

SECTION 02518

INTERLOCKING CONCRETE PAVERS

07/97

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 33	(1990) Concrete Aggregates
ASTM C 140	(1975; Rev 1988) Method of Sampling and Testing Concrete Masonry Units
ASTM C 150	(1989) Portland Cement
ASTM C 936	(1982; Rev 1988) Solid Concrete Interlocking Paving Units

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL DESCRIPTIONS:

SD-01, Data; FIO.

Manufacturer/s Product Data; GA.

SD-04, Drawings

Interlocking Concrete Pavers; GA.

Indicate layout of pavers, dimensions of paved areas, elevations, and affected adjacent construction. Indicate characteristics of paver unit, dimensions, special shapes, and edge units.

SD-06, Instructions

Manufacturer's Installation Instructions; FIO.

SD-14, Samples

Interlocking Concrete Pavers ;GA.

Submit two samples of each paver size and color illustrating style, size, color range, and surface texture of units being provided.

1.3 GENERAL REQUIREMENTS

1.3.1 Paving Units

Paving Units shall be installed on sand laying course as shown on the drawings. All paving units provided shall be from the same production runs to ensure quality and color conformity.

1.3.2 Sample Mock-up

Provide a mock-up sample area of pavers to demonstrate the paver color pattern and arrangement. Size of mock-up shall be 16-foot by 16-foot minimum. Sample mock-up will be approved by the Contracting Officer.

1.4 DELIVERY, STORAGE, AND HANDLING

Deliver pavers on pallets, platforms, or skids and bound in such a manner that no damage occurs during shipping, handling, unloading, and storage. Concrete sand used in the sand leveling course shall be stored in such a manner to avoid contamination and prevent excessive segregation.

1.5 EXTRA PAVING UNITS

Provide extra concrete paving units for the Government's operation and maintenance use, equivalent to 2 percent of the square footage of pavers required for the project, in each color and thickness used in the project. Deliver and unload the extra concrete paving units as directed by the Contracting Officer.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Courtyard Pavers

Paving units shall conform to ASTM C 936. Shape of the unit shall be as per detail or approved equal (see drawings). Thickness of unit shall be 2-3/8". Pavers shall be placed in a custom mosaic color arrangement pattern featuring three different colored concrete paving units. This multi-color arrangement shall facilitate random placement in the ratios specified below:

<u>Percentage of Pavers</u>	<u>Color</u>
50 percent	Terra Cotta
25 percent	Light Grey
25 percent	Tan

2.1.2 Cementitious Materials

Portland cement shall conform to ASTM C 150.

2.1.4 Aggregates

Aggregates shall conform to ASTM C 33 for normal weight concrete aggregate (no expanded shale or lightweight aggregates).

2.1.5 Sand Laying Course

Well-graded, clean washed concrete sand with the following gradation:

<u>Sieve</u>	<u>Percent Passing</u>
3/8-inch	100
No. 4	85-100
No. 100	10-30
No. 200	0-3

2.1.6 Sand for Joint Fill

Clean washed fine beach sand at least 30 percent of 1/8-inch particles.

2.1.7 Edge Restraint (Concrete Bands)

All edges of the installed pavers shall be restrained. The type of edge restraint shall be sidewalk pavement or 12 inch wide plain concrete band with trowel finish (see drawings). Concrete bands shall have expansion joints at every change of direction or 20 feet of length and control joints placed every 10 feet. Inside scaled or called out dimensions of the edge restraints as shown on the drawings are nominal dimensions; the actual dimensions may be adjusted 2-inches or less to the paver modular dimensions to minimize cutting of pavers.

2.2 PHYSICAL REQUIREMENTS

2.2.1 Compressive Strength

At the time of delivery to the work site, the average compressive strength shall not be less than 8,000 psi with no individual unit strength less than 7,200 psi. Testing procedures shall be in accordance with ASTM C 140.

2.2.2 Absorption

The average absorption shall not be greater than 5 percent with no individual unit absorption greater than 7 percent

2.2.3 Proven Field Performance

The manufacturer of the paving units shall satisfy field performance to the Contracting Officer by indicating when paving units similar in composition, and made with the same manufacturing equipment as those to be supplied, do not exhibit deterioration after at least three (3) years of installation, when exposed to comparable environment, temperature range, and traffic volume.

2.2.4 Visual Inspection

All units shall be sound and free of defects that would interfere with the proper placing of unit or impair the strength or performance of the construction. Paving units with cracks, chips, or deformities shall be removed from the site.

PART 3 EXECUTION

3.1 INSTALLATION OVER SAND LAYING COURSE

3.1.1 Verifying Substrate Conditions

Verify gradients and elevations of base are correct. The Contractor shall inspect and approve the substrate prior to placement of the sand laying course. Beginning of installation means acceptance of substrate.

3.1.2 Laying Aggregate Base

Place and compact aggregate to the depth and areas indicated on the drawings. Aggregate base shall be level and true to grade.

3.1.3 Sand Laying Course Depth

Spread the sand evenly over the area to be paved and screed to a level that will produce a 1-inch thickness when the pavers have been placed and vibrated. In addition, provide the proper level of sand such that the final elevation of pavers will be nominally 1/4-inch higher than the adjacent curb, or other paving to allow for free drainage from chamfers on lock edges. Do not disturb this sand laying course once screeding and leveling to the desired elevation is achieved.

3.1.4 Concrete Paver Placement over Sand

The pavers shall be placed in the approved pattern:

-Pavers shall be running pattern

Paver directions as noted and shown on the drawings. Joints between the pavers are nominally 1/8-inch with no individual gap exceeding 1/4-inch. Use string lines to hold all patterns true.

3.1.5 Cutting of Pavers

Use a double-header breaker or a masonry saw for all paver cutting. Cut edges shall leave a clean edge to the traffic surface. The gaps at the edge of the paver surface shall be filled with standard pavers or pavers cut to fit. When cutting precision designed areas, a masonry saw shall be used. In general, cut pavers shall be at least one-third of the full paver dimension.

3.1.6 Vibration of Pavers

Pavers shall be vibrated into the sand laying course using a vibrator capable of 3,000 to 5,000 pounds compaction force with the surface clean and joints open. After vibration, clean sand for joint fill shall be spread over the paving surface, allowed to dry, and vibrated into the joints with additional vibrator passes and brushing so as to completely fill the joints. Surplus material shall be swept from the surface, and all areas of work shall be left clean.

3.2 GRADE CONFORMANCE TESTS

Completed interlocking paver unit sections will be checked for conformance with plan grade requirements. For that purpose, the completed section shall be tested by running a line of levels with a 10-foot straightedge or

other approved device, operated in such a manner as to reveal all surface irregularities exceeding 1/8-inch in any 10-foot long section. The entire area of interlocking pavers shall be tested in both the longitudinal and the transverse direction on parallel lines 3 feet apart or less.

-- End of Section --