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Design No. U465
Fire Resistance Ratings - ANSUL U463

[Page Bottom](#)

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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 subcommittee 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 specific concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

Fire-resistance Ratings - ANSUL U463

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Design No. U465
June 07, 2013
Nonbearing Wall Rating - 1 HR.

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, min 3-5/8 in. deep, attached to floor and ceiling with fasteners 24 in. OC max.

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

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BXUV-U465 - Fire Resistance Ratings - ANSUL U463

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 tape and compound, Item 5, optional for use with Type USGX).

USG MEXICO S A DE C V – Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or WRX.

4A. **Gypsum Board*** – (As alternate to Item 4) - Nom 5/8 in. thick gypsum panels with beveled, 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 5 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, WRC or WRX.

CERTAINTED GYPSUM INC – Type X, Type C, Type EGRG/ GlasRoc.

CERTAINTED GYPSUM CANADA INC – Type X, Type C, Type EGRG/ GlasRoc.

GEORGIA-PACIFIC GYPSUM L L C – Types DAP, DAPC, DGG, DS.

LAFARGE NORTH AMERICA INC – Type LGFC6A, LGFC-A

THAI GYPSUM PRODUCTS PCL – Type X, Type C.

UNITED STATES GYPSUM CO – T type AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC, WRX, USGX (Joint tape and compound, Item 5, optional for use with Type USGX).

USG MEXICO S A DE C V – Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or WRX.

4B. **Gypsum Board*** – (As an alternate to Items 4 or 4A) – Nom 3/4 in. thick, 4 ft wide, installed as described in Item 4A with fire length increased to 1-1/4 in.

CGC INC – Types AR, IP-AR.

UNITED STATES GYPSUM CO – 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 legged lead 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.

TEMPLE-INLAND – GreenGlass Type X.

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SCAFCO STEEL STUD MANUFACTURING CO – Type SUPREME Framing System

STEEL CONSTRUCTION SYSTEMS INC – Type SUPREME Framing System

UNITED METAL PRODUCTS INC – Type SUPREME Framing System

1B. **Framing Members*** – **Floor and Ceiling Runners** – (Not shown) - In lieu of Item 1 – For use with Item 2B, proprietary channel shaped runners, 1-1/4 in. wide by min 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

CALIFORNIA EXPANDED METAL PRODUCTS CO – Viper20™ Track

CRACO MFG INC – SmarterTrack20™, SmartTrack20™

HARIO/WARE, DIV OF WARE INDUSTRIES INC – Viper20™ Track

PHILLIPS MFG CO L L C – Viper20™ Track

1C. **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 4B 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.

CLARKDIETECH BUILDING SYSTEMS – CD ProTRAK

DMFCWS L L C – ProTRAK

MBA BUILDING SUPPLIES – ProTRAK

RAM SALES L L C – Ram ProTRAK

SOUTHEASTERN STUD & COMPONENTS INC – ProTRAK

STEEL STRUCTURAL SYSTEMS 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, channel shaped runners, 1-1/4 in. deep by min 3-5/8 in. wide fabricated from min 20 MSG steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

CLARKDIETECH BUILDING SYSTEMS – CD ProTRAK

DMFCWS L L C – ProTRAK

MBA BUILDING SUPPLIES – ProTRAK

RAM SALES L L C – Ram ProTRAK

SOUTHEASTERN STUD & COMPONENTS INC – ProTRAK

STEEL STRUCTURAL SYSTEMS L L C – Tri-S ProTRAK

1F. **Framing Members*** – **Floor and Ceiling Runners** – (Not shown) - In lieu of Items 1 through 1E – For use with Item 2F, channel shaped runners, 1-1/4 in. deep by min 3-5/8 in. wide fabricated from min 20 MSG steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

KIRRI (HONG KONG) LTD – Type KIRRI

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BXUV-U465 - Fire Resistance Ratings - ANSUL U463

4D. **Gypsum Board*** – As an alternate to Items 4A, 4B, and 4C - Nom. 5/8 in. thick gypsum panels applied horizontally. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Gypsum panels fastened to framing with 1 in. long Type 5 steel screws 1-1/2 in. from board edges, 3 in. from board edge and every 8 in. OC in the field. Screws spaced a max 12 in. along the top and bottom edges of the wall.

NATIONAL GYPSUM CO – Types FSK, FSK-C, FSK-G, FSW-C, FSW-G, FSW.

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 5 steel screws spaced 8 in. OC. Not to be used with Item 6.

NATIONAL GYPSUM CO – Soundtrak 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 5-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.

RAY-BAR ENGINEERING CORP – Type RB-LBG

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 5 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.

LAFARGE NORTH AMERICA INC – Type LGFC6A, LGFC-A

NATIONAL GYPSUM CO – Types FSW

UNITED STATES GYPSUM CO – Type SCX

4H. **Wall and Partition Facings and Accessories*** – (As an alternate to Items 4 through 4G) – Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item 4.

SERIOUS ENERGY INC – Types QuietRock ES, QuietRock 327.

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 5 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.

UNITED STATES GYPSUM CO – Type SCX

4J. **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 5-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. To be used with Lead Batten Strips (see Item 8A) 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.

CGC INC – Type ULX

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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 24 in. OC max.

STUCCO BUILDING SYSTEMS – CROCCSTUD Track

1H. **Floor and Ceiling Runners** – (Not shown) – Channel shaped, fabricated from min 0.02 in. galv steel, min width to accommodate stud size, with min 1 in. long legs. For use with studs specified below and fabricated from min 0.02 in. galv steel or thicker, attached to floor and ceiling with fasteners spaced max 24 in. OC.

HARIO/WARE, DIV OF WARE INDUSTRIES INC – Viper20™ Track VT310.

1I. **Framing Members*** – **Floor and Ceiling Runners** – (Not shown) - In lieu of Item 1 – For use with Item 2H, proprietary channel shaped runners, 1-1/4 in. deep by min 3-5/8 in. wide fabricated from min 0.020 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

TELLING INDUSTRIES L L C – Viper20™ 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. Studs to be cut 3/4 in. less than assembly height.

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

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

UNITED METAL PRODUCTS INC – Type SUPREME Framing System

2B. **Framing Members*** – **Steel Studs** – (Not shown) - In lieu of Item 2 – For use with Item 1B, 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.

CALIFORNIA EXPANDED METAL PRODUCTS CO – Viper20™

CRACO MFG INC – SmarterTrack20™, SmartStud20™

HARIO/WARE, DIV OF WARE INDUSTRIES INC – Viper20™

PHILLIPS MFG CO L L C – 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.

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BXUV-U465 - Fire Resistance Ratings - ANSUL U463

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 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. Wallboard secured to studs with 1-1/4 in. long Type 5-12 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 gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in., placed on the face of studs and attached to the stud with construction adhesive and two 3 in. long Type 5-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 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-2011, 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 (Item 8) with vertical joints located anywhere over stud cavities. Secured to mineral and fiber boards with 1-1/2 in. Type 5 Screws spaced 8 in. OC along edges of each vertical joint and 12 in. OC in intermediate field of the Mineral and Fiber Board (Item 8). Secured to outermost studs and floor and ceiling runners with 2 in. long, Type 5 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

CERTAINTED GYPSUM INC – Type PRFC, Type C

CERTAINTED GYPSUM CANADA INC – Type C

CGC INC – Types C, IP-X2, IPC-AR

GEORGIA-PACIFIC GYPSUM L L C – Types 5, DAPC

LAFARGE NORTH AMERICA INC – Types LGFC-C, LGFC-A/C

NATIONAL GYPSUM CO – Types FSK-C, FSW-C

PARCO BUILDING PRODUCTS L L C, DBA PARCO GYPSUM – Type PG-C

PANEL KEY S A – Type PRC

TEMPLE-INLAND – Type TG-C

THAI GYPSUM PRODUCTS PCL – Type C

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

6D. **Steel Framing Members** – (Optional, Not Shown) * - Furring channels and resilient sound isolation clip as described below:

a. **Furring Channels** – Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. 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 4 in. from overlap edge). Gypsum board attached to furring channels as described in Item 4. Side joint furring channels shall be attached to channel with screws spaced 8 in. OC, approximately 1/2 in. from joint edge.

b. **Steel Framing Members*** – Resilient sound isolation clip used to attach furring channels (Item 6D) to studs. Clips spaced 24 in. OC, and secured to studs with No. 10 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction

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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, 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.

CLARKDIETECH BUILDING SYSTEMS – CD ProSTUD

DMFCWS L L C – ProSTUD

MBA BUILDING SUPPLIES – ProSTUD

RAM SALES L L C – Ram ProSTUD

SOUTHEASTERN STUD & COMPONENTS INC – ProSTUD

STEEL STRUCTURAL SYSTEMS L L C – Tri-S ProSTUD

2E. **Framing Members*** – **Steel Studs** – As an alternate to Items 2 through 2D- For use with Item 1E and 4G 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.

TELLING INDUSTRIES L L C – TRUE-STUD™

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.

KIRRI (HONG KONG) LTD – Type KIRRI

SCAFCO STEEL STUD MANUFACTURING CO – Type SUPREME Framing System

STEEL CONSTRUCTION SYSTEMS INC – Type SUPREME Framing System

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 – Viper20™

3. **Batts and Blankets*** – (Optional) – Mineral wool or glass fiber batts partially or completely filling stud cavity.

See **Batts and Blankets** (B232) 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 2.1 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 for use with wet or dry application. INS75SLD and INS77OLD are to be used for dry application only.

3B. **Fiber, Sprayed*** – As an alternate to Batts and Blankets (Item 3) and Item 3A - Spray applied cellulose

http://database.ul.com/.../ANSUL-U463&objid=1074330743&cfid=1073741824&version=versionless&parent_id=1073984811&sequence=118/8/2013 8:57:01 AM
BXUV-U465 - Fire Resistance Ratings - ANSUL U463

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

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 gypsum board is applied to the entire surface of classified wall or ceiling. Baseboard Joints reinforced. Furring channels 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 5-12 pan head steel screws. May not be used with Item 4B or 4I.

6A. **Steel Framing Members (Not Shown)*** – As an alternate to Item 6, furring channels and resilient sound isolation clip 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 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 6. 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 overlapped 6 in. and secured together with two self-tapping No. 8 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 6a) to studs (Item 2). Clips spaced 48 in. OC, and secured to studs with 1-5/8 in. washer or hex head Type 5 steel screw through the center grommet. Furring channels are friction fitted into clips. RSC-1 clip for use with 2-9/16 in. wide furring channels. RSC-1 (L-75) clip for use with 2-23/32 in. wide furring channels.

PAC INTERNATIONAL INC – Types RSC1-C, RSC-1 (2.75).

6B. **Framing Members*** – Optional - Not Shown - Used as an alternate method to attach resilient channels (Item 6). Clips attached at each intersection of the resilient channel and the steel studs (Item 2). Resilient channels are friction fitted into clips, and then clips are secured to the stud with min. 1 in. long Type 5-12 pan head steel screws through the center hole of the clip and the resilient channel flange.

KEENE BUILDING PRODUCTS CO INC – Type RC Assurance.

CGC INC – Types C, IP-X2, IPC-AR

GEORGIA-PACIFIC GYPSUM L L C – Types 5, DAPC

LAFARGE NORTH AMERICA INC – Types LGFC-C, LGFC-A/C

NATIONAL GYPSUM CO – Types FSK-C, FSW-C

PARCO BUILDING PRODUCTS L L C, DBA PARCO GYPSUM – Type PG-C

PANEL KEY S A – Type PRC

TEMPLE-INLAND – Type TG-C

THAI GYPSUM PRODUCTS PCL – Type C

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

6C. **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 max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 6. Gypsum board attached to furring channels as described in Item 4.

b. **Steel Framing Members*** – Used to attach furring channels (Item 6C) to studs (Item 2). Clips spaced max. 48 in. OC. GENICLIPS secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, 5-12 steel screw through the center grommet. Furring channels are friction fitted into clips.

PLITEQ INC – Type Genie Clip

6D. **Steel Framing Members** – (Optional, Not Shown) * - Furring channels and resilient sound isolation clip as described below:

a. **Furring Channels** – Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. 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 4 in. from overlap edge). Gypsum board attached to furring channels as described in Item 4. Side joint furring channels shall be attached to channel with screws spaced 8 in. OC, approximately 1/2 in. from joint edge.

b. **Steel Framing Members*** – Resilient sound isolation clip used to attach furring channels (Item 6D) to studs. Clips spaced 24 in. OC, and secured to studs with No. 10 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction

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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 lb/ft³.

INTERNATIONAL CELLULOSE CORP – Cellar-RL

3D. **Batts and Blankets*** – For use with Item 8, Nom 3 in. thick, minimum 3.4 pcf mineral wool batts, friction fit between the studs and floor and ceiling runners.

See **Batts and Blankets** (B232) category for names of manufacturers.

4. **Gypsum Board*** – 5/8 in. thick, 4 ft wide, attached to steel studs and floor and ceiling track with 1 in. long, Type 5 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 or 6C (furring channels), gypsum board is screw attached to furring channels with 1 in. long, Type 5 steel screws spaced 12 in. OC.

ACADIA DRYWALL SUPPLIES LTD – Type X

AMERICAN GYPSUM CO – Types AG-C, AGX-1, M-Glass

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, WRC or WRX.

CERTAINTED GYPSUM INC – Types 1, EGRG, GlasRoc, Type X, Type C, SilentFX, 5/8" East-Lite Type X.

CERTAINTED GYPSUM CANADA INC – Type C, Type X, Type Abuse-Resistant, 5/8" East-Lite Type X.

GEORGIA-PACIFIC GYPSUM L L C – Types 5, 6, 9, C, DAP, DD, DA, DAPC, DGG, DS, GPFS6, LS.

LAFARGE NORTH AMERICA INC – Types LGFC2, LGFC4A, LGFC6, LGFC6A, LGFC-C, LGFC-A/C, LGFC-WD, LGFC-WD.

NATIONAL GYPSUM CO – Types FSK, FSK-C, FSK-G, FSW-C, FSW-G, FSW, FSW-3, FSW-6, FSL.

PARCO BUILDING PRODUCTS L L C, DBA PARCO GYPSUM – Types PG-C, PG-9, PG-11, PGS-WRS.

PANEL KEY S A – Types GREX, PRX, RHX, MDX, ETX.

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

TEMPLE-INLAND – Type X, Veneer Plaster Base - Type X, Water Retard - Type X, Sheathing - Type X, Soffit - Type X, TG-C, GreenGlass Type X, Type X ComfortGuard Sound Densifying Gypsum Board

fit into clips.

STUCCO BUILDING SYSTEMS – RESILMOUNT Sound Isolation Clips - Type A237R

7. **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-S10 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 in the alternate material 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.

SERIOUS ENERGY INC – Type QuietRock QR-S10.

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 5 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.

9. **Lead Batten Strips** – (Not Shown, For Use With Item 4E) - Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type 5-12 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-2011, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum board (Item 4E) and optional at remaining stud locations. Required behind vertical joints.

9A. **Lead Batten Strips** – (Not Shown, for use with Item 4J) Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min