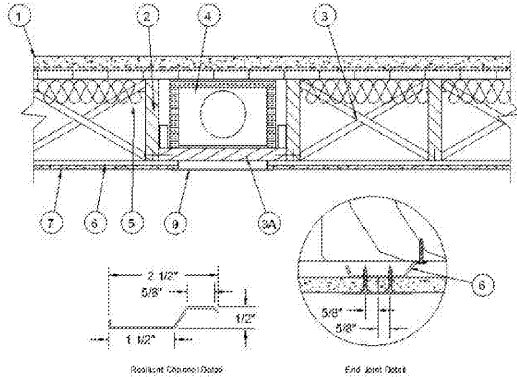


UL Design No. L545

March 11, 2016

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.



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

- System No. 1**
Subflooring — Min 3/4 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to joints with joints staggered. Long edges may be T & G or square.
Comerititious Backer Units — Nom 1/2 in. or 5/8 in. thick, min. 4 ft by 4 ft square edge comerititious backer units located above subfloor. Units attached to joists through subfloor with 1-5/8 in. long Type S, corrosion resistant, water-head steel screws spaced 6 in. OC. Joints offset min 6 in. from subflooring joints. Joints covered with glass fiber mesh tape.
UNITED STATES GYPSUM CO — Type DCB.
Laminate Adhesive* (Optional) — Used to bond subflooring to Comerititious Backer Units. ANSI A136.1 Type 1 organic adhesive applied with 1/4 in. square notched trowel.
 See Adhesives (BYWR) category in the Fire Resistance Directory or Adhesives (BULZ) category in the Building Materials Directory for names of manufacturers.
System No. 2
Subflooring — Min 3/4 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to joints with joints staggered. Long edges may be T & G or square.
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 wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to joints with joints staggered. Long edges may be T & G or square.
Floor Mat Materials* (Optional) — Floor mat material nom 5/64 in. (2mm) 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 in. of floor-topping mixture.
ECORE INTERNATIONAL INC — Type QTacu 4002
HACKER INDUSTRIES INC — Type Hacker Sound-Mat
Alternate Floor Mat Materials* (Optional) — Floor mat material nom 1/4 in. (6mm) 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 1-1/4 in. (32mm) of floor-topping mixture.
ECORE INTERNATIONAL INC — Type QTrfm 3006-3
HACKER INDUSTRIES INC — Type Hacker Sound-Mat II
Alternate Floor Mat Materials* (Optional) — Floor mat material nom 1/8 in. (3mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 3/4 in. (19mm)
HACKER INDUSTRIES INC — FRM-FLL SCM 125
Alternate Floor Mat Materials* (Optional) — Floor mat material nom 1/4 in. (6mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1 in. (25mm)
HACKER INDUSTRIES INC — Type FRM-FLL SCM 250, Quiet Quil 55/025
Alternate Floor Mat Materials* (Optional) — Floor mat material nom 3/8 in. (10mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/4 in. (32mm)
HACKER INDUSTRIES INC — FRM-FLL SCM 400, Quiet Quil 60/040
Alternate Floor Mat Materials* (Optional) — Floor mat material nom 3/4 in. (19mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/2 in. (38mm)
HACKER INDUSTRIES INC — Type FRM-FLL SCM 750, Quiet Quil 65/075
Metal Lath (Optional) — For use with 3/8 in. (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-Fil Gypsum Concrete, Firm-Fil 2010, Firm-Fil 3310, Firm-Fil 4010, Firm-Fil High Strength, Gyp-Span Radiant
System No. 4
Subflooring — Min 3/4 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to joints with joints staggered. Long edges may be T & G or square.
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 Acous-Mat I floor mat.
MAXXON CORP — Type Acous-Mat I, Acous-Mat II, Acous-Mat II HP.
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 Acous-Mat 3, Acous-Mat 3 HP, 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.
Fiber Glass Mesh Reinforcement — (Optional) — Maxxon Corp's "Maxxon Reinforcement (MR)" for use with or as an alternate to CSM or metal lath reinforcement. The materials consists of a plastic coated non-woven fiber glass mesh grid intended to suppress cracks in the Floor Topping Mixture.
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 in. Floor topping thickness shall be min 3/4 in. when used with Crack Suppression Mat (CSM), Metal Lath, or Maxxon Reinforcement (MR).
MAXXON CORP — Type Enkasonic 9110, Enkasonic 9110 HP.
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 Acous-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 of 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)
Fiber Glass Mesh Reinforcement — (Optional) — Maxxon Corp's "Maxxon Reinforcement (MR)" for use with or as an alternate to CSM or metal lath reinforcement. The materials consists of a plastic coated non-woven fiber glass mesh grid intended to suppress cracks in the Floor Topping Mixture.
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 mixed with 80 lbs of floor topping mixture and 1.0 to 2.1 cu ft of sand.
MAXXON CORP — Types D-C, GC, GC 2000, L-R, T-F, CT

System No. 5

- Subflooring** — Min 3/4 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to joints with joints staggered. Long edges may be T & G or square.
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 Acous-Mat I floor mat.
MAXXON CORP — Type Acous-Mat I, Acous-Mat II, Acous-Mat II HP.
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 Acous-Mat 3, Acous-Mat 3 HP, 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.
Fiber Glass Mesh Reinforcement — (Optional) — Maxxon Corp's "Maxxon Reinforcement (MR)" for use with or as an alternate to CSM or metal lath reinforcement. The materials consists of a plastic coated non-woven fiber glass mesh grid intended to suppress cracks in the Floor Topping Mixture.
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 in. Floor topping thickness shall be min 3/4 in. when used with Crack Suppression Mat (CSM), Metal Lath, or Maxxon Reinforcement (MR).
MAXXON CORP — Type Enkasonic 9110, Enkasonic 9110 HP.
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 Acous-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 of 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)
Fiber Glass Mesh Reinforcement — (Optional) — Maxxon Corp's "Maxxon Reinforcement (MR)" for use with or as an alternate to CSM or metal lath reinforcement. The materials consists of a plastic coated non-woven fiber glass mesh grid intended to suppress cracks in the Floor Topping Mixture.
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 mixed with 80 lbs of floor topping mixture and 1.0 to 2.1 cu ft of sand.
MAXXON CORP — Types D-C, GC, GC 2000, L-R, T-F, CT

System No. 6

- Subflooring** — Min 3/4 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to joints with joints staggered. Long edges may be T & G or square.
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 D E 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 1/2 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 joints with joints staggered.
Vapor Barrier — (Optional) — Commercial asphalt saturated felt, 0.020 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.
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 Quil 55/025 and Quiet Quil 60/040 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 Quil 60/040 and Quiet Quil 65/075 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 Quil 65/075, Quiet Quil 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 Quil 52/013 and Quiet Quil 52/015
Alternate Floor Mat Materials* (Optional) — Floor mat material Nom. 1/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.
KEENE BUILDING PRODUCTS CO INC — Type Quiet Quil 55/025 and Quiet Quil 60/040 N
System No. 8
Subflooring — Min 2 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to the joists with end joints staggered to the joists with joints staggered. Long edges may be T & G or square. Ringed shank nails spaced 12 in. OC along each end joint. Staples having equal or greater withdrawal and lateral resistance shall be substituted for nails.
Gypsum Board* — One layer of nom 5/8 in. thick, 4 ft wide gypsum board, installed with long dimension perpendicular to the joints. 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
Alternate Floor Mat Materials* (Optional) — (As an alternate to the single layer gypsum board) — Floor mat material loose laid over the subfloor.
MAXXON CORP — Type Acous-Mat I, Acous-Mat II, Acous-Mat II HP, Acous-Mat 3, Acous-Mat 3 HP, Enkasonic 9110, Enkasonic 9110 HP, Acous-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 joints 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. Wood Joists — Min 2 by 10, spaced 16 in. OC and effectively fireblocked in accordance with local codes.
3. Cross Bridging — Min 1 by 3 in. or min 2 by 10 solid blocking.
3A. Horizontal Bridging — Used in lieu of item 3 in same joist bay as ceiling damper (Item 4), when ceiling damper is employed. Wood 2 by 4 in. secured between joists with nails.
4. Ceiling Damper* (Optional) — Max nom area shall be 196 sq in. Max rectangular size shall be 12 in. wide by 16-1/2 in. long. Max height of damper shall be 8-3/4 in. Aggregate damper openings shall not exceed 99 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturer's installation instructions provided with the damper. A steel grille (Item 5) shall be installed in accordance with installation instructions.
AIR BALANCE INC — Type 299 (See Item 7A)
AIR KING VENTILATION PRODUCTS — Series AS, Series AK
AIR MANAGEMENT INC — Models AMI-50-CD-WG-B, AMI-50-CD-WG-B/V
CENTRAL VENTILATION SYSTEMS CO L L C — Models C-SR-HC(A), C-RD-HC(A)
GREENHECK FAN CORP — Model CRD-1WJ
METAL-FAB INC — Models MSCDHC, MRCDHC
METAL INDUSTRIES INC — Models CD-SR-HC, CD-SR-HC-A, CD-RD-HC, CD-RD-HC-A

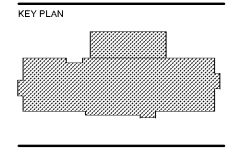
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HOME 2 SUITES BELMONT
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Revisions		
#	Date	Description

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 Issued for: CONSTRUCTION
 Issue Date: 2019-06-07

DRAWING TITLE
UL DESIGN ASSEMBLIES

SHEET NUMBER
G.304