

\*\*SPECIFIER NOTE: GUIDE SPECIFICATION PURPOSE\*\*

THIS GUIDE SPECIFICATION IS DESIGNED TO ASSIST THE SPECIFIER IN ACCURATELY SPECIFYING NEXGEN MAXTERRA® MGO NON-COMBUSTIBLE STRUCTURAL WALL SHEATHING AND ITS INSTALLATION. THE SPECIFIER IS REQUIRED TO EDIT THE GUIDE SPECIFICATION TO SUIT THE SPECIFIC NEEDS OF EACH PROJECT. THROUGHOUT THIS GUIDE SPECIFICATION, SPECIFIER NOTES ARE PROVIDED TO AID IN THE EDITING PROCESS. RED TEXT IN BRACKETS INDICATES THAT A SELECTION NEEDS TO BE MADE BY THE SPECIFIER. FOR ASSISTANCE IN SELECTING THE MOST APPROPRIATE PRODUCTS, PLEASE CONTACT NEXGEN BUILDING PRODUCTS.

NEXGEN MATERRA® MgO NON-COMBUSTIBLE SINGLE LAYER STRUCTURAL FLOOR PANELS OFFER A VERSATILE SOLUTION FOR VARIOUS BUILDING APPLICATIONS, CAPABLE OF REPLACING PLYWOOD, ORIENTED STRAND BOARD (OSB), OR CEMENT-BASED SUBFLOORING, AND CAN BE USED TO ELIMINATE THE NEED FOR A WET-LAID GYPSUM CEMENT UNDERLAYMENT. THESE PANELS CAN BE USED IN FIRE-RESISTANT FLOOR / CEILING ASSEMBLIES TO MEET STRINGENT SOUND TRANSMISSION CLASS (STC) AND IMPACT INSULATION CLASS (IIC) REQUIREMENTS, ENSURING OPTIMAL PERFORMANCE AND SAFETY IN VARIOUS BUILDING APPLICATIONS. FIRE-RESISTANT RATED ASSEMBLIES’ INSTALLATION MUST STRICTLY ADHERE TO THE PUBLISHED EVALUATION SERVICE LISTINGS (ESL’s) TO ENSURE OPTIMAL PERFORMANCE, SAFETY, AND COMPLIANCE WITH RELEVANT BUILDING CODES.

Disclaimer

This Specification has been prepared as a reference guide for professionally qualified Specifiers and Design Professionals. The use of this guide is intended to facilitate the specification of MAXTERRA® MgO Non-Combustible Single Layer Structural Floor Panel, but it is the sole responsibility of the qualified Specifier and Design Professional to exercise their professional judgment and expertise in adapting the information to the specific needs of the Building Owner and the Project.

The qualified Specifier and Design Professional must ensure that the Specification is coordinated with the Construction Document Process and meets all applicable building codes, regulations, and laws. NEXGEN™ disclaims any and all warranties, expressed or implied, including the warranty of merchantability or fitness for a particular purpose, with respect to the use of this product for the Project.

By using this Specification, the Building Owner and the Project accept the terms and conditions set forth in this Notice of Disclaimer and Limitation of Liability.

 

# SECTION 06 16 23

# SUBFLOORING

# NEXGEN BUILDING PRODUCTS

**MAXTERRA® MgO NON-COMBUSTIBLE SINGLE LAYER STRUCTURAL FLOOR PANELS**

\*\*SPECIFIER NOTE: \*\* THESE SPECIFICATIONS WERE CURRENT AT THE TIME OF PUBLICATION BUT ARE SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE. PLEASE CONFIRM THE ACCURACY OF THESE SPECIFICATIONS WITH THE MANUFACTURER AND/OR DISTRIBUTOR PRIOR TO CONSTRUCTION OR INSTALLATION.

GUIDE SPECIFICATIONS: THIS GUIDE SPECIFICATION IS WRITTEN ACCORDING TO THE CONSTRUCTION SPECIFICATIONS INSTITUTE (CSI) FORMATS, INCLUDING MASTERFORMAT™, SECTIONFORMAT™, AND PAGEFORMAT™.

CAREFULLY REVIEW AND EDIT THIS SECTION TO MEET THE REQUIREMENTS OF THE PROJECT, LOCAL BUILDING CODE AND AUTHORITIES HAVING JURISDICTION. COORDINATE THIS SECTION WITH OTHER SPECIFICATION SECTIONS AND DRAWINGS.DELETE ALL "SPECIFIER NOTES" WHEN EDITING THIS SECTION.

# PART 1 - GENERAL

## SECTION INCLUDES

* + 1. NEXGEN MAXTERRA® MgO Non-Combustible Single Layer Structural Floor Panels for Subflooring.

## REFERENCES

* + 1. American Society for Testing and Materials (ASTM):
			1. ASTM E3223: Standard Guide for Specifying and Testing Field-Constructed Exterior Building Wall System Mockups in New Construction.
			2. ASTM E2099: Standard Practice for the Specification and Evaluation of Pre-Construction Laboratory Mockups of Exterior Wall Systems
			3. ASTM C473: Standard Test Methods for Physical Testing of Gypsum Panel Products.
			4. ASTM C1185: Standard Test Method for Physical Properties (Dimensions and Tolerances).
			5. ASTM C666: Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing.
			6. ASTM D1037: Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials.
			7. ASTM D1761: Standard Test Methods for Mechanical Fasteners in Wood and Wood-Based Materials.
			8. ASTM D2394: Standard Test Methods for Simulated Service Testing of Wood and Wood-Based Finish Flooring.
			9. ASTM E119 / UL 263: Standard Test Methods for Fire Tests of Building Construction and Materials.
			10. ASTM E136: Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750ºC. Option A and Option B.
			11. ASTM E84/ UL723: Standard Test Method for Surface Burning Characteristics of Building Materials.
			12. ASTM E96: Standard Test Method for Water Vapor Transmission.
			13. ASTM E330: Standard Test Methods for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference.
			14. ASTM E661: Standard Test Method for Performance of Wood and Wood-Based Floor and Roof Sheathing Under Concentrated Static and Impact Loads.
			15. ASTM G21: Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi
			16. ASTM E90: Standard test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.
			17. ASTM E492: Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using Tapping Method.
			18. ASTM E2235: Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods
		2. American National Standards Institute (ANSI):
			1. ANSI A118.1: Standard Specifications for Dry-Set Portland Cement Mortar.
			2. ANSI A118.4: Standard Specifications for Latex-Portland Cement Mortar.
		3. International Code Council Evaluation Service (ICC-ES):
			1. ICC Evaluation Report: ICC ESR-5194.
			2. ICC-ES Listing Report: ICC ESL (In-process / forthcoming)
			3. ICC-ES Acceptance Criteria for Fiber-Reinforced Magnesium-Oxide-Based Sheets (AC386)
			4. ICC-ES Acceptance Criteria for Reinforced Cementitious Sheathing and Floor Underlayment (AC376)
			5. ICC-ES Acceptance Criteria for Fiber-Cement Interior Substrate Sheets Used in Wet and Dry Areas (AC378)
			6. ICC-ES Acceptance Criteria for Fiber-Reinforced Cement Sheet Structural Floor Sheathing (AC367)
			7. ICC-ES Acceptance Criteria for Structural Cementitious Floor and Roof Sheathing Panels (AC318)
			8. California Building Code-Building.
			9. California Building Code-Residential.
			10. Chicago Title 14 Supplement.
			11. Florida Building Code-Building.
			12. Florida Building Code-Residential.
			13. Los Angeles Building Code-Building.
			14. Los Angeles Building Code-Residential.

## SUBMITTALS

* + 1. Product Data:
			1. Submit ICC-ES Evaluation Report ESR-5194, manufacturer's printed product literature, specifications, installation guide, warranty, and any additional product certifications to show compliance with indicated performance criteria.



## QUALITY ASSURANCE

* + 1. Product must be certified with the International Code Council Evaluation Service (ICC-ES).
		2. Product must be manufactured under a quality-control program with inspections by the International Code Council Evaluation Service (ICC-ES).
		3. Product must be labeled with ESR-5194 in accordance with ICC-ES Evaluation Report.
	1. MOCKUPS
		1. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
		2. Coordinate mockup requirements with project requirements. Refer to all applicable sections of the Specifications for materials, products and components to be included in mockups.
		3. Obtain Architect's approval before starting work of mockups.
		4. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
		5. Notify Architect 7 days in advance of dates and times when mockups will be constructed.
		6. Demonstrate the proposed range of aesthetic effects and workmanship.
		7. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
		8. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* SPECIFIER NOTE: DELETE IF MOCKUP IS NOT REQUIRED.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

## STORAGE AND HANDLING

* + 1. Storage and Protection: Store MAXTERRA® products in a cool and dry space, horizontal and fully supported, off the ground, on a clean and level surface, covered with a waterproof tarp or plastic sheeting, and provide proper ventilation. Consider additional protection during extended adverse weather conditions. See the MAXTERRA® product dimension and weights table for individual products and pallet sizes. Ensure forklifts or alternative equipment are capable of lifting and moving the pallet or load safely. Ensure if lifting pallets from long end the forks are long enough to balance the weight of the lift safely.
	1. PROJECT CONDITIONS
		1. Must comply with IBC and or IRC and local building codes.

## WARRANTY

* + 1. Manufacturer’s Warranty: Provide the manufacturer’s standard limited warranty in effect at the date of purchase for a period of ten (10) years.

# PART 2 - PRODUCTS

## MANUFACTURERS

* + 1. BASIS-OF-DESIGN - Specified Manufacturer: NEXGEN Building Products, 1904 Manatee Ave West #300, Bradenton, FL 34205. Telephone: 727-620-3334. Email: support@nexgenbp.com. Web: [www.nexgenbp.com.](http://www.nexgenbp.com/)
		2. Substitutions: Not Permitted.

## NEXGEN MAXTERRA® MgO NON-COMBUSTIBLE SINGLE LAYER STRUCTURAL FLOOR PANELS DESCRIPTION

* + 1. NEXGEN MAXTERRA® MgO Non-Combustible Single Layer Structural Floor Panels for Subflooring Description:
			1. NEXGEN MAXTERRA® MgO is a mineral-based building material composed primarily of magnesium oxide and sulfate. It is a superior alternative to oriented strand board, plywood, gypsum, Portland cement, and gypcrete as it can be used a single-layer replacement.
		2. NEXGEN MAXTERRA® Non-Combustible Structural Floor Panels for Subflooring Sustainability Characteristics:
			1. NEXGEN MAXTERRA® MgO is free from VOCs, silica, and carcinogens.
			2. The formulation is sulfate-based, and this distinguishes it from traditional chloride-based MgO products, addressing corrosion issues and aligning with future safety and environmental compliance standards.

## NEXGEN MAXTERRA® MgO NON-COMBUSTIBLE SINGLE LAYER STRUCTURAL FLOOR PANELS PERFORMANCE AND DESIGN CRITERIA

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* SPECIFIER NOTE: DELETE OPTIONS NOT REQUIRED FOR THIS PROJECT. PANEL OPTIONS ARE INDICATED IN RED SQUARE BRACKETS.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

* + 1. Design Criteria of Sulfate-based magnesium oxide panels:
			1. Strength: Structural floor panels shall be strong and durable.
			2. Replaces:
				1. Plywood.
				2. Oriented strand board.
				3. Plywood/Oriented strand board combination.
				4. Plywood/Wet-laid Gypsum combination.
		2. Physical Characteristics:
			1. Dimensions: Conforms to ASTM C1185.
				1. Thickness:

3/4 inches (20 millimeters).

* + - * 1. Dimension:

[4 by 8 feet (1.2 by 2.4 meters)].

[4 by 10 feet (1.2 by 3.0 meters)].

* + - * 1. Weight:

4.92 pounds per square foot (0.24 Kilopascals).

* + - * 1. Edge Treatments:

[Tongue and Groove]

[Square Edge]

* + 1. Performance requirements:
			1. Contact the manufacturer for the most up-to-date performance testing information.
			2. Component of Fire-Resistant Assembly in accordance with the following standards: “UL-263, Standard for Fire Tests of Building Construction and Materials” and “ASTM E119, Standard Test Methods for Building Construction and Materials”

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SPECIFIER NOTE: MAXTERRA® MgO NON-COMBUSTIBLE SINGLE LAYER STRUCTURAL FLOOR PANELS, AS A PRODUCT, POSSESS INHERENT FIRE-RESISTANCE PROPERTIES, MAKING THEM SUITABLE FOR USE AS A COMPONENT OF A TESTED FIRE-RESISTANT FLOOR / CEILING ASSEMBLIES TO MEET STRINGENT SOUND TRANSMISSION CLASS (STC) AND IMPACT INSULATION CLASS (IIC) REQUIREMENTS. IT IS ESSENTIAL TO COORDINATE PROJECT-SPECIFIC REQUIREMENTS AND CONSULT WITH OTHER SPECIFICATION SECTIONS TO ENSURE THE INCLUSION OF EACH ASSEMBLY COMPONENT, ADDITIONALLY, GRAPHIC ASSEMBLIES SHOULD BE INCLUDED IN DRAWINGS TO FACILITATE CLEAR UNDERSTANDING. NEXGEN BUILDING PRODUCTS OFFERS A COMPREHENSIVE RANGE OF FIRE-RATED SOUND ASSEMBLIES AND ICC DESIGN NUMBERS FOR MAXTERRA® MgO NON-COMBUSTIBLE SINGLE LAYER STRUCTURAL FLOOR PANELS, FOR ASSISTANCE IN SELECTING THE MOST APPROPRIATE PRODUCTS, PLEASE CONTACT NEXGEN BUILDING PRODUCTS.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

* + 1. Performance Criteria:
			1. Non-combustible and Fire Resistant: Tested to ASTM E136.
				1. Non-combustible Rating.
			2. Smoke and Flame Spread: Conforms to ASTM E84.
				1. Flame Spread Index: 0.
				2. Smoke Developed Index: 0.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* SPECIFIER NOTE: DELETE OPTIONS NOT REQUIRED FOR THIS PROJECT (a.WOOD OR b.CFS TRUSSES). STC, IIC, & HIIC OPTIONS ARE INDICATED IN RED SQUARE BRACKETS.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

* + - 1. Sound Transmission Class (STC): Tested to ASTM E90.
				1. [Bare Sound Rating (Without floor coverings) on (UL L528), 18-in Wood OWT, 24-in O.C., R-13 Fiberglass: STC 56]
				2. [Bare Sound Rating (Without floor coverings) on (UL H515), 12-in CFS OWT, 24-in O.C., R-13 Fiberglass: STC 50]
			2. Impact Insulation Class (IIC): Tested to ASTM E492.
				1. [Bare Sound Rating (Without floor coverings) on (UL L528), 18-in Wood OWT, 24-in O.C., R-13 Fiberglass: IIC 38]
				2. [Bare Sound Rating (Without floor coverings) on (UL H515), 12-in CFS OWT, 24-in O.C., R-13 Fiberglass: IIC 31]
			3. High-Frequency Impact Insulation Class (HIIC): Tested to ASTM E2235
				1. [Bare Sound Rating (Without floor coverings) on (UL L528), 18-in Wood OWT, 24-in O.C., R-13 Fiberglass: HIIC 37]
				2. [Bare Sound Rating (Without floor coverings) on (UL H515), 12-in CFS OWT, 24-in O.C., R-13 Fiberglass: HIIC 31]
			4. Floor Sheathing Under Concentrated Static and Impact Loads: Tested to ASTM E661.
				1. 24 inches (61 centimeters, 610mm) on center rating.
				2. Concentrated Static Load: Greater than 550 pounds (249.5 Kilograms).
				3. Maximum Deflection Under 200-pound force (890 Newtons) Concentrated Load: Less than 0.1083 inches (2.75 millimeters).
				4. Maximum Deflection Under 200-pound force (890 Newtons) Follow Impact Load: Less than 0.1083 inches (2.75 millimeters).
			5. Structural Performance: Tested to ASTM E330.
				1. Average Deflection at: 133 pounds per square foot (6.4 kilopascals): less than L/480 [.05” (1.3 mm) for a 24-inch span].
				2. Minimum Peak Load: Greater than 200 pounds per square foot (9.5 Kilopascals).

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* SPECIFIER NOTE: DELETE OPTIONS NOT REQUIRED FOR THIS PROJECT. HARDWARE OPTIONS ARE INDICATED IN RED SQUARE BRACKETS. SEE SECTION 3.3 H FOR TRUSS CONFIGURATION, HARDWARE TYPE, AND HARDWARE SPACING. SEE MANUFACTURER WEBSITE FOR SUGGESTED FASTERNERS.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

* + - 1. Fastener Holding: Tested to ASTM D1761.
				1. [0.113-inch x 2-inch (2.9mm x 50.8mm) Galvanized Ring Shank Nail

Ultimate Lateral Load Dry: Greater than 210lbf (934 Newtons).

Ultimate Lateral Load Wet: Greater than 160lbf (712 Newtons).

Ultimate Withdrawal Dry: Greater than 20lbf (89 Newtons).

Ultimate Withdrawal Wet: Greater than 15lbf (67 Newtons).

Ultimate Nail-head Pull Through Dry: Greater than 200lbf (890 Newtons).

Ultimate Nail-head Pull Through Wet: Greater than 150lbf (668 Newtons).]

* + - * 1. [2-inch (50.8mm) #8 Stainless Steel Screw

Ultimate Lateral Load Dry: Greater than 210lbf (934 Newtons).

Ultimate Lateral Load Wet: Greater than 160lbf (712 Newtons).

Ultimate Withdrawal Dry: Greater than 20lbf (89 Newtons).

Ultimate Withdrawal Wet: Greater than 15lbf (67 Newtons).

Ultimate Nail-head Pull Through Dry: Greater than 200lbf (890 Newtons).

Ultimate Nail-head Pull Through Wet: Greater than 150lbf (668 Newtons).]

* + - * 1. [8 x 1-5/8-in Grabber Screw (GH8158LG)

Ultimate Lateral Load Dry: Greater than 210lbf (934 Newtons).

Ultimate Lateral Load Wet: Greater than 160lbf (712 Newtons).

Ultimate Withdrawal Dry: Greater than 20lbf (89 Newtons).

Ultimate Withdrawal Wet: Greater than 15lbf (67 Newtons).

Ultimate Nail-head Pull Through Dry: Greater than 200lbf (890 Newtons).

Ultimate Nail-head Pull Through Wet: Greater than 150lbf (668 Newtons).]

* + - * 1. [8 x 1-5/8-in Grabber Screw (GCB8158HL)

Ultimate Lateral Load Dry: Greater than 210lbf (934 Newtons).

Ultimate Lateral Load Wet: Greater than 160lbf (712 Newtons).

Ultimate Withdrawal Dry: Greater than 20lbf (89 Newtons).

Ultimate Withdrawal Wet: Greater than 15lbf (67 Newtons).

Ultimate Nail-head Pull Through Dry: Greater than 200lbf (890 Newtons).

Ultimate Nail-head Pull Through Wet: Greater than 150lbf (668 Newtons).]

* + - 1. Physical Properties: Tested to ASTM C1185.
				1. Flexural Strength: Greater than 580 pounds per square inch (4,000 Kilopascals).
				2. Dimensions and Tolerances: Nominal panel dimensions for 4’x8’ for items 1-5 below, note these are tolerances.

Length: 0.10 inches (2.5 millimeters).

Width: 0.07 inches (1.8 millimeters)

Thickness: 0.05 inches (1.3 millimeters).

Squareness: 0.001 inches (0.025 millimeters).

Straightness: 0.001 inches (0.025 millimeters).

* + - 1. Physical and Mechanical Properties: Tested to ASTM D1037.
				1. Falling Ball Impact: No damage from a 12-inch (30 centimeter) drop.
			2. Performance of Finish Flooring: Tested to ASTM D2394.
				1. Compression Indentation: Less than 0.05 inches (1.27 millimeters).
			3. Resistance of Concrete to Rapid Freezing and Thawing: Tested to ASTM C666.
				1. Freeze/Thaw Cycling: No disintegration following 25 cycles.
			4. Physical Testing of Gypsum Products: Tested to ASTM 473. Humidified Deflection: Less than 0.0639 inches (1.62 millimeters).
			5. Mold and Mildew Resistance: Tested to ASTM G21. Test results were “0 Mold Growth Observed.”
			6. Water Vapor Transmission: Tested to ASTM E96. With ½-inch (12mm) Structural Wall.
				1. Greater than or equal to 13 perms according to ASTM E96 Method B.
				2. Greater than or equal to 5 perms according to ASTM E96 Method A.
			7. Shear Bond Strength for Dry-Set Portland Cement Mortar: Tested to ANSI A118.1.
				1. Dry-Set Portland Cement: Greater than 50 pounds per square inch (345 Kilopascals).
			8. Shear Bond Strength for Latex-Portland Cement Mortar: Tested to ANS A118.4.
				1. Latex-Portland Cement Mortar: Greater than 50 pounds per square inch (345 Kilopascals).
			9. Building Code Compliance:
				1. 2021, 2018, & 2015 International Building Code (IBC)
				2. 2021, 2018, & 2015 International Residential Code (IRC)
				3. ICC Evaluation Report: ICC ESR-5194.
				4. ICC-ES Acceptance Criteria for Fiber-Reinforced Magnesium-Oxide-Based Sheets (AC386)
				5. ICC-ES Acceptance Criteria for Reinforced Cementitious Sheathing and Floor Underlayment (AC376)
				6. ICC-ES Acceptance Criteria for Fiber-Cement Interior Substrate Sheets Used in Wet and Dry Areas (AC378)
				7. ICC-ES Acceptance Criteria for Fiber-Reinforced Cement Sheet Structural Floor Sheathing (AC367)
				8. ICC-ES Acceptance Criteria for Structural Cementitious Floor and Roof Sheathing Panels (AC318)
				9. Comply with California Building Code-Building.
				10. Comply with California Building Code-Residential.
				11. Comply with Chicago Title 14 Supplement.
				12. Comply with Florida Building Code-Building.
				13. Comply with Florida Building Code-Residential.
				14. Comply with Los Angeles Building Code-Building.
				15. Comply with Los Angeles Building Code-Residential.

## FASTENERS

* + 1. Size and type of fastener must comply with the manufacturers written installation instructions and the requirements of authorities having jurisdiction. See manufacturer website for up-to-date suggested fasteners.
	1. ADHESIVES
		1. Adhesive type must comply with the manufacturers written installation instructions and the requirements of authorities having jurisdiction. See manufacturer website for suggested adhesives and product accessories guide
		2. Polyurethane or solvent based.
		3. Panel manufacturer and adhesive manufacturer recommended for indicated use.
		4. Conforms with ASTM D3498 - Standard Specification for Adhesives for Field-Gluing Structural Panels to Wood Based Floor System Framing [and] [or] APA AFG-01 - Adhesives for Field-Gluing Plywood to Wood Framing.

# PART 3 - EXECUTION

## EXAMINATION

* + 1. Examine Project conditions and completed Work and verify that the area is ready to receive Work.
			1. Confirm truss surface quality is within tolerances required by the truss manufacturer.
		2. Immediately correct all deficiencies and conditions which would cause improper execution of Work specified in this Section and subsequent Work.
			1. Proceeding with Work specified in this Section shall be interpreted to mean that all conditions were determined to be acceptable prior to start of Work.

## INSTALLATION GENERAL

* + 1. Install NEXGEN MAXTERRA® MgO NON-COMBUSTIBLE SINGLE LAYER STRUCTURAL FLOOR PANELS in accordance with the manufacturers written instructions, requirements of applicable (Evaluation Reports, Evaluation Listings, & any requirements of authorities having jurisdiction) Refer to Technical and Install Guide on <https://nexgenbp.com/resources>.
		2. Adhere to the recommendations of the Authorities Having Jurisdiction.
		3. Refer to the manufacturer’s instructions for required tools, materials, estimating procedures, and jobsite preparation.
		4. Follow truss manufactures guidelines for installation, tolerances, execution, etc.
		5. Follow finish flooring manufacturers recommendations for underlayment, padding, etc.
	1. SUBFLOOR INSTALLATION

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* SPECIFIER NOTE: DELETE OPTIONS NOT REQUIRED FOR THIS PROJECT. HARDWARE OPTIONS ARE INDICATED IN RED SQUARE BRACKETS. SEE SECTION 3.3 H FOR TRUSS TYPE & HARDWARE TYPE.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

* + 1. [Glue and nail] or [Glue and screw] to Wood framing] or [Glue and screw to Cold-Formed Steel framing]
		2. Install floor panels with smooth side exposed.
		3. Apply code approved adhesive in accordance with manufacturer’s instructions.
		4. Butt panel edges together.
		5. Stagger end joints of adjacent panels.
		6. Do not bridge expansion joints.
		7. Long direction of panels to span a minimum of three joists, short end to be supported over framing.
		8. Mechanically fasten subfloor panels per specifications below.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* SPECIFIER NOTE: DELETE OPTIONS NOT REQUIRED FOR THIS PROJECT. TRUSS AND HARDWARE OPTIONS ARE BELOW. SEE MANUFACTURER WEBSITE FOR SUGGESTED FASTERNERS.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Framing Type** | **Framing Spacing** | **Fastener Type 1** | **Fastener Configuration** |   |
| 2 x lumber | 24-inches O.C. (max) | 0.113-inch x 2-inch galvanized ring shank nails2 | 6” O.C. (Perimeter)      x 12” O.C. (Field) |  |
|
|
|
| 2 x lumber | 24-inches O.C. (max) | #8 x 2-inch stainless steel screws3 | 6” O.C. (Perimeter)      x 12” O.C. (Field) |
|
|
|
| Cold-Formed Steel | 24-inches O.C. (max) | Grabber GCB8158HL4 | 6” O.C. (Perimeter)      x 12” O.C. (Field) |
|
|
|
| Cold-Formed Steel | 24-inches O.C. (max) | GCH8158LG ([ESR-4223](https://icc-es.org/report-listing/esr-4223/))4 | 6” O.C. (Perimeter)      x 12” O.C. (Field) |
|
|
|

For **SI:** 1 inch = 25.4 mm

1Fasteners must be placed a minimum of 1/2-inch from edges and 2-inches from corners.

2Nails to penetrate framing members 1.25 inch minimum to wood framing.

3Screws to penetrate framing member 1-in minimum] to wood framing.

4Screws to penetrate framing member 3 threads protruding minimum] to cold formed steel framing.

* 1. PROTECTION
		1. Protect exposed board surfaces from damage due to high construction traffic and concentrated loads during construction.
	2. REPAIR
		1. MAXTERRA® MgO Non-Combustible Single Layer Structural Floor Panels imperfections and minor divots can be easily corrected through patching with an elastomeric compound explicitly designed for concrete and masonry substrates. Follow the manufacturer’s instructions for achieving optimal gap filling and applications.
		2. For damage greater than small imperfections or minor divots that create a hole in the panel, the impacted area and surrounding area should be replaced with a new piece of MAXTERRA® MgO Non-Combustible Single Layer Structural Floor Panel. Replace damaged areas with new MAXTERRA® MgO Non-Combustible Single Layer Structural Floor Panels, ensuring a minimum coverage width of 24 inches that spans a minimum of three floor joists. Add nominal 2x blocking at these panel seams.
		3. If damage to a panel occurs in a fire-rated assembly, contact your local authority having jurisdiction and NEXGEN Building Products for guidance on potential repair options.

## PREPERATION FOR FINISH FLOORING INSTALATION

* + 1. Make sure surface is clean (free of dust, debris, oil and other contaminants)
		2. Verify fasteners are flush with panel surfaces
		3. Perform any required repairs in accordance with the section above and the information provided in the manufacturer's installation instructions.
		4. Perform any additional preparatory measures as required by the finish flooring manufacturer.

**END OF SECTION**