

NITTERHOUSE



MASONRY PRODUCTS, LLC

ARCHITECTURAL PAVING STONES

SECTION 02780

Specifications for Unit Paving Stones

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete paver units. [Concrete paver edge units.]
- B. Bedding and joint sand.
- C. Edge restraints.

1.02 RELATED SECTIONS

- A. Section: [-]-Curbs and Drains.
- B. Section: [-]-Aggregate Base.
- C. Section: [-]-Cement Treated Base.
- D. Section: [-]-Asphalt Treated Base.
- E. Section: [-]-Pavements, Asphalt and Concrete.
- F. Section: [-]-Roofing Materials.
- G. Section: [-]-Bitumen and Neoprene Setting Bed, Acrylic Fortified Mortar Setting Bed.
- H. Section: [-]-Geotextiles.

1.03 REFERENCES

Note: Use the latest editions of the references.

- A. American Society of Testing and Materials (ASTM):
 - 1. C 33, Specification for Concrete Aggregates.
 - 2. C 136, Method for Sieve Analysis for Fine and Coarse Aggregate.
 - 3. C 140, Sampling and Testing Concrete Masonry Units.
 - 4. C 144, Standard Specification for Aggregate for Masonry Mortar.
 - 5. C 936, Specification for Solid Interlocking Concrete Paving Units.
 - 6. C 979, Specification for Pigments for Integrally Colored Concrete.
 - 7. D 698, Test Methods for Moisture Density Relations of Soil and Soil Aggregate Mixtures Using a 5.5-lb (2.49 kg) Rammer and 12 in. (305 mm) drop.
 - 8. D 1557, Test Methods for Moisture Density Relations of Soil and Soil Aggregate Mixtures Using a 10-lb (4.54 kg) Rammer and 18 in. (457 mm) drop.

1.04 QUALITY ASSURANCE

- A. Installation by a contractor and crew with at least one year of experience in placing concrete pavers on projects of similar nature or dollar cost.
- B. Contractor shall conform to all local, state/provincial, federal licensing and bonding requirements.

1.05 SUBMITTALS

- A. Shop or product drawings, and product data.
- B. Full size samples of concrete paving units to indicate color and shape selections. Color will be selected by Architect/Engineer/Landscape Architect/Owner from manufacturer's available colors.

C. Indicating drawing layout, pattern, and relationship of paving joints to fixtures and project formed

1.06 MOCK-UPS

- A. Install a (4 ft. x 4 ft.) paver area
- B. This area will be used to determine surcharge of the bedding sand layer, joint sizes, lines, laying pattern(s), color(s), and texture of the job.
- C. Approved by the engineer/architect and shall be the standard from which the work will be judged.
- D. Approved area shall be included in the work.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver concrete pavers to site in steel banded, plastic banded, or plastic wrapped cubes on wooden pallets capable of transfer by fork lift.
- B. Unload pavers at job site in such a manner that no damage occurs to the product.

1.08 ENVIRONMENTAL CONDITIONS

- A. Do not install sand or pavers during heavy rain or snowfall.
- B. Do not install sand and pavers over frozen base materials.
- C. Do not install frozen sand.

PART 2 PRODUCTS

2.01 CONCRETE PAVERS

Paving Stone Supplier shall be:

Nitterhouse Masonry Products LLC
859 Cleveland Ave.
Chambersburg, PA. 17201
Phone 717-267-4570
Fax 717-267-4527

TECHNICAL DATA

- A. Architectural Paving Stones
- B. Product - name(s)
shape(s),
color(s),
overall dimensions of the paver(s):

Furnish pavers meeting the following requirements:

Compressive Strength:

Average compressive strength of 55 MPa (8,500 psi) with no individual unit under 50 MPa

Absorption:

Average absorption of less than 5% - tested in accordance with ASTM C 140.

Flexural Strength:

The paver stones have an average flexural strength of 870 PSI - tested in accordance with NCMA testing procedures min. required strength 650 psi

Freeze-Thaw Durability:

Less than 1% weight loss – ASTM C 1262

Weight:

24.5 lbs./sq. ft. based 2" on standard thickness.

Cement: Portland Cement conforming to ASTM C-150

Pigments: Use pigment conforming to ASTM C 979.

2.04 EDGE RESTRAINTS

Note: Edge Restraints various types.

- A. Concrete, Plastic, Wood, Metal. Any that will restrain the pavers from moving laterally

PART 3 EXECUTION

3.01 EXAMINATION

Note: For installation on a compacted aggregate base and soil subgrade, the specifier should be aware that the top surface of the pavers may be 3 mm (1/8") above the final elevations after installation. This difference in initial and final elevation is to compensate for possible minor settling.

A. Verify that subgrade preparation, compacted density and elevations conform to the specifications.

Note: Compaction of the soil subgrade to at least 95% Standard Proctor Density per ASTM D 698 is recommended. Stabilization of the subgrade and/or base material may be necessary with weak or saturated subgrade soils. The Architect/Engineer should inspect subgrade preparation, elevations, and conduct density tests for conformance to specifications.

B. Verify that geotextiles, if applicable, have been placed according to specifications.

C. Verify that aggregate base materials, thickness, compaction, surface tolerances, and elevations conform to the specifications.

Note: Local aggregate base materials typical to those used for flexible pavements are recommended, or those conforming to ASTM D 2940. Compaction to not less than 95% Proctor Density in accordance with ASTM D 698 is recommended for pedestrian areas. The aggregate base should be spread and compacted in uniform layers not exceeding 150 mm (6 in.) thickness. Recommended base surface tolerance should be plus or minus 10 mm (3/8 in.) over a 3 m (10 ft.) straight edge.

Note: The Architect/Engineer should inspect geotextile materials and placement (if applicable), base preparation, surface tolerances, elevations, and conduct density tests for conformance to specifications prior to installation.

Note: Mechanical tampers are recommended for compaction of soil subgrade and aggregate base around lamp standards, utility structures, building edges, curbs, tree wells and other protrusions. In areas not accessible to roller compaction equipment, compact to specified density with mechanical tampers.

NOTE: Mechanical plate compactors are not to be used on architectural paving stones.

A. Verify location, type, installation and elevations of edge restraints around the perimeter area to be paved.

B. Install edge restraints per the drawings [and manufacturer's recommendations][at the indicated elevations].

C. Verify that base is dry, uniform, even, and ready to support sand, pavers, and imposed loads.

D. Beginning of bedding sand and paver installation means acceptance of base and edge restraints.

E. Verify that base is dry, uniform, even, and ready to support sand, pavers, and imposed loads.

F. Beginning of bedding sand and paver installation means acceptance of base and edge restraints.

3.02 INSTALLATION

SAND SET PAVERS

A. Spread the sand evenly over the base course and screed to a nominal 25 mm (1 in.) thickness, not exceeding 40 mm (1.5 in.) thickness. The screeded sand should not be disturbed. Place sufficient sand to stay ahead of the laid pavers. Do not use the bedding sand to fill depressions in the base surface.

B. Ensure that pavers are free of foreign material before installation.

C. Lay the pavers in the pattern(s) as shown on the drawings. Maintain straight pattern lines.

- D. Pavers shall be laid hand tight.
- E. A rubber mallet shall be used to adjust the pavers into final position.

Note: **Do not use a plate or any other compactor on the pavers all adjustments are to be made by hand or a rubber mallet only.**

- E. Fill gaps at the edges of the paved area with cut pavers.
- F. Cut pavers to be placed along the edge with a masonry saw.
- G. The final surface elevations shall not deviate more than 10 mm (3/8 in.) under a 3 m (10 ft.) long straightedge.
- H. The surface elevation of pavers shall be 3 to 6 mm (1/8 to 1/4 in.) above adjacent drainage inlets, concrete collars or channels.

PORTLAND / MORTAR SET PAVERS

- A. It is recommended that the pavers should have a concrete subbase of 4" minimum. The top elevation of the concrete subbase shall be no more than 2 1/2" from final paver elevation.
- B. Portland and bedding sand mixed at a ratio of 3 parts sand to 1 part Portland. This shall mixed with water to form a mix typical of that which is used in laying brick.
- C. Place the pavers hand tight on the wet mortar and tamp into place.

Note: It may be necessary to pre- wet the back of the paver prior to installing it. Consult manufacturer for further information in installation.

PEDESTAL SET PAVERS

- A. Pavers set on pedestals or otherwise corner / edge supported should have a minimum of 2" of support. If a paving unit has a crack present it should not be replaced. These pavers are designed to support pedestrian traffic. They are not designed to handle any type of vehicular traffic.

TOLERANCES:

These paver stones are hydraulically pressed to create a high density concrete unit and are manufactured to 1/8" tolerance in any direction.

FINISH:

Our "Antique" finish is design to give the paver stones a look and feel of natural stone for an architectural appearance.

This finish exposes the stone showing the natural matrix of the paver. All paver stones have beveled edges.

END OF SECTION