PRIEST & ASSOCIATES CONSULTING, LLC

February 19, 2025

Eric Polzin
NEXGEN Building Products, LLC
1501 Telegraph Road
Mobile, AL 36611

Re: Engineering Evaluation Letter 11255M, Revision 1
ASTM E119 compliance for rated floor/ceiling assemblies similar to UL Design H515.

Mr. Polzin:

Priest & Associates Consulting (PAC) has prepared this engineering evaluation letter (EEL) to show that NEXGEN Building Products, LLC (NEXGEN) Maxterra™ MgO tongue-and-groove subfloor material can maintain compliance in fire-resistance rated floor/ceiling assemblies where specified as UL Design H515.

This document provides an expert opinion on the properties of the materials, products, or assemblies identified in this report related to meeting a specific code or standard. The end-user must determine suitability for use.

BACKGROUND

We understand that various projects specify 1-h or 2-h floor/ceiling assemblies following designs similar to UL Design No. H515[1] in Types I and II construction.

NEXGEN Building Products, LLC (NEXGEN) asked PAC to evaluate the use of their Maxterra™ MgO tongue-and-groove subfloor material as a replacement for other subfloor materials in that UL Design. The floor sheathing material is certified by ICC-ES[2] for use on cold-formed steel framing.

The design specifically to evaluate are the following components.

- ¾ in. Maxterra MgO Subfloor (no underlayment on top)
- FRAMECAD Cold-formed steel trusses, minimum 12 in. deep, spaced 24 in. OC.
- 3½ in. thick unfaced fiberglass insulation draped over the ceiling membrane and resilient channel
- Resilient Channel
- One or two layers of ⅝ in. type ULIX Gypsum Wallboard (GWB) dependent on the rating needed

Priest & Associates Consulting (PAC) will analyze listings, code language, and test standards and use previous experience to assess compliance with UL 263 / ASTM E119 for the specified fire-resistance ratings for this designed construction.

UL 263 or ASTM E119 is not a component test but a system test that will determine compliance based on components used in combination. The elements can include sheathing boards, cavity depths, structural members, insulation, and attachment systems. Testing all possible combinations of components and installation techniques is unreasonable and impractical.

[1] BXUV.H515 | UL Product iQ
[2] ESR-5194 - ICC Evaluation Service, LLC (ICC-ES)

It is typical for approval agencies to allow the extension of data to system components that would perform better than what was tested and certified. For this reason, test assemblies are designed to allow options based on successful testing of the worst-case scenario. Worst-case testing does have risks passing the test, and some manufacturers are less risk averse than others; therefore, each case where engineering judgments are made must be handled with due diligence and careful consideration of the options requested and certifications provided.

ANALYSIS

PAC was provided with a test report[3] from an ISO 17025 accredited lab showing that the Maxterra™ MgO board is noncombustible per ASTM E136, the standard used to determine combustibility in the 2021 IBC.

This evaluation focuses on the allowance for the substitution of nominal ¾ in. Maxterra™ Tongue & Groove (T&G) MgO board for the listed ¾ in. subflooring in UL Design No. H515.

The minimum flooring system requirement in UL Design No. H515 is for noncombustible ¾ in. Tongue & Groove structural cement fiber boards, manufactured by United States Gypsum (USG) and called STRUCTO-CRETE or USGSP.

The following discussion helps illustrate the impact (or lack thereof) of the furnace fire exposure on the flooring system during and after an E119 fire test.

The conditions of acceptance required by the ASTM E119 / UL263 fire resistance test standards for both unrestrained wood and steel-supported designs include two limiting conditions:

1. The ability of the construction to sustain a load imparting the maximum design deflection of the supporting elements for the specified fire classification period and
2. A limitation on the temperature rise on the unexposed surface.

The fire resistance classification of a steel-framed design such as UL Design No. H515 is typically governed by the protection provided by the GWB ceiling cladding, which keeps the supporting elements intact for a sufficient period to sustain the assembly's load-carrying ability. From experience, elevated temperatures on the unexposed side of the floor deck surface have not been a contributing factor in failures of such tests, especially when insulation is installed in the concealed space.

A discussion of the test performance of UL Design No. L528 is used for illustration purposes. This design includes parallel chord wood trusses versus prefabricated steel trusses spaced 24 in. OC as support framing with a protective ceiling membrane consisting of one layer of ⅝ in. type C GWB fastened to RC furring channels on the bottom chord of the trusses. The tested assemblies described include plywood or wood structural panel subflooring with glass fiber insulation draped over the RC channels supporting the GWB ceiling membrane. The failure mode is the charring and decomposition of the truss beyond its ability to maintain the applied load caused by the overheating of the bottom chord of the truss.

Direct experience with successful E119 testing (held confidential) of two UL Design No. L528-type floor/ceiling assemblies has demonstrated that temperatures recorded by thermocouples within the plenum space between the insulated ceiling membrane and the underside of the floor ranged between 420 °F and 500 °F near the end of the 1-hour fire rating period. The maximum unexposed floor surface temperatures were 125 °F and 129 °F, respectively (as noted in Table 1.0 below, conservatively 170 °F below failure temperatures.

[3] Intertek Test Report Number 230803005SHF-004-R1

Table 1.0
Confidential Data from test reports in PAC's files from UL Design L528-type Assemblies

Test	Temperature at mid-depth between subflooring and insulated gypsum board ceiling at 1 hour (°F)	Unexposed surface temperature at 1 hour (°F)
1	420	125
2	500	129

The post-test photograph in Figure 1.0 illustrates the protection provided to the underside of the subfloor and upper portions of the wood trusses.

The limiting condition (failure to sustain the applied load) in these two tests was reached after the 1-hour fire classification period. It was due to the decomposition and collapse of the tension (bottom) chord member. This failure mode occurs after the thermal protection of the protective gypsum ceiling is exceeded. As shown in Table 1.0, the unexposed temperatures remained well below the limiting temperature rise conditions of the standard (average temperature rise of 250 °F above ambient, or maximum temperature of 325 °F above ambient).

Figure 1.0 Photo from PAC Fire Test Files

The above discussion is intended to illustrate the relatively low temperatures in the space below the subfloor sheathing in typical ASTM E119 floor/ceiling testing when insulation is draped over the back of the ceiling membrane. It also demonstrates that the fire rating of a floor/ceiling assembly depends on the degree of fire resistance protection provided by the ceiling membrane separating the assembly framing components and concealed space from the applied fire exposure. This protection restricts heat transfer to the framing and through to the unexposed side of floor sheathing attached to the top of the joists.

In general, the thermal conductivity of cement-based products is higher than magnesium oxide-based products and conservatively can be considered nearly equivalent, therefore the substitution of the same thickness of Maxterra MgO versus the cement-based subfloor directly to the top of the trusses is not deemed to decrease the thermal transmission properties of the floor/ceiling assembly.

In one option, UL Design H515 allows STRUCTO-CRETE or USGSP to be used in the 1½-h fire-resistance-rated assembly when one layer of nominal ⅝-in. type ULIX GWB is used as protection membrane for the minimum 12-in. cold-formed-steel truss members spaced 24 in. on center when using 3½ in. thick fiber batt insulation draped over the resilient channel.

In the other option, UL Design H515 allows STRUCTO-CRETE or USGSP to be used in the 2-h fire-resistance-rated assembly when two layers of nominal ⅝-in. type ULIX GWB is used as protection membrane for the minimum 12-in. cold-formed-steel truss members spaced 24 in. on center when using 3½ in. thick fiber batt insulation draped over the resilient channel.

CONCLUSION

Based on a thorough evaluation conducted by Priest & Associates Consulting (PAC), our expert opinion is that the substitution of the ¾ in. Maxterra™ MgO tongue-and-groove subfloor material for the certified STRUCTO-CRETE or USGSP fiber cement boards in UL Design No. H515 is both feasible and compliant with the required ASTM E119 and UL 263 standards for a 1-hour (not 1½-hour) and 2-hour fire-resistance-rated floor/ceiling assembly when using one layer or two layers of ⅝ in. type ULIX GWB, respectively, as the membrane protection.

The Maxterra™ MgO subfloor exhibits verified noncombustibility, sufficient thermal insulation capabilities, and adequate structural support, making it a dependable substitute for STRUCTO-CRETE or USGSP in this specific design.

Note: All components, except the subfloor, must align with those specified in UL Design H515. The Maxterra™ MgO subfloor must be installed in the same manner as STRUCTO-CRETE or USGSP in UL Design H515.

The scope of this Engineering Judgment is for fire-resistance properties ONLY. It does not purport to make judgments on other criteria, such as the assemblies' structural or sound transmission performance.

If you have any comments or questions, please let us know at your earliest convenience.

Submitted by,

Mike Luna
President
(830) 581-1455

February 19, 2025

Reviewed and approved,

Deg Priest
Chief Executive Officer

February 19, 2025

UL Product iQ®

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.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States

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

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States
Design Criteria and Allowable Variances

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
Design Criteria and Allowable Variances

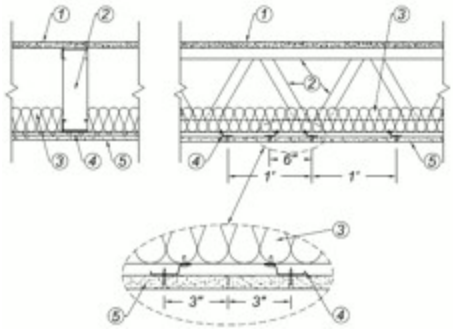
Design No. H515

November 12, 2019

Unrestrained Assembly Rating —1-1/2 or 2 Hr (For 2 Hr. See Alternate Constructions)

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 —**

1-1/2 Hr Rating

1A. **Structural Cement-Fiber Units* —** Nom 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to joists with end joints staggered a min of 2 ft and centered over the joists. Panels secured to steel joists with 1-5/8 in. long No. 8 self-drilling, self-countersinking steel screws spaced a max of 12 in. OC in the field with a screw located 1 in. and 2 in. from each edge, and 8 in. OC on the perimeter with a screw located 2 in. from each edge, located 1/2 in. from the side edges of the panel.
UNITED STATES GYPSUM CO — Types STRUCTO-CRETE or USGSP

2. **Structural Steel Members* —** Pre-fabricated light gauge steel truss system consisting of cold-formed, galvanized steel cord and web sections. Trusses fabricated in various sizes, depths, and from various steel thickness. Trusses minimum 12 in. deep, spaced a max of 24 in. OC.
DOUGLASS COLONY GROUP INC — Type FRAMECAD

3. **Batts and Blankets* —** 3-1/2 in. thick glass fiber batt insulation draped over the resilient channels. Any glass fiber batt insulation bearing the UL Classification Marking for Surface Burning Characteristics having a flame spread index of 25 or less and a smoke developed index of 50 or less may be used. See **Batts and Blankets** (BKNV) category in the Building Materials Directory for names of manufacturers.

4. **Resilient Channels —** Formed of No. 25 MSG galv steel, 1/2 in. deep, spaced max 12 in. OC, perpendicular to joists. Channel splices located beneath joists and overlapped 6 in. Channels secured to each joist with one 1/2 in. long Type S-12 low profile steel screw. Two channels, spaced 6 in. OC, oriented opposite each gypsum board end joint as shown on the illustration above. Additional channels shall extend min 6 in. beyond each side edge of board.

4A. **Steel Framing Members* —** (Optional, Not Shown) — As an Alternate to Item 4 - When it is desired to drop the ceiling below the bottom plane of the structural steel members (Item 2), a suspension system may be used in lieu of the resilient channels. Main runners, cross tees, cross channels and wall angle as listed below:

a. **Main Runners —** Nom 10 or 12 ft long , 15/16 in. or 1-1/2 in. wide face, spaced 4 ft. OC. Main runners suspended by min 12 SWG galv steel hanger wires spaced 24 in. OC a min of 4 in. below bottom flange of joists, twist tied to #10 - 3/4 in. long screws installed in the web, 1/2 in. from the bottom flange of the steel joists. Hanger wires to be located adjacent to main runner/cross tee intersections.

b. **Cross Tees —** Nom 4 ft long, 1-1/2 in. wide face, installed perpendicular to the main runners, spaced 12 in. OC. Additional cross tees or cross channels used at 8 in. from each side of butted gypsum panel end joints. The cross tees or cross channels may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation.

c. **Cross Channels —** Nom 4 ft or 12 ft long, installed perpendicular to main runners, spaced 12 in. OC.

d. **Wall Angle or Channel —** — Painted or galv steel angle with 1 in. legs or channel with 1 in. legs, 1-9/16 in. deep attached to walls at perimeter of ceiling with fasteners 16 in. OC. To support steel framing member ends and for screw-attachment of the gypsum panel.
USG INTERIORS LLC — Type DGL or RX.

4B. **Steel Framing Members* —** (Optional, Not Shown) — As an alternate to Item 4 — Furring channels and Steel Framing Members as described below:

a. **Furring channels —** Formed of No. 25 MSG galv steel, 2-3/8 in. wide by 7/8 in. deep, spaced 12 in. OC, perpendicular to joists. Channel secured to joists as described in Item b. 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 channels shall

be positioned so that the distance from the end of the board to the center of the first channel is 3 in. and from the board end to the center of the next channel is 12 in.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to joists (Item 2). Clips spaced 48 in. OC and secured to the bottom chord of joists with min 1-5/8 in. long No. 8 self-drilling, self-tapping, bugle, flat or hex head screw through the center grommet. Furring channels are friction fitted into clips. Additional clips required to hold furring channel that supports the gypsum board butt joints.
PLITEQ INC — Type Genie Clip

4C. **Alternate Steel Framing Members* —** (Optional, Not Shown) — As an alternate to Item 4, furring channels and Steel Framing Members as described below.

a. **Furring channels —** Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 12 in. OC, perpendicular to joists. Channels secured to joists as described in Item b. 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.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to the steel joists (Item 2). Clips spaced a max of 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to alternating joists with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clips for use with 2-23/32 in. wide furring channels. Adjoining channels are overlapped as described in Item a. 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 6.
PAC INTERNATIONAL L L C — Types RSIC-1 or RSIC-1 (2.75)

4D. **Steel Framing Members* —** — (Optional, Not Shown) — As an alternate to Item 4.

a. **Furring Channels —** Formed of No. 25 MSG galv steel, nominal 2-1/2 in. wide by 7/8 in. deep, spaced 12 in. OC, perpendicular to trusses. Channels secured to Cold Rolled Channels at every intersection with a 3/4 in. TEK screw through each furring channel leg. Ends of adjoining channels overlapped 12 in. and fastened together with two double strand No. 18 SWG galv steel wire ties, one at each end of overlap, or with two 3/4 in. TEK screws in each leg of the overlap section. Two furring channels used at end joints of gypsum board (Item 5), each extending a min of 6 in. beyond both side edges of the board.

b. **Cold Rolled Channels —** -1/2 in. by 1/2 in., formed from No. 16 ga. galv steel, positioned vertically and parallel to trusses, friction-fitted into the channel caddy on the Steel Framing Members (Item 4Dd) and secured with two 3/4 in. TEK screws. Adjoining lengths of cold rolled channels lapped min. 12 in. and secured along bottom legs with four 3/4 in. TEK screws and wire-tied together with two double strand 18 SWG galv steel wire ties, one at each end of overlap.

c. **Blocking —** Where truss design does not permit direct, full contact of the hanger bracket, a piece of nominal 3-5/8 in. x 20 ga. steel stud (blocking), min. 12 in. long to permit full contact of the hanger bracket, to be secured vertically to the side of the trusses at the top and bottom of the blocking at each Steel Framing Member (Item 4Dd) location with minimum 2-1/2 in. screws.

d. **Steel Framing Members* —** Spaced 48 in. OC. max along truss, and secured to the truss on alternating trusses with two, No. 10-16 TEK screws through mounting holes on the hanger bracket.
PAC INTERNATIONAL L L C — Type RSIC-SI-CRC EZ Clip

4E. **Steel Framing Members* —** (Optional, Not Shown) — As an alternate to Item 4.

a. **Furring Channels —** Formed of No. 25 MSG galv steel, nominal 2-1/2 in. wide by 7/8 in. deep, spaced 12 in. OC perpendicular to trusses and friction fit into Steel Framing Members (Item 4Ec). 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 or with two TEK

screws along each leg of the 6 in. overlap. Two furring channels used at end joints of gypsum board (Item 5). Butt joint channels held in place by strong back channels placed upside down, on top of, and running perpendicular to primary furring channels, extending 6 in. longer than length of gypsum side joint. Strong back channels spaced maximum 48 in. OC. Strong back channels secured to every intersection of primary furring channels with four 7/16 in. pan head screws, two along each of the legs at intersections. Butt joint channels run perpendicular to strong back channels and shall be minimum 6 in. longer than length of joint, secured to strong back channels with 7/16 in. pan head screws, two along each of the legs at intersection with strong back channels.

b. **Blocking —** Where truss design does not permit direct, full contact of the hanger bracket, a piece of nominal 3-5/8 in. x 20 ga. steel stud (blocking), min. 12 in. long to permit full contact of the hanger bracket, to be secured vertically to the side of the trusses at the top and bottom of the blocking at each Steel Framing Member (Item 4Ec) location with minimum 2-1/2 in. screws.

c. **Steel Framing Members* —** Used to attach furring channels (Item 4Ea) to trusses. Clips spaced 48 in. OC and secured along truss webs at each furring channel intersection with min. 3/4 in. long self-drilling No. 10-16 TEK screws through each of the provided hole locations. Furring channels are friction fitted into clips.
PAC INTERNATIONAL L L C — Type RSIC-S1-1 Ultra

5. **Gypsum Board* —** One layer of nom 5/8 in. thick by 48 in. wide gypsum panels installed with long dimension perpendicular to resilient channels or cross tees of suspension system (Item 4A).Gypsum panels secured to resilient channels or drywall suspension system with 1 in. long Type S bugle-head screws spaced 8 in. OC, with screws located minimum of 1 in. from the side joints and 3 in. from the end joints. End joints secured to both resilient channels as shown in end joint detail. When **Steel Framing Members** (Item 4B or 4C) are used, the butt joints in the gypsum board shall be supported by two furring channels. The two furring channels shall be spaced approximately 3-1/2 in. OC, and be attached to underside of the joist with one RSIC-1, RSIC-1 (2.75) or Genie clip at each end of the channel.
When **Steel Framing Members** (Item 4D) are used, nom 5/8 in. thick, 4 ft wide gypsum board, installed as described in Item 5. Adjacent butt joints staggered minimum 48 in. OC.

When **Steel Framing Members** (Item 4E) are used, nom 5/8 in. thick, 4 ft wide gypsum board, installed as described in Item 5. Butt joints staggered minimum 24 in. OC.

CGC INC — Type ULIX

UNITED STATES GYPSUM CO — Type ULIX

6. **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 panels.

MODIFICATIONS TO INCREASE RATING TO 2 HR (Not Shown):

ALTERNATE CONSTRUCTION: 2 Hr Rating

1B. **Gypsum Board* (Not Shown) —** Two layers of min 1/4 in. thick, 4 ft by 4 ft gypsum board underlayment, Classified as to Surface Burning Characteristics. Bonded and attached to each other with a mortar applied with a 1/4 in. by 1/4 in. notched trowel, and min 1/2 in. long staples spaced max 8 in. OC in the field and 4 in. OC along the perimeter. Joints between two layers of Gypsum Board staggered a min of 12 in. in both directions.
UNITED STATES GYPSUM CO — Type FRX-G

1C. **Floor Mat Materials* (Not Shown) —** Floor mat material loosely laid over Structural Cement-Fiber Units (Item 1A). Gypsum Board Item 1B loosely laid over floor mat material with joints of bottom layer of Gypsum Board staggered a minimum of 12 in. in both directions.

KINETICS NOISE CONTROL INC — Type Soundmatt

PLITEQ INC — Types GenieMat RST02, GenieMat RST05

ALTERNATE CONSTRUCTION: 2 Hr Rating

1B. **Floor Topping Mixture* —** Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1800 psi installed over Structural Cement Fiber Unites (Item 1A) 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 CONSTRUCTION: 2 Hr Rating

5. **Gypsum Board* — Two Layers —** Nom 5/8 in. thick, 48 in. wide gypsum panels. Base layer installed with long dimension perpendicular to resilient channels, furring channels or cross tees, secured with 1-1/4 in. long Type S bugle-head screws spaced 12 in. OC, with screws located 6 in. from and on each side of the gypsum panel, in both the field and the perimeter, and 1-1/2 in. from side edges of the panels. Face layer installed with long dimension perpendicular to resilient/furring channels or cross tees with joints offset 24 in. from base layer, secured with 1-5/8 in. long Type S bugle-head screws spaced 8 in. OC in both the field and the perimeter, and 1-1/2 in. from side edges of the panel. Butt joints of face layer panels secured to base layer with 1-1/2 in. long Type G screws spaced 8 in. OC and 1-1/2 in. from side edges of the panels, with butt joints located between resilient/furring channels. Butt joints of face panels staggered a minimum of 12 in. from butt joints of base layer. When **Steel Framing Members** (Item 4B or 4C) are used, the butt joints in the gypsum board shall be supported by two furring channels. The two furring channels shall be spaced approximately 3-1/2 in. OC, and be attached to underside of the joist with one RSIC-1, RSIC-1 (2.75) or Genie clip at each end of the channel.
When **Steel Framing Members** (Item 4D) are used, nom 5/8 in. thick, 4 ft wide gypsum board, installed as described in Item 5. Adjacent butt joints staggered minimum 48 in. OC.

When **Steel Framing Members** (Item 4E) are used, nom 5/8 in. thick, 4 ft wide gypsum board, installed as described in Item 5. Butt joints staggered minimum 24 in. OC.

CGC INC — Type ULIX

UNITED STATES GYPSUM CO — Type ULIX

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

Last Updated on 2019-11-12