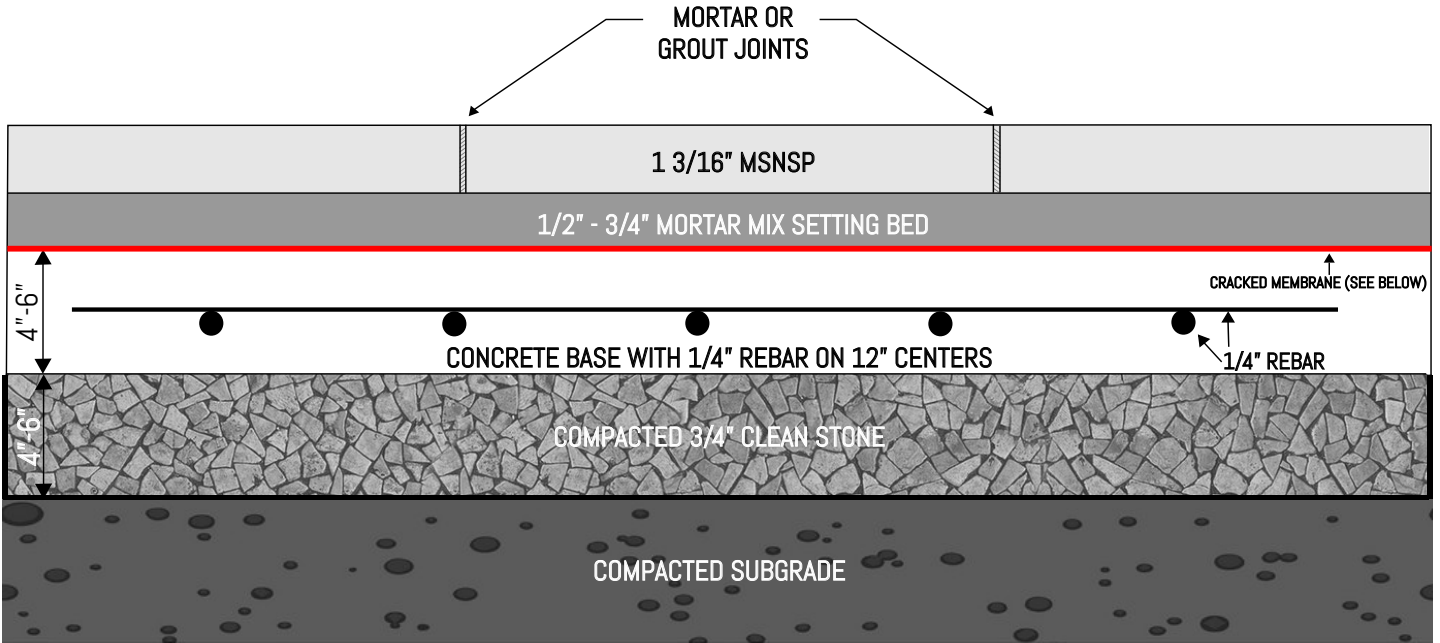



WET LAID 1 3/16"

MSNSP – Marmiro Stones Natural Stone Pavers – Pedestrian Application





For unique job conditions, soil types and concrete slab reinforcement additional engineering may be needed.

Concrete sand and screenings hold moisture under Marmiro Stones Natural Stone Pavers (MSNSP) and can affect the stones life integrity.

Tamping sandblasted marble & sandblasted travertine is not recommended. This will cause chipping along the edges of the stone.



APPROVED MSNSP PRODUCT FOR THIS INSTALLATION METHOD		
MATERIAL TYPE	RECOMMENDED	NOT RECOMMENDED
MARBLE	✓	
TRAVERTINE	✓	
GRANITE	✓	
BLUESTONE	✓	
BASALT	✓	

Excavation

1. Please be sure to call 811 or your local utility companies to ensure utility lines are marked correctly before any excavation has begun.
2. If lines are found, please take proper precautions to ensure utility lines will not be disturbed. This includes discussing sprinkler lines and heads with the customer.
3. Dig soils to depth between 10.5" - 12.5" maintaining a slope of 3/16" per foot to allow for proper drainage. This slope should mimic the slope of your final elevation.
4. Compact your sub grade, maintaining the slope as mentioned above. Install woven geotextile, encapsulating the entire excavated area including the vertical walls of the soil. **See diagram.**
5. Install 4" of ASTM #57 (3/4" clean) stone as sub-base compacting using a vibratory plate compactor.

6. For a 4" or 6" slab pour 3500 PSI concrete using 1/2" rebar on 12" centers.
 - A. Pitch concrete 3/16" per foot to control water and mirror finish grade.

Installation

1. Final elevation of concrete base should be 2" below finished grade.
2. Crack membrane installation types:
 - Schluter® – Ditra System
 - Laticrete® Anti-fracture membrane
3. Options for Mortar setting bed:
 1. Laticrete® Multimax™ MIN ½" – ¾" MAX
 - a) Use approximately 4.8-5.0 qts. (4.5-4.7 L) of water for 25 lbs. (11.3 kg) of powder. (To mix smaller, quantities use 3.7 parts powder to 1 part water.)
 - b) Allow mortar to slake for 5 minutes. Remix without adding any more water or powder. During use, stir occasionally to keep mix fluffy. DO NOT temper with water.
 - c) Due to the fiber-reinforced formula back buttering the stone is not required.
 2. Type S Mortar mix – Up to 1" bed depth MAX
 - a) Mix 1 bag mortar mix to 16 shovelfuls of mason sand (ASTM C-144) in wheelbarrow or cement mixer adding 4-1/2 quarts (4.3 L) of clean water into the mixing container for each 80 lb (36.3 kg) bag. Slowly pour the contents of the bag into the mixing water. Mix until a firm, workable consistency is achieved.
 - b) IMPORTANT: Back butter the entire stone with thin set covering the entire back of the stone before laying onto the setting bed.
4. Based on the pattern and job site conditions, choose your starting point that is most practical from staging of materials.
 - During installation of MSNSP, it is best practice to use string lines or laser equipment to maintain square at the starting point.
5. Be sure to remove excess setting bed mortar along exposed edges before ending the day.
6. MSNSP must be installed with at least 1/8" to 1/4" joint using spacers, depending on the pattern while maintaining straight lines.
7. Due to variations in natural stone, it is required to pull from multiple crates.
8. Perform all cutting using a diamond blade. Cutting wet can provide a smoother cut and may decrease chipping on MSNSP.
9. Only use a white non-marking mallet to set the stones.
10. Grouting the joints is REQUIRED for all wet laid applications.
 1. Grout installation after a minimum of 24 hours curing time at 70°F
 2. Laticrete® Permacolor Select Grout – 1/8"- 1/4" joint.
 - a) Use approximately 2.4 – 2.6 quarts (2.3 L – 2.5 L) of clean potable water for 25 lbs (11.3 kg) of PERMACOLOR® Grout. Place water in a clean 5 gal. mixing bucket and add grout powder. Mix with a slow speed drill mixer (300 rpm) for 1 minute.
 - b) Clean tile surface with a damp sponge. Spread with a sharp, firm rubber grout float or wall float for narrow wall joints. To remove excess grout hold the float at a 90° angle and pull it at a 45° angle diagonally across the joints to avoid pulling out the material. Note: If the grout begins to stiffen during installation, remix with drill mixer for 10–15 seconds. DO NOT ADD MORE WATER.
 - c) Begin initial cleaning by lightly wiping down entire area to be cleaned with a damp sponge. Wash with a damp sponge (not wet). Work diagonally to the joints. Allow to dry 3 hours at 70°F (warmer days will have a faster dry time). For second cleaning, use a damp sponge or dry cloth to remove remaining grout haze.