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Design No. L551

BXUV.L551

Fire Resistance Ratings - ANSI/UL 263

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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 Listed or Classified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
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Fire Resistance Ratings - ANSI/UL 263

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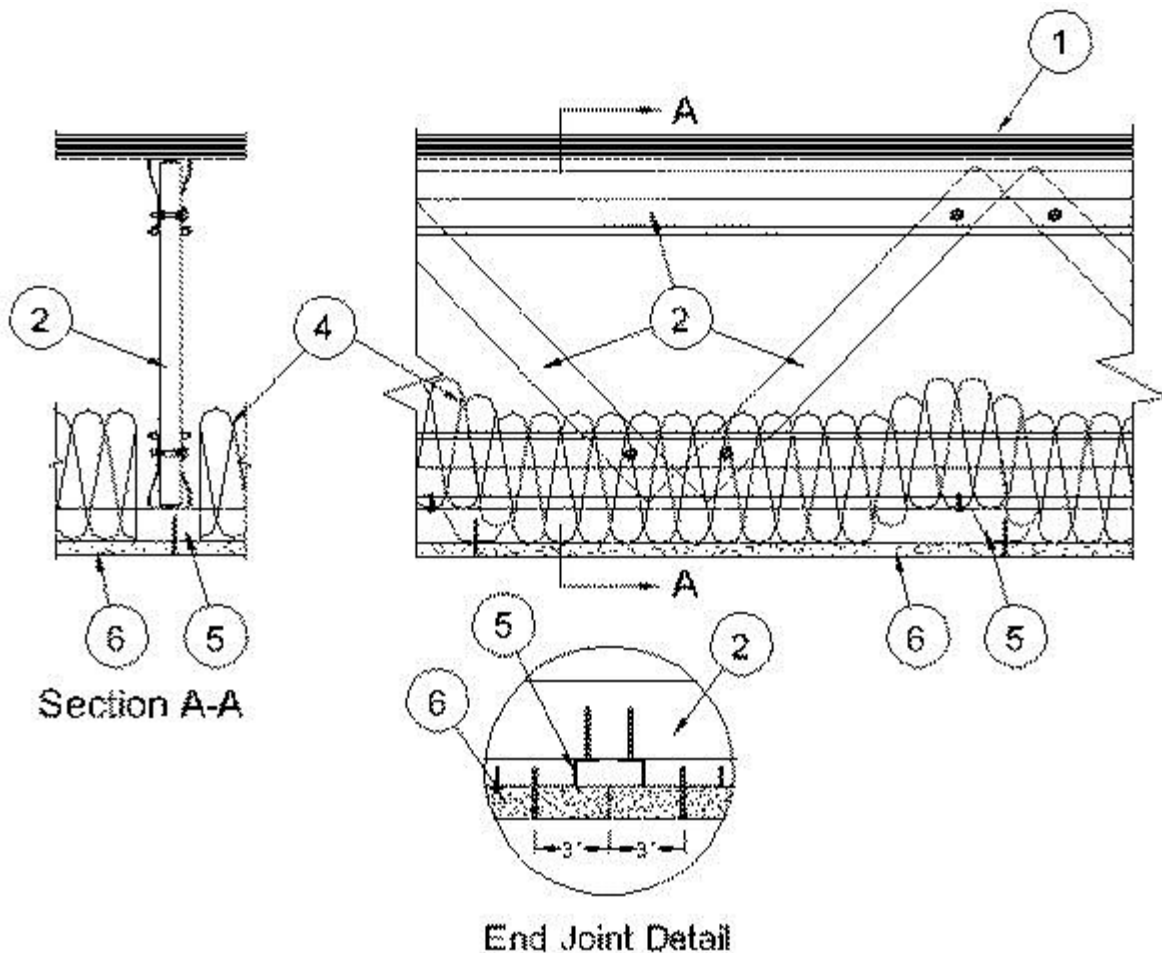
Design No. L551

June 29, 2012

Unrestrained Assembly Rating - 1 Hr.

Unrestrained Beam Rating - 1 Hr.

Load Restricted for Canadian Applications — See Guide [BXUV7](#)



1. **Flooring Systems** — The flooring system shall consist of one of the following:

System No. 1

Subflooring — Min 23/32 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered 4 ft. Plywood or panel mechanically fastened to trusses 12 in. OC in conjunction with construction adhesive.

Vapor Barrier - (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Flooring — Min 1 by 4 in. T & G lumber installed perpendicular to trusses, or min 15/32 in. thick wood structural panels, min grade "Underlayment" or "Single Floor". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered.

System No. 2

Subflooring — Min 23/32 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered 4 ft. Plywood or panel mechanically fastened to trusses 12 in. OC in conjunction with construction adhesive.

Floor Mat Materials* - (Optional) — Nom 6 mm thick floor mat material adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement

of floor-topping mixture. When floor mat material is used, min thickness of floor topping mixture is 1 in.

HACKER INDUSTRIES INC — Type Hacker Sound-Mat.

Alternate Floor Mat Materials* — (Optional) — Floor mat material nom 10 mm thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of a min 1-1/2 in. of floor-topping mixture.

HACKER INDUSTRIES INC — Type Hacker Sound-Mat II.

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

HACKER INDUSTRIES INC — Type Quiet Qurl 55/025

Alternate Floor Mat Materials* — (Optional) — Floor mat material nom 3/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/2 in.

HACKER INDUSTRIES INC — Type Quiet Qurl 60/040

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

HACKER INDUSTRIES INC — Type Quiet Qurl 65/075

Metal Lath (Optional) — For use with 3/8 in. or 10 mm floor mat materials, 3/8 in. expanded steel diamond mesh, 3.4 lbs/sq yd placed over the floor mat material. Hacker Floor Primer to be applied prior to the placement of the metal lath. When metal lath is used, floor topping thickness a nom 1-1/4 in. over the floor mat.

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

Subflooring — Min 23/32 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered 4 ft. Plywood or panel mechanically fastened to trusses 12 in. OC in conjunction with construction adhesive.

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. 4

Subflooring — Min 23/32 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered 4 ft. Plywood or panel mechanically fastened to trusses 12 in. OC in conjunction with construction adhesive.

Floor Mat Materials* - (Optional) — Nom 1/4 in. thick floor mat material loose laid over the subfloor. Maxxon Floor Primer to be applied to the surface of the mat prior to the floor topping placement. When floor mat material is used, min thickness of floor topping mixture is 1 in. Floor topping thickness a min 3/4 in. over Acousti-Mat I floor mat.

MAXXON CORP — Type Acousti-Mat I, Acousti-Mat II

Alternate Floor Mat Materials* - (Optional) - Nom 0.8 in. thick floor mat material loose laid over the subfloor with Crack Suppression Mat (CSM) loose laid over the floor mat material. Floor topping thickness shall be min 1-1/2 in.

MAXXON CORP — Type Acousti-Mat 3, Crack Suppression Mat (CSM)

Metal Lath (Alternate to Crack Suppression Mat (CSM)) - 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd loose laid over the floor mat material. Floor topping thickness shall be min 1-1/2 in.

Alternate Floor Mat Materials* - (Optional) — Nom 0.4 in. thick floor mat material loose laid over the subfloor. Maxxon Floor Primer to be applied to the surface of the mat prior to the floor topping placement. Floor topping thickness shall be min 1-1/2 in.

MAXXON CORP — Type Enkasonic 9110

Alternate Floor Mat Materials* - (Optional) — Nom 0.2 in. thick floor mat material loose laid over the subfloor. Maxxon Floor Primer may be applied to the surface of the mat prior to the

floor topping placement. Floor topping thickness shall be as specified under **Floor Topping Mixture**.

MAXXON CORP — Type Acousti-Mat LP-R

Metal Lath (Optional) — For use with floor mat materials, 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd or Maxxon Corp. UL Classified Crack Suppression Mat (CSM) loose laid over the floor mat material. Floor topping thickness shall be min 1 in.

MAXXON CORP — Type Crack Suppression Mat (CSM)

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1000 psi. Mixture shall consist of 3 to 7 gal of water to 80 lbs of floor topping mixture to 1.0 to 2.1 cu ft of sand.

MAXXON CORP — Type D-C, GC, GC2000, L-R, T-F, CT

System No. 5

Subflooring — Min 23/32 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered 4 ft. Plywood or panel mechanically fastened to trusses 12 in. OC in conjunction with construction adhesive.

Floor Mat Materials* - (Optional) — Nom 1/4 in. thick floor mat material loose laid over the subfloor. Maxxon Floor Primer to be applied to the surface of the mat prior to the floor topping placement. When floor mat material is used, min thickness of floor topping mixture is 1in. Floor topping thickness a min 3/4 in. over Acousti-Mat I floor mat.

MAXXON CORP — Type Acousti-Mat I, Acousti-Mat II

Alternate Floor Mat Materials* - (Optional) - Nom 0.8 in. thick floor mat material loose laid over the subfloor with Crack Suppression Mat (CSM) loose laid over the floor mat material. Floor topping thickness shall be min 1-1/2 in.

MAXXON CORP — Type Acousti-Mat 3, Crack Suppression Mat (CSM)

Metal Lath (Alternate to Crack Suppression Mat (CSM)) - 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd loose laid over the floor mat material. Floor topping thickness shall be min 1-1/2 in.

Alternate Floor Mat Materials* - (Optional) — Nom 0.4 in. thick floor mat material loose laid over the subfloor. Maxxon Floor Primer to be applied to the surface of the mat prior to the floor topping placement. Floor topping thickness shall be min 1-1/2 in.

MAXXON CORP — Type Enkasonic 9110

Alternate Floor Mat Materials* - (Optional) — Nom 0.2 in. thick floor mat material loose laid over the subfloor. Maxxon Floor Primer may be applied to the surface of the mat prior to the floor topping placement. Floor topping thickness shall be as specified under **Floor Topping Mixture**.

MAXXON CORP — Type Acousti-Mat LP-R

Metal Lath (Optional) — For use with floor mat materials, 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd or Maxxon Corp. UL Classified Crack Suppression Mat (CSM) loose laid over the floor mat material. Floor topping thickness shall be min 1 in.

MAXXON CORP — Type Crack Suppression Mat (CSM)

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1200 psi. Mixture shall consist of 4 to 7 gal of water mixed with 80 lbs of floor topping mixture and 1.4 to 1.9 cu ft of sand.

RAPID FLOOR SYSTEMS — Type RF, RFP, RFU, RFR, Ortecrete

System No. 6

Subflooring — Min 23/32 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered 4 ft. Plywood or panel mechanically fastened to trusses 12 in. OC in conjunction with construction adhesive.

Vapor Barrier — (Optional) - Nom 0.030 in. thick commercial asphalt saturated felt.

Floor Mat Materials* — (Optional) - Min 3/8 in. to max 3/4 in. thick floor mat material loose laid over the subfloor.

UNITED STATES GYPSUM CO — LEVELROCK® Brand Sound Reduction Board

Alternate Floor Mat Materials* — (Optional) - Nom 1/4 in. thick floor mat material loose laid over the subfloor. Floor topping thickness shall be as specified under Floor Topping Mixture.

UNITED STATES GYPSUM CO — 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

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1200 psi. Thickness increased to min 1 in. for use with LEVELROCK® Brand Floor Underlayment SRM-25. Refer to manufacturer's instructions accompanying the material for specific mix design.

UNITED STATES GYPSUM CO — Type LRK

System No. 7

Subflooring — Min 23/32 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered 4 ft. Plywood or panel mechanically fastened to trusses 12 in. OC in conjunction with construction adhesive.

Vapor Barrier — (Optional) - Nom 0.030 in. thick commercial asphalt saturated felt.

Floor Mat Materials* — (Optional) - Min 3/8 in. to max 3/4 in. thick floor mat material loose laid over the subfloor.

UNITED STATES GYPSUM CO — LEVELROCK® Brand Sound Reduction Board

Alternate Floor Mat Materials* — (Optional) - Nom 1/4 in. thick floor mat material loose laid over the subfloor. Floor topping thickness shall be as specified under Floor Topping Mixture.

UNITED STATES GYPSUM CO — 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

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 3000 psi. Thickness increased to min 1 in. for use with LEVELROCK® Brand Floor Underlayment SRM-25. Refer to manufacturer's instructions accompanying the material for specific mix design.

UNITED STATES GYPSUM CO — Type HSLRK

System No. 8

Subflooring — Min 23/32 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered 4 ft. Plywood or panel mechanically fastened to trusses 12 in. OC in conjunction with construction adhesive.

Vapor Barrier - (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

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.

ALLIED CUSTOM GYPSUM PLASTERWORKS L L C — Accu-Crete, AccuRadiant, AccuLevel G40 and AccuLevel SD30.

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.

ALLIED CUSTOM GYPSUM PLASTERWORKS L L C — Type AccuQuiet P80, Type AccuQuiet C40, Type AccuQuiet RSM 20, Type AccuQuiet RSM 32, Type AccuQuiet RSM 48, Type AccuQuiet RSM 64, Type AccuQuiet RSM 120, and Type AccuQuiet D-18.

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 Acousti-Mat I, Acousti-Mat II, Acousti-Mat 3, Enkasonic 9110, Acousti-Mat LP-R.

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

2. **Structural Steel Members*** — Pre-fabricated light gauge steel truss system consisting of cold-formed, galv steel chord and web sections. Trusses fabricated in various sizes, depths and from various steel thickness. Trusses spaced a max of 48 in. OC.

TRUSSTEEL, DIV OF ITW BUILDING COMPONENTS INC — TrusSteel

3. **Bridging - (Not Shown)** — Location of lateral bracing for truss chord and web sections to be specified on truss engineering.

4. **Batts and Blankets* - (Optional)** — Any thickness of mineral wool or glass fiber insulation fitted in the concealed space, draped over the resilient channels and gypsum board ceiling membrane. Any mineral wool or glass fiber insulation bearing the UL Classification Marking for Surface Burning Characteristics having a flame spread index of 25 or less and a smoke developed index of 50 or less may be used.

See **Batts and Blankets** (BKNV) category in the Building Materials Directory for names of manufacturers.

4A. **Loose Fill Material* - (Optional)** — As an alternate to Item 4, any thickness of loose fill material installed on top of gypsum board ceiling membrane. Any loose fill material bearing the UL Classification Marking for Surface Burning Characteristics having a flame spread index of 25 or less and a smoke developed index of 50 or less may be used.

See **Loose Fill Materials** (BPHX) category in the Building Materials Directory for names of manufacturers.

5. **Furring Channels** — Resilient channels formed of 25 MSG galv steel, installed perpendicular to the trusses (Item 2) when trusses are spaced a max 24 in. OC. Resilient channels spaced max 16 in. OC. When batt insulation (Item 4) is fitted in the concealed space and draped over the resilient channel/gypsum board ceiling membrane, or when loose fill insulation (Item 4A) is used, resilient channel spacing shall be max 12 in. OC. Channels secured to each truss with 1/2 in. long Type S12 steel screws. Channel splices located beneath trusses and overlapped 4 in. Two channels, spaced 6 in. OC, oriented opposite each gypsum board end joint as shown in end joint detail. Additional channels shall extend min 6 in. beyond each side edge of board. As an alternate to the resilient channels, furring channels (Items 5A and 5B) or **Steel Framing Members*** (Item 5C) may be used.

5A. **Furring Channels - (Not Shown)** — As an alternate to Item 5, hat channels, formed of 20 MSG galv steel, 2-5/8 in. wide by 7/8 in. deep, installed perpendicular to the trusses spaced max

16 in. OC. When batt insulation (Item 4) is fitted in the concealed space and draped over the resilient channel/gypsum board ceiling membrane, or when loose fill insulation (Item 4A) is used, resilient channel spacing shall be max 12 in. OC. Channels secured to each truss with No. 18 SWG galv steel wire double strand saddle ties. Channel splices located beneath trusses and overlapped 6 in. Channels tied together at splices with double strand of No. 18 SWG galv steel wire at each end of overlap. Two channels, spaced 6 in. OC, oriented opposite each gypsum board end joint as shown in end joint detail. Additional channels shall extend min 6 in. beyond each side edge of board.

5B. Alternate Furring Channels - (Not Shown) — As an alternate to Items 5 and 5A, resilient channels, double legged formed of 25 MSG galv steel, 2-7/8 in. wide by 1/2 in. deep, installed perpendicular to the trusses spaced max 16 in. OC. When batt insulation (Item 4) is fitted in the concealed space and draped over the resilient channel/gypsum board ceiling membrane, or when loose fill insulation (Item 4A) is used, resilient channel spacing shall be max 12 in. OC. Channels secured to each truss with 1/2 in. long Type S12 steel screws or with No. 18 SWG galv steel wire double strand saddle ties. Channel splices located beneath trusses and overlapped 4 in. Channels tied together at splices with double strand of No. 18 SWG galv steel wire at each end of overlap. Two channels, spaced 6 in. OC, oriented opposite each gypsum board end joint as shown in end joint detail. Additional channels shall extend min 6 in. beyond each side edge of board.

5C. Alternate Steel Framing Members* - (Not Shown) — As an alternate to Items 5, 5A and 5B, main runners, cross tees or channels, and wall angle or channels as listed below:

a. **Main Runners** — Nom 10 or 12 ft long, 15/16 in. or 1-1/2 in. wide face, spaced 4 ft OC perpendicular to trusses. Main runners suspended a min of 2 in. beneath bottom chord of trusses with min 12 SWG galv steel hanger wires spaced 48 in. OC. Hanger wires to be located adjacent to main runner/cross tee intersections.

b. **Cross Tees or Channels** — Cross tees, nom 4 ft long, 15/16 in. or 1-1/2 in. wide face, or cross channels nom 4 ft long, 1-1/2 in. wide face, installed perpendicular to the main runners, spaced 16 in. OC. Additional cross tees or cross channels used at 8 in. from each side of butted gypsum board end joints. The cross tees or cross channels may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation.

c. **Wall Angle or Channel** — Used to support steel framing member ends and for screw attachment of the gypsum board. Min 0.016 in. thick painted or galvanized steel angle with 1 in. legs or min 0.016 in. thick painted or galvanized steel channel with a 1 by 1 1/2 by 1 in. profile, attached to walls at perimeter of ceiling with fasteners 16 in. OC.

CGC INC — Types DGL, RX

USG INTERIORS LLC — Types DGL, RX

6. Gypsum Board* — Nom 5/8 in. thick, 48 in. wide gypsum board. When resilient channels (Item 5) or furring channels (Items 5A and 5B) are used, gypsum board installed with long dimension perpendicular to resilient channels. Gypsum board secured with 1 in. long Type S bugle head steel screws spaced 12 in. OC along butted end joints and in the field. End joints secured to both pieces of resilient channel as shown in end joint detail. When batt insulation

(Item 4) is fitted in the concealed space and draped over the resilient channel/gypsum board ceiling membrane, or when loose fill insulation (Item 4A) is used, screw spacing shall be 8 in. OC along butted end joints and in the field. When **Steel Framing Members*** (Item 5C) are used, gypsum board installed with long dimension parallel to the main runners. Gypsum board fastened to each cross tee or channel with five drywall screws, with one screw located at the midspan of the cross tee or channel, one screw located 12 in. from and on each side of the cross tee or channel mid span and one screw located 1-1/2 in. from each wallboard side joint. Except at gypsum board end joints, gypsum board screws shall be located 1/2 in. from the joint. Gypsum board fastened to main runners with drywall screws 1/2 in. from side joints, midway between intersections with cross tees or channels (16 in. OC). End joints of adjacent gypsum board sheets shall be staggered not less than 32 in. Gypsum board sheets screw attached to leg of wall angle with drywall screws spaced 12 in. OC. When batt insulation (Item 4) is fitted in the concealed space and draped over the resilient channel/gypsum board ceiling membrane, or when loose fill insulation (Item 4A) is used, screws spacing shall be 8 in. OC.

CGC INC — Types C, IP-X2, IPC-AR

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

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

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.

*Bearing the UL Classification Mark

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