

BXUV.U412 -

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

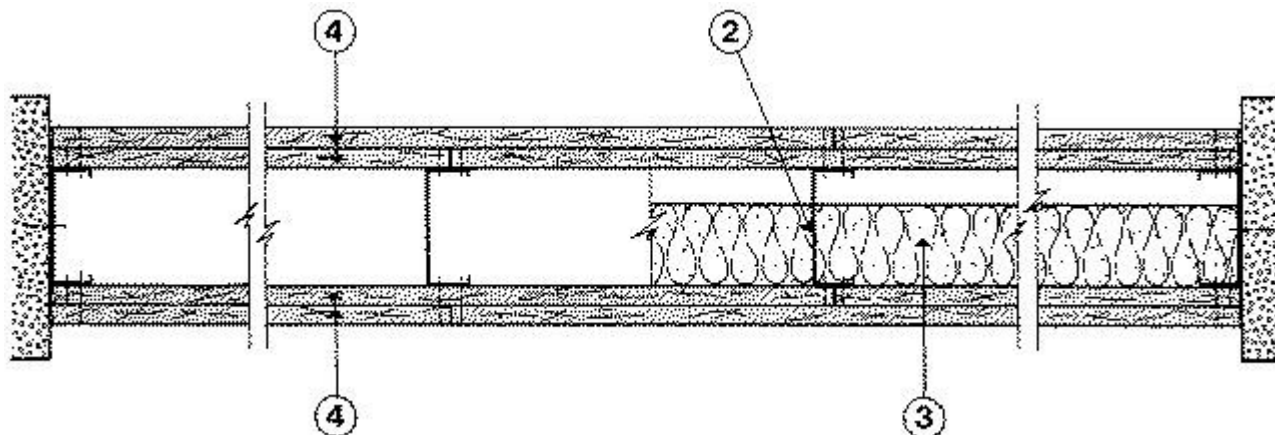
See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
Design Criteria and Allowable Variances

Design No. U412

February 06, 2020

Nonbearing Wall Rating — 2 HR.

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



1. **Floor and Ceiling Runner** — (Not Shown) — 25 MSG (min) galv steel 1 in. high, return legs 1-5/8 in. wide (min), attached to floor and ceiling with fasteners 24 in. OC max.

1A. **Framing Members* — Floor and Ceiling Runners** — (Not Shown) — As an alternate to Item 1 - For use with Item 2A, channel shaped, min 1-5/8 in. wide, attached to floor and ceiling with fasteners 24 in. OC. max.

ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME D24/30EQD and Type SUPREME D20

QUAIL RUN BUILDING MATERIALS INC — Type SUPREME D24/30EQD and Type SUPREME D20

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME D24/30EQD and Type SUPREME D20

STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME D24/30EQD and Type SUPREME D20

UNITED METAL PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20

1B. **Framing Members — Floor and Ceiling Runner*** — (Not Shown) — In lieu of Item 1 — For use with Item 2B, 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

1C. **Framing Members* — Floor and Ceiling Runners** — (Not Shown) — As an alternate to Item 1 - For use with Item 2C, channel shaped, min 1-5/8 in. wide fabricated from min 0.015 in. thick galv steel, attached to floor and ceiling with fasteners 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

1D. **Framing Members* — Floor and Ceiling Runners** — (Not Shown) — As an alternate to Item 1 - For use with Item 2D, channel shaped, min 1-5/8 in. wide fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners 24 in. OC. max.

TELLING INDUSTRIES L L C — TRUE-TRACK™

1E. **Framing Members* — Floor and Ceiling Runners** — (Not Shown) — As an alternate to Item 1 - For use with Item 2E, channel shaped, min 1-5/8 in. wide fabricated from min 25 MSG steel, attached to floor and ceiling with fasteners 24 in. OC.

max.

KIRII (HONG KONG) LTD — Type KIRII

1F. Framing Members — Floor and Ceiling Runner* — (Not Shown) — In lieu of Item 1 — For use with Item 2F, 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

1G. Framing Members* — Floor and Ceiling Runners — (Not Shown) — As an alternate to Item 1 - For use with Item 2G, channel shaped, min 1-5/8 in. wide (SmartTrack20™), min 3-5/8 in. wide (SmartTrack25™), attached to floor and ceiling with fasteners 24 in. OC max.

CRACO MFG INC — SmartTrack25™, SmartTrack20™

1H. Framing Members* — Floor and Ceiling Runners — (Not Shown) — As an alternate to Item 1 - For use with Item 2K. Channel shaped, attached to floor and ceiling with fasteners 24 in. OC. max.

BAILEY METAL PRODUCTS LTD — Type PLATINUM PLUS

1I. Framing Members* — Floor and Ceiling Runners — (Not Shown) — As an alternate to Item 1 - For use with Item 2L, channel shaped, min 3-1/2 in. wide fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners 24 in. OC. Max.

STEEL INVESTMENT GROUP L L C — AlphaTRAK

1J. Framing Members — Floor and Ceiling Runner* — (Not Shown) — In lieu of Item 1 — For use with Item 2M, proprietary channel shaped runners, 1-1/4 in. deep by min 1-5/8 in. wide fabricated from min 25 MSG (0.018 in. min. bare metal thickness), attached to floor and ceiling with fasteners spaced 24 in. OC max.

CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper X Track

1K. Framing Members* — Floor and Ceiling Runners — (Not Shown) — In lieu of Item 1 - For use with Item 2N. Channel shaped, min. 1-5/8 in. wide, attached to floor and ceiling with fasteners 24 in. OC. max.

ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME D25

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME D25

QUAIL RUN BUILDING MATERIALS INC — Type SUPREME D25

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME D25

STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME D25

UNITED METAL PRODUCTS INC — Type SUPREME D25

2. Steel Studs — 1-5/8 in. wide (min), 1-1/4 in. legs, 1/4 in. return, formed of 25 MSG (min) galv steel max stud spacing 24 in. OC. Studs to be cut 3/4 in. less than assembly height.

2A. **Framing Members*— Steel Studs** — As an alternate to Item 2 — For use with Item 1A, channel shaped studs, min 1-5/8 in. wide, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.

ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME D24/30EQD and Type SUPREME D20

QUAIL RUN BUILDING MATERIALS INC — Type SUPREME D24/30EQD and Type SUPREME D20

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME D24/30EQD and Type SUPREME D20

STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME D24/30EQD and Type SUPREME D20

UNITED METAL PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20

2B. **Framing Members* — Steel Studs** — Not Shown — In lieu of Item 2 — For use with Item 1B, 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. Studs to be cut 3/4 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™

2C. **Framing Members* — Steel Studs** — As an alternate to Item 2 — For use with Item 1C, channel shaped studs, min 1-5/8 in. wide fabricated from min 0.015 in. thick galv steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less 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

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

TELLING INDUSTRIES L L C — TRUE-STUD™

2E. **Framing Members* — Steel Studs** — As an alternate to Item 2 — For use with Item 1D, channel shaped studs, min 1-5/8 in. wide fabricated from min 25 MSG steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.

KIRII (HONG KONG) LTD — Type KIRII

2F. **Framing Members* — Steel Studs** — Not Shown — In lieu of Item 2 — For use with Item 1F, 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. Studs to be cut 3/4 in. less in length than assembly height.

TELLING INDUSTRIES L L C — Viper20™

2G. **Framing Members* — Steel Studs** — As an alternate to Item 2 — For use with Item 1G, channel shaped studs, min 1-5/8 in. wide (SmartStud20™), min 3-5/8 in. wide (SmartStud25™) spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.

CRACO MFG INC — SmartStud25™, SmartStud20™

2H. **Framing Members* — Steel Studs** — Not Shown — In lieu of Item 2 — For use with Item 1, channel shaped steel studs, 1-1/4 in. deep by min 1-5/8 in. wide fabricated from min 25 MSG galv steel. Studs to be cut 3/4 in. less in length than assembly height.

EB METAL INC — NITROSTUD

2I. **Framing Members* — Steel Studs** — Not Shown — In lieu of Item 2 — For use with Item 1, channel shaped steel studs, min 1-5/8 in. deep by min 1-1/4 in. wide, fabricated from min 25 MSG galv steel. Studs cut 3/4 in. less in length than assembly height.

OLMAR SUPPLY INC — PRIMESTUD

2J. **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.

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

2K. **Framing Members* — Steel Studs** — As an alternate to Item 2 — For use with Item 1H, channel shaped, min 3-5/8 in. wide, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

BAILEY METAL PRODUCTS LTD — Type PLATINUM PLUS

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

STEEL INVESTMENT GROUP L L C — AlphaSTUD

2M. **Framing Members* — Steel Studs** — (Not Shown) — In lieu of Item 2 — For use with Item 1J, channel shaped steel studs, 1-1/4 in. deep by min 1-5/8 in. wide fabricated from min 25 MSG (0.018 in. min. bare metal thickness). Studs to be cut 3/4 in. less in length than assembly height.

CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper X

2N. **Framing Members* — Steel Studs** — In lieu of Item 2 — For use with item 1K. Channel shaped studs, min depth 1-5/8 in. wide, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.

ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME D25

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME D25

QUAIL RUN BUILDING MATERIALS INC — Type SUPREME D25

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME D25

STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME D25

UNITED METAL PRODUCTS INC — Type SUPREME D25

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 manufacturers.

ROCKWOOL — Type AFB, min. density 1.69 pcf / 27.0 kg/m³

ROCKWOOL MALAYSIA SDN BHD — Type Acoustical Fire Batts

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 supplied with the product.

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

3B. **Fiber, Sprayed*** — As an alternate to **Batts and Blankets** (Item 3) - 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

3C. **Fiber, Sprayed*** — As 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. **Fiber, Sprayed*** — As an alternate to Batts and Blankets (Item 3) — 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. To facilitate the installation of the material, any thin, woven or non-woven netting may be attached by any means possible to the outer face the studs. The material shall reach equilibrium moisture content before the installation of materials on either face of the studs. The minimum dry density shall be 5.79 lbs/ft³.

APPLEGATE HOLDINGS L L C — Applegate Advanced Stabilized Cellulose Insulation

4. Gypsum Board* — 1/2 in. thick. Gypsum board applied vertically in two layers. (Laminated System) Inner layer attached to studs with 1 in. long Type S steel screws spaced 24 in. O.C. along vertical edges and 24 in. O.C. in the field. Outer layer laminated to inner layer with joint compound, applied with a notched spreader producing continuous beads of compound about 3/8 in. in diameter, spaced not greater than 2 in. O.C. Joints of laminated outer layer offset 12 in. from inner layer joints. Outer layer gypsum board attached to inner layer with 1-1/2 in. long Type G steel screws spaced 24 in. O.C. along edges and center line of each sheet.

Optional, (Direct Attached System) Gypsum board applied vertically in two layers. Inner layer attached to studs with 1 in. long Type S steel screws spaced 24 in. O.C. in the field and along the vertical edges. Outer layer attached to the studs over the inner layer with 1-5/8 in. long Type S steel screws spaced 12 in. O.C. in the field, along the vertical edges, and to the floor and ceiling runners. Joints of screw-attached outer layer offset from inner layer joints.

Optional, (Direct Attached System) Inner layer gypsum board applied vertically, outer layer wallboard applied horizontally. Inner layer attached to studs with 1 in. Type S steel screws spaced 24 in. O.C. along vertical edges and in the field. Outer layer attached to the studs over the inner layer with 1-5/8 in. long Type S steel screws spaced 12 in. OC in the field, along the vertical edges, and to the floor and ceiling runners. Outer layer secured to inner layer gypsum board with 1-1/2 in. long Type G steel screws located midway between studs and 1 in. from the horizontal joint.

Outer layer gypsum board joints covered with joint tape and min two coats of joint compound, and screw heads covered with min two coats of joint compound. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced.

AMERICAN GYPSUM CO — Types AG-C.

CABOT MANUFACTURING ULC — Type C

CERTAINTED GYPSUM INC — Type C

CGC INC — Type C, IP-X2, IPC-AR or WRC.

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

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

NATIONAL GYPSUM CO — Types eXP-C, FSK-C, FSW-G, 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 — Type C, IP-X2, IPC-AR or WRC.

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Type C, IP-X2, IPC-AR or WRC.

4A. Gypsum Board* — (As an alternate to Item 4) — 5/8 in. thick. Two layers installed by any method as described in Item 4.
NATIONAL GYPSUM CO — Type FSMR-C.

UNITED STATES GYPSUM CO — Type ULIX

5. **Furring Channels** — (Optional, Not Shown, for single or double layer systems) — Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type S-12 steel screws.

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

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