UL Product iQ®

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

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

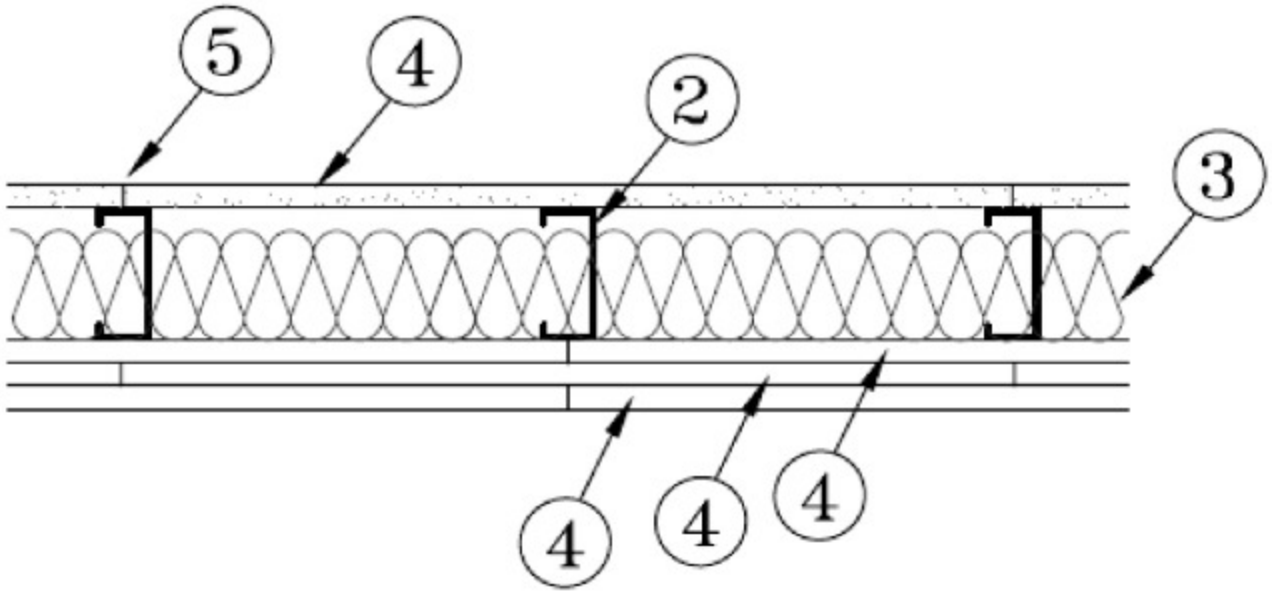
See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States
Design Criteria and Allowable Variances

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

Design No. **U421**

February 8, 2024

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 Runners —** (Not Shown) — Channel shaped, min 2-1/2 in. deep when Items 4, 4A or 4B are used or 3-5/8 in deep when Items 4C, 4D or 4E are used, with min 1-1/4 in. long legs, fabricated from min 25 MSG corrosion-protected steel, attached to floor and ceiling with fasteners 24 in. OC max.

1A. **Framing Members* — Floor and Ceiling Runner —** Not Shown — As an alternate to Item 1, proprietary channel shaped runners, min 2-1/2 in. deep when Items 4, 4A or 4B are used or 3-5/8 in deep when Items 4C, 4D or 4E are used ,with 1-1/4 in. long legs fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
CEMCO, LLC — Viper20™

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

1B. **Framing Members* — Floor and Ceiling Runners —** Not Shown — As an alternate to Item 1, proprietary channel shaped, min. 3-5/8 in. wide, fabricated from min. 0.0150 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC max. Not to be used with Item 4E.
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

1C. **Framing Members* — Floor and Ceiling Runner —** Not Shown — As an alternate to Item 1, proprietary channel shaped runners, min 2-1/2 in. deep when Items 4, 4A or 4B are used or 3-5/8 in deep when Items 4C, 4D or 4E are used ,with 1-1/4 in. long legs fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™

1D. **Framing Members* — Floor and Ceiling Runners —** Not Shown — As an alternate to Item 1, proprietary channel shaped, min. 3-5/8 in. wide, fabricated from min. 0.018 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC max. Not to be used with Item 4E.
RESCUE METAL FRAMING, L L C — AlphaTRAK

1E. **Framing Members* — Floor and Ceiling Runner —** Not Shown — As an alternate to Item 1, proprietary channel shaped runners, min 2-1/2 in. deep when Items 4, 4A or 4B are used or 3-5/8 in deep when Items 4C, 4D or 4E are used ,with 1-1/4 in. long legs

fabricated from min 0.020 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
CRACO MFG INC — SmartTrack20™

2. **Steel Studs —** Channel shaped, min 2-1/2 in. deep when Items 4, 4A or 4B are used or 3-5/8 in deep when Items 4C, 4D or 4E are used, 1-1/4 in. flanges and 3/16 in. returns, fabricated from min 25 MSG corrosion-protected steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height and friction-fit in place.

2A. **Framing Members* — Steel Studs —** Not Shown — In lieu of Item 2 — For use with Item 1A - proprietary channel shaped steel studs, 1-1/4 in. wide by min 2-1/2 in. deep when Items 4, 4A or 4B are used or 3-5/8 in deep when Items 4C, 4D or 4E are used, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 to 3/4 in. less in length than assembly height.
CEMCO, LLC — Viper20™

CRACO MFG INC — SmartStud20™

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

2B. **Framing Members* — Steel Studs —** As an alternate to Item, for use with Item 1B, proprietary channel shaped studs, min. 3-5/8 in. wide, fabricated from min. 0.0150 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. Not to be used with Item 4E.
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

2C. **Framing Members* — Steel Studs —** Not Shown — In lieu of Item 2 — For use with Item 1C - proprietary channel shaped steel studs, 1-1/4 in. wide by min 2-1/2 in. deep when Items 4, 4A or 4B are used or 3-5/8 in deep when Items 4C, 4D or 4E are used, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 to 3/4 in. less in length than assembly height.
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™

2D. **Framing Members* — Steel Studs —** As an alternate to Item 2 — For use with Item 1A (3-5/8 in. wide track) and Items 4C, 4D or 4E, 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™

2E. **Framing Members* — Steel Studs —** As an alternate to Item 2, for use with Item 1D, proprietary channel shaped studs, min. 3-5/8 in. wide, fabricated from min. 0.018 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. Not to be used with Item 4E.
RESCUE METAL FRAMING, L L C — AlphaSTUD

2F. **Framing Members* — Steel Studs —** Not Shown — In lieu of Item 2 — For use with Item 1E - proprietary channel shaped steel studs, 1-1/4 in. wide by min 2-1/2 in. deep when Items 4, 4A or 4B are used or 3-5/8 in deep when Items 4C, 4D or 4E are used, fabricated from min 0.020 in. thick galv steel. Studs cut 3/8 to 3/4 in. less in length than assembly height.
CRACO MFG INC — SmartStud20™

3. **Batts and Blankets* —** (Optional) — Placed in stud cavities, any glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.

4. **Gypsum Board* —** Nom 5/8 in. thick gypsum panels with beveled, square or tapered edges. Base layer applied vertically or horizontally on both sides of the studs, with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Horizontal edge joints (when applied horizontally) and horizontal butt joints (when applied vertically) on opposite sides of studs need not be staggered or backed. Base layer panels attached to studs with 1 in. long Type S or Hi-Low screws spaced 8 in. OC when applied horizontally, or 8 in. OC along the vertical edges and 12 in. OC in the field when applied vertically. When Items 1C and 2C are used the base layer is required to be installed vertically. Remaining two layers applied vertically or horizontally on one side of the wall. Horizontal butt joints staggered a min of 6 in. on adjacent layers. First of these two layers attached to studs with 1-5/8 in. long Type S or Hi-Low screws spaced 12 in. OC. Face layer attached to studs with 2-3/8 in. Type S or Hi-Low screws spaced 8 in. OC when applied horizontally, or 8 in. OC along the vertical edges and 12 in. OC in the field when applied vertically. When used in widths other than 48 in., gypsum panels to be installed horizontally.
AMERICAN GYPSUM CO — Types AGX-1, M-Glass, AG-C, LightRoc.

CERTAINTEED GYPSUM INC — Types LGFC6A, LGFC-WD, LGFC-2A, LGFC-C/A, LGLLX, CLLX

GEORGIA-PACIFIC GYPSUM L L C — Type 9, Type 5, Type 6, Type DAP, Type DS, Type DGG, Type DAPC, LS, Type X, Veneer Plaster Base - Type X, Water Rated - Type X, Sheathing - Type X, Soffit - Type X, GreenGlass Type X, Type TG-C, Type LWX, Veneer Plaster Base-Type LWX, Water Rated-Type LWX, Sheathing Type-LWX, Soffit-Type LWX, Type DGLW, Water Rated-Type DGLW, Sheathing Type- DGLW, Soffit-Type DGLW, 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.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types PG-11, PGS-WRS, PGI

4A. **Gypsum Board* —** As an alternate to Item 4 — Nom 5/8 in. thick gypsum panels with beveled, square or tapered edges. Base layer panels applied vertically attached to studs with 1 in. long Type S or Hi-Low screws 8 in. OC along the vertical edges and 12 in. OC in the field. Remaining two layers applied vertically on one side of the wall. First of these two layers attached to studs with 1-5/8 in. long Type S or Hi-Low screws spaced 12 in. OC. Face layer attached to studs with 2-3/8 in. Type S or Hi-Low screws spaced 8 in. OC along the vertical edges and 12 in. OC in the field. Not to be used with Item 6, resilient channels.
GEORGIA-PACIFIC GYPSUM L L C — Type X ComfortGuard Sound Deadening Gypsum Board.

4B. **Gypsum Board* —** As an alternate to Item 4, for use as the base layer of boards on one or both sides of the steel studs. Nom. 5/8 in. thick gypsum panels with beveled, square or tapered edges secured as described in Item 4. When used in widths other than 48 in., gypsum panels to be installed horizontally.
CGC INC — 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, USGX, WRX or WRC

UNITED STATES GYPSUM CO — 5/8 in. thick Type AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, USGX, WRX, WRC

USG BORAL DRYWALL SFZ LLC — Types C, SCX, USGX

USG MEXICO S A DE C V — 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, USGX, WRX, WRC

4C. **Gypsum Board* —** As an alternate to Item 4, for use as the base layer of boards on one or both sides of the steel studs. Nom. 5/8 in. thick gypsum board applied vertically to studs with #6 x 1-1/4 in. long bugle head screws spaced 8 in. OC at the perimeter and 12 in. OC in the field of the boards. Vertical joints are centered over studs and staggered from vertical joints on opposite sides of the wall.
NATIONAL GYPSUM CO — Types eXP-C, FSK, FSK-C, FSL, FSW, FSW-6, FSW-C

4D. **Gypsum Board* —** As an alternate to Item 4, for use as the base layer of boards on one or both sides of the steel studs. Nom. 5/8 in. thick gypsum board applied vertically or horizontally to studs. When applied vertically, boards attached with 1 in. long Type-S bugle head screws spaced 8 in. OC at the perimeter and 12 in. OC in the field with the 1st screw installed 4 in. from the board edges at the perimeter and 6 in. from the board edge in the field. Vertical joints are centered over studs and staggered from vertical joints on opposite sides of the wall. When applied horizontally, boards attached with 1 in. long Type-S bugle head screws spaced 8 in. OC at the perimeter and in the field with the 1st screw installed 4 in. from the board edge. Horizontal joints need not be staggered on opposite faces or backed by steel framing. When Items 1C and 2C are used the base layer is required to be installed vertically.
CABOT MANUFACTURING ULC — Type X, 5/8 Type X

CERTAINTEED GYPSUM INC — Type C

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 MR ACTIV'Air, Gyproc DuraLine M2TECH ACTIV'Air

THAI GYPSUM PRODUCTS PCL — Type X, Type C

4E. **Gypsum Board* —** As an alternate to Item 4, for use as the base layer of boards on one or both sides of the steel studs Nom. 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.
CERTAINTEED GYPSUM INC — Types EGRG, GlasRoc, GlasRoc-2, Type X-1, Easi-Lite Type X-2, Type C, 5/8" Easi-Lite Type X, Type LWTX

NATIONAL GYPSUM CO — Types eXP-C, FSK, FSK-C, FSK-G, FSL, FSMR-C, FSW-C, FSW-G, FSW, FSW-3, FSW-5, FSW-6, FSW-8, RSX.

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 MR ACTIV'Air, Gyproc DuraLine M2TECH ACTIV'Air

THAI GYPSUM PRODUCTS PCL — Type X, Type C

4F. **Gypsum Board* —** (As an alternate to Items 4 and 4E) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically only and secured as described in Item 4.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock ES

4G. **Gypsum Board* —** (As an alternate to Item 4B, not for use with Items 1C and 2C) — Nom. 5/8 in. thick gypsum panels with beveled, square or tapered edges installed as described in Item 4B.
CGC INC — Type ULX

UNITED STATES GYPSUM CO — Type ULX

USG MEXICO S A DE C V — Type ULX

4H. **Wall and Partition Facings and Accessories* —** (As an alternate to Items 4 and 4G) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically only and secured as described in Item 4.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock QR-527.

5. **Joint Tape and Compound —** Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screw heads of outer layers. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer layer panels. When square-edge gypsum board is used, treatment of joints is optional.

6. **Furring Channels —** (Optional, Not Shown, for use on the single layer side only) — 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.

6A. **Steel Framing Members* —** (Not Shown) — Optional, for single layer side — As an alternate to Item 6, furring channels and Steel Framing Members as described below.
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 max. 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 6Aa) to studs (Item 2, 2A or, 2B, or 2C). Clips spaced max. 48 in. OC. RSIC-1 clips secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 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 channels.
PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-1 (2.75).

6B. **Steel Framing Members* —** (Not Shown) — Optional for single layer side — As an alternate to Item 6, furring channels and Steel Framing Members as described below.
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 tied together with double strand of No. 18 AWG galvanized steel wire.Gypsum board attached to furring channels as described in Item 4.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to studs. Clips spaced 48 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips.
STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237R

6C. **Steel Framing Members* —** (Not Shown) — Optional for single layer side — As an alternate to Item 6, furring channels and Steel Framing Members as described below.
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 6Cb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 4.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Ca) to studs. Clips spaced 48 in. OC, and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
REGUPOL AMERICA — Type SonusClip

6D. **Steel Framing Members* —** (Not Shown) — Optional for single layer side — As an alternate to Item 6, resilient channels and Steel Framing Members as described below.
a. **Resilient Channels —** Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 4.

b. **Steel Framing Members* —** Used to attach resilient channels (Item 6Da) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.
KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

7. **Caulking and Sealants* —** (Optional, Not Shown) — A bead of acoustical sealant applied around the partition perimeter for sound control.
UNITED STATES GYPSUM CO — Type AS

*** 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 2024-02-08

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