

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

THIS GUIDE SPECIFICATION IS DESIGNED TO ASSIST THE SPECIFIER IN ACCURATELY SPECIFYING NEXGEN MAXTERRA® MgO NON-COMBUSTIBLE STRUCTURAL 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 MAXTERRA MgO NON-COMBUSTIBLE STRUCTURAL SHEATHING PANELS OFFER A VERSATILE SOLUTION FOR VARIOUS BUILDING APPLICATIONS, CAPABLE OF REPLACING FIRE-RETARDANT TREATED PLYWOOD,

ORIENTED STRAND BOARD (OSB), AND GYPSUM SHEATHING PANELS. THESE PANELS CAN BE USED IN FIRE-RESISTANT ASSEMBLIES AND OR LOAD-BEARING WALL 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 STRUCTURAL SHEATHING, 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 00

SHEATHING

NEXGEN BUILDING PRODUCTS

MAXTERRA® MgO NON-COMBUSTIBLE STRUCTURAL SHEATHING

\*\*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 STRUCTURAL SHEATHING.

## 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 C1185: Standard Test Method for Testing Non-Asbestos Fiber-Cement Flat Sheet, Roofing, Siding Shingles, and Clapboards.
			4. ASTM D1037: Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials
			5. ASTM E72: Standard Test Methods of Conducting Strength Tests of Panels for Building Construction
			6. ASTM E119 / UL 263: Standard Test Methods for Fire Tests of Building Construction and Materials.
			7. ASTM E136: Standard Test Methods for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750ºC. Option A and Option B.
			8. ASTM E84 / UL723: Standard Test Methods for Surface Burning Characteristics of Building Materials.
			9. ASTM D1761: Standard Test Methods for Mechanical Fasteners in Wood and Wood-Based Materials.
			10. ASTM C666: Standard Test Methods for Resistance of Concrete to Rapid Freezing and Thawing
			11. ASTM D2394: Standard Test Methods for Simulated Service Testing of Wood and Wood-Based Finish Flooring
			12. ASTM E96: Standard Test Method for Water Vapor Transmission.
			13. ASTM C473: Standard Test Methods for Physical Testing of Gypsum Panel Products
			14. ASTM G21: Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
		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-5193.
				2. ICC-ES Listing Report: ICC ESL-1568
				3. California Building Code-Building.
				4. California Building Code-Residential.
				5. Chicago Title 14 Supplement.
				6. Florida Building Code-Building.
				7. Florida Building Code-Residential.
				8. Los Angeles Building Code-Building.
				9. Los Angeles Building Code-Residential.

## SUBMITTALS

* + 1. Product Data:
			1. Submit ICC-ES Evaluation Report ESR-5193, ICC-ES Listing Report ESL-1568, manufacturer's printed product literature, specifications, and additional data to show compliance.

 

## QUALITY ASSURANCE

* + 1. Product must be approved 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-5193 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.

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## STORAGE AND HANDLING

* + 1. Storage and Protection: Store MAXTERRA® products in a cool / 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 dimensions 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 STRUCTURAL SHEATHING DESCRIPTION

## NEXGEN MAXTERRA® MgO NON-COMBUSTIBLE STRUCTURAL SHEATHING

## Description:

* + - 1. NEXGEN MAXTERRA® MgO is a versatile mineral-based building material composed primarily of magnesium oxide and sulfate. It is a superior alternative to oriented strand board (OSB), plywood, gypsum, and fire-retardant treated plywood/OSB. Offering unmatched non-combustibility, fire resistance, water resistance, and mold and mildew resistance.

## NEXGEN MAXTERRA® MgO NON-COMBUSTIBLE STRUCTURAL SHEATHING

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 STRUCTURAL SHEATHING PERFORMANCE AND DESIGN CRITERIA

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* + 1. Design Criteria of Sulfate-based magnesium oxide panels:
			1. Strength: MAXTERRA® MgO NON-COMBUSTIBLE STRUCTURAL SHEATHING shall be

strong and durable.

* + - 1. Replaces:
				1. Plywood.
				2. Oriented strand board.
				3. Plywood/Oriented strand board combination.
				4. Engineered OSB combination.
				5. Engineered Fireboard.
		1. Physical Characteristics:
			1. Dimensions: Conforms to ASTM C1185.
				1. Thickness:

[1/2-inch (12 mm).]

[5/8-inch (16mm).]

* + - * 1. Dimensions:

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

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

[4 by 12 feet (1.2 by 3.6 meters).]

* + - * 1. Weight:

[1/2-in (12mm) - 2.83 pounds per square foot.]

[5/8-in (16mm) - 3.77 pounds per square foot.]

* + - * 1. Edge Treatments:

[Straight / Square Edge.]

[Tapered 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”

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* + 1. Performance Criteria:
			1. Non-combustible and Fire Resistant: Tested to ASTM E136.
				1. Non-combustible Rating.
			2. Smoke and Flame Spread: Tested to ASTM E84.
				1. Flame Spread Index: 0.
				2. Smoke Developed Index: 0.
			3. Structural Performance: Tested to ASTM E72.

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| **Allowable Shear Loads** |
| Nominal Panel Thickness | Framing | Fastening Requirements | Wall Height (feet) | Allowable Shear Capacity (plf) |
| Fastener Specification | Panel Edge Distance (inches) | On-Center Spacing (Perimeter / Field) (inches) |
| 1/2" (12mm) | Minimum 2x4; Specific gravity of 0.42, spaced at 24-in O.C. | 0.113-inch x 2-inch galvanized ring shank nails | 1/2 | 4/8 | 8 | 237 |
| 1/2 | 4/8 | 10 | 195 |
| #8 x 1-5/8" stainless steel screw | 1/2 | 4/8 | 8 | 288 |
| 5/8" (16mm) | Minimum 2x4; Specific gravity of 0.42, spaced at 24-in O.C. | 0.113-inch x 2-inch galvanized ring shank nails | 1/2 | 4/8 | 8 | 237 |
| 1/2 | 4/8 | 10 | 195 |
| #8 x 1-5/8" stainless steel screw | 1/2 | 4/8 | 8 | 288 |

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| **Allowable Transverse Wind Loads** |
| Nominal Panel Thickness | Framing | Hardware | Fastener On-Center Spacing (Perimeter/Field) | Allowable Wind Load (psf) |
| Positive | Negative |
| 1/2" (12mm) | Minimum 2"x4"; Specific gravity of 0.42, spaced at 24-in O.C. | 0.113-inch x 2-inch galvanized ring shank nails | 4/8 | 47 | 35 |
| #8 x 1-5/8" stainless steel screw | 4/8 | 45 | 37 |
| 5/8" (16mm) | Minimum 2"x4"; Specific gravity of 0.42, spaced at 24-in O.C. | 0.113-inch x 2-inch galvanized ring shank nails | 4/8 | 47 | 35 |
| #8 x 1-5/8" stainless steel screw | 4/8 | 45 | 37 |

* + - 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.
				1. Length: 0.04 inches (1.02 millimeters).
				2. Width: 0.03 inches (0.76 millimeters).
				3. Thickness: 0.02 inches (0.508 millimeters).
				4. Squareness: 0.001 inches (0.0254 millimeters).
				5. Straightness: 0.001 inches (0.0254 millimeters).
			3. Physical and Mechanical Properties: Tested to ASTM D1037
				1. [1/2-inch (12mm) Nail-head Pull Through: Ultimate Load 90lbf (400 Newtons)]
				2. [5/8-inch (16mm) Nail-head Pull Through: Ultimate Load 90lbf (400 Newtons)]
				3. Falling Ball Impact: No Damage at 12-inch (30 centimeter) Drop.
			4. Performance of finish Flooring: Tested to ASTM D2394
				1. Compression Indentation: Less Than 0.05 inches (1.27 millimeters).
			5. Resistance of Concrete to Rapid Freezing and Thawing: Tested to ASTM C666
				1. Freeze/Thaw Cycling: No Disintegration following 25 Cycles.
			6. Physical Testing of Gypsum Products: Tested to ASTM C473
				1. Humidified Deflection: Less Than 0.0639 inches (1.62 millimeters).
			7. Mold and Mildew Resistance: Test results were “0 Mold Growth Observed”
				1. Inorganic material advantage.
				2. Enhanced moisture resistance.
			8. 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.
			9. 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 (344.7 Kilopascals).
			10. 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 (344.7 Kilopascals).
			11. 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-5193.
				4. ICC-ES Listing Report: ICC ESL-1568.
				5. Comply with California Building Code-Building.
				6. Comply with California Building Code-Residential.
				7. Comply with Chicago Title 14 Supplement.
				8. Comply with Florida Building Code-Building.
				9. Comply with Florida Building Code-Residential.
				10. Comply with Los Angeles Building Code-Building.
				11. Comply with Los Angeles Building Code-Residential.

## FASTENERS

* + 1. Size and type of fastener must comply with the manufacturer’s written installation instructions and the requirements of authorities having jurisdiction. See manufacturer website for up-to-date suggested fasteners.

# PART 3 - EXECUTION

## EXAMINATION

* + 1. Examine Project conditions and completed Work and verify that the area is ready to receive Work.
			1. Confirm wall framing quality is within tolerances.
		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.
	1. INSTALLATION GENERAL
		1. Install NEXGEN MAXTERRA® MgO NON-COMBUSTIBLE STRUCTURAL SHEATHING 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. Coordinate termite and decay protection when MAXTERR® sheathing to be installed within 8 inches of exposed earth.
		5. Follow wall finishing manufacturers recommendations for WRB, siding, brick veneer, etc.

## WALL SHEATHING INSTALLATION

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* + 1. [Nail] or [Screw] to Wood framing.
		2. Place sheathing with smooth side exposed.
		3. Install panels parallel or perpendicular to framing.
		4. Butt panel edges together.
		5. Stagger panel seams from one side of the assembly to the opposite as required by manufacturer.
		6. Panel edges to be backed with framing or blocking
		7. Mechanically fasten panels per specifications below.

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| --- | --- | --- | --- |
| **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 nails | 4” O.C. (Perimeter)      x 8” O.C. (Field) |
| 2 x lumber | 24-inches O.C. (max) | #8 x 1-5/8-inch stainless steel screws | 4” O.C. (Perimeter)      x 8” 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.

* 1. PROTECTION
		1. Protect exposed board surfaces from damage due to high construction traffic during construction.
	2. REPAIR
		1. MAXTERRA® Non-Combustible Structural Sheathing 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 that is greater than small imperfections / 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 Structural Sheathing. Replace damaged areas with new MAXTERRA® MgO Non-Combustible Structural Sheathing ensuring a minimum width of 24-inches of coverage that spans a minimum of two spans (three wall studs), add nominal 2x blocking at the panel seams. When MAXTERRA® MgO Non-Combustible Structural Sheathing are used as an element to resist lateral loading, the panels shall be installed in accordance with the Lateral Force Resisting Systems section above and in accordance with applicable evaluation service report.
		3. If damage to a panel occurs in a fire-rated wall assembly, contact your local authority having jurisdiction and NEXGEN Building Products for guidance on potential repair options.

## PREPARATION FOR WRB & FINISH WALL COVERINGS

* + 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 wall coverings manufacturer.

**END OF SECTION**