

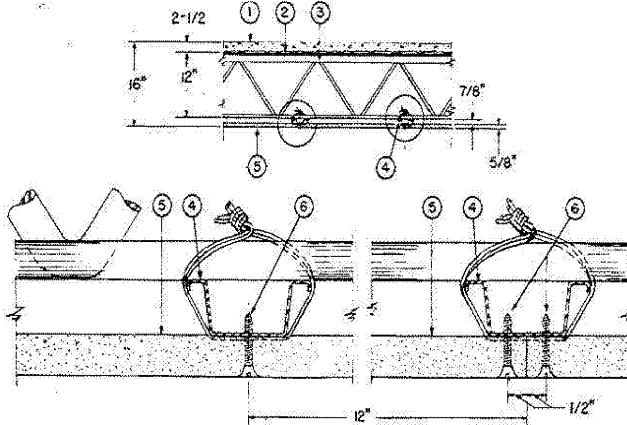
Design No. G510

April 05, 2019

Restrained Assembly Rating — 2 Hr.
Unrestrained Assembly 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 HYPERLINK "http://productspec.ul.com/document.php?id=BXUV7.GuidelineInfo" BXUV or HYPERLINK "http://productspec.ul.com/canada/document.php?id=BXUV7.GuidelineInfo" BXUV7. GuideInfo" BXUV7

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



- Normal-Weight Concrete** — Siliceous or carbonate aggregate, 150+ or -3 pcf unit weight, 4000 psi compressive strength.
- Metal Lath** — 3/8 in. rib 3.4 lb/sq yd expanded steel, tied to each joist at every other rib, and midway between joists at side lap with 18 SWG galv steel wire. As an alternate, the form material for the concrete may be corrugated steel deck 9/16 in. deep of 28 MSG (min) galv steel welded to supports 15 in. OC with washers. The concrete thickness shall be measured to the top plane of the steel deck.
- Steel Joists** — Type 12J4 min size, spaced 24 in. OC and welded to end supports. Bridging provided by 1/2 in. diam steel bars welded to top and bottom chords of each joist.
- Furring Channel** — No. 25 MSG galv steel, 2-3/8 in. or 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC, except at end joints noted below, secured to each joist with a double strand of 18 SWG galv wire. Adjoining lengths of channels lapped 12 in. and tied together with two double strand wire ties, one at each end of overlap. As an alternate, furring channels may be secured to 1-1/2 in. cold-rolled channels at every intersection with double strand of 18 SWG galv wire. Cold-rolled channels spaced 24 in. OC and suspended perpendicular from lower chords of joists with 8 SWG galv wire spaced 48 in. OC along channels.
- Steel Framing Members*** — (optional, not shown) — alternate method to attach furring channels (Item 4) to joists (Item 3). Clips spaced 48 in. OC, and secured to alternating joists with cup washer installation kit provided by manufacturer. On underside of bottom chord, 1-1/2 in. dia x 3/8 in. deep No. 16 galv steel cup washer is placed to surround the rubber insert. Clip attached to the bottom chord with a 1/4 in. dia. zinc plated bolt inserted through the center grommet and between the chord members, depth of bolt determined as 1-1/2 in. plus the depth of the bottom chord of the joist. Fastened on the top side of the bottom chord with a second cup washer placed open side up, and a 1/4 in. zinc plated "Nyloc" nut. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the wallboard butt joints, as described in Item 5.

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

- Steel Framing Members*** — (Optional, Not Shown) - Used as an alternate method to attach furring channels (Item 4) to joists (Item 3). Clips spaced at 48" OC and secured to the bottom of the joists with cup washer installation kit provided by manufacturer. On underside of bottom chord, 1-1/2 in. dia x 3/8 in. deep No. 16 galv steel cup washer is placed to surround the rubber insert of clip. Clip attached to the bottom chord with a 1/4 in. dia zinc plated bolt inserted through the center grommet and between the chord members, depth of bolt determined as 1-1/2 in. plus the depth of the bottom chord of the joist. Fastened on the top side of the bottom chord with a second cup washer placed open side up, and a 1/4 in. zinc plated "Nyloc" nut. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6" and tied together with double strand of No. 18 AWG galvanized steel wire. Additional clips are required to hold the Gypsum Butt joints as described in Item 5.

STUDDO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237R

- Gypsum Board*** — 5/8 in. thick, attached with the long dimension at right angles to furring channels. Wallboard at end joints secured to an additional furring channel wire-tied to the joists and placed over the joint and extending a minimum of 4 in. beyond the joint at either end and wire-tied to the bar joint not more than 16 in. from either end. Side joints of wallboards to occur midway between joists. Paper tape and cement joint treatment not required for rating.

When **Steel Framing Members** (Item 4A) are used, wallboard butt joints shall be staggered min. 2 ft. within the assembly, and occur between the main furring channels. Edge joints may occur beneath the joists. At the wallboard butt joints, each end of the gypsum board shall be supported by a single length of furring channel equal to the width of the wallboard plus 6 in. on each end. The furring channels shall be spaced approximately 3-1/2 in. OC, and be attached to underside of the joist with one RSIC-1 clip at each end of the channel. Gypsum board attached to the furring channels using 1 in. long Type S bugle-head steel screws spaced 8 in. OC along buttled joints and 12 in. OC in the field of the board. Wallboard joints covered with fiber tape and joint compound.

When **Steel Framing Members** (Item 4B) are used, one layer of nominal 5/8 in. thick, 44 lb/100 sq yd gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nominal 1 in. long Type S bugle-head steel screws spaced 8 in. OC in the field of the board. Gypsum board at end joints shall be staggered minimum 48 in. and centered over main furring channels. Wallboard butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 3 in. on each end. The two supporting furring channels shall be spaced approximately 3 in. in from end joint. Screw spacing along the gypsum board butt joint and along both longitudinal furring channels shall be 8 in. OC. Additional screws shall be placed at the adjacent section of gypsum board into the aforementioned 3 in. extension of the extra butt joint channels as well as into the main channel that is between the two furring channels. Additional screws shall be placed in the adjacent section of gypsum board into the aforementioned 3 in. extension of the extra butt joint channels as well as into the main channel that is between the two furring channels. Butt joint furring channels shall be attached with one RESILMOUNT Sound Isolation Clip at each end of the channel.

- AMERICAN GYPSUM CO** — Type X-1, LightRoc
- CERTAINTED GYPSUM INC** — Type D, Type C, Type X, Type X-1, Easi-Lite Type X-2
- CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C** — Type LGFC-C/A
- GEORGIA-PACIFIC GYPSUM L L C** — Type 5, C, DAPC, TG-C
- THAI GYPSUM PRODUCTS PCL** — Type C, Type X

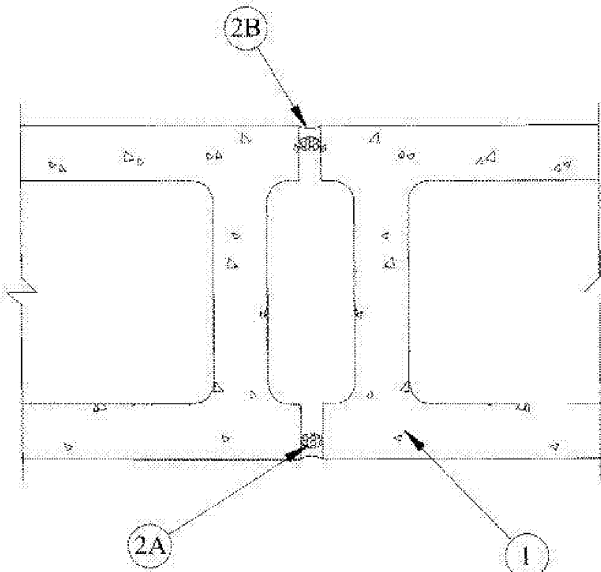
- Wallboard, Screw** — No. 6 Phillips flathead, self-tapping, sheet-metal type screw, 1 in. long, spaced 1/2 in. from edges and 12 in. OC. Screws shall be driven no farther than flush with the exposed surface of the wallboard. Wallboard on each side of end joint attached to the 4 in. overlap of furring channel with one additional screw.

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System No. WW-S-0034

August 03, 2001

Assembly Rating — 2 Hr
L Rating At Ambient — 4 CFM/Lin Ft
L Rating At 400 F — 6 CFM/Lin Ft
Joint Width — 1/2 in. Max



- Wall Assembly** — Min 7-1/2 in. thick UL Classified Concrete Blocks* or min 7-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) structural concrete. See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
- Joint System** — Max width of joint is 1/2 in. The joint system shall consist of the following:
A. **Forming Material** — Nom 3/4 in. diameter polyethylene backer rod compressed and installed into joint. Packing material to be recessed from each surface of wall as required to accommodate the required thickness of fill material.
B. **Fill, Void or Cavity Material*** — Min 1/4 in. thickness of fill material applied within the joint, flush with both surfaces of wall.
3M COMPANY — FD 150+

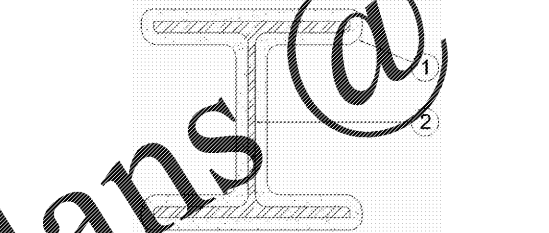
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Design No. X723

October 26, 2017

Ratings — 1, 2, 3 and 4 Hr.

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Steel Column — Min size of column, a W8x28 with outside dimensions of 8 by 6-1/2 in. with a flange thickness of 7/16 in. and a web thickness of 5/16 in. and a cross-sectional area of 8.23 sq in.

- Spray-Applied Fire Resistive Materials*** — See table below for appropriate thickness. Applied by mixing with water and spraying in one or more coats to steel surfaces which must be clean and free of dirt, loose scale and oil. Min avg and min ind density of 15/14 pcf respectively. Min avg and min ind density of 19/18 pcf respectively for Type 7GP and 7HD. For method of density determination, see Design Information Section, preceding these designs.

Rating Hr.	Min Thkns In.
4	2-11/16
3	2
2	1-3/8
1	3/4

The thicknesses contained in the table below are applicable when the Spray-Applied Fire Resistive Materials thickness applied to the columns flange lips is reduced to 1/2 that shown in the table below:

Rating Hr.	Min Thkns In.
4	2-15/16
3	2-1/4
2	1-1/2
1	13/16

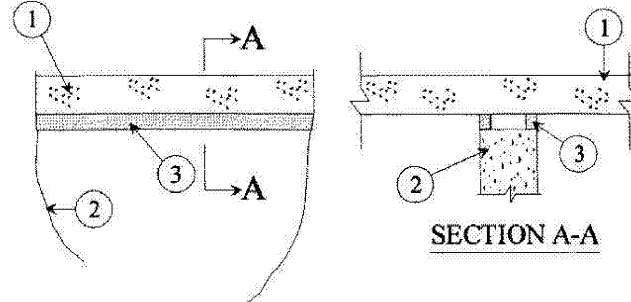
- GCP KOREA INC** — Types MK-6/CBF, MK-6/ED, MK-6/HY, MK-6s, Monokote Acoustic 1.
- PYROK INC** — Type LD.
- SOUTHWEST FIREPROOFING PRODUCTS CO** — Types 4, 5, 5EF, 5GP, 5MD, 7GP, 7HD, 8EF, 8GP, 8MD, 9EF, 9GP, 9MD.
- GCP APPLIED TECHNOLOGIES INC** — Types MK-6/HY, MK-6s, Monokote Acoustic 1, RG.

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System No. HW-D-0035

October 01, 2004

Assembly Rating — 2 Hr
Nominal Joint Width — 3/4 In.
Class II Movement Capabilities — 33% Compression & Extension



- Floor Assembly** — Min 4-1/2 in. thick lightweight or normal weight (100-150 pcf) concrete. Floor may also be constructed from any UL Classified hollow-core Precast Concrete Units*. See Precast Concrete Units (CFTV) category in the Fire Resistance Directory for names of manufacturers.
- Wall Assembly** — Min 4-7/8 in. thick reinforced lightweight or normal weight (100-150 pcf) structural concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
- Max separation between bottom of floor and top of wall is 3/4 in. The joint system is designed to accommodate a max 33 percent compression or extension from its installed width.**
- Fill, Void or Cavity Material*** — Sealant — Min 5/8 in. thickness of fill material installed on each side of the wall between the top of the wall and bottom of floor, flush with each surface of wall.
PASSIVE FIRE PROTECTION PARTNERS — 3600EX, 4100NS, 4800DW

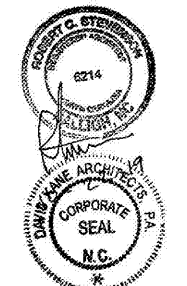
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PROJECT INFORMATION

UNCG ATHLETICS
COLEMAN BUILDING
WEIGHT ROOM
SCL ID No. 19-20597-01A | Code: 41825 Item: 304
1408 Walker Ave., Greensboro, NC 27402

SEALS



DKA JOB NUMBER

1915

REVISIONS

No.	Description

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PA: RS
PM: SB
Drawn By: JW
Plot Date: 10/23/2019 3:58:36 PM

DATE ISSUED

BID DOCUMENTS
10/22/19

SHEET TITLE

UL DETAILS

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