Studs** — Not Shown — In lieu of Item 1 — For use with Item 3B, channel shaped steel studs, 1-1/4 in. deep by min 1-5/8 in. wide fabricated from min 0.018 in. thick galv steel, spaced max 24 in. OC. Studs cut 1/2 in. less in length than assembly height.

**CLARKDIETRICH BUILDING SYSTEMS** — CD ProSTUD

**DMFCWBS L L C** — ProSTUD

**MBA METAL FRAMING** — ProSTUD

**RAM SALES L L C** — Ram ProSTUD

**STEEL STRUCTURAL PRODUCTS L L C** — Tri-S ProSTUD

1C. **Framing Members\* — Steel Studs** — Not Shown — In lieu of Item 1 — For use with Item 3C, proprietary channel shaped steel studs, 1-1/4 in. deep by min 1-5/8 in. wide fabricated from min 0.018 in. thick galv steel, spaced max 24 in. OC. Studs cut 1/2 in. less in length than assembly height.

**TELLING INDUSTRIES L L C** — Viper20™

1D. **Framing Members\* — Steel Studs** — Not Shown — In lieu of Item 1 — For use with Item 3D, channel shaped steel studs, 1-1/4 in. deep by min 1-5/8 in. wide fabricated from min 0.018 in. thick galv steel, spaced max 24 in. OC. Studs cut 1/2 in. less in length than assembly height.

**TELLING INDUSTRIES L L C** — TRUE-STUD™

1E. **Framing Members\* — Steel Studs** — Not Shown — In lieu of Item 1 - For use with Item 3E, channel-shaped, 1.97 in. wide by 1 in. deep. Fabricated from No. 25 MSG galvanized steel. Studs spaced max 24 in. OC. Studs to be cut 1/2 in. less than assembly height.

**KIRII (HONG KONG) LTD** — Type KIRII

2. **Bracing** — Maximum spacing 60 in. OC. Either Type 1 or Type 2 bracing may be used. **Type 1** — Cut from steel runners, 5-1/4 in. long. Fastened to the studs with two No. 8 by 1/2 in. self-drilling, self-tapping steel screws in each stud. **Type 2** — Cut from the gypsum board 5-1/4 in. long and 6 in. wide. Fastened to the studs with three Type S screws at each end.

3. **Floor And Ceiling Runners** — Channel-shaped runners, min 1-5/8 in. wide by 1-1/4 in. deep, fabricated from No. 25 MSG galv steel. Attached to floor and ceiling with fasteners spaced 24 in OC max.

3A. **Framing Members\* — Floor and Ceiling Runner** — Not Shown — In lieu of Item 3 — For use with Item 1A, proprietary channel shaped runners, 1-1/4 in. deep by min 1-5/8 in. wide fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — Viper20™ Track

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

**FUSION BUILDING PRODUCTS** — Viper20™ Track

**IMPERIAL MANUFACTURING GROUP INC** — Viper20™ Track

3B. **Framing Members\* — Floor and Ceiling Runners** — Not Shown — In lieu of Item 3 — For use with Item 1B, channel shaped runners, 1-1/4 in. deep by min 1-5/8 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

3C. **Framing Members\* — Floor and Ceiling Runner** — Not Shown — In lieu of Item 3 — For use with Item 1C, proprietary channel shaped runners, 1-1/4 in. deep by min 1-5/8 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** — Viper20™ Track

3D. **Framing Members\* — Floor and Ceiling Runners** — Not Shown — In lieu of Item 3 — For use with Item 1D, channel shaped runners, 1-1/4 in. deep by min 1-5/8 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™

3E. **Framing Members\* — Floor and Ceiling Runner** — Not Shown — In lieu of Item 3 - Channel-shaped runners, min 1.97 in. wide by 1-1/4 in. deep, fabricated from No. 25 MSG galvanized steel. Attached to floor and ceiling with fasteners spaced 24 in OC max.

**KIRII (HONG KONG) LTD** — Type KIRII

4. **Steel Truss Members** — Fabricated with structural steel members designed in accordance with the Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings published by the American Institute of Steel Construction. Truss members to be located between the steel studs and truss members may not contact the gypsum board. All connections shall be riveted, welded or bolted in accordance with the AISC specifications. The min weight of structural member shall be 3.75 plf.

5. **Gypsum, Board\* — For 3 Hr Rating** — Two layers of 3/4 in. thick, 4 ft wide gypsum board with square or tapered edges. Inner layers to be applied vertically with joints centered over studs. Outer layers may be applied vertically or horizontally. First layer fastened to studs with 1-1/4 in. long, Type S self-tapping steel screws. Second layer fastened to studs through first layer with 2-1/4 in. long, Type S, self-tapping steel screws. Second layer also secured to the first layer with 1-1/2 in. long, Type G, self-tapping steel screws located midway between each stud along the horizontal joint of each board and spaced 24 in. OC. Joints in each layer of gypsum board to be staggered 24 in. from the joints in the layer below and on opposite side of studs. The Type S, self-tapping steel screws to be spaced 24 in. OC for the inner layers of gypsum board, 12 in. OC for the outer layer and 3/8 in. from the edge of the board.

**CGC INC** — Type IP-X3 or ULTRACODE

**UNITED STATES GYPSUM CO** — Type IP-X3 or ULTRACODE

**USG BORAL DRYWALL SFZ LLC** — Type ULTRACODE

**USG MEXICO S A DE C V** — Type IP-X3 or ULTRACODE

**For 3 Hr Rating** — Three layers of 1/2 in. thick, 4 ft wide gypsum board with square or tapered edges. Inner layers to be applied vertically with joints centered over studs. Outer layer may be applied vertically or horizontally. First layer fastened to studs with 1 in. long, Type S, self-tapping steel screws. Second layer fastened to studs through the first layer with 1-5/8 in. long, Type S, self-tapping steel screws. Third layer fastened to studs through first and second layers with 2-1/4 in. long, Type S, self-tapping steel screws. Third layer also secured to the first and second layers with 1-1/2 in. long, Type G, self-tapping steel screws located midway between each stud along the horizontal joint of each board and spaced 24 in. OC. Joints in each layer of gypsum board to be staggered 24 in. from the joints in the layer below and on opposite side of studs. The Type S, self-tapping steel screws to be spaced 24 in. OC for the two inner layers of gypsum board, 12 in. OC for the outer layer and 3/8 in. from the edge of the board.

**AMERICAN GYPSUM CO** — Types AG-C

**CABOT MANUFACTURING ULC** — Type C

**CERTAINTED GYPSUM INC** — Type C

**CGC INC** — Types C, IP-X2, IPC-AR.

**CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C** — Types LGFC-C/A, LGFC-WD.

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

**NATIONAL GYPSUM CO** — Types eXP-C, FSK-C, FSW-C, FSMR-C.

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

**PANEL REY S A** — Type PRC

**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

**THAI GYPSUM PRODUCTS PCL** — Type C.

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

**USG BORAL DRYWALL SFZ LLC** — Type C

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

**For 3 Hr Rating** — Three layers of 5/8 in. thick, 4 ft wide gypsum board, installed in the same manner as the three layers of 1/2 in. gypsum board as described above, except the third layer Type G screws shall be 1-7/8 in. long.

**NATIONAL GYPSUM CO** — Type FSMR-C.

**For 3 Hr Rating** — Three layers of 5/8 in. thick, 4 ft wide gypsum board, installed in the same manner as the three layers of 1/2 in. gypsum board as described above.

**UNITED STATES GYPSUM CO** — Type ULIX

**For 2 Hr Rating** — Two layers of 1/2 in. thick, 4 ft wide gypsum board with square or tapered edges. The inner layers to be applied in the same manner as the 3 hr rating. The outer layer may be applied vertically or horizontally and in the same manner as the outer layer for the 3 hr rating. Board joints to be staggered 24 in. from the joints in the adjacent layer and on opposite side of studs.

**AMERICAN GYPSUM CO** — Type AG-C

**CERTAINTED GYPSUM INC** — 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

**PANEL REY S A** — Type PRC

**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

**THAI GYPSUM PRODUCTS PCL** — Type C.

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

**USG BORAL DRYWALL SFZ LLC** — Type C

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

**For 2 Hr Rating** — Two layers of 5/8 in. thick, 4 ft wide gypsum board with square or tapered edges installed as described above.

**UNITED STATES GYPSUM CO** — Type ULIX

**5A. Gypsum, Board\* — (Not Shown) — Any 5/8 in. thick UL Classified Gypsum Board that is eligible for use in Design Nos. L501, G512 or U305.**

**As an alternate for the 2 hr rating** — Two layers of nom 5/8 in. thick gypsum board with beveled, square or tapered edges. The inner layer to be applied in the same manner as for the 1 hr rating. The outer layer to be fastened to the studs (through the inner layer) using 1-5/8 in. long, Type S, self-drilling, self-tapping, screws spaced 8 in. OC at the joints located 3/8 in. from the edges and 12 in. OC in the field. Fasteners to be spaced 8 in. OC at the runners. Joints to be staggered 24 in. from the inner layer.

**For 1 Hr rating** — One layer of any Classified 5/8 in. thick gypsum board with beveled, square or tapered edges. Applied vertically with joint centered over studs. Fastened to studs with 1 in. long, Type S, self-tapping, self-drilling screws spaced 8 in. OC at the joints located 3/8 in. from the edges at 12 in. OC in the field. Fasteners to be spaced 8 in. OC at the runners. No horizontal joints to be used.

**AMERICAN GYPSUM CO** (View Classification) — CKNX.R14196

**BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO** (View Classification) — CKNX.R19374

**CABOT MANUFACTURING ULC** (View Classification) — CKNX.R25370

**CERTAINTED GYPSUM INC** (View Classification) — CKNX.R3660

**CGC INC** (View Classification) — CKNX.R19751

**CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C** (View Classification) — CKNX.R18482

**GEORGIA-PACIFIC GYPSUM L L C** (View Classification) — CKNX.R2717

**LOADMASTER SYSTEMS INC** (View Classification) — CKNX.R11809

**NATIONAL GYPSUM CO** (View Classification) — CKNX.R3501

**PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM** (View Classification) — CKNX.R7094

**PANEL REY S A** (View Classification) — CKNX.R21796

**SAINT-GOBAIN GYPROC MIDDLE EAST FZE** (View Classification) — CKNX.R27321

**SIAM GYPSUM INDUSTRY (SARABURI) CO LTD** (View Classification) — CKNX.R19262

**THAI GYPSUM PRODUCTS PCL** (View Classification) — CKNX.R27517

**UNITED STATES GYPSUM CO** (View Classification) — CKNX.R1319

**USG BORAL DRYWALL SFZ LLC** (View Classification) — CKNX.R38438

**USG MEXICO S A DE C V** (View Classification) — CKNX.R16089

**6. Batts And Blankets\* — (Optional)** — Any glass fiber or mineral wool batt or blanket material bearing the UL Classification Marking as to Fire Resistance. The glass fiber or mineral wool batt or blanket material may not be placed on only one side of the structural steel members.

See **Batts and Blankets\*** (BZJZ) Category for names of Classified companies.

**6A. Fiber, Sprayed\*** — As an alternate to **Batts and Blankets** (Item 6) — (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/ft<sup>3</sup>. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft<sup>3</sup>, in accordance with the application instructions supplied with the product.

**U S GREENFIBER L L C** — INS735, INS745, INS750LD for use with wet or dry application. INS765LD and INS773LD are to be used for dry application only.

**6B. Fiber, Sprayed\*** — As an alternate to **Batts and Blankets** (Item 6) — 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

**6C. Fiber, Sprayed\*** — As an alternate to **Batts and Blankets** (Item 6) — 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/ft<sup>3</sup>.

**INTERNATIONAL CELLULOSE CORP** — Celbar-RL

**7. Joint Tape And Compound** — Vinyl or casein, 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.

**8. Alternate Ceiling Detail — Steel Angle** — Angle shaped runners, fabricated from No. 25 MSG galv steel. Attached to ceiling with fasteners spaced 24 in. OC. Each layer of gypsum board to be fastened to the steel angle with Type S, self-tapping steel screws spaced 24 in. OC.

**\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2020-03-12

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