

SECTION 02516

**A-JACKS® CONCRETE ARMOR UNIT
SPECIFICATION FOR STREAMBANKS**

PART 1 - GENERAL

1.1 Description

A. Scope of Work

Contractor shall furnish all labor, materials, equipment and incidentals required to perform all operations in connection with the installation of A-JACKS® concrete armor units in reasonable accordance with the lines, design and dimensions shown on the Contract Drawings and as specified herein.

B. Related Work Specified Elsewhere

Earthwork Section 2200
Rock Rip Rap Construction Section 2510

1.2 Submittals

A. Manufacturer's Reports

Contractor shall furnish to the engineer all manufacturers' specifications, literature, and shop drawings

PART 2 - MATERIALS

2.1 General

The concrete armor units are interlocking concrete armor units consisting of two symmetrical halves. Each half consists of a central core with three identical legs that radiate outward at 90-degree spacing. The center leg contains a "fillet" on either side of it to aid in the proper placement and assembly of the concrete units. The tips of the legs shall be rounded. The "fillet" and rounded tips shall be manufactured as an integral part of each half unit.

The symmetrical halves are placed adjacent to each other in a crosswise fashion. The two halves are then slide together to form a single unit with six

equally spaced legs. Each leg will be spaced at a 90-degree angle from four adjacent legs. When the unit is placed in its most stable configuration, each unit will rest on three of the six arms.

2.2 Concrete Armor Units

A. Scope

This specification covers concrete armor units used for erosion control energy dissipation and streambank stabilization.

B. Materials

NOTE: Materials shall conform to the following applicable ASTM Specifications for Cementitious Materials.

1. Portland Cements - Specification C 150, or Portland Cement.
2. Blended Cements - Specification C 595, for Blended Hydraulic Cements.
3. Hydrated Lime Types - Specification C 207, for Hydrated Lime Types.
4. Pozzolans - Specification C618, for Fly Ash and Raw or Calcinated Natural Pozzolans for use in Portland Cement Concrete.
5. Normal Weight - Specification C 33, for Concrete Aggregates.

C. Physical Requirements

1. At the time of delivery to the work site, the units shall conform to the physical requirements prescribed in TABLE I below.

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| TABLE 1. PHYSICAL REQUIREMENTS |
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Compressive Strength (Average of 3 units)

- Min. psi = 4000, mpa = 27.6

Water Absorption (Average of 3 units)

Max. lb/ft³ = 10, kg/m³ = 160

2. **Durability.** The manufacturer shall satisfy the purchaser by proven field performance that the concrete units have adequate durability even if they are to be subjected to a freeze- thaw environment.
3. Sample and tests units in accordance with ASTM Methods C 140, Sampling and Testing Concrete Masonry Units.

D. Visual Inspection

1. All units shall be sound and free of defects that would interfere with the proper placing of the unit or impair the strength or performance of the construction. Surface cracks incidental to the usual methods of manufacture, or surface chipping resulting from customary methods of handling in shipment and delivery shall not be deemed grounds for rejection.
2. Broken units shall NOT be repaired or used in the matrix assembly.

E. Sampling and Testing

1. The purchaser or his or her authorized representative shall be accorded proper access to the manufacturer to inspect and sample the concrete units at the place of manufacture from lots ready for delivery.

F. Expense of Tests

1. Additional testing, other than that provided by the manufacturer, shall be borne by the purchaser.

G. Manufacturer

Concrete armor units shall be **A-JACKS^R** as manufactured by:

ARMORTEC
9025 Centre Pointe Drive, Suite 400
West Chester, OH 45069
(800) 305-0523
www.armortec.com

Sold by:
 CONTECH Construction Products, Inc.
www.contech-cpi.com

The A-JACKS^R concrete armor units shall have the following nominal characteristics listed on the following page.

**TABLE 2. STANDARD SIZE AND WEIGT OF A-JACKS^R
 CONCRETE ARMOR UNITS**

| A-JACKS | Length | Arm Thickness | Fillet Length | Vol. (ft ³) | Unit |
|---------|-----------|---------------|---------------|----------------------------|--------------|
| | L (in) | T & H (in) | C (in) | | Wt. (lbs) |
| AJ -24 | 24 | 3.68 | 1.84 | .56 | 78 |

2.3 High Survivability Filter Fabric

High survivability geotextile filter fabric is required at all dumped rip-rap locations and shall conform to the requirements of ADOT Standard Specification Section 1014 and Section 02510 of these specifications.

PART 3 – FOUNDATION PREPARATION AND A-JACKS PLACEMENT

3.1 Foundation Preparation

A. General

Areas on which A-Jacks[®] are to be placed shall be constructed to the lines and grades shown on the Contract Drawings and to the tolerances specified in the Contract Documents, and approved by the Engineer.

B. Grading

The slope shall be graded to a smooth plane surface and the geotextile installed behind the A-Jacks[®] nearest to the slope. All slope deformities, roots, grade stakes, and large stones which project normal to the local slope face must be regraded or removed. Where such areas are evident, they shall be brought to grade by placing compacted homogenous material. The slope and slope face shall be uniformly graded, compacted,

and the depth of layers and amount of compaction shall be as required by the Engineer.

3.2 Placement of A-Jacks®

A. General

A-Jacks® shall be constructed within the specified lines and grades shown on the Contract Drawings.

B. Placement and Consultation

An Armortec representative of the A-Jacks® shall provide construction advice during the initial installation phases of the project or as required by the engineer.

PART 4 - MEASUREMENT AND PAYMENT – Not Applicable

**** END OF SECTION 02516 ****