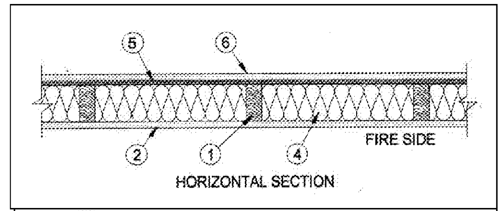
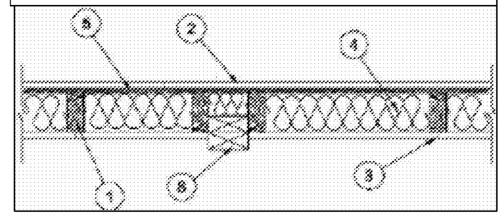
UL DESIGN U356





Design No. U356
April 15, 2019
Bearing Wall Rating - 1 Hr Rating Exposed to Fire on Interior Face Only
Bearing Wall Rating -- 1 Hr Rating Exposed to Fire on Exterior Face (See Item 6E)
Finish Rating -- 23 Min or 25 Min (See Item 2C)
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used -- See Guide BXUV or BXUV7
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.
1. Wood Studs -- Nom 2 by 4 in. spaced 16 in. OC with two 2 by 4 in. top and one 2 by 4 in. bottom plates. Studs laterally-braced by wood structural panel sheathing (Item 5). When Mineral and Fiber Boards* (Item 5A) are considered as bracing for the studs, the load is restricted to 76% of allowable axial load. Walls effectively fire stopped at top and bottom of wall.
2. Gypsum Board* -- Any 5/8 in. thick UL Classified Gypsum Board that is eligible for use in Design Nos. L501, G512 or U305. Nom 5/8 in. thick, 4 ft wide, applied vertically and nailed to studs and bearing plates 7 in. OC with 6d cement-coated nails, 1-7/8 in. long with 1/4 in. diam head.
When Item 7, 7B, 7C, 7D or 7E Steel Framing Members*, is used, gypsum panels attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC.
When Item 7A Steel Framing Members*, is used, two layers of gypsum panels attached to furring channels. Base layer attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC. Face layer attached to furring channels with 1-5/8 in. long Type S bugle-head steel screws spaced 12 in. OC. All joints in face layers staggered with joints in base layers.
ACADIA DRYWALL SUPPLIES LTD (View Classification) -- CKNX.R25370
AMERICAN GYPSUM CO (View Classification) -- CKNX.R14196
BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO (View Classification) -- CKNX.R19374
CERTAINTEED 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
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
2A. Gypsum Board* -- (As an alternate to Item 2, Not Shown) -- Any 5/8 in. thick 4 ft wide gypsum panels that are eligible for use in Design Nos. L501, G512 or U305, supplied by the Classified Companies listed below shown in the Gypsum Board* (CKNX) category. Applied vertically and attached to studs and bearing plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board.
CGC INC
UNITED STATES GYPSUM CO
USG BORAL DRYWALL SFZ LLC
USG MEXICO S A DE C V
2B. Gypsum Board* -- (As an alternate to Item 2, Not Shown) -- 5/8 in. thick 4 ft wide gypsum panels applied vertically and attached to studs and bearing plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board.
ACADIA DRYWALL SUPPLIES LTD -- Type X, 5/8 Type X, Type Blueglass Exterior Sheathing
AMERICAN GYPSUM CO -- Types AGX-1, M-Glass, AG-C, LightRoc
CERTAINTEED GYPSUM INC -- Type C, Type X, Type X-1, Easi-Lite Type X-2
GEORGIA-PACIFIC GYPSUM L L C -- Types X, Veneer Plaster Base-Type X, Water Rated-Type X, Sheathing Type-X, Soffit-Type X, Type X ComfortGuard Sound Deadening Gypsum Board.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM -- Types PG-11, PGS-WRS.
THAI GYPSUM PRODUCTS PCL -- Type C or Type X
2C. Gypsum Board* -- (As an alternate to Item 2, Not Shown) -- For Use with Item 5A only - 5/8 in. thick 4 ft wide gypsum panels applied horizontally and attached to studs and bearing plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screws 1 in.and 4 in. from edges of board. Finish Rating is 25 min.
ACADIA DRYWALL SUPPLIES LTD -- 5/8 Type X, Type Blueglass Exterior Sheathing
GEORGIA-PACIFIC GYPSUM L L C -- Type X, Veneer Plaster Base-Type X, Water Rated-Type X, Sheathing Type-X, Soffit-Type X
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM -- Types PG-11, PGS-WRS
2D. Gypsum Board* -- (As an alternate to Item 2) -- Not to be used with item 7. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically only and fastened to the studs and plates with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 1/4 in. diam heads, 7 in. OC.
NATIONAL GYPSUM CO -- SoundBreak XP Type X Gypsum Board
2E Gypsum Board* -- (As an alternate to Items 2 through 2D) -- Nominal 5/8 in. thick, 4 ft wide panels, secured as described in Item 2.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM -- Type QuietRock ES.
2F. Gypsum Board* -- (As an alternate to Item 2) -- Not to be used with item 7. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically or horizontally and fastened to the studs and plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board.
CERTAINTEED GYPSUM INC -- Type SilentFX
2G. Wall and Partition Facings and Accessories* -- (As an alternate to Items 2 through 2F) -- Nominal 5/8 in. thick, 4 ft wide panels, secured as described in Item 2.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM -- Type QuietRock 527.
2H. Gypsum Board* -- (As an alternate to Item 2) -- 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a maximum 10 in. OC with the last two screws 4 and 1 in. from the edges of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally.
CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C -- Type LGFC6A (finish rating 21 min), Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX
2I. Gypsum Board* -- (As an alternate to Item 2) -- 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC with last screw 1 in. from edge of board. When used in widths of other than 48 in., gypsum boards are to be installed horizontally.
AMERICAN GYPSUM CO -- Types AGX-1 (finish rating 25 min.), M-Glass (finish rating 25 min.), AG-C (finish rating 25 min.), LightRoc (finish rating 25 min.)
NATIONAL GYPSUM CO -- Type FSK, Type FSK-G, Type FSW, Type FSW-3, Type FSW-5, Type FSW-G, Type FSK-C, Type FSW-C, Type FSMR-C, Type FSW-6, Type FSL
2J. Gypsum Board* -- (As an alternate to Item 2) - 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread steel screws spaced a max 8 in. OC with the last screw 1 in. from edge of board. When used in widths other than 48 in., gypsum boards are to be installed horizontally.
CERTAINTEED GYPSUM INC -- Type C, Type X or Type X-1(finish rating 26 min), Easi-Lite Type X (finish rating 24 min), Easi-Lite Type X-2, Type EGRG or GlasRoc or GlasRoc Sheathing (finish rating 23 min)
3. Joints and Fastener Heads -- (Not Shown) -- Gypsum board joints covered with tape and joint compound. Fastener heads covered with joint compound.
4. Batts and Blankets* -- Mineral fiber or glass fiber insulation, 3-1/2 in. thick, pressure fit to fill wall cavities between studs and plates. Mineral fiber insulation to be unfaced and to have a min density of 3 pcf. Glass fiber insulation to be faced with aluminum foil or kraft paper and to have a min density of 0.9 pcf (min R-13 thermal insulation rating).
See Batts and Blankets* (BKNV) Category in the Building Materials Directory and Batts and Blankets* (BZJZ) Category in the Fire Resistance Directory for names of Classified Companies.
4A. Fiber, Sprayed* -- As an alternate to Batts and Blankets (Item 4) -- 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 for use with wet or dry application. INS510LD, INS515LD, INS541LD, INS735, INS745, INS765LD, and INS770LD are to be used for dry application only.
4B. Fiber, Sprayed* -- As an alternate to Item 4 and 4A -- 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. Nominal dry density of 4.58 lb/ft 3.
NU-WOOL CO INC -- Cellulose Insulation
4C. Fiber, Sprayed* -- As an alternate to Batts and Blankets (Item 4) -- 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
4D. Fiber, Sprayed* -- As an alternate to Batts and Blankets (Item 4) -- Spray applied, granulated mineral fiber material. The fiber is applied with adhesive, at a minimum density of 4.0 pcf, to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. See Fiber, Sprayed (CCAZ).
AMERICAN ROCKWOOL MANUFACTURING, LLC -- Type Rockwool Premium Plus
5. Wood Structural Panel Sheathing -- Min 7/16 in. thick, 4 ft wide wood structural panels, min grade "C-D" or "Sheathing". Installed with long dimension of sheet (strength axis) or face grain of plywood parallel with or perpendicular to studs. Vertical joints centered on studs. Horizontal joints backed with nom 2 by 4 in. wood blocking. Attached to studs on exterior side of wall with 6d cement coated box nails spaced 6 in. OC at perimeter of panels and 12 in. OC along interior studs.
5A. Mineral and Fiber Boards* -- As an alternate to Item 5 - Min 1/2 in. thick, 4 ft wide sheathing, installed vertically to studs. Vertical joints centered on studs. Horizontal joints backed with nom 2 by 4 in. wood blocking. Attached to studs on exterior side of wall with 1-1/2 in. long galvanized roofing nails spaced 6 in. OC at perimeter of panels and 12 in. OC along interior studs. As an option a weather resistive barrier may be applied over the Mineral and Fiber Boards.
6. Exterior Facings -- Installed in accordance with the manufacturer's installation instructions. One of the following exterior facings is to be applied over the sheathing:
A. Vinyl Siding -- Molded Plastic* -- Contoured rigid vinyl siding having a flame spread value of 20 or less.
See Molded Plastic (BTAT) category in the Building Materials Directory for names of manufacturers.
B. Particle Board Siding -- Hardboard exterior sidings including patterned panel or lap siding.
C. Wood Structural Panel or Lap Siding -- APA Rated Siding, Exterior, plywood, OSB or composite panels with veneer faces and structural wood core, per PS 1 or APA Standard PRP-108, including textured, rough sawn, medium density overlay, brushed, grooved and lap siding.
D. Cementitious Stucco -- Portland cement or synthetic stucco systems with self-furring metal lath or adhesive base coat. Thickness from 3/8 to 3/4 in., depending on system.
E. Brick Veneer -- Any type on nom 4 in. wide brick veneer. When brick veneer is used, the rating is applicable with exposure on either face. Brick veneer fastened with corrugated metal wall ties attached over sheathing to wood studs with 8d nail per tie: ties spaced not more than each sixth course of brick and max 32 in. OC horizontally. One in. air space provided between brick veneer and sheathing.
F. Exterior Insulation and Finish System (EIFS) -- Nom 1 in. Foamed Plastic* insulation bearing the UL Classification Marking, attached over sheathing and finished with coating system, or Portland cement or synthetic stucco systems, in accordance with manufacturer's instructions. See Foamed Plastic (BRYX and CCVW) categories for names of Classified companies.

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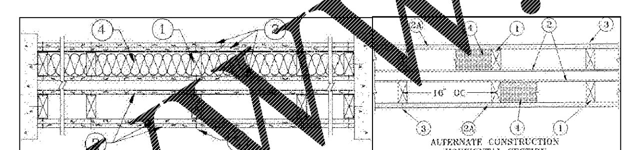
G. Siding -- Aluminum or steel siding attached over sheathing to studs.
H. Fiber-Cement Siding -- Fiber-cement exterior sidings including smooth and patterned panel or lap siding.
I. Wall and Partition Facings and Accessories* -- Stone veneer is mortar bonded to a lath, scratch coat and water resistant barrier applied to sheathing, installed in accordance with the manufacturers installation instructions, and meeting the requirements of local code agencies.
ELDORADO STONE OPERATIONS L L C -- Type Eldorado Stone
6A. Building Units* -- As an alternate to Exterior Facing Item 6 -- Insulated steel panels, 12 through 42 in. wide. Attached over sheathing through retainer clips to studs or support steel with No. 14 hex head self-tapping screws located at each joint in the concealed lip of the units and spaced in accordance with the structural design requirements. KINGSPAN INSULATED PANELS INC -- Types 200, 300, 400, 900, or KS series, 2 through 6 in. thickness; CWP-V, H, 2 through 3 in. nominal thickness or Designwall 2000 or Designwall 4000, 2 and 3 in. nominal thickness.
7. Steel Framing Members* -- (Optional, Not Shown) -- 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 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 overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 2.
b. Steel Framing Members* -- Used to attach furring channels (Item 7A) 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 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).
7A. Steel Framing Members* -- (Optional, Not Shown) -- 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 are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. Two layers of gypsum board attached to furring channels as described in Item 2.
b. Steel Framing Members* -- Used to attach furring channels (Item 7Aa) to interior side of studs. Clips spaced 48 in. OC., and secured to studs with two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels are friction fitted into clips.
KINETICS NOISE CONTROL INC -- Type Isomax.
7B. Steel Framing Members* -- (Optional, Not Shown) -- Furring channels 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 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 overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 2.
b. Steel Framing Members* -- Used to attach furring channels (Item a) to studs. Clips spaced 48 in. OC. Genie clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
PLITEQ INC -- Type Genie Clip
7C. Steel Framing Members* -- (Optional, Not Shown) -- 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 2.
b. Steel Framing Members* -- Used to attach furring channels (Item 7Ca) 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
7D. Steel Framing Members* -- (Optional, Not Shown) -- 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 7Db. 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 2.
b. Steel Framing Members* -- Used to attach furring channels (Item 7Da) 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
7E. Steel Framing Members* -- (Optional, Not Shown) -- 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 2.
b. Steel Framing Members* -- Used to attach resilient channels (Item 7Ea) 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
8. Non-Bearing Wall Partition Intersection -- (Optional) -- Two nominal 2 by 4 in. stud or nominal 2 by 6 in. stud nailed together with two 3in. long 10d nails spaced a max. 16 in. OC. vertically and fastened to one side of the minimum 2 by 4 in. stud with 3 in. long 10d nails spaced a max 16 in. OC. vertically. Intersection between partition wood studs to be flush with the 2 by 4 in. studs. The wall partition wood studs are to be framed by with a second 2 by 4 in. wood stud fastened with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Maximum one non-bearing wall partition intersection per stud cavity. Non-bearing wall partition stud depth shall be at a minimum equal to the depth of the bearing wall.
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

UL DESIGN U342



Design No. U342
April 15, 2019
Bearing Wall Rating -- 2 Hr.
Finish Rating -- Min 59 min.
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used -- See Guide BXUV or BXUV7
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.
HORIZONTAL SECTION
1. Wood Studs -- Nom 2 by 4 in. Cross braced at mid-height and effectively firestopped at top and bottom of wall. Spaced a max of 16 or 24 in. OC depending on type of wallboard. See Item 2 below.
2. Gypsum Board* -- 5/8 in. thick, 4 ft wide. Applied either horizontally or vertically. Inner layers nailed to studs and bearing plates 6 in. O.C. with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 1/4 in. diam head. Outer layer of double layered side nailed to studs and bearing plates 8 in. O.C with 8d cement coated nails, 2-3/8 in. long, 0.113 in. shank diam and 9/32 in. diam head. Vertical joints located over studs. As an alternate, No. 6 bugle-head drywall screws, 1-7/8 or 2-3/8 in. long for the inner and outer layers, respectively, may be substituted for the cement coated nails. All joints in outer layer of double layer sides staggered with joints in inner layer.
When Steel Framing Members* (Item 5-5D) are used, base layer attached to furring channels with 1 in. long Type S bugle-head steel screws spaced max 24 in. OC; face layer attached with 1-5/8 in. long Type S bugle-head steel screws spaced max 12 in. OC.
When used in widths other than 48 in., gypsum board to be installed horizontally.
NOTE: Only board types marked with + may be used in assemblies with 24 in. OC spacing of studs.
ACADIA DRYWALL SUPPLIES LTD -- Type X, 5/8 Type X, Moisture Resistant Type X, Gypsum Sheathing Type X, Mold & Mildew Resistant Type X and Mold & Mildew Resistant AR Type X, Type Blueglass Exterior Sheathing
AMERICAN GYPSUM CO -- Types AGX-1, M-Glass, AG-C+, AGX-11, LightRoc
BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO -- Type DBX-1
CERTAINTEED GYPSUM INC -- Types 1, FRPC+, EGRG, GlasRoc, GlasRoc-2, Type X, Type X-1, Easi-Lite Type X-2, or Type C
CGC INC -- Type C+, IP-X1, IP-X2+, IPC-AR+, SCX, SHX, ULX, WRC+, WRX
CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C -- Types LGFC2A, LGFC6A, LGFC-C/A+, LGFC-WD, LGLLX, CLLX
GEORGIA-PACIFIC GYPSUM L L C -- Types 5+, 6, 9, DAP, DD, DA, DAPC+, DGG, DS, C, GPFS6. LS, TG-C+, Type X, Veneer Plaster Base-Type X, Water Rated-Type X, Sheathing Type-X, Soffit-Type X, GreenGlass Type X+, 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
NATIONAL GYPSUM CO -- Type eXP-C, FSK, FSK-1, FSK-C+, FSMR-C, FSW, FSW-3, FSW-5, FSW-6, FSW-8, FSW-C+, FSL or FSW-G
NATIONAL GYPSUM CO -- Riyadh, Saudi Arabia -- Type FR, or WR.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM -- Type C+, PG-2, PG-3, PG-3W, PG-3WS, PG-4, PG-5W, PG-5WS, PG-6 , PG-9, PG-11, PG-C, PGS-WRS
PANEL REY S A -- Types GREX, PRX, PRC2, RHX, MDX, ETX or PRC+
SIAM GYPSUM INDUSTRY (SARABURI) CO LTD -- Type EX-1
THAI GYPSUM PRODUCTS PCL -- Type X or Type C
UNITED STATES GYPSUM CO -- Type C+, FRX-G, IP-X1, IP-X2+, IPC-AR+, SCX, SHX, ULIX, ULX, WRC+ or WRX
USG BORAL DRYWALL SFZ LLC -- Types C, SCX
USG MEXICO S A DE C V -- Types C+, IP-X1, IP-X2+, IPC-AR+, SCX, SHX, ULX, WRC+, WRX
2A. Gypsum Board* -- 3/4 in. thick, 4 ft wide. Applied vertically to studs (spaced max 16 in. OC) and bearing plates 6 in. OC with 8d cement coated nails, 2-3/8 in. long, 0.113 in. shank diam and 9/32 in. diam heads or 2-3/8 in. long No. 6 bugle head drywall screws. When this single layer system is used Finished Rating is reduced to 26 min.
CGC INC -- Type ULTRACODE
UNITED STATES GYPSUM CO -- Type ULTRACODE
USG BORAL DRYWALL SFZ LLC -- Type ULTRACODE
USG MEXICO S A DE C V -- Type ULTRACODE
2B. Gypsum Board* -- As an Alternate to Item 2 -- 5/8 in. thick applied either horizontally or vertically. Inner layers fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. Outer layers fastened to framing with 1-7/8 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths other than 48 in., gypsum board to be installed horizontally. All joints in outer layer of double layer sides staggered with joints in inner layer.
NOTE: Only board types marked with + may be used in assemblies with 24 in. OC spacing of studs.
ACADIA DRYWALL SUPPLIES LTD -- Type X, 5/8 Type X
AMERICAN GYPSUM CO -- Types AGX-1, M-Glass, AG-C+, LightRoc
CERTAINTEED GYPSUM INC -- Type C, Type X, Type X-1, Easi-Lite Type X-2
CGC INC -- Type C+, IP-X1, IP-X2+, IPC-AR+, SCX, SHX, ULX, WRC+, WRX.
NATIONAL GYPSUM CO -- Type FSK, Type FSK-G, Type FSW, Type FSW-3, Type FSW-5, Type FSW-G, Type FSK-C, Type FSW-C, Type FSMR-C, Type FSW-6, Type FSL
THAI GYPSUM PRODUCTS PCL -- Type C or Type X
UNITED STATES GYPSUM CO -- Type C+, FRX-G, IP-X1, IP-X2+, IPC-AR+, SCX, SHX, ULIX, ULX, WRC+ or WRX
USG BORAL DRYWALL SFZ LLC -- Type SCX
USG MEXICO S A DE C V -- Types C+, IP-X1, IP-X2+, IPC-AR+, SCX, SHX, ULX, WRC+, WRX
2C. Gypsum Board* -- (As an alternate to Items 2 through 2B) -- 5/8 in. thick, 4 ft. wide, paper surfaced applied vertically and secured as described in Item 2.
GEORGIA-PACIFIC GYPSUM L L C -- Type X ComfortGuard Sound Deadening Gypsum Board
2D. Gypsum Board* -- (As an alternate to Items 2 through 2C) -- Not to be used with Item 5. Installed as described in Item 2. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically only.
NATIONAL GYPSUM CO -- SoundBreak XP Type X Gypsum Board
2E. Gypsum Board* -- (As an alternate to Items 2 through 2D) -- Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item 2.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM -- Type QuietRock ES
2F. Gypsum Board* -- (As an alternate to Items 2 through 2E) -- Not to be used with item 5. Installed as described in Item 2. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically only.
CERTAINTEED GYPSUM INC -- Type SilentFX
2G. Gypsum Board* -- (As an alternate to Item 2) -- 5/8 in. thick, 4 ft. wide, applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Secured as described in Item 2.
CERTAINTEED GYPSUM INC -- 5/8" Easi-Lite Type X

UL DESIGN U342 (CONT.)

2H. Gypsum Board* -- (As an alternate to 5/8 in. Type FSW in Item 2) -- Nom. 5/16 in. thick gypsum panels applied vertically or horizontally. Two layers of 5/16 in. for every single layer of 5/8 in. gypsum board described in Item 2. Horizontal joints on the same side need not be staggered. Inner layer of each double 5/16 in. layer attached with fasteners, as described in item 2, spaced 24 in. OC. Outer layer of each double 5/16 in. layer attached per Item 2.
NATIONAL GYPSUM CO -- Type FSW
2I. Wall and Partition Facings and Accessories* -- (As an alternate to Item 2) -- Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item 2.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM -- Type QuietRock 527
2J. Gypsum Board* -- (As an alternate to Item 2) -- 5/8 in. thick, two layers applied either horizontally or vertically. Inner layer attached to studs with 1-1/4 in. long Type W steel screws spaced 10 in. OC with the last two screws 4 and 1 in. from the edges of the board. Outer layer attached to studs over inner layer with 1-7/8 in. long Type W steel screws spaced 10 in. OC offset 5 in. from base layer with the last two screws 4 and 1 in. from the edges of the board. Vertical joints located over studs. Vertical and horizontal joints between inner and outer layers staggered. Outer layer joints covered with joint tape and compound, screwheads covered with joint compound. When used in widths other than 48 in., gypsum panels are to be installed horizontally.
CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C -- Type LGFC6A, Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX
3. Joints and Nailheads -- Gypsum board joints of outer layer covered with paper tape and joint compound. Nail heads of outer layer covered with joint compound. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with joints reinforced with paper tape.
4. Batts and Blankets* -- (Optional) -- 3-1/2 in. max thickness glass or mineral fiber batt insulation.
See Batts and Blankets (BZJZ) category of list of Classified companies.
4A. Fiber, Sprayed* -- As an alternate to Batts and Blankets (Item 4) -- 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 for use with wet or dry application. INS510LD, INS515LD, INS541LD, INS735, INS745, INS765LD, and INS770LD are to be used for dry application only.
4B. Fiber, Sprayed* -- As an alternate to Batts and Blankets (Item 4) -- 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
4C. Fiber, Sprayed* -- As an alternate to Batts and Blankets (Item 4) -- 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
4D. Fiber, Sprayed* -- As an alternate to Batts and Blankets (Item 4) -- 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 5.74 lb/ft3.
APPLEGATE HOLDINGS L L C -- Type 1 SAFE Applegate Fired Rated Material
5. Steel Framing Members* -- (Optional, Not Shown) -- 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 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 overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Wallboard attached to furring channels as described in Item 2.
b. Steel Framing Members* -- Used to attach furring channels (Item a) to studs (Item 1) . Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall 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).
5A. Steel Framing Members* -- (Optional, Not Shown) -- Furring channels 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 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 overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 2.
b. Steel Framing Members* -- Used to attach furring channels (Item a) to studs. Clips spaced 48 in. OC. Genie clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
PLITEQ INC -- Type Genie Clip
5B. Steel Framing Members* -- (Optional, Not Shown) -- 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 2.
b. Steel Framing Members* -- Used to attach furring channels (Item 5Ba) 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
5C. Steel Framing Members* -- (Optional, Not Shown) -- Furring channels and Steel Framing Members as described below:

c. Furring Channels -- Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 5Cb. 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 2.
d. Steel Framing Members* -- Used to attach furring channels (Item 5Ca) 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
5D. Steel Framing Members* -- (Optional, Not Shown) -- 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 2.
b. Steel Framing Members* -- Used to attach resilient channels (Item 5Da) 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

6. 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 wood 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

* 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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