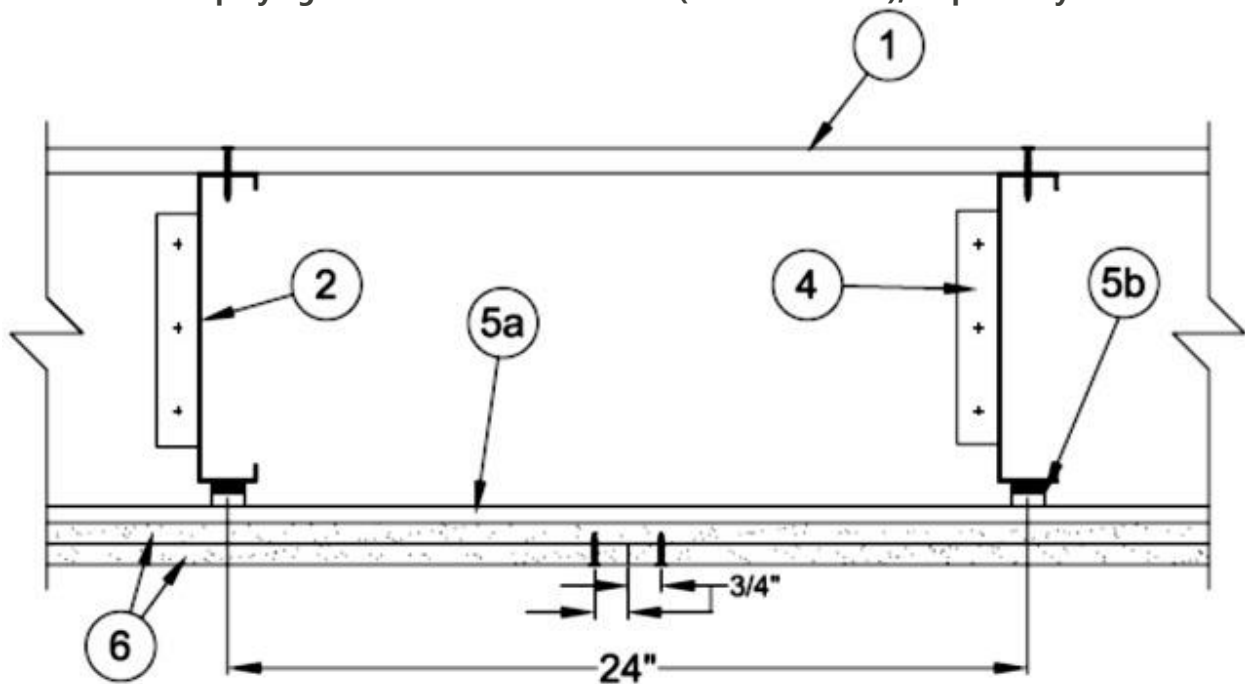


Design No. **L573**
February 4, 2022

Unrestrained Assembly Rating — 1 Hr.

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. **Flooring System** — The flooring system shall consist of the following:

System No. 1

Subflooring — Min 3/4 in. thick plywood, min grade "Underlayment". Face grain of plywood to be perpendicular to joists with end joints staggered. Long edges to be T & G. Plywood or nonveneer APA rated panels secured to joists with construction adhesive and 1-5/16 in. long Type S12 steel screw spaced 12 in. OC along each joist. Screw located 5/8 in. from end joints and 1 in. for side joints. Adhesive applied to top of joists prior to placing of plywood.

System No. 2

Subflooring — Min 3/4 in. thick plywood, min grade "Underlayment". Face grain of plywood to be perpendicular to joists with end joints staggered. Long edges to be T & G. Plywood or nonveneer APA rated panels secured to joists with construction adhesive and 1-5/16 in. long Type S12 steel screw spaced 12 in. OC along each joist. Screw located 5/8 in. from end joints and 1 in. for side joints. Adhesive applied to top of joists prior to placing of plywood.

Finish Floor - Mineral and Fiber Board* — Min 1/2 in. thick, supplied in sizes ranging from 3 ft by 4 ft to 8 ft by 12 ft. All joints to be staggered a min of 12 in. with adjacent sub-floor joints.

HOMASOTE CO — Type 440-32 Mineral and Fiber Board

System No. 3

Subflooring — Min 3/4 in. thick plywood, min grade "Underlayment". Face grain of plywood to be perpendicular to joists with end joints staggered. Long edges to be T & G. Plywood or nonveneer APA rated panels secured to joists with construction adhesive and 1-5/16 in. long Type S12 steel screw spaced 12 in. OC along each joist. Screw located 5/8 in. from end joints and 1 in. for side joints. Adhesive applied to top of joists prior to placing of plywood.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1100 psi. Mixture shall consist of 6.8 gal of water to 80 lbs of floor topping mixture to 1.9 cu ft of sand.

HACKER INDUSTRIES INC — Firm-Fill Gypsum Concrete, Firm-Fill 2010, Firm-Fill 3310, Firm-Fill 4010, Firm-Fill High Strength, Gyp-Span Radiant

System No. 4

Subflooring — Min 3/4 in. thick plywood, min grade "Underlayment". Face grain of plywood to be perpendicular to joists with end joints staggered. Long edges to be T & G. Plywood or nonveneer APA rated panels secured to joists with construction adhesive and 1-5/16 in. long Type S12 steel screw spaced 12 in. OC along each joist. Screw located 5/8 in. from end joints and 1 in. for side joints. Adhesive applied to top of joists prior to placing of plywood.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1500 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

MAXXON CORP — Types Maxxon Standard and Maxxon High Strength

Floor Mat Materials* - (Optional) — Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.

MAXXON CORP — Type Encapsulated Sound Mat.

Floor Mat Reinforcement - (Optional) Refer to manufacturer's instructions regarding minimum thickness of floor topping for use with floor mat material.

— Crack Suppression Mat (CSM) or Maxxon Reinforcement (MR)

Metal Lath — (Optional)- 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd placed over the floor mat material.

Fiber Glass Reinforcement — (Optional) - 0.015 in. thick PVC coated non-woven fiberglass mesh, 0.368 lbs./sq. yd loose laid over the floor mat material.

System No. 5

Subflooring — Min 3/4 in. thick plywood, min grade "Underlayment". Face grain of plywood to be perpendicular to joists with end joints staggered. Long edges to be T & G. Plywood or non-veneer APA rated panels secured to joists with construction adhesive and 1-5/16 in. long Type S12 steel screw spaced 12 in. OC along each joist. Screw located 5/8 in. from end joints and 1 in. for side joints. Adhesive applied to top of joists prior to placing of plywood.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

FORMULATED MATERIALS LLC — Types FR-25, FR-30, and SiteMix

Floor Mat Material* — (Optional) Floor mat material nominal 2 - 9.5 mm thick loose laid over the subfloor. Floor topping shall be a min of 3/4 in.

FORMULATED MATERIALS LLC — Types M1, M2, M3, Elite, Duo, R1, and R2

System No. 6

Subflooring — Min 3/4 in. thick plywood, min grade "Underlayment". Face grain of plywood to be perpendicular to joists with end joints staggered. Long edges to be T & G. Plywood or nonveneer APA rated panels secured to joists with construction adhesive and 1-5/16 in. long Type S12 steel screw spaced 12 in. OC along each joist. Screw located 5/8 in. from end joints and 1 in. for side joints. Adhesive applied to top of joists prior to placing of plywood.

Vapor Barrier — (Optional) - Nom 0.010 in. thick commercial asphalt saturated felt.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1800 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

UNITED STATES GYPSUM CO — Types LRK, HSLRK, CSD

USG MEXICO S A DE C V — Types LRK, HSLRK, CSD

Floor Mat Materials* — (Optional) - Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.

UNITED STATES GYPSUM CO — Types SAM, LEVELROCK® Brand Sound Reduction Board, LEVELROCK® Brand Floor Underlayment SRM-25

Alternate Floor Mat Materials* — (Optional) - Nom 3/8 in. thick floor mat material loose laid over the subfloor.

GRASSWORX L L C — Type SC50

System No. 7

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered.

Vapor Barrier — (Optional) - Commercial asphalt saturated felt, 0.030 in. thick.

Vapor Barrier — (Optional) - Nom 0.010 in. thick commercial rosin-sized building paper.

Finish Flooring* — Min 3/4 in. thickness of any Floor Topping Mixture bearing the UL Classification Marking as to Fire Resistance. See Floor- and Roof-Topping Mixtures (CCOX) category for names of Classified Companies. Refer to the manufacturer's instructions accompanying the material and/or contact the manufacturer's technical support for specific mix design and minimum thickness recommended for use with eligible floor mat(s).

Floor Mat Materials* — (Optional) - Nom. 1/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 55/025 and Quiet Qurl 55/025 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 3/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 60/040 and Quiet Qurl 60/040 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1-1/2 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 65/075, Quiet Qurl 65/075 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 1/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 52/013 and Quiet Qurl 52/013 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 1/4 in. entangled net core with a compressible fabric attached to the bottom loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.

KEENE BUILDING PRODUCTS CO INC — Quiet Qurl 55/025 MT and Quiet Qurl 55/025 N MT

System No. 8

Subflooring — Min 3/4 in. thick plywood, min grade "Underlayment". Face grain of plywood to be perpendicular to joists with end joints staggered. Long edges to be T & G. Plywood or nonveneer APA rated panels secured to joists with construction adhesive and 1-5/16 in. long Type S12 steel screw spaced 12 in. OC along each joist. Screw located 5/8 in. from end joints and 1 in. for side joints. Adhesive applied to top of joists prior to placing of plywood.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

ARCOSA SPECIALTY MATERIALS — AccuCrete® Types NexGen, Green, Prime and PrePour, AccuRadiant®, AccuLevel® Types G40, G50 and SD30

DEPENDABLE LLC — GSL M3.4, GSL K2.6, GSL-CSD or GSL RH

Floor Mat Material* — (Optional) - Floor mat material nominal 2 - 9.5 mm thick loose laid over the subfloor. Floor topping shall be a min of 3/4 in.

ARCOSA SPECIALTY MATERIALS — AccuQuiet® Types D13, D-18, D25, DX38, EM.125, EM.125S, EM.250, EM.250S, EM.375, EM.375S, EM.750, and EM.750S.

System No. 9

Subflooring — Min 23/32 in. thick T&G wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with end joints staggered 4 ft. Panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Gypsum Board* — One layer of nom 5/8 in. thick, 4 ft wide gypsum board, installed with long dimension perpendicular to joists. Gypsum board secured with 1 in. long No. 6 Type W bugle head steel screws spaced 12 in. OC and located a min of 1-1/2 in. from side and end joints. The joints of the gypsum board are to be staggered a minimum of 12 inches from the joints of the subfloor.

GEORGIA-PACIFIC GYPSUM L L C — Type DS

Floor Mat Materials* — (As an alternate to the single layer gypsum board) - Floor mat material loose laid over the subfloor.

MAXXON CORP — Type Encapsulated Sound Mat.

Gypsum Board* — (For use when floor mat is used) Two layers of nom 5/8 in. thick, 4 ft wide gypsum board, installed with long dimension perpendicular to joists on top of the floor mat material. Gypsum board secured to each other with 1 in. long No. 6 Type G bugle head steel screws spaced 12 in. OC and located a min of 1-1/2 in. from side and end joints. The joints of the gypsum board are to be staggered a minimum of 12 inches in between layers and from the joints of the subfloor.

GEORGIA-PACIFIC GYPSUM L L C — Type DS

System No. 10

Subflooring — Min 3/4 in. thick plywood, min grade "Underlayment". Face grain of plywood to be perpendicular to joists with end joints staggered. Long edges to be T & G. Plywood or nonveneer APA rated panels secured to joists with construction adhesive and 1-5/16 in. long Type S12 steel screw spaced 12 in. OC along each joist. Screw located 5/8 in. from end joints and 1 in. for side joints. Adhesive applied to top of joists prior to placing of plywood.

Finish Flooring - Floor Topping Mixture* — Min 1 in. thickness of floor topping mixture having a min compressive strength of 4500 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

SIKA DEUTSCHLAND GMBH — Type SCHONOX AP Rapid Plus

System No. 11

Subflooring — Min 3/4 in. thick plywood, min grade "Underlayment". Face grain of plywood to be perpendicular to joists with end joints staggered. Long edges to be T & G. Plywood or nonveneer APA rated panels secured to joists with construction adhesive and 1-5/16 in. long Type S12 steel screw spaced 12 in. OC along each joist. Screw located 5/8 in. from end joints and 1 in. for side joints. Adhesive applied to top of joists prior to placing of plywood.

Vapor Barrier — (Optional) - Commercial asphalt saturated felt, 0.030 in. thick.

Vapor Barrier — (Optional) - Nom 0.010 in. thick commercial rosin-sized building paper.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of any Floor Topping Mixture bearing the UL Classification Marking as to Fire Resistance. See Floor- and Roof-Topping Mixtures (CCOX) category for names of Classified Companies. Refer to the manufacturer's instructions accompanying the material and/or contact the manufacturer's technical support for specific mix design and minimum thickness recommended for use with eligible floor mat(s).

Floor Mat Materials* — (Optional, Not Shown) - Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.

LOW & BONAR INC — EnkaSonic® by Colbond a member of the Low & Bonar group Types 125, 250, 250 Plus, 400, 400 Plus, 750 and 750 Plus.

Floor Mat Reinforcement — (Optional) - Refer to manufacturer's instructions regarding minimum thickness of floor topping for use with floor mat reinforcement.

Metal Lath — (Optional) — Expanded steel diamond mesh, 2.5 lb / sq yd loose laid over floor mat material.

Fiberglass Mesh Reinforcement — (Optional) — Coated non-woven glass fiber mesh grid loose laid over floor mat material.

2. **Steel Joists** — The joists are channel-shaped, min 9-3/8 in. deep, with min 1-5/8 in. wide flanges and 1/2 in. long stiffening flanges. The joists are fabricated from min No. 16 MSG galv steel. Min yield strength of steel is either 33,000 or 40,000 psi with corresponding max working stress of 20,000 and 24,000 psi. Joists spaced max 24 in. OC. At joist splices bearing on supports, joists are connected using an overlapping section of 1 ft long joist, with eight 1/2 in. long Type S12 pan head screws.

3. **Joist Bridging - (Not Shown)** — Installed immediately after joists are erected and before construction loads are applied. The bridging consisting of joist sections cut to length and placed between outer supports, adjacent to openings and at mid-span with 8 ft. OC max spacing. Bridging channels are screw-attached at each end to joist web using angle clips. V-bracing of 1-1/2 in. by 20-ga galvanized steel screw-attached to bottom joist flange between bridging channels.

4. **Angle Clips** — No. 14 MSG, 8 in. long steel angles with 2 in. legs and four 1/8 in. diam holes spaced 2 in. OC and located 1 in. from the ends and 3/4 in. from long edge. Secured to header and joists with eight 1/2 in. long S12 pan head screws.

5. **Steel Framing Members* - (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 16 in. OC perpendicular to joists. Channels secured to joists as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap.

b. **Steel Framing Members*** — Used to attach furring channels (Item a) to joists (Item 2). Clips spaced 24 in. OC and secured to each joists with min 1-5/8 in. long No. 8 self-drilling, self-tapping, bugle, flat or hex head 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. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel.

PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-1 (2.75).

5A. **Steel Framing Members*** — (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 16 in. OC perpendicular to joists. Channels secured to joists as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap.

b. **Steel Framing Members*** — Used to attach furring channels (Item a) to joists (Item 2). Clips spaced 24 in. OC and secured to each joists with min 1-5/8 in. long No. 8 self-drilling, self-tapping, bugle, flat or hex head screw through the center grommet. Furring channels are friction fitted into clips. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel.

PLITEQ INC — Type GENIECLIP

5B. **Alternate Steel Framing Members*** — (Not shown) As an alternate to items 5 and 5A, furring channels and **Steel Framing Members** as described below.

a. **Furring Channels** — Formed of No. 25 MSG galv steel, 2-5/8 in. wide by 7/8 in deep, spaced 16 in OC, perpendicular to joists. Channels secured to joists as described in Item b.

b. **Steel Framing Members*** — Used to attach furring channels (Item a) to joists (Item 2). Clips spaced at 48" OC and secured to the bottom of the joists with one 2 in. Coarse Drywall Screw with 1 in. diam washer through the center hole. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6" and tied together with double strand of No. 18 AWG galvanized steel wire. Additional clips are required to hold the Gypsum Butt joints as described in Item 6.

STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237R

5C. **Steel Framing Members*** — (Optional, Not Shown) — As an alternate to Item 5.

a. **Furring Channels** — Formed of No. 25 MSG galv steel, nominal 2-1/2 in. wide by 7/8 in. deep, spaced 16 in. OC, perpendicular to joists. Channels secured to Cold Rolled Channels at every intersection with a 3/4 in. TEK screw through each furring channel leg. Ends of adjoining channels overlapped 12 in. and fastened together with two double strand No. 18 SWG galv steel wire ties, one at each end of overlap, or with two 3/4 in. TEK screws in each leg of the overlap section. Gypsum board (Item 6) butted end joints centered on the furring channels, each extending a min of 6 in. beyond both side edges of the board.

b. **Cold Rolled Channels** — 1-1/2 in. by 1/2 in., formed from No. 16 ga. galv steel, positioned vertically and parallel to joists, friction-fitted into the channel caddy on the Steel Framing Members (Item 5Cc) and secured with two 3/4 in. TEK screws. Adjoining lengths of cold rolled channels lapped min. 12 in. and secured along bottom legs with four 3/4 in. TEK screws and wire-tied together with two double strand 18 SWG galv steel wire ties, one at each end of overlap.

c. **Steel Framing Members*** — Spaced 48 in. OC. max along joist, and secured to the joist on alternating joists with two, No. 10-16 TEK screws through mounting holes on the hanger bracket.

PAC INTERNATIONAL L L C — Type RSIC-SI-CRC EZ Clip

5D. **Steel Framing Members*** — (Optional, Not Shown) — As an alternate to Item 5.

a. **Furring Channels** — Formed of No. 25 MSG galv steel, nominal 2-1/2 in. wide by 7/8 in. deep, spaced 16 in. OC perpendicular to joists and friction fit into Steel Framing Members (Item 5Db). Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap or with two TEK screws along each leg of the 6 in. overlap. Gypsum board (Item 6) butted end joints centered on the furring channels. Butt joint channels held in place by strong back channels placed upside down, on top of, and running perpendicular to primary furring channels, extending 6 in. longer than length of gypsum side joint. Strong back channels spaced maximum 48 in. OC. Strong back channels secured to every intersection of primary furring channels with four 7/16 in. pan head screws, two along each of the legs at intersections. Butt joint channels run perpendicular to strong back channels and shall be minimum 6 in. longer than length of joint, secured to strong back channels with 7/16 in. pan head screws, two along each of the legs at intersection with strong back channels.

b. **Steel Framing Members*** — Used to attach furring channels (Item 5Da) to joists. Clips spaced 48 in. OC and secured along joist webs at each furring channel intersection with min. 3/4 in. long self-

drilling No. 10-16 TEK screws through each of the provided hole locations. Furring channels are friction fitted into clips.

PAC INTERNATIONAL L L C — Type RSIC-S1-1 Ultra

6. Gypsum Board* — Two layers of 5/8 in. thick by 48 in. wide sheets installed with long dimension perpendicular to furring channels. Upper layer attached to furring channels using 1 in. long, Type S bugle head steel screws spaced 24 in. OC and located 5/8 in. from butt joint and 2 in. from long edges. Butt joints to be centered under furring channels. Face layer attached to furring channels through upper layer with 1-5/8 in. long Type S bugle head steel screws spaced a max. 12 in. OC in the field and 1 in. from side edges of boards. All joints in face layer boards to be offset from joints in upper layer a min. of 16 in. Butt joints of face layer to occur between furring channels with each end of butted boards attached to upper layer board with 1-1/2 in. long Type G bugle head steel screws spaced 8 in OC along the joint and 3/4 in. from board ends. When **Steel Framing Members** (Item 5B) are used, base layer gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long Type S bugle-head steel screws spaced 8 in. OC in the field of the board. Gypsum board butted end joints shall be staggered minimum 48 in. and centered over main furring channels. At the gypsum board butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 3 in. on each end. The two support furring channels shall be spaced approximately 3 in. in from joint. Screw spacing along the gypsum board butt joint and along both additional channels shall be 8 in. OC. Additional screws shall be placed in the adjacent section of gypsum board into the aforementioned 3 in. extension of the extra butt joint channels as well as into the main channel that runs between. Butt joint furring channels shall be attached with one RESILMOUNT Sound Isolation Clip at each end of the channel. Face layer secured as described above.

When **Steel Framing Members** (Item 5C) are used, Two layers nom 5/8 in. thick, 4 ft wide gypsum board, installed as described in Item 6. Adjacent butt joints staggered minimum 48 in. OC.

When **Steel Framing Members** (Item 5D) are used, Two layers nom 5/8 in. thick, 4 ft wide gypsum board, installed as described in Item 6. Butt joints staggered minimum 24 in. OC.

AMERICAN GYPSUM CO — Types AG-C, AGX-C

CERTAINTED GYPSUM INC — Type C

CGC INC — Type C

CERTAINTED GYPSUM INC — Types LGFC-C, LGFC-C/A

GEORGIA-PACIFIC GYPSUM L L C — Type 5

GEORGIA-PACIFIC GYPSUM L L C — Type TG-C

NATIONAL GYPSUM CO — Types FSK-C, FSW-C, FSW-G

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types C, PG-C

UNITED STATES GYPSUM CO — Type C

USG MEXICO S A DE C V — Type C

7. **Finishing System** — (Not shown) Vinyl, dry or premixed joint compound, applied in two coats to joints and screw-heads. Nom 2 in. wide paper tape embedded in first layer of compound over all joints. As an alternate, nom 3/32 in. thick veneer plaster may be applied to the entire surface of gypsum board.

*** 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 2022-02-04