



**Design No. L556**  
**BXUV.L556**  
**Fire Resistance Ratings - ANSI/UL 263**

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**Design/System/Construction/Assembly Usage Disclaimer**

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
  - Authorities Having Jurisdiction should be consulted before construction.
  - Fire resistance assemblies and products are developed by the design 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.
  - Only products which bear UL's Mark are considered Certified.
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**BXUV - Fire Resistance Ratings - ANSI/UL 263**

**BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada**

[See General Information for Fire-resistance Ratings - ANSI/UL 263](#)

[See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada](#)

**Design No. L556**

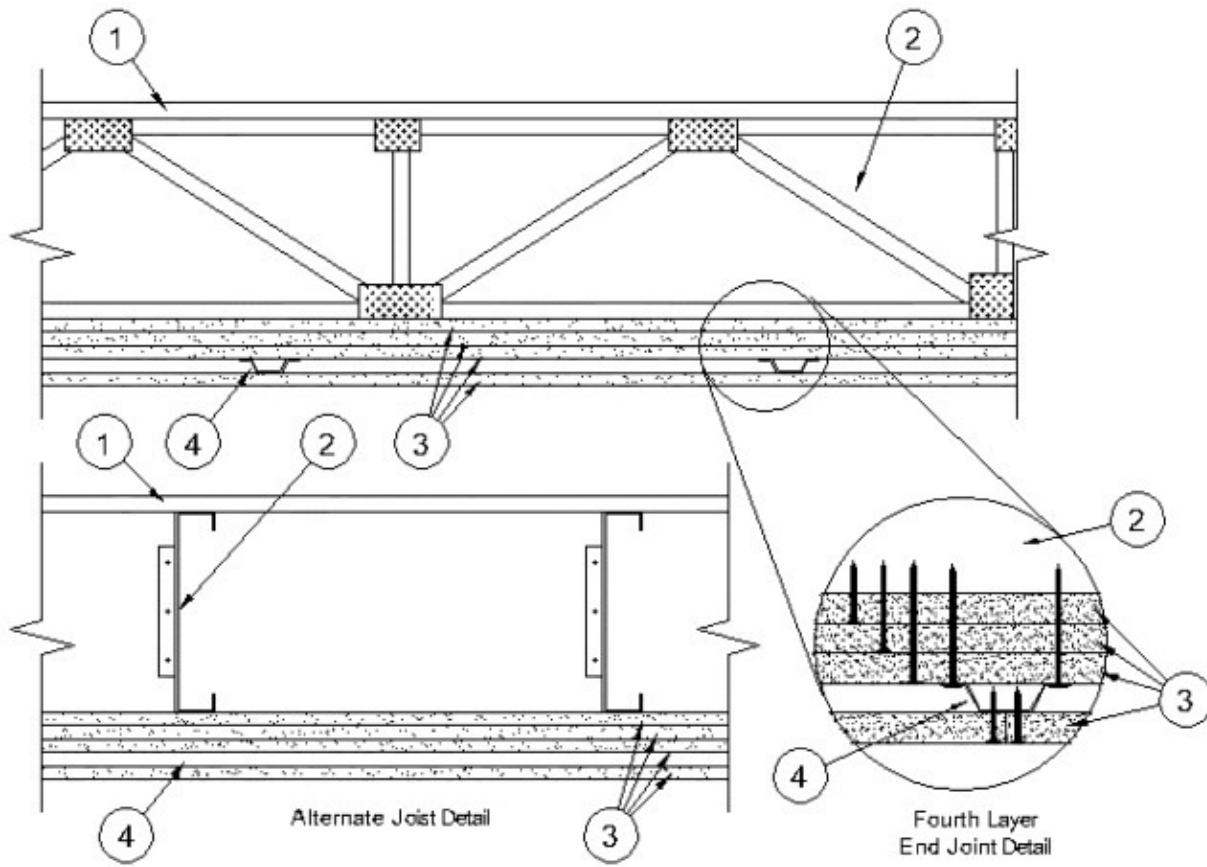
February 27, 2015

**Unrestrained Assembly Rating - 2 Hr**

**Finish Rating - 2 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 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. Plywood or panels secured to wood trusses (Item 2A) with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. Construction adhesive conforming to APA specification AFG-01 applied in 1/4 in. diam beads on top of trusses and to grooved edges of plywood or panel. Plywood or panels secured to steel joists (Item 2B) with 1-5/8 in. long No. 10 steel screws spaced 12 in. OC along each joist.

**Subflooring (Alternate) - Structural Cement-Fiber Units\*** — Min 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to joists with end joints staggered. Panels secured to steel joists (item 2B) with 1-5/16 in. long No. 8 self-drilling, self-countersinking steel screws or to wood trusses (item 2A) with min 1-1/2 in. long No. 8 coarse thread steel screws, spaced 12 in. OC in both the field and perimeter and located 1 in. from the side edges of the board. "Enerbond" 45 spray foam adhesive applied to butt joints and to tongue and grooved edges of flooring during installation. When panels thicker than 3/4 in. are used, the min fastener length for installation into steel joists shall be the thickness of the panel plus 9/16 in. For installation into wood trusses, the min fastener length shall be twice the thickness of the panel.

**VIROC/PORTUGAL INDUSTRIAS DE MADEIRA E CIMENTO S A**

**Subflooring (Alternate) — Structural Cement-Fiber Units\*** — Nominal 19 mm (3/4 in.) thick tongue and groove structural cement-fiber units. Long dimension of panels to be perpendicular to joists with end joints staggered. Panels fastened to the joist with #10 self-drilling, self-tapping cement board screws 1-3/4 in. long. Screws shall be spaced 6 in. OC along the perimeter of each sheet and 12 in. OC in the field of each sheet. Screws shall be spaced 1/2 in. from end joints and 1 in. from side joints.

**ECTEK INTERNATIONAL INC** — Armoroc Panel

**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

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

**GRASSWORX L L C** — Type SC50

## 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. Plywood or panels secured to wood trusses (Item 2A) with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. Construction adhesive conforming to APA specification AFG-01 applied in 1/4 in. diam beads on top of trusses and to grooved edges of plywood or panel. Plywood or panels secured to steel joists (Item 2B) with 1-5/8 in. long No. 10 steel screws spaced 12 in. OC along each joist.

**Subflooring (Alternate) - Structural Cement-Fiber Units\*** — Min 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to joists with end joints staggered. Panels secured to steel joists (item 2B) with 1-5/16 in. long No. 8 self-drilling, self-countersinking steel screws or to wood trusses (item 2A) with min 1-1/2 in. long No. 8 coarse thread steel screws, spaced 12 in. OC in both the field and perimeter and located 1 in. from the side edges of the board. "Enerbond" 45 spray foam adhesive applied to butt joints and to tongue and grooved edges of flooring during installation. When panels thicker than 3/4 in. are used, the min fastener length for installation into steel joists shall be the thickness of the panel plus 9/16 in. For installation into wood trusses, the min fastener length shall be twice the thickness of the panel.

### VIROC/PORTUGAL INDUSTRIAS DE MADEIRA E CIMENTO S A

**Subflooring (Alternate) — Structural Cement-Fiber Units\*** — Nominal 19 mm (3/4 in.) thick tongue and groove structural cement-fiber units. Long dimension of panels to be perpendicular to joists with end joints staggered. Panels fastened to the joist with #10 self-drilling, self-tapping cement board screws 1-3/4 in. long. Screws shall be spaced 6 in. OC along the perimeter of each sheet and 12 in. OC in the field of each sheet. Screws shall be spaced 1/2 in. from end joints and 1 in. from side joints.

**ECTEK INTERNATIONAL INC** — Armoroc Panel

**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, Acousti-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 Acousti-Mat 3, Acousti-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 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)

**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 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. 3

**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. Plywood or panels secured to wood trusses (Item 2A) with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. Construction adhesive conforming to APA specification AFG-01 applied in 1/4 in. diam beads on top of trusses and to grooved edges of plywood or panel. Plywood or panels secured to steel joists (Item 2B) with 1-5/8 in. long No. 10 steel screws spaced 12 in. OC along each joist.

**Subflooring (Alternate) — Structural Cement-Fiber Units\*** — Min 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to joists with end joints staggered. Panels secured to steel joists (item 2B) with 1-5/16 in. long No. 8 self-drilling, self-countersinking steel screws or to wood trusses (item 2A) with min 1-1/2 in. long No. 8 coarse thread steel screws, spaced 12 in. OC in both the field and perimeter and located 1 in. from the side edges of the board. "Enerbond" 45 spray foam adhesive applied to butt joints and to tongue and grooved edges of flooring during installation. When panels thicker than 3/4 in. are used, the min fastener length for installation into steel joists shall be the thickness of the panel plus 9/16 in. For installation into wood trusses, the min fastener length shall be twice the thickness of the panel.

### VIROC/PORTUGAL INDUSTRIAS DE MADEIRA E CIMENTO S A

**Subflooring (Alternate) — Structural Cement-Fiber Units\*** — Nominal 19 mm (3/4 in.) thick tongue and groove structural cement-fiber units. Long dimension of panels to be perpendicular to joists with end joints staggered. Panels fastened to the joist with #10 self-drilling, self-tapping cement board screws 1-3/4 in. long. Screws shall be spaced 6 in. OC along the perimeter of each sheet and 12 in. OC in the field of each sheet. Screws shall be spaced 1/2 in. from end joints and 1 in. from side joints.

**ECTEK INTERNATIONAL INC** — Armoroc Panel

**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 1-1/4 in. of floor-topping mixture.

**ECORE INTERNATIONAL INC** — Type QTscu 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 QTrbm 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 1 in. (25mm)

**HACKER INDUSTRIES INC** — FIRM-FILL 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 FIRM-FILL SCM 250, Quiet Qurl 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** — FIRM-FILL SCM 400, Quiet Qurl 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 FIRM-FILL SCM 750, Quiet Qurl 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 1 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 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. Plywood or panels secured to wood trusses (Item 2A) with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. Construction adhesive conforming to APA specification AFG-01 applied in 1/4 in. diam beads on top of trusses and to grooved edges of plywood or panel. Plywood or panels secured to steel joists (Item 2B) with 1-5/8 in. long No. 10 steel screws spaced 12 in. OC along each joist.

**Subflooring (Alternate) — Structural Cement-Fiber Units\*** — Min 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to joists with end joints staggered. Panels secured to steel joists (item 2B) with 1-5/16 in. long No. 8 self-drilling, self-countersinking steel screws or to wood trusses (item 2A) with min 1-1/2 in. long No. 8 coarse thread steel screws, spaced 12 in. OC in both the field and perimeter and located 1 in. from the side edges of the board. "Enerbond" 45 spray foam adhesive applied to butt joints and to tongue and grooved edges of flooring during installation. When panels thicker than 3/4 in. are used, the min fastener length for installation into steel joists shall be the thickness of the panel plus 9/16 in. For installation into wood trusses, the min fastener length shall be twice the thickness of the panel.

#### VIROC/PORTUGAL INDUSTRIAS DE MADEIRA E CIMENTO S A

**Subflooring (Alternate) — Structural Cement-Fiber Units\*** — Nominal 19 mm (3/4 in.) thick tongue and groove structural cement-fiber units. Long dimension of panels to be perpendicular to joists with end joints staggered. Panels fastened to the joist with #10 self-drilling, self-tapping cement board screws 1-3/4 in. long. Screws shall be spaced 6 in. OC along the perimeter of each sheet and 12 in. OC in the field of each sheet. Screws shall be spaced 1/2 in. from end joints and 1 in. from side joints.

**ECTEK INTERNATIONAL INC** — Armoroc Panel

**Finish Flooring - Floor Topping Mixture\*** — Min 1-1/2 in. thickness of floor topping mixture having a min compressive strength of 1000 psi and a cast density of 100 plus or minus 5 pcf. Foam concentrate mixed 40:1 by volume with water and expanded at 100 psi through nozzle. Mixture shall consist of 1.4 cu feet of preformed foam concentrate to 94 lbs Type I Portland cement, 300 lbs of sand with 5-1/2 gal of water.

**ELASTIZELL CORP OF AMERICA** — Type FF

#### 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. Plywood or panels secured to wood trusses (Item 2A) with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. Construction adhesive conforming to APA specification AFG-01 applied in 1/4 in. diam beads on top of trusses and to grooved edges of plywood or panel. Plywood or panels secured to steel joists (Item 2B) with 1-5/8 in. long No. 10 steel screws spaced 12 in. OC along each joist.

**Subflooring (Alternate) — Structural Cement-Fiber Units\*** — Min 3/4 in. thick, with long edges

tongue and grooved. Long dimension of panels to be perpendicular to joists with end joints staggered. Panels secured to steel joists (item 2B) with 1-5/16 in. long No. 8 self-drilling, self-countersinking steel screws or to wood trusses (item 2A) with min 1-1/2 in. long No. 8 coarse thread steel screws, spaced 12 in. OC in both the field and perimeter and located 1 in. from the side edges of the board. "Enerbond" 45 spray foam adhesive applied to butt joints and to tongue and grooved edges of flooring during installation. When panels thicker than 3/4 in. are used, the min fastener length for installation into steel joists shall be the thickness of the panel plus 9/16 in. For installation into wood trusses, the min fastener length shall be twice the thickness of the panel.

#### **VIROC/PORTUGAL INDUSTRIAS DE MADEIRA E CIMENTO S A**

**Subflooring (Alternate) — Structural Cement-Fiber Units\*** — Nominal 19 mm (3/4 in.) thick tongue and groove structural cement-fiber units. Long dimension of panels to be perpendicular to joists with end joints staggered. Panels fastened to the joist with #10 self-drilling, self-tapping cement board screws 1-3/4 in. long. Screws shall be spaced 6 in. OC along the perimeter of each sheet and 12 in. OC in the field of each sheet. Screws shall be spaced 1/2 in. from end joints and 1 in. from side joints.

**ECTEK INTERNATIONAL INC** — Armoroc Panel

**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** — Accu-Crete, AccuRadiant, AccuLevel G40 and AccuLevel SD30

**Alternate 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** — Type AccuQuiet P80, Type AccuQuiet C40, AccuQuiet D13, and Type AccuQuiet D-18

### **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. Plywood or panels secured to wood trusses (Item 2A) with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. Construction adhesive conforming to APA specification AFG-01 applied in 1/4 in. diam beads on top of trusses and to grooved edges of plywood or panel. Plywood or panels secured to steel joists (Item 2B) with 1-5/8 in. long No. 10 steel screws spaced 12 in. OC along each joist.

**Subflooring (Alternate) — Structural Cement-Fiber Units\*** — Min 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to joists with end joints staggered. Panels secured to steel joists (item 2B) with 1-5/16 in. long No. 8 self-drilling, self-countersinking steel screws or to wood trusses (item 2A) with min 1-1/2 in. long No. 8 coarse thread steel screws, spaced 12 in. OC in both the field and perimeter and located 1 in. from the side edges of the board. "Enerbond" 45 spray foam adhesive applied to butt joints and to tongue and grooved edges of flooring during installation. When panels thicker than 3/4 in. are used, the min fastener length for installation into steel joists shall be the thickness of the panel plus 9/16 in. For installation into wood trusses, the min fastener length shall be twice the thickness of the panel.

#### **VIROC/PORTUGAL INDUSTRIAS DE MADEIRA E CIMENTO S A**

**Subflooring (Alternate) — Structural Cement-Fiber Units\*** — Nominal 19 mm (3/4 in.) thick tongue and groove structural cement-fiber units. Long dimension of panels to be perpendicular to joists with end joints staggered. Panels fastened to the joist with #10 self-drilling, self-tapping cement board screws 1-3/4 in. long. Screws shall be spaced 6 in. OC along the perimeter of each sheet and 12 in. OC in the field of each sheet. Screws shall be spaced 1/2 in. from end joints and 1 in. from side joints.

**ECTEK INTERNATIONAL INC** — Armoroc Panel

**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, Acousti-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 Acousti-Mat 3, Acousti-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 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)

**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 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. 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. Plywood or panels secured to wood trusses (Item 2A) with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. Construction adhesive conforming to APA specification AFG-01 applied in 1/4 in. diam beads on top of trusses and to grooved edges of plywood or panel. Plywood or panels secured to steel joists (Item 2B) with 1-5/8 in. long No. 10 steel screws spaced 12 in. OC along each joist.

**Subflooring (Alternate) - Structural Cement-Fiber Units\*** — Min 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to joists with end joints staggered. Panels secured to steel joists (item 2B) with 1-5/16 in. long No. 8 self-drilling, self-countersinking steel screws or to wood trusses (item 2A) with min 1-1/2 in. long No. 8 coarse thread steel screws, spaced 12 in. OC in both the field and perimeter and located 1 in. from the side edges of the board. "Enerbond" 45 spray foam adhesive applied to butt joints and to tongue and grooved edges of flooring during installation. When panels thicker than 3/4 in. are used, the min fastener length for installation into steel joists shall be the thickness of the panel plus 9/16 in. For installation into wood trusses, the min fastener length shall be twice the thickness of the panel.

### VIROC/PORTUGAL INDUSTRIAS DE MADEIRA E CIMENTO S A

**Subflooring (Alternate) — Structural Cement-Fiber Units\*** — Nominal 19 mm (3/4 in.) thick tongue and groove structural cement-fiber units. Long dimension of panels to be perpendicular to joists with end joints staggered. Panels fastened to the joist with #10 self-drilling, self-tapping cement board screws 1-3/4 in. long. Screws shall be spaced 6 in. OC along the perimeter of each sheet and 12 in. OC in the field of each sheet. Screws shall be spaced 1/2 in. from end joints and 1 in. from side joints.

**ECTEK INTERNATIONAL INC** — Armoroc Panel

**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

**2. Structural Wood Members** — Min 9-1/4 in. deep "I" - shaped wood joists spaced a max 24 in. OC. Min joist bearing on bearing plates 2 in. Joists secured to bearing plates with two 8d steel nails at each end. Circular holes may be cut in the web of the joists in accordance with the manufacturer's published design specifications.

**2A. Structural Wood Members** — As an alternate to item 2, Nominal 2 by 8 or nominal 2 by 10 in. wood joists spaced 24 in. OC, firestopped or min. 18 in. deep parallel chord trusses spaced a max 24 in. OC fabricated from nom 2 by 4 in. lumber with lumber oriented either vertically (2A) or horizontally (2B). Truss members secured together with No. 20 MSG galv steel truss plates. Plates have 5/16 in. long teeth projecting perpendicular to the plane of the plate. The teeth are in pairs facing each other (made by the same punch), forming a split-tooth-type plate. Each tooth has a chisel point on its outside edge. These points are diagonally opposite each other for each pair. The top half of each tooth has a twist for stiffness. The pairs are repeated on approx 7/8 in. centers with four rows of teeth per in. of plate width.

**2B. Steel Channel Joists** — As an alternate to Item 2, steel channel-shaped joists, min 8 in. deep with min 1-1/2 in. flanges and 1/4 in. stiffening flanges. The joists are fabricated from min 18 MSG galv steel. Min yield strength is 33 ksi. Joists spaced max 24 in. OC. Steel channel joists, perimeter supports, web stiffeners, bridging straps, blocking and blocking clips designed in accordance with the current edition of the Specification for the Design of Cold-Formed Steel Structural Members, published by the American Iron and Steel Institute.

**3. Gypsum Board\*** — **Any 1/2 in. thick UL Classified Gypsum Board that is eligible for use in Design No. X515. Any 5/8 in. thick UL Classified Gypsum Board that is eligible for use in Design Nos. L501 or G512.** Four layers of nom 5/8 in. thick, 4 ft wide gypsum board. First three layers installed with long dimension perpendicular to bottom chord of structural members. Adjacent butt joints staggered approximately 4 ft OC. Overlapping layers installed so that edges and butt joints offset min 10 in. from previous layer. Base layer fastened to bottom chord of structural members with 1-1/4 in. long Type W or S-12 steel screws spaced 12 in. OC. Second layer secured to bottom chord of structural members with 2 in. long Type S or S-12 steel screws spaced 12 in. OC. Third layer secured to bottom chord of structural members with 2-1/2 in Type S or S-12 steel screws spaced 12 in. OC. Fourth layer secured to resilient channels with 1-1/8 in. long Type S steel screws spaced 12 in. OC. Screws to be spaced 1/2 in. from butted end joints and 1 in. from side joints.

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4. **Resilient Channels** — Hat shaped channels formed from No. 25 MSG galv steel spaced 24 in. OC perpendicular to structural wood members. Channels secured to bottom chord of structural member through third layer of gypsum board with 2-1/2 in. Type S or S-12 steel screws spaced 12 in. OC.

5. **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.**

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