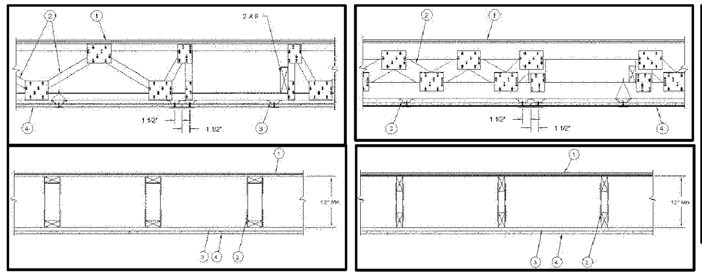


## U.L. DESIGN NO. L528
(1/A0.15)

November 14, 2019
Unrestrained Assembly Rating - 1 Hr.
Finish Rating - 22 Min.
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

1. Flooring System — The flooring system shall consist of one of the following:
System No. 1
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.
System No. 2
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 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.
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 lightweight insulating concrete with Perlite Aggregate* or Vermiculite Aggregate*, or gypsum concrete.
See Perlite Aggregate (CFFX) and Vermiculite Aggregate (CJZZ) categories for names of manufacturers.
System No. 3
Subflooring — Min 23/32 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 trusses with joints staggered.
Vapor Barrier — (Optional) - Commercial asphalt saturated felt, 0.030 in. thick.
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 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 3/4 in. (19mm)
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 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 23/32 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 trusses with joints staggered.
Vapor Barrier — (Optional)— Commercial asphalt saturated felt, 0.010 in. thick.
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
LATICRETE SUPERCAP L L C — Tyles LRK, HSLRK
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. Floor topping thickness shall be as specified under Floor Topping Mixture.
GRASSWORX L L C — Type SC50

Alternate Floor Mat Material* — (Optional) - Floor mat material nominal 3/8 in. thick loose laid over the subfloor. Floor topping shall be a min 3/4 in. thick.
OWENS CORNING — Type QuietZone Acoustical Floor Mat

System No. 5
Subflooring — Min 23/32 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 trusses with joints staggered.
Vapor Barrier-(Optional) — Commercial asphalt saturated felt, 0.030 in. thick.
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 1 Portland cement, 300 lbs of sand with 5-1/2 gal of water.
ELASTIZELL CORP OF AMERICA — Type FF

System No. 6
Subflooring — Min 23/32 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 trusses with joints staggered.
Vapor Barrier-(Optional) — Commercial asphalt saturated felt, 0.030 in. thick.
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 1.2 cu feet of preformed foam concentrate to 94 lbs Type 1 Portland cement, 300 lbs of sand with 5-1/2 gal of water.
AERIX INDUSTRIES — Floor Topping Mixture

System No. 7
deleted

System No. 8
Subflooring — Min 23/32 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 trusses with joints staggered.
Vapor Barrier — (Optional) — Commercial asphalt saturated felt, 0.030 in. thick.
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 regarding the minimum thickness of the floor topping over each floor mat material.
MAXXON CORP — Type Acousti-Mat I, Acousti-Mat II, Acousti-Mat II HP.
RAPID FLOOR SYSETMS — Types RF, RFP, RFU, Ortecrete

Floor Mat Materials* - (Optional) Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of the floor topping over each floor mat material.
MAXXON CORP — Type Acousti-Mat I, Acousti-Mat II, Acousti-Mat II HP, Enkasonic 9110, Enkasonic 9110 HP, Acousti-Mat 3, Acousti-Mat 3 HP, Acousti-Mat LP, Acousti-Mat LP-R, Acousti-Mat 5D

Floor mat Reinforcement - (Optional) - Refer to manufacturer's instructions regarding minimum thickness of floor topping over each floor mat material, primers and use of crack suppression reinforcement.
MAXXON CORP - Crack Suppression Mat (CSM) or Maxxon Reinforcement (MR)

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.

System No. 9
Subflooring — Min 23/32 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 trusses with joints staggered.
Vapor Barrier — (Optional) - Commercial asphalt saturated felt, 0.030 in. thick.
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 5 to 8 gal of water to 80 lbs of floor topping mixture to 2.1 cu ft of sand.
ULTRA QUIET FLOORS — UQF-A, UQF-Super Blend, UQF-Plus 200

System No. 10
Subflooring — Min 23/32 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 trusses with joints staggered.
Vapor Barrier — (Optional) - Commercial asphalt saturated felt, 0.030 in. thick.
Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping having a minimum compressive strenght of 1000 psi. Refer to manufacturer's instructions accompanying the material for specifi mix design.

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

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

FORMULATED MATERIALS LLC - Types M1, M2, M3, R1 and R2

System No. 11
Subflooring — Min 1 by 6 in. T & G lumber fastened diagonally to trusses, or min 15/32 in. thick plywood or min 7/16 in. thick oriented strand board (OSB) wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered.
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. 12
Subflooring — Min 23/32 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 trusses with joints staggered.
Vapor Barrier — (Optional) - Commercial asphalt saturated felt, 0.030 in. thick.
Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping 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 640 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, C40, D13, D-18, D25, DX38, EM.125, EM.125S, EM.250, EM.250S, EM.375, EM.375S, EM.750, EM.750S

System No. 13
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.
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. ¼ 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. 14
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 II HP, Acousti-Mat 3, Acousti-Mat 3 HP, Enkasonic 9110, Enkasonic 9110 HP, 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 S 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. 15
Subflooring — Min 23/32 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 trusses with joints staggered.
Vapor Barrier — (Optional) — Commercial asphalt saturated felt, 0.030 in. thick.
Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping having a min compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.
DEPENDABLE LLC — GSL M3.4, [illegible] 2.6 and GSL-RH
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. ¼ 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. 16
Subflooring — Min 23/32 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.
Floor Mat Materials* — (Optional) - Nom 3/32 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.
FLITEQ INC — Type GenieMat RST02

Floor Mat Materials* — (Optional) - Nom 3/16 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.
FLITEQ INC — Type GenieMat FF04

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.
FLITEQ INC — Type GenieMat FF06

Floor Mat Materials* — (Optional) - Nom 3/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.
FLITEQ INC — Type GenieMat FF10

Floor Mat Materials* — (Optional) - Nom 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1-1/2 in.
FLITEQ INC — Type GenieMat FF17

Floor Mat Materials* — (Optional) - Nom 1 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1-1/2 in.
FLITEQ INC — Type GenieMat FF25

System No. 17
Subflooring - Nom. 1-1/2 in. thick T & G laminated compostie plywood sub-floor panels to be perpendicular to the trusses with end joints staggered 4 ft. End joints centered over top chord of trusses. Subfloor panels secured to trusses with construction adhesive and #8 by 3 in. wood screws spaced 12 in. OC in the field and 6 in. at the end joints.

RSP INDUSTRIES - SAP board

2. Trusses — Parallel chord trusses, spaced a max 24 in. OC, fabricated from nom 2 by 4 in. lumber with lumber oriented vertically or horizontally. Min truss depth is 12 in. when Item 9 is not employed. Min truss depth is 18 in. when Item 9 is employed. Truss members secured together with min 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.

3. Furring Channels — Furring channels, 7/8 in. deep by 2-9/16 in. or 2-11/16 in. or 2-23/32 in. wide at the base and 1-7/16 in. wide at the face, formed from No. 25 ga galv steel, spaced 24 in. OC perpendicular to trusses. Channels secured to trusses with double strand of No. 18 SWG galv steel wire spaced 48 in. OC. 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. Two furring channels used at end joints of gypsum board (Item 4), each extending a min of 6 in. beyond both side edges of the board.

3A. Resilient Channels — (Not Shown) - As an alternate to Item 3, resilient channel formed from No. 26 MSG galv steel, spaced 16 in. OC perpendicular to trusses. Channels secured to each truss with 1-1/4 in. long No. 6 Type S bugle head steel screw. Channels overlapped at splices 4 in. Two resilient channels used at end joints of gypsum board (Item 4), each extending a min of 6 in. beyond both side edges of the board.

3B. Steel Framing Members* — (Optional) - Used as an alternate method to attach furring channels to trusses (Item 2). Clips spaced 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to the bottom chord of alternating trusses with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to the bottom chord of alternating trusses with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels. Adjoining channels are overlapped as described in Item 3. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two min 7/16 in. long No. 6 self-tapping framing screws, at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 4. When Fiber, Sprayed (Item 6) is used, furring channel spacing reduced to 16 in. OC and two layers of nom 5/8 in. thick, 4 ft wide gypsum board shall be installed as described in Item 4.
PAC INTERNATIONAL INC — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75).

3C. Steel Framing Members* — (Optional, Not Shown) - Used as an alternate method to attach furring channels to trusses. Clips spaced 48 in. OC., and secured to the bottom chord to alternating trusses with two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels are friction fitted into clips. 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. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 4. Two layers of gypsum board required as described in Item 4. Not evaluated for use with Item 6. When Item 3C is used and Batts and Blankets are added per Section III Item 18 Blanket Insulation of the General Information of this Directory (BXUV), clips spaced 48 in. OC, furring channels spaced 16 in. [illegible] max, 3-[illegible] max. Batts and Blankets* secured to plywood subfloor with staples spaced 12 in. OC or to the trusses with 0.040 in. diam galv steel wires spaced 12 in. OC. Two layers of gypsum board required as described in Item 4. When the Batts and Blankets are draped over the furring channel/gypsum panel ceiling membrane, the [illegible] spacing shall be reduced to 24 in. OC and secured [illegible] consecutive [illegible] the furring channel spacing shall be reduced to 12 in. OC, and two layers of gypsum board required as described [illegible]
KINETICS NOISE CONTROL INC — Type [illegible] max.

3D. Steel Framing Members* — (Optional, Not Shown) - Used as an alternate method to attach furring channels to trusses. Clips spaced 48 in. OC. and secured to the bottom chord to alternating trusses with one No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. 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. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 4. Not evaluated for use with Item 6.
FLITEQ INC — Type Genie Clip

3E. Steel Framing Members* — (Optional, Not Shown) - Used as an alternate method to attach furring channels to trusses. Clips spaced at 24" OC and secured to the bottom of the trusses with one No. 10 x 2-1/2 Coarse Drywall Screw through the center hole. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6" and screwed with four #8 x 1/2 Self Drilling screws (2 per side 1 in. and 4 in. from overlap edge). Additional clips are required to hold the Gypsum Butt joints and side joints as described in Item 4. Not evaluated for use with Item 6.
STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237 or A237R

3F. Resilient Channels — Resilient channels, formed from No. 25 MSG galv steel and shaped as shown, spaced 12 in. OC perpendicular to joist. Channels overlapped 4 in. at splices and secured to each joist with 1-1/4 in. Type S screws. Min end clearance of channels to wall to be 1/2 in. Additional resilient channels positioned so as to coincide with end joints of gypsum board (Item 4B).

3G. Resilient Channels — For use with Item 4C - Formed from min No. 25 MSG galv steel installed perpendicular to trusses and spaced 16 in. OC. Channels secured to each truss with 1-5/8 in. long Type S bugle head steel screws. Channels overlapped 4 in. at splices. Two channels, spaced 6 in. OC oriented opposite each panel end joint. Additional channels shall extend min 6 in. beyond each side edge of panel. Insulation, Item 7C is applied over the resilient channel/gypsum panel ceiling membrane.

4. Gypsum Board* — One layer of nom 5/8 in. thick, 4 ft wide gypsum board, installed with long dimension perpendicular to furring or resilient channels. Gypsum board secured with 1 in. long No. 6 Type S bugle head steel screws spaced 12 in. OC and located a min of 1-1/2 in. from side and end joints. When Steel Framing Members (Item 3B) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimension perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long No. 6 Type S bugle head screws spaced 12 in. OC in the field of the board. Gypsum board butt joints shall be staggered 2 ft within the assembly, and shall occur between the 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 6 in. on each end. The two furring channels at each butt joint shall be spaced approximately 3-1/2 in. OC, and be attached to the bottom chord of the truss with one RSIC-1 clip at each end of the channel. Screw spacing along the gypsum board butt joint shall be 8 in. OC. When both Steel Framing Members (Item 3B) and Fiber, Sprayed (Items 6 or 6A) are used, furring channel spacing reduced to 16 in. OC and two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long dimension perpendicular to furring channels. Base layer secured to furring channels with nom 1 in. long No. 6 Type S bugle head screws spaced 12 in. OC in the field of the board. Gypsum board butt joints shall be staggered 2 ft within the assembly, and shall occur between the 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 6 in. on each end. The two furring channels at each butt joint shall be spaced approximately 3-1/2 in. OC, and be attached to the bottom chord of the truss with one RSIC-1 clip at each end of the channel. Screw spacing along the gypsum board butt joint shall be 8 in. OC. Outer layer secured to furring channels using 1-5/8 in. long No. 6 Type S screws spaced 8 in. OC and 1-1/2 in. from the end joint. Butted end joints to be offset a min. of 8 in. from base layer end joints. Butted side joints of outer layer to be offset min 18 in. from butted side joints of base layer. When Steel Framing Members (Item 3C) are used, two layers of nom 5/8 in. thick, 4 ft wide are installed with long dimensions perpendicular to furring channels. Base layer attached to the furring channels using 1 in. long No. 6 Type S bugle-head steel screws spaced 12 in. OC in the field of the board. Butted end joints shall be staggered min 2 ft. within the assembly, and occur midway between the continuous furring channels. 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 6 in. on each end. The two furring channels shall be spaced approximately 4 in. OC, and be attached to underside of the truss with one Isomax clip at each end of the channel. Screw spacing along the gypsum board butt joint shall be 8 in. OC. Outer layer attached to the furring channels using 1-5/8 in. long No. 6 Type S bugle-head steel screws spaced 12 in. OC in the field. The end of the outer layer boards at the butt joint shall be attached to the base layer boards with 1-5/8 in. long Type G screws spaced 8 in. OC and 1-1/2 in. from the end joint. Butted end joints to be offset a min of 8 in. from base layer end joints. Butted side joints of outer layer to be offset min 18 in. from butted side joints of base layer. When Steel Framing Members (Item 3D) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long No. 6 Type S bugle-head steel screws spaced 12 in. OC in the field of the board. Gypsum board butted end joints shall be staggered minimum 16 in. within the assembly. . 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 6 in. on each end. These additional furring channels shall be attached to underside of the truss with Genie clips as described in Item 3D. Screw spacing along the gypsum board butt joint shall be 6 in. OC. When Steel Framing Members (Item 3E) are used, one layer of nom 5/8 in. thick, 4 ft wide 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 72 in. 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, spaced approximately 2 in. in from joint. Screw spacing along the gypsum board butt joint shall be 8 in. OC. Butt joing furring channels shall be attached with a RESILMOUNT Sound Isolation Clip secured to underside of every truss that is located over the butt joint. Over all Gypsum Board side joints, approximately 20 in. lengths of furring channel shall be installed parallel to trusses [illegible] between main furring channels. Side joint furring channels shall be attached to underside of the truss with RESILMOUNT Sound Isolation Clips - located approximately 2 in. from each end of the approximate 20 in. length of channel. Both Gypsum Boards at side joints fastened into channel with screws spaced 8 in. OC, approximately 1/2 in. from joint edge. When Fiber, Sprayed (Items 6 or 6A) is used, two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long dimensions perpendicular to furring channels. Base layer gypsum board secured with 1 in. long No. 6 Type S bugle head steel screws spaced 12 in. OC and located a min of 1-1/2 in. from side and end joints. End joints secured to both resilient channels as shown in the end joint detail. Outer layer gypsum board secured with 1-5/8 in. long No. 6 Type S bugle head steel screws spaced 12 in. OC and located a min of 1-1/2 in. from side and end joints. Outer layer shall be finished as described in Item 5.
AMERICAN GYPSUM CO — Type AG-C
CERTAINTEED GYPSUM INC — Type FRPC, Type C
CGC INC — Types C, IP-X2, IPC-AR
CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Type LGFC-C/A
GEORGIA-PACIFIC GYPSUM L L C — Types 5, DAPC, GPFS-C
NATIONAL GYPSUM CO — Types eXP-C, FSK-C, FSW-C, FSW-G
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type C
THAI GYPSUM PRODUCTS PCL — Type C
UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR
USG BORAL DRYWALL SFZ LLC — Type C
USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR

4A. Gypsum Board — For use when Item 3C is used and Batts and Blankets are secured to the plywood subfloor, to the trusses or draped over the furring channel/gypsum panel ceiling membrane as described in Item 3C. For method of gypsum board installation, see Item 4.
CGC INC — Types C, IP-X2, IPC-AR
UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR
USG BORAL DRYWALL SFZ LLC — Type C
USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR

4B. Gypsum Board* — For use when Batts and Blankets* (Item 7A) and Resilient Channels (Item 3F) are used. Nom 5/8 in. thick, 4 ft wide gypsum board installed with long dimension perpendicular to resilient channels. Nom 1 in. long No. Type S bugle head screws are driven through channel spaced 8 in. OC. End joints of gypsum board similarly fastened to additional resilient channels positioned at end joint locations.
AMERICAN GYPSUM CO — Type AG-C
CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Type LGFC-C/A
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type C

4C. Gypsum Board* — For use with Items 3G and 7C. Nom 5/8 in. thick, 4 ft wide gypsum panels installed with long dimension perpendicular to resilient channels. Gypsum panels secured with 1 in. long No. 6 Type S bugle head steel screws spaced 8 in. OC and located a min of 1-1/2 in. from side joints and 3 in. from end joints. Finish rating with this ceiling system is 20 min.
UNITED STATES GYPSUM CO - Type ULIX

4D. Gypsum Board* — For use when Flooring System (Item 1) consists of both system no. 1 and min 15/32 in. plywood, min grade "Underlayment" or "Sturd-I-Floor" with T & G edges and conforming with PS1-83 specifications, or min 3/4 in. thickness of any Floor Topping Mixture (CCOX) bearing the UL Classifications Marking as to Fire Resistance, min Truss depth (Item 2) is 18 in. and Batts and Blankets (Item 7D) and Resilient Channels (Item 3A) are used. ONe layer of nom 5/8 in. thick, 4 ft wide gypsum board installed with long dimension perpendicular to resilient channels. Gypsum board secured with 1 in. long No. Type S bugle head steel screws. Screws spaced 1 in. from side joints, and 12 in. OC in the rest of the field. Screws spaced 1-1/2" from end joints. End joints secured to both resilient channels as shown in end detail. When batt insulation (Item 7D) is draped over the resilient channel/gypsum board ceiling membrane, the resilient channel (Item 3A) spacing shall be reduced to 12 in. OC, and gypsum board screws spaced 1 in. from side joints, and 8 in. OC in the rest of the field. For use only with ceiling damper described in Item 9R.
PANEL REY S A - Type PRC2

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.

6. Fiber, Sprayed* — (Dry Dense Packed 100% Borate Formulation) — (Not Shown, Optional) — The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft3, in accordance with the application instructions supplied with the product. When Item 6A (Fiber, Sprayed, Dry Dense Packed) is used, Furring Channels (Item 3F) or Resilient Channels (Item 3A) spacing shall be reduced to 12 in. OC. When Item 6A (Fiber, Sprayed, Dry Dense Packed) is used, two layers of gypsum board required as described in Item 4. Not evaluated for use with Item 3C.
U S GREENFIBER L L C — INS735, INS745, INS765LD & INSTIOLD to be used with dry application only.

6A. Fiber, Sprayed* — (Loose Fill 100% Borate Formulation) — (Not Shown, Optional) — The finished rating when Fiber, Sprayed is used has not been determined. The fiber is applied without water or adhesive at a minimum dry density of 0.5 lb/ft3 and at a max thickness of 3-1/2 in., in accordance with the application instructions supplied with the product. When Item 6B (Fiber, Sprayed, Loose Fill) is used, Furring Channels (Item 3F) or Resilient Channels (Item 3A) spacing shall be reduced to 12 in. OC. When Item 6B (Fiber Sprayed, Loose Fill) is used, two layers of gypsum board required as described in Item 4. Not evaluated for use with Item 3C.
U S GREENFIBER L L C — INS735, INS745, INS765LD & INSTIOLD to be used with dry application only.

7. Batts and Blankets* — (Not Shown) - For use with Item 3D - Nom 3 in. thick mineral wool insulation held suspended in the concealed space with 0.040 in. diam galv steel wires attached to the wood trusses at 18 in. OC.

7A. Batts and Blankets* — For Use With Items 3F and 4B - Glass fiber insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance having a min. density of 0.5 pcf, draped over the resilient channel/gypsum ceiling membrane. No limit on overall thickness.

7B. Batts and Blankets* — (Not Shown) - For use with Item 3E - Nom 3-1/2 in. thick, min. 2 pcf fiber glass insulation held suspended in the concealed space with nominal 0.090 in. diam galv steel wires attached to the wood trusses at nominally 16 in. OC.

7C. Cavity Insulation - Batts and Blankets* or Fiber Sprayed* - (As described above) in Items 7 through 7B) - (For use with Item 4C, Not Shown) - Min 3-1/2 in. thick with no limit on maximum thickness fitted in the concealed space, draped over the resilient channel (Item 3G)/gypsum board (Item 4C) ceiling membrane.

7D. Batts and Blankets* - For use with Item 4D - Insulation may be secured to plywood subfloor with staples spaced 12 in. OC or to the trusses with 0.040 in. diam steel wires spaced 12 in. OC. Insulation may alternatively be draped over the resilient channels and gypsum board ceiling membrane, and the resilient channels and gypsum board attachment shall be modified as specified in Item 4D. Any glass fiber insulation bearing the UL Classification Marking for the Surface Burning Characteristics and/or Fire Resistance, and having a min density of 0.5 pcf and max thickness of 3-1/2 in. may be used.

8. Air Duct* — (Optional) — Any UL Class 0 or Class 1 flexible air duct installed in accordance with the instructions provided by the damper manufacturer.

9. Ceiling Damper* — (Optional. To be used with Air Duct Item 8) — For use with min. 18 in. deep trusses. Not for use with flooring system 1. Max. nom area shall be 344 sq. in. Max. overall length and width shall not exceed 18-11/16 in. by 18-11/16 in. with max. 16 in. by 16 in. register opening. Aggregate damper openings shall not exceed 175 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. An aluminum or steel grille (Item 10) shall be installed in accordance with installation instructions.
MIAMI TECH INC — Model Series RxCRD, [illegible] RxCRPD

9A. Ceiling Damper* — (Optional. To be used with Air Duct Item 8) — For use with min. 18 in. deep trusses. Not for use with flooring system 1. Max damper assembly size nom 18 in. long by 18 in. wide and 4-1/4 in. high, or 8 in. diam. fabricated from galv steel. Aggregate damper openings shall not exceed 162 sq. in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper.
RUSKIN COMPANY — Model CFDTT or CFD[illegible]

9B. Ceiling Damper* — (Optional. To be used with Air Duct Item 8) — For use with min. 18 in. deep trusses. Not for use with flooring system 1. Max damper assembly size nom 18 in. long by 18 in. wide and 4-1/4 in. high, or 8 in. diam. fabricated from galv steel. Aggregate damper openings shall not exceed 162 sq. in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper.
AIR INDUSTRIES INC — Model CCDTT or CCDRTT

9C. Ceiling Damper* — (Optional. To be used with Air Duct Item 8) — For use with min. 18 in. deep trusses. Not for use with flooring system 1. Max 12 in. diameter damper with insulated register box assembly. The maximum size of the register box assembly is nom. 20 in. long by 20 in. wide and 4 in. high fabricated from galv steel. Aggregate area of the register opening(s) through the ceiling membrane shall not exceed 128 sq in. per 100 sq ft ceiling area. Damper assembly installed in accordance with the manufacturers installation instructions.
AIRE TECHNOLOGIES INC — Series 57

9D. Ceiling Damper* — (Optional. To be used with Air Duct Item 8) — For use with min. 18 in. deep trusses. Not for use with flooring system 1. Max 20 in. long by 16 in. wide by 4 in. high rectangular damper with duct board plenum box assembly. The maximum outer dimensions of the plenum box assembly are 23-1/2 in. long by 19-1/2 in. wide and 17 in. high fabricated from 6pcf, 1-1/2 to 2 in. thick Knauf Air Duct Board M*. Aggregate area of the register opening(s) through the ceiling membrane shall not exceed 160 sq in. per 100 sq ft ceiling area. Damper assembly installed in accordance with the manufacturers installation instructions.
AIRE TECHNOLOGIES INC — Series 58

9E. Ceiling Damper* — (Optional. To be used with Air Duct Item 8) — For use with min. 18 in. deep trusses. Not for use with flooring system 1. Max 14 in. long by 14 in.wide by rectangular damper with 90° boot. The maximum size of damper/boot assembly is 14 in. long by 14 in. wide and 18 in. high fabricated from galv steel. The aggregate area of the register opening(s) through the ceiling membrane shall not exceed 98 sq in. per 100 sq ft. ceiling area. Damper assembly installed in accordance with the manufacturers installation instructions.
AIRE TECHNOLOGIES INC — Models 50 w/ Boot, 50EA w/ Boot, 50 w/ Box and 50EA w/ Box

9F. Ceiling Damper* — (Optional. To be used with Air Duct Item 8). — For use with min 18 in. deep trusses Not for use with flooring system 1. Max plenum box size nom 19 in. long by 19 in. wide and 11-7/8 in. high fabricated from galv steel. Aggregate damper openings shall not exceed 128 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper.
LLOYD INDUSTRIES INC — Model
CRD 50-BT, CRD 50-EA-BT, CRD 55-BT, CRD 55 EA-BT

9G. Ceiling Damper* — (Optional. To be used with Air Duct Item 8). For use with min 18 in. deep trusses Not for use with flooring system 1. Max plenum box size nom 13 in. long by 13 in. wide and 11-7/8 in. high fabricated from galv steel. Aggregate damper openings shall not exceed 50 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper.
LLOYD INDUSTRIES INC — Model
CRD 50-BT-6, CRD 50-EA-BT-6, CRD 55-BT-6, CRD 55 EA-BT-6

9H. Alternate Ceiling Damper* - (Optional. To be used with Air Duct Item 8). Ceiling damper and fan assembly for use with min 18 in. deep trusses. Not for use with flooring system 1 or 17. Max nom area shall be 103 sq in. with the length not to exceed 10-1/8 in. and the width not to exceed 10-1/8 in. Aggregate damper openings shall not exceed 52 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 10) shall be installed in accordance with installation instructions.
PANASONIC CORPORATION, PANASONIC CORPORATION OF NORTH AMERICA - Model PC-RD05C5

9I. Alternate Ceiling Damper* - (Optional. To be used with Air Duct Item 8). Ceiling damper and fan assembly for use with min 18 in. deep trusses. Not for use with flooring system 1 or 17. Max nom area shall be 113 sq in. with the length not to exceed 10-1/8 in. and the width not to exceed 11-1/8 in. Aggregate damper openings shall not exceed 57 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 10) shall be installed in accordance with installation instructions.
BROAN-NUTONE L L C - Model RDFWHT

9J. Alternate Ceiling Damper* - (Optional. To be used with Air Duct Item 8). Ceiling damper and fan assembly for use with min 18 in. deep trusses. Not for use with flooring system 1 or 17. Max nom area shall be 79 sq in. with the length not to exceed 10 in. and the width not to exceed 7-16/16 in. Aggregate damper openings shall not exceed 40 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A metallic grille (Item 10) shall be installed in accordance with installation instructions.
BROAN-NUTONE L L C - Model RDJ1 and RDH

9K. Alternate Ceiling Damper* - (Optional. To be used with Air Duct Item 8). Ceiling damper and fan assembly for use with min 18 in. deep trusses. Not for use with flooring system 1 or 17. Max plenum box size nom 19 in. long by 19 in. wide and 11-7/8 in. high fabricated from galv steel. Aggregate damper openings shall not exceed 128 sq in. per 100 sq ft of ceiling area. Damper shall be installed in accordance with, the manufacturer's installation instructions provided with the damper.
METAL-FAB INC - Models MSCD-HC and MRCD-HC

9L. Alternate Ceiling Damper* - (Optional. To be used with Air Duct Item 8). Ceiling damper and fan assembly for use with min 18 in. deep trusses. Not for use with flooring system 1 or 17. Max nom area shall be 87 sq in. with the length not to exceed 9 in. and the width not to exceed 9-11/16 in. Aggregate damper openings shall not exceed 44 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 10) shall be installed in accordance with installation instructions.
BROAN-NUTONE - Models RDMWT

9M. Alternate Ceiling Damper* - (Optional. To be used with Air Duct Item 8). Ceiling damper and fan assembly for use with min 18 in. deep trusses. Not for use with flooring system 1 or 17. Max nom 21 in. long by 18 in. wide fabricated from galvanized steel. Plenum box max size nom 21 in. long by 18 in. wide by 14 in. high (inner dimensions) fabricated from either galvanized steel or min 1 in. thick List Duct Board bearing the UL Listing Marking having a min [illegible] of 4.5. Installed in accordance with the manufacturer's installation instructions provided. Max damper openings not to exceed 180 sq in. per 100 sq ft of ceiling area.
GREENHECK FAN CORP - Models [illegible]

9N. Alternate Ceiling Damper* - (Optional. To be used with Air Duct Item 8). Ceiling damper and fan assembly for use with min 18 in. deep trusses. Not for use with flooring system 1 or 17. Max nom 12 in. long by 12 in. wide, with an 8 in. diameter damper, fabricated from galvanized steel. Installed in accordance with the manufacturer's installation instructions provided. Max damper openings not to exceed 72 sq in. per 100 sq ft of ceiling area.
GREENHECK FAN CORP - Models CRD-2WT

9O. Alternate Ceiling Damper* - (Optional. To be used with Air Duct Item 8). Ceiling damper and fan assembly for use with min 18 in. deep trusses. Not for use with flooring system 1 or 17. Max nom area shall be 324 sq in. with the lenght not to exceed 24 in. and the width not to exceed 20 in. Max height of the damper shall be 14 in. Aggregate damper openings shall not exceed 162 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 10) shall be installed in accordance with installation instructions.
C&S AIR PRODUCT - Models RD-521
POTTORFF - Model CFD-521

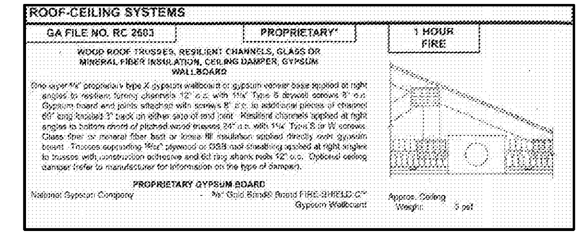
9P. Alternate Ceiling Damper* - (Optional. To be used with Air Duct Item 8). Ceiling damper and fan assembly for use with min 18 in. deep trusses. Not for use with flooring system 1 or 17. Max nom area shall be 196 sq in. with the length not to exceed 26 in. and the width not to exceed 14 in. Max height of the damper shall be 7 in. Aggregate damper openings shall not exceed 98 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 10) not to exceed 144 sq in. shall be installed in accordance with installation instructions.
C&S AIR PRODUCT - Models RD-521-BT
POTTORFF - Model CFD-521-BT

9Q. Alternate Ceiling Damper* - For use with min 18 in. deep trusses. Not for use with flooring system 1 or 17. Max nom area shall be 256 sq in. with the lenght not to exceed 24 in. and the width not to exceed 20 in. Max height of the damper shall be 17 in. Aggregate damper openings shall not exceed 128 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 10) shall be installed in accordance with installation instructions.
C&S AIR PRODUCT - Models RD-521-IP, RD-521-NP
POTTORFF - Model CFD-521-IP, CFD-521-NP

9R. Alternate Ceiling Damper* - (optional. To be used with Air Duct Item 8) - For use with Item 4D only. Not for use with flooring system 1. Max nom 8 in diameter by 3-1/8 in. high, fabricated from galvanized steel. Plenum box max size nom 12 in. long by 12 in. wide by 3 in. high fabricated from galvanized steel. Installed in accordance with the instructions provided by the manufacturer. Max damper openings not to exceed 72 sq in. per 100 sq ft of ceiling area.
NAILOR INDUSTRIES INC _ Types 0755, 0755A

10. Grille — Aluminum or Steel grille, installed in accordance with the installation instructions provided with the ceiling damper.

11. Discrete Products Installed in Air-handling Spaces* - Automatic Balancing Valve/Damper - (not shown - optional) - FOr use with Item 9A, Ruskin Company's Model CFDTT damper (CABS). Ceiling damper to be provided with plenum box per damper manufacturer's instructions with side outlet only. Entire assembly to be installed into any UL Class 0 or Class 1 flexible air duct in accordance with the instructions provided by the automatic balancing valve/damper manufacturer.
METAL INDUSTRIES INC - Model ABV-4, ABV-5, ABV-6



ROOF-CEILING SYSTEMS

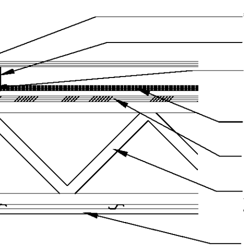
GA FILE NO. RC 2603 | PROPRIETARY* | 1 HOUR FIRE

WOOD ROOF TRUSSES, RESILIENT CHANNELS, GLASS OR MINERAL FIBER INSULATION, CEILING DAMPER, GYPSUM WALLBOARD

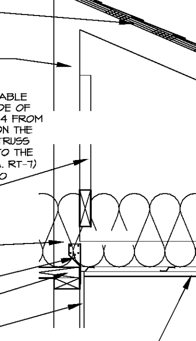
One layer 5/8" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 12" o.c. with 1 1/4" Type S drywall screws 8" o.c. Gypsum board end joints attached with screws 8" o.c. to additional pieces of channel 60" long located 3" back on either side of end joint. Resilient channels applied at right angles to bottom chord of pitched wood trusses 24" o.c. with 1 1/4" Type S or W screws. Glass fiber or mineral fiber batt or loose fill insulation applied directly over gypsum board. Trusses supporting 19/32" plywood or OSB roof sheathing applied at right angles to trusses with construction adhesive and 6d ring shank nails 12" o.c. Optional ceiling damper (refer to manufacturer for information on the type of damper).

PROPRIETARY GYPSUM BOARD
National Gypsum Company - 5/8" Gold Bond® Brand FIRE-SHIELD C™ Gypsum Wallboard
Approx. Ceiling Weight: 3 psf

## GYPSUM ASSOCIATION - FILE NO. RC 2603
(2/A0.15)




### DETAIL
(3/A0.15) FLOOR/CEILING
U.L. ASSEMBLY #L528
1"=1'-0"




### DETAIL
(4/A0.15) ROOF/CEILING
G.A. FILE NO. RC 2603
1"=1'-0"

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# CRABTREE NORTH APTS.
2251 Charles Drive
Raleigh, North Carolina
EYC COMPANIES

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| PROJECT | 1915 |
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U.L. DETAILS
FLOOR
CEILING

A0.15