



**SPECIFICATION FOR NEW MISSION® PAVER SYSTEM**

**PART 1: GENERAL**

**1.1 Scope**

This Work includes furnishing and installing non-permeable concrete paver system and base to the lines and grades designated on the construction drawings and as specified herein.

**1.2 Reference Standards**

- AASHTO M288 Geotextile Specifications to Highway Applications
- ACI 318 Building Code Requirements for Reinforced Concrete
- ASTM C33 Concrete Aggregates
- ASTM C39 Compressive Strength of Concrete
- ASTM C94 Ready-Mixed Concrete
- ASTM C140 Sampling and Testing Concrete Masonry Units and Related Units
- ASTM C143 Slump of Concrete
- ASTM C144 Aggregate for Masonry Mortar
- ASTM C231 Air Content of Concrete
- ASTM C685 Concrete Made by Volumetric Batching and Continuous Mixing
- ASTM C936 Concrete Interlocking Paving Units
- ASTM D698 Laboratory Compaction Characteristics of Soil Using Standard Effort
- ASTM D1557 Laboratory Compaction Characteristics using Modified Effort

**1.3 Delivery, Storage, and Handling**

- A. Check the materials upon delivery to assure proper material has been received. Unload without damaging product or adjacent materials
- B. Prevent excessive mud, wet concrete, and like materials from contacting the paving units.
- C. Protect the materials from damage. Damaged material shall not be incorporated in the project.

**PART 2: MATERIALS**

**2.1 Paving Units**

- A. Paving units shall be New Mission® units as produced by a manufacturer licensed and authorized by the paver licensor to produce the units.
- B. Paving units shall have New Mission® paver specifications and be made from wet-cast concrete in accordance with ASTM C94 or C685, latest revision, and per the following chart:

Freeze-Thaw Exposure Class*	Air Content %	28-Day Compressive Strength <i>psi (MPa)</i>	Maximum Water Cement Ratio	Min. Concrete Temp. at Placement °F (°C)
Negligible	1½ to 4½	8000 (55.2)	0.38	50 (10)
Moderate	2½ to 5½	8000 (55.2)	0.38	50 (10)
Severe	3 to 6	8000 (55.2)	0.38	50 (10)
Very Severe	3 to 6	8000 (55.2)	0.38**	50 (10)

All Outcropping products shall use frost-free aggregate.

\*Exposure class is as described in ACI 318. “MODERATE” describes concrete that is exposed to freezing and thawing cycles and occasional exposure to moisture. “SEVERE” describes concrete that is exposed to freezing and thawing cycles and in continuous contact with moisture. “VERY SEVERE” describes concrete that is exposed to freezing and thawing cycles and in continuous contact with moisture and exposed to deicing chemicals. Exposure class should be specified by owner/purchaser prior to order placement.

\*\*For Very Severe exposure, flay ash, other pozzolan, and slag shall be limited as described in ACI 318 4.2.3.

Notwithstanding anything stated above, all material used in the wall units must meet applicable ASTM and ACI requirements for exterior concrete.

- C. Paving units shall comply with ASTM C936, except as modified herein.
- D. Exterior paver dimensions, as measured in accordance with ASTM C140, shall be uniform and consistent. Maximum dimensional deviations shall be 0.125 inch (3.2 mm) or 2%, whichever is less, excluding the architectural surface.
- E. Average absorption (as determined according to ASTM C140) shall be less than 5%. Absorption of single units shall not exceed 7%.

# SPECIFICATION FOR ROSETTA® NEW MISSION PAVER SYSTEM

## 2.2 Jointing Sand

- A. Use polymeric or natural jointing sand, as specified, meeting the gradation requirements of ASTM C33, with less than 1% passing the No. 200 (0.075 mm) sieve, or ASTM C144.
- B. Provide a joint sand color acceptable to Owner.

## 2.3 Bedding, Base, and Subbase

- A. Internal and external drainage, subgrade conditions, traffic, and pavement structure requirements shall be evaluated by the Professional Engineer who is responsible for the pavement system design.
- B. Use bedding sand meeting the requirements of ASTM C33, with less than 1% passing the No. 200 (0.075 mm) sieve, or ASTM C144.
- C. Use dense-graded gravel base material meeting the requirements of the local transportation agency. Material should be a mixture of hard, durable fragments of crushed stone. Maximum grain size should not exceed 1½ inch and the portion finer than the No. 200 (0.075 mm) should not exceed 8%.
- D. If specified, subbase material shall be a free-draining, natural sand and gravel mixture free of particles greater than 3 inches (75 mm) and no more than 8% passing the No. 200 (0.075 mm) sieve.

## 2.4 Geotextile

- A. Geotextile fabric shall meet the requirements for Class 2 construction survivability in accordance with AASHTO M288.

## 2.5 Edge Restraint

- A. For pedestrian or residential applications, plastic or metal edging strips fastened securely to the compacted base using steel spikes, per the manufacturer's recommendations, may be used.
- B. For vehicular applications, use cast-in-place concrete curb.

## PART 3: CONSTRUCTION OF PAVER SYSTEM

### 3.1 Excavation & Grading

- A. Contractor shall excavate and/or grade to the lines and grades shown on the construction drawings.

### 3.2 Subgrade Preparation

- A. Verify that the subgrade meets the required alignment and grade. Note that pavers will settle slightly (1/4- to 3/8-inch; 6 to 10 mm) during compaction. Final grade of base and bedding material should be adjusted to account for this

settlement. Take special care where pavers abut existing site features such as other pavements.

- B. Verify subgrade meets or exceeds assumed design strength and compaction. Unsuitable soils, such as excessively soft or loose soil, soils that yield excessively under load, soils with high organic content, undocumented fill, or frozen soils shall be removed and replaced with acceptable, compacted material, or otherwise improved, to the satisfaction of the engineer. Unless otherwise required by the engineer, compact subgrade compact to at least 95% of standard proctor maximum dry density (ASTM D698) or 90% of modified proctor maximum dry density (ASTM D1557).
- C. Protect prepared subgrade from weather and traffic. Remove subgrade that has been degraded and replace with acceptable, compacted material.

### 3.3 Subbase and Base Placement

- A. Place geotextile on smooth, prepared subgrade, avoiding wrinkles. Do not operate wheeled or tracked equipment directly on geotextile.
- B. Place subbase, if required, to the required thickness and compact to at least 98% of standard proctor maximum dry density (ASTM D698) or 95% of modified proctor maximum dry density (ASTM D1557).
- C. Place gravel base to the required thickness and compact to at least 100% of standard proctor maximum dry density (ASTM D698) or 98% of modified proctor maximum dry density (ASTM D1557).
- D. Ensure surface of gravel base is smooth and uniform, without irregular low or high locations.

### 3.4 Edge Restraint and Bedding Sand

- A. Place edge restraint as indicated. For metal or plastic edge restraints, install in accordance with the manufacturers installation instructions.
- B. Do not use metal or plastic edge restraints for vehicular applications. Use cast-in-place concrete curb instead.
- C. Place bedding sand and screed to a uniform thickness of 1 inch (25 mm). Maintain the sand in a loose, smooth condition. Protect from traffic, precipitation, or other disturbance. Do not place bedding sand further than the area that can be covered with pavers that day.
- D. Ensure a minimum of 1 inch vertical restraining surface is in contact with the side of the pavers.

### 3.5 Paver Installation

- A. To ensure proper color distribution, mix layers from several bundles at one time.
- B. Install pavers following the indicated pattern.

# SPECIFICATION FOR ROSETTA® NEW MISSION PAVER SYSTEM

- C. Push pavers together so the spacer bars butt tight and cut units as needed to finish edges.
- D. Replace pavers that become cracked or chipped.
- E. Once installed, set pavers in bedding material by compacting with a plate compactor. The compactor should be capable of exerting at least 5,000 lbs (22 kN) of compaction force at 75 to 90 hertz. Use a urethane pad or other measures, as necessary, to prevent damage to pavers. Compaction should proceed in overlapping rows such that each is crossed at least twice by the compactor in two perpendicular directions. Compact pavers to within 6 feet (2 meters) of the laying surface at the end of each work day. Protect uncompacted pavers and bedding sand from disturbance.

## 3.6 Jointing Sand

- A. Fill all joints with jointing sand. Sweep joint filler sand into the joints between pavers until joints are completely filled.
- B. After joints are filled, carefully sweep pavers clean before compacting. Loose material could damage paver surface during compaction.
- C. Vibrate pavers with a plate compactor. Utilize a urethane pad on the plate compactor as necessary to prevent damage to the pavers. Use at least two passes of the compactor.
- D. Top off joints and recompact, if necessary.
- E. For polymeric jointing sand, follow the manufacturer's installation instructions.

## 3.7 Sealing

- A. Use a high-quality sealer specifically formulated for wet-cast concrete, following the manufacturer's application instructions.

## PART 4: AVAILABILITY

Rosetta products are available from a licensed manufacturer, authorized to produce the units, or an authorized dealer. For a list of approved manufacturers contact:

Rosetta Hardscapes® LLC  
05481 South US-31,  
Charlevoix, MI 49720  
1-844-367-9763  
[www.rosettahardscapes.com](http://www.rosettahardscapes.com)  
[info@rosettahardscapes.com](mailto:info@rosettahardscapes.com)