

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

THIS GUIDE SPECIFICATION IS DESIGNED TO ASSIST THE SPECIFIER IN ACCURATELY SPECIFYING NEXGEN MAXTERRA® MgO FIRE-AND WATER-RESISTANT UNDERLAYMENT 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 FIRE-AND WATER-RESISTANT UNDERLAYMENT PANELS OFFER A VERSATILE SOLUTION FOR VARIOUS BUILDING APPLICATIONS, CAPABLE OF REPLACING WET-LAID GYPSUM CEMENT UNDERLAYMENT FOR INTERIOR FLOORING APPLICATIONS. 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 FIRE-AND WATER-RESISTANT UNDERLAYMENT, 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 26

UNDERLAYMENT

NEXGEN BUILDING PRODUCTS

MAXTERRA® MgO FIRE-AND WATER-RESISTANT UNDELAYMENT

\*\*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 FIRE-AND WATER-RESISTANT UNDERLAYMENT.

## 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 E84 / UL723: Standard Test Methods for Surface Burning Characteristics of Building Materials.
			7. ASTM D1761: Standard Test Methods for Mechanical Fasteners in Wood and Wood-Based Materials.
			8. ASTM C666: Standard Test Methods for Resistance of Concrete to Rapid Freezing and Thawing
			9. ASTM D2394: Standard Test Methods for Simulated Service Testing of Wood and Wood-Based Finish Flooring
			10. ASTM C473: Standard Test Methods for Physical Testing of Gypsum Panel Products
		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-5192.
				2. ICC-ES Acceptance Criteria for Fiber-Reinforced Magnesium-Oxide-Based Sheets (AC386)
				3. ICC-ES Acceptance Criteria for Reinforced Cementitious Sheathing and Floor Underlayment (AC376)
				4. ICC-ES Acceptance Criteria for Fiber-Cement Interior Substrate Sheets Used in Wet and Dry Areas (AC378)

## SUBMITTALS

* + 1. Product Data:
			1. Submit ICC-ES Evaluation Report ESR-5192, 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-5192 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 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 lBC and or IRC, and local building codes.
		2. Environmental Limitations: For 1/4-in (6mm) & 3/8-in (9mm) Underlayment, DO NOT INSTALL, until installation areas are enclosed and conditioned for a minimum of 48 hours.
		3. Environmental Limitations: For 1/2-in (12mm) & 5/8-in (16mm) Underlayment, can be installed during rough framing and can be exposed for 200 days.

## 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 FIRE-AND WATER-RESISTANT UNDERLAYMENT DESCRIPTION

* + 1. NEXGEN MAXTERRA® MgO FIRE-AND WATER-RESISTANT UNDERLAYMENT

Description:

1. NEXGEN MAXTERRA® MgO is a mineral-based building material composed primarily of magnesium oxide and sulfate. It is a superior alternative to conventional Portland Cement based backer board products and Wet-Laid Gypsum.

## NEXGEN MAXTERRA® MgO FIRE-AND WATER-RESISTANT UNEDRLAYMEMT

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 FIRE-AND WATER-RESISTANT UNDERLAYMENT PERFORMANCE AND DESIGN CRITERIA

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* + 1. Design Criteria:
			1. Strength: MAXTERRA® MgO FIRE-AND WATER-RESISTANT UNDERLAYMENT shall be strong and durable.
			2. Replaces:
				1. Traditional Portland Cement Boards
				2. Wet-laid Gypsum
			3. Uses: Interior underlayment installed over structural subfloor designed to withstand prolonged exposure to moisture
				1. [1/4-in (6mm) & 3/8-in (9mm) do not install until installation areas are enclosed and conditioned for a minimum of 48 hours]
				2. [1/2-in (12mm) & 5/8-in (16mm) can be installed during rough framing and can be exposed for 200 days.]
		2. Physical Characteristics:
			1. Dimensions: Conforms to ASTM C1185.
				1. Thickness:

[1/4 inch (6mm)].

[3/8 inch (9 mm)].

[1/2 inch (12 mm)].

[5/8 inch (16mm)].

* + - * 1. Dimensions:

[3 x 5 feet (0.9 x 1.5 meters)].

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

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

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

* + - * 1. Weight:

[1/4in (6mm) - 1.22 pounds per square foot].

[3/8in (9mm) - 1.81 pounds per square foot].

[1/2in (12mm) - 2.41 pounds per square foot].

[5/8in (16mm) - 3.22 pounds per square foot.].

* + - * 1. Edge Treatments:

Straight / 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”

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SPECIFIER NOTE: MAXTERRA® MgO FIRE-AND WATER-RESISTANT UNDERLAYMENT, 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 FIRE-AND WATER-RESISTANT UNDERLAYMENT, FOR ASSISTANCE IN SELECTING THE MOST APPROPRIATE PRODUCTS, PLEASE CONTACT NEXGEN BUILDING PRODUCTS.

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* + 1. Performance Criteria:
			1. Smoke and Flame Spread: Tested to ASTM E84.
				1. Flame Spread Index: 0.
				2. Smoke Developed Index: 0.
			2. 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: 1/8-in (3.125 millimeters).

Width: 1/8-in (3.125 millimeters).

Thickness: 1/16-in (1.6 millimeters).

Squareness: 1/64-in (0.4 millimeters).

Straightness: 1/64-in (0.4 millimeters).

* + - 1. Physical and Mechanical Properties: Tested to ASTM D1037 (saturated test condition)
				1. [1/4-in (6mm) Nail-head Pull Through: Ultimate Load Greater Than 60lbf (266 Newtons)]
				2. [3/8-in (9mm) Nail-head Pull Through: Ultimate Load Greater Than 90lbf (400 Newtons)]
				3. [1/2-in (12mm) Nail-head Pull Through: Ultimate Load Greater Than 90lbf (400 Newtons)]
				4. [5/8-in (16mm) Nail-head Pull Through: Ultimate Load Greater Than 90lbf (400 Newtons)]
				5. Falling Ball Impact: No Damage at 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 C473
				1. Humidified Deflection: Less Than 0.0639 inches (1.62 millimeters).
			5. 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).
			6. 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).
			7. 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-5192.

## 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. Ensure wall and/or subfloor is structurally sound.
			2. Confirm subfloor framing quality is within tolerances.
			3. Ensure subfloor surfaces are clean and flat.
			4. Ensure subfloor has no standing water or other contaminates that would interfere with installation of underlayment installation in accordance with manufacturers guidelines.
		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 FIRE-AND WATER-RESISTANT UNDERLAYMENT 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. Fully support NEXGEN MAXTERRA® MgO FIRE-AND WATER-RESISTANT UNDERLAYMENT on approved structural subflooring.
		5. Maintain designed expansion joints through underlayment. Do not bridge designed expansion joints in structural panel subfloor.
	1. UNDERLAYMENT INSTALLATION

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* + 1. [Glue and nail] or [Glue and screw] or [Glue and staple] to structural subflooring.
		2. Install panels with smooth side exposed.
		3. Apply code approved adhesive in accordance with manufacturer’s instructions.
		4. Butt underlayment in moderate contact to adjacent panels.
		5. Stagger end joints of adjacent panels.
		6. Offset underlayment edges a minimum of 4-in from structural subflooring edges.
		7. Ensure full contact between NEXGEN MAXTERRA® MgO FIRE-AND WATER-RESISTANT UNDERLAYMENT and structural subflooring
		8. Mechanically fasten underlayment panels per specifications below.

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|  |  |
| --- | --- |
| **Panel Thickness** | **Fastening Requirements4** |
| **Fastener Type Most Typical1,2,**(See manufacturer website for suggested fasteners) | **Perimeter Spacing3** | **Field Spacing** |
| **¼” (6 mm)** **3/8” (9 mm)** | ¼” crown chisel point staple5 | 2-inches O.C. | 4-inches O.C. |
| 3d (.083-in. dia.) x 1-1/4 in. ring shank nails  |
| **½” (12 mm)****5/8” (16 mm)** | 0.113-in. dia. x 1-1/2 in. to 2 in. ring shank nails | 6-inches O.C. | 12-inches O.C. |
| #8 x 1-1/2 in. to 2 in. wafer head screws |

**For SI:** 1 inch =25.4 mm

1Fasteners must be corrosion resistant (electrogalvanized, hot-dipped galvanized, or stainless).

2Fasteners must be set flush or just below panel surface.

3Fasteners must be placed a minimum of 1/2-inch from edges and 2-inches from corners.

4Structural subfloor assembly must be designed with a maximum assembly deflection of L/360 for the applicable design loads.

5Staple length must be selected such that it embeds at least 85% of the thickness of the subfloor but does not protrude from the bottom of the subfloor panel.

*For example: 1” length staples should be used with ¼-inch thick underlayment and ¾-inch thick subfloor; 7/8” length staples should be used with ¼-inch thick underlayment and 5/8-inch-thick subfloor.*

* 1. PROTECTION
		1. Protect exposed board surfaces from damage due to high construction traffic and concentrated loads during construction.
	2. REPAIR
		1. MAXTERRA® MgO FIRE-AND WATER-RESISTANT UNDERLAYMENT 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 replace with a new piece of MAXTERRA® MgO FIRE-AND WATER-RESISTANT UNDERLAYMENT.
		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

## Make sure surface is clean (free of dust, debris, oil and other contaminants)

## Verify fasteners are flush with panel surfaces

## Perform any required repairs in accordance with the section above and the information provided in the manufacturer's installation instructions.

## Perform any additional preparatory measures as required by the finish flooring manufacturer.

**END OF SECTION**