



**INTERLOCKING CONCRETE PAVEMENTS
SECTION 02518**

Part 1 General

1.01 Section Includes

- A. Concrete paver units. (Concrete paver edge units.)
- B. Sand setting bed and joint sand.

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

- A. American Society of testing Materials (ASTM):
 - 1. C936 Specification for Solid Interlocking Concrete Paving Units.
 - 2. C140 Method of Sampling and Testing Concrete Masonry Units.
 - 3. C136 Method for Sieve Analysis for fine and course aggregate.
 - 4. C67 Method of sampling and testing brick and structural clay tile.
 - 5. C33 Specification for concrete aggregates.
 - 6. C 144-89 Standard specification for aggregate for masonry mortar.
 - 7. D698 Test Methods for Moisture Density Relations of Soil and Soil Aggregate Mixtures Using a 5-51bs. Rammer and 12 in. drop.
 - 8. D1557, Test Method for Moisture Relations of soil and Soil Aggregate Mixture Using a 10-lb. Rammer 18 in. drop.
 - 9. D2940, Graded Aggregate Material for bases or Sub-bases for Highways or Airports.

1.04 Quality Assurance

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

1.05 Submittals

- A. Submit shop or product drawings, and product data.
- B. Submit 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. Submit sieve analysis for grading of bedding and joint sand.
- D. Submit test results from an independent testing laboratory for compliance of paving units requirements to ASTM C936.
- E. Indicate layout, pattern, and relationship of paving joints to fixtures and project formed details.

1.06 Mock-ups

- A. Install a 7 ft. x 7 ft. paver area as described in Article 3.02. This area will be used to determine surcharge of the bedding sand layer, joint sizes, lines, laying patterns colors, and texture of the job. This area shall be the standard from which the work will be judged.

1.07 Delivery, Storage, And Handling

- A. Deliver concrete pavers to the site in steel banded, plastic banded, or plastic wrapped cubes capable of transfer by fork lift or clamp lift. Unload pavers at job site in such a manner that no damage occurs to the product.
- B. Sand shall be covered with waterproof covering to prevent exposure to rainfall or removal by wind. The covering shall be secured in place.
- C. Coordinate delivery and paving schedule to minimize interference with normal use of buildings adjacent to paving.

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

- A. Concrete pavers shall be Manufactured by **Anchor Concrete Products, 100 Foulrft Rd. Phillipsburg NJ. 08865, contact Louis A. Mangiaracina at 1-800-523-3585.**
- B. Product name(s)/shape(s), color(s), overall dimensions, and thickness of the paver(s) shall be:
 - (_____ in.x _____ in.x _____ in.x thick.)
 - (_____ in.x _____ in.x _____ in.x thick.)
 - (_____ in.x _____ in.x _____ in.x thick.)
- C. Pavers shall meet the following requirements set forth in ASTM C936, Standard Specification for interlocking Concrete Paving units.
 - 1. Average compressive strength of 8000 psi with no individual unit under 7200 psi.
 - 2. Average absorption of 5% with no unit greater than 7% when tested in accordance with ASTM C140.,
 - 3. Resistance to 50 freeze-thaw cycles when tested in accordance with ASTM C67.
 - 4. Manufacturing shall take place on a Omag Single Layer Paving Machine or approved equal.
 - 5. Cement shall conform to ASTM C 150
 - 6. Pigment in concrete pavers shall conform to ASTM C 979.

2.02 Bedding Sand and Joint Sand

- A. Bedding and joint sand shall be clean, non-plastic, free from deleterious or foreign matter. The sand shall be natural or manufactured from crushed rock. **Limestone screenings or stone dust that do not conform to the grading requirements in table 1 shall not be used.** When concrete pavers are subject to vehicular traffic, the sand shall be as hard as practically available.
- B. Grading of sand samples for the bedding course and joints shall be done according to ASTM C 136. The bedding sand shall conform to the grading requirements of ASTM C 33 as shown in table 1.

Table 1.

Grading Requirements for Bedding Sand
ASTM C 33

<u>Sieve Size</u>	<u>Percent Passing</u>
3/8 in.	100%
No. 4	95 to 100
No.8	85 to 100
No. 16	50 to 100

No. 30	25 to 60
No. 50	10 to 30
No. 100	2 to 10

Table 2
Grading For Joint Sand
ASTM C 144

<u>Sieve Size</u>	<u>Natural Sand Passing</u>	<u>Manuf. Sand % Passing</u>
No. 4	100	100
No. 8	95 to 100	95 to 100
No. 16	70 to 100	70 to 100
No. 30	40 to 75	40 to 75
No. 50	10 to 35	20 to 40
No. 100	2 to 15	10 to 25
No. 200	0	0 to 10

Part 3 Execution

3.01 Examination

- A. Verify that subgrade preparation, compacted density and elevations conform to the specifications.
(For installations on a compacted aggregate base and soil subgrade, the specifier should be aware that the top surface of the pavers may be 1/8 to 1/4 in. above the final elevations after compaction. This difference in initial and final elevations is to compensate for possible minor settling. Compaction of the soil subgrade to at least 95% Standard Proctor Density per ASTM D 698 is recommended. Higher density, or compaction to ASTM D 1557 may be necessary for areas subject to continual vehicular traffic. Stabilization of the subgrade and/or base material may be necessary with weak or saturated subgrade soils. The Design Professional should inspect subgrade preparation, elevations, and conduct density test 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.
- D. Verify location, type, installation and elevations of edge restraints around the perimeter area to be paved.
- 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

- A. Spread the sand evenly over the base course and screed to a nominal 1 in. thickness, not exceeding 1 1/2 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 materials before installation.
- C. Lay the pavers in the pattern(s) as shown on the drawings. Maintain straight pattern lines.
- D. Joints between the pavers on average shall be between 1/16 and 3/16 in. wide.
- E. Fill gaps at the edges of the paved area with cut pavers or edge units.
- F. Cut pavers to be placed along the edge with a double blade paver splitter or masonry saw.
- G. Use a low amplitude, high frequency plate vibrator to vibrate the pavers into the sand. Use Table 3 below to select size of compaction equipment:

Table 3

<u>Paver Thickness</u>	<u>Minimum Compaction Force</u>
2-3/8 in. 60 mm	3000 Ibs.
3-1/8 in. 80 mm	5000 Ibs.

- H. Vibrate the pavers, sweeping dry joint sand into the joints and vibrating until they are full. This will require at least two or three passes with the vibrator. Do not vibrate within 3 ft. of the unrestrained edges of the paving units.
- I. All work to within 3 ft. of the laying face must be left fully compacted with sand-filled joints at the completion of each day.
- J. Sweep off excess sand when the job is complete.
- K. The final surface elevation shall not deviate more than 3/8 in. under a

10 ft. long straightedge.

- L. The surface elevation of pavers shall be 1/8 to 1/4 in. above adjacent drainage inlets, concrete collars or channels.

3.03 Field Quality Control

- A. After removal of excess sand, check final elevations for conformance to the drawings.

END OF SECTION