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BUILDING PRODUCTS LISTING PROGRAM

Customer: Multi-Panels, Inc.
Class: Subflooring
Location: Holliston, MA
Website: www.multi-panels.com

Listing No. B1136-1
Project No. B1136-1, Edition 1
Effective Date: June 22, 2022
Last Revised Date: N/A
Expires: N/A

Standards:

ASTM E84	*Standard Test Method for Surface Burning Characteristics of Building Materials*.
ASTM E136	*Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750^{o}C*
ASTM E455	*Standard Test Method for Static Load Testing of Framed Floor or Roof Diaphragm Constructions for Buildings*.
ASTM E119	*Standard Test Methods for Fire tests of Building Construction and Materials*.

Product: Nocom Magnesium Sulphate Boards

Markings: Product is marked with labels that include the following information:

a) Manufacturer's name.
b) Product name.
c) ASTM E136 – Classified Non-Combustible
d) ASTM E84 – Class A
e) Traceability code.
f) QAI logo shown here:

Labels are applied to palletized finished products to ensure visibility on the jobsite.

Ratings: **The following outlines Nocom Magnesium Sulphate boards used as subflooring results determined through testing to the noted standards**

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Nocom Magnesium Sulphate boards have the following surface burning characteristics determined in accordance with ASTM E84

NOCOM SUBFLOOR SURFACE BURNING CHARACTERISTICS PER ASTM E84[1]					
PRODUCTS	**MAX. THICNESSES**		**FLAME SPREAD INDEX**	**SMOKE DEVELOPED INDEX**	**CLASS**
	inches	**mm**			
Nocom	¾	19	≤ 0	≤ 5	A

Nocom Magnesium Sulphate boards are classified as non-combustible per ASTM E136.

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CERTIFICATION TESTING INSPECTION

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Floor assemblies constructed with Nocom provide shear diaphragm resistances determined per ASTM E455 as noted[1,2]:

NOCOM SUBFLOOR MINIMUM	JOIST MINIMUM	RIM JOIST MINIMUM	BRIDGING MINIMUM	STRAPPING	MAX. ASPECT RATIO	ULTIMATE CAPACITY	SHEAR MODULUS *G'*
SIMPLE BEAM ASSEMBLIES							
¾'' 19 mm Shiplap or Tongue and Groove Joint Options Installed Perpendicular to Joist.	16 Ga. (1.6 mm) 50 ksi (345 MPa) 1000S200-54 10'' (254 mm) web depth x 2'' (51 mm) leg length steel joists spaced at 24'' (610 mm) on center. Nocom sheathing fastened to joists with #8-18 x 1-5/8'' (41 mm) wafer head winged drillpoint grabber screw part no. GGH8158LB screws at 6'' (152 mm) around perimeter and 12'' (304 mm) in the field with screws at 4'' (102 mm) inset from corners, and ½'' (13 mm) spacing from panel edges.	16 Ga. (1.6 mm) 50 ksi (345 MPa) 1000T200-54 10'' (254 mm) web depth x 1-1/4'' (31 mm) top flange and 2-1/2'' (57 mm) bottom flange length rim track. Fastened to joists with three #10-16 x ¾'' (19 mm) length self-drilling screws at joist flange and at rim track through 16 Gauge (1.6 mm) clip angles of 1-1/2'' x 1-1/2'' x9'' (38 mm x 38 mm x 229 mm).	18 Gauge (1.3 mm) 1000S200-54 10'' (254 mm) web depth x 2'' (51 mm) leg length located at midspan. Fastened to joists with three #10-16 x ¾'' (19 mm) length self-drilling screws at joist flange and at rim track through 16 Gauge (1.6 mm) clip angles of 1-1/2'' x 1-1/2'' x9'' (38 mm x 38 mm x 229 mm).	N/A	2:1	1.026 lbsft 15.0 kN/m	N/A
CANTILEVER BEAM ASSEMBLIES							
¾'' 19 mm Tongue and Groove Installed Perpendicular to Joist.	16 Ga. (1.6 mm) 50 ksi (345 MPa) 800S162-54 8'' (203 mm) web depth x 1-5/8'' (41 mm) leg length steel joists spaced at 24'' (610 mm) on center. Nocom sheathing fastened to joists with #8-18 x 1-5/8'' (41 mm) Grabber Long Wing driller Grabber SuperDrive™ Lox screws GH8158LG at 3'' (76 mm) around perimeter and 12'' (304 mm) in the field with screws at 3'' (76 mm) inset from corners, and ½'' (13 mm) spacing from panel edges.	16 Ga. (1.6 mm) 50 ksi (345 MPa) 800T125-54 8'' (203 mm) web depth x 1-1/4'' (31 mm) flange length rim track. Fastened to joists with three #10-16 x ¾'' (19 mm) length self-drilling screws at joist flange and at rim track through 16 Gauge (1.6 mm) clip angles of 1-1/2'' x 1-1/2'' x5-3/4'' (38 mm x 38 mm x 146 mm).	N/A	16 Ga. (1.6 mm) 4'' (102 mm) width steel strap continuous at Nocom subfloor tongue and groove edge locations. #8-18 x 1-5/8'' (41 mm) Grabber Long Wing driller Grabber SuperDrive™ Lox screws GH8158LG at 3'' (76 mm) along Nocom joints into strapping.	1:1	2,155 lbs/ft 31.4 kN/m	9,126 lbs/in 1.6 kN/mm

Note 1: Connection of the rim joist to shear resisting wall structure is outside the scope of this listing and is to be designed by the registered design professional.
Note 2: Fasteners noted were not evaluated for additional performance requirements or compatibility outside the diaphragm shear resistance.

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Nocom load-bearing fire-resistance rated assemblies determined in accordance with ASTM E119:

QAI DESIGN #	FIRE-RESISTANCE RATING	ASSEMBLY
B1136-1a	2 hours – Unrestrained Load-Bearing[1]	**Interior Finish**: Single layer of minimum 5/8'' (16 mm) thickness Type C FSW by National Gypsum Company installed perpendicular to resilient channel with butt joints offset a minimum of 6'' (152 mm). Minimum 1'' (25 mm) length Type S drywall screws spaced at 8'' (204 mm) at panel ends and in the field. Joints are to be taped and mudded with minimum 2 coats. Fastener heads to be mudded with a minimum of 2 coats. **Resilient Channel[2]:** Minimum 25-gauge (0.5 mm) ½'' (13 mm) resilient channel installed perpendicular to joists, spaced at maximum spaced at maximum 12'' (305 mm) on center. Resilient channel splices are to be at joist locations with a minimum overlap of 4'' (102 mm). Resilient channel to be fastened to joists with one ½'' (13 mm) length 1'' (25 mm) Type S-12 low profile screw. An additional 2 resilient channels spaced at 6'' (152 mm) from each panel end are required, with the minimum length of the additional resilient channel to extend a minimum of 12'' (305 mm) past gypsum panel ends. **Insulation:** Minimum 3-1/2'' (82 mm) thickness glass fiber batt insulation laid over resilient channel between joists. Insulatio is to be laid with no gaps between joints, and joints offset from interior finish gypsum joints. **Framing:** 1) Steel Joists: Minimum 16-gauge (1.6 mm) galvanized steel C-channel of minimum 10'' depth with 1-5/8'' (41 mm) returns spaced at maximum 24'' (610 mm) on center. Joists are fastened to rim tracks with 1-1/2'' x 4'' x 9-3/4'' (31 mm x 102 mm x 248 mm) and secured with three #10 ¾'' (19 mm) length self-drilling screws. **2**) Steel Trusses: Minimum 16-gauge (1.6 mm) light frame steel trusses of 12'' (305 mm) depth spaced at maximum 24'' (610 mm) on center spacing. Trusses are fastened to rim tracks with 1-1/2'' x 4'' x 9-3/4'' (31 mm x 102 mm x 248 mm) and secured with three #10 ¾'' (19 mm) length self-drilling screws. **Bridging:** Sized to match joists spaced at maximum 8 ft (2.4 m). Bridging is connected to joists with clips of minimum1-1/2'' x 4'' x 8'' (31 mm x 102 mm x 203 mm) connected with three #10 ¾'' (19 mm) length self-drilling screws on bridging and joist. **Subfloor:** Minimum ¾'' (19 mm) Nocom magnesium sulphate tongue and groove subfloor oriented perpendicular to joists with panel butt joints offset a minimum of 4 ft (1.2 m). Nocom subfloor to be fastened to the joists with minimum #8 x 1-5/8'' (41 mm) self-drilling screws including Grabber GH8158LG spaced at 8'' (204 mm) along panel butt ends, and 12'' (305 mm) in the field. Fasteners are to be a minimum of ½'' (13 mm) from panel edges, and 2'' (51 mm) from corners.

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QAI DESIGN #	FIRE-RESISTANCE RATING	ASSEMBLY
B1136-1b	1 hour – Unrestrained Load-Bearing[1]	**Interior Finish**: Two layers of minimum 5/8'' (16 mm) thickness Type FSW-C by National Gypsum Company installed perpendicular to resilient channel with butt joints offset a minimum of 6'' (152 mm). Base layer is to be anchored with 1'' (25 mm) length Type S drywall screws spaced at 8'' (204 mm) at panel ends, and 16'' (406 mm) in the field. Second exposed gypsum layer is to be installed with joints offset a minimum of 48'' (1219 mm) from first gypsum layer anchored with 1-1/2'' (38 mm) Type G drywall screws spaced at 8'' (203 mm) on center at panel ends and 1-5/8'' (41 mm) Type S drywall screws spaced 8'' (203 mm) in the field. Joints are to be taped and mudded with minimum 2 coats. Fastener heads to be mudded with a minimum of 2 coats. **Resilient Channel[2]:** Minimum 25-gauge (0.5 mm) ½'' (13 mm) resilient channel installed perpendicular to joists, spaced at maximum spaced at maximum 24'' (305 mm) on center. Resilient channel splices are to be at joist locations with a minimum overlap of 4'' (102 mm). Resilient channel to be fastened to joists with one ½'' (13 mm) length 1'' (25 mm) Type S-12 low profile screw. An additional 2 resilient channels spaced at 6'' (152 mm) from each panel end are required, with the minimum length of the additional resilient channel to extend a minimum of 12'' (305 mm) past gypsum panel ends. **Insulation:** Minimum 3-1/2'' (82 mm) thickness glass fiber batt insulation laid over resilient channel between joists. Insulatio is to be laid with no gaps between joints, and joints offset from interior finish gypsum joints. **Framing:** 1) Steel Joists: Minimum 16-gauge (1.6 mm) galvanized steel C-channel of minimum 10'' depth with 1-5/8'' (41 mm) returns spaced at maximum 24'' (610 mm) on center. Joists are fastened to rim tracks with 1-1/2'' x 4'' x 9-3/4'' (31 mm x 102 mm x 248 mm) and secured with three #10 ¾'' (19 mm) length self-drilling screws. **2**) Steel Trusses: Minimum 16-gauge (1.6 mm) light frame steel trusses of 12'' (305 mm) depth spaced at maximum 24'' (610 mm) on center spacing. Trusses are fastened to rim tracks with 1-1/2'' x 4'' x 9-3/4'' (31 mm x 102 mm x 248 mm) and secured with three #10 ¾'' (19 mm) length self-drilling screws. **Bridging:** Sized to match joists spaced at maximum 8 ft (2.4 m). Bridging is connected to joists with clips of minimum1-1/2'' x 4'' x 8'' (31 mm x 102 mm x 203 mm) connected with three #10 ¾'' (19 mm) length self-drilling screws on bridging and joist. **Subfloor:** Minimum ¾'' (19 mm) Nocom magnesium sulphate tongue and groove subfloor oriented perpendicular to joists with panel butt joints offset a minimum of 4 ft (1.2 m). Nocom subfloor to be fastened to the joists with minimum #8 x 1-5/8'' (41 mm) self-drilling screws including Grabber GH8158LG spaced at 8'' (204 mm) along panel butt ends, and 12'' (305 mm) in the field. Fasteners are to be a minimum of ½'' (13 mm) from panel edges, and 2'' (51 mm) from corners.

Note 1: Allowable load is based off allowable stress design methodology. Where assemblies are used in applications following Load Resistance Factor Design or Limit States Design, determination of the equivalent allowable loads are to be determined in accordance with the local regulatory requirements.

Note 2: Where an approved sound isolation clips are used in conjunction with resilient channel, resilient channel spacing is required to be at maximum 12'' (305 mm) on center spacing. Resilient channel size, and attachment to sound isolation clip, and attachment of sound isolation clip to stud are to be in accordance with the approved sound insulation clip listed installation for 2-hour fire-resistance rating. The use of sound isolation clips is outside the scope of this listing and shall be approved by the authority having jurisdiction.

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Notes: Final acceptance of the product in the intended application is to be determined by the authority having jurisdiction.

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