



Standard Practice for Assembly and Placement of Double-Twisted Wire Mesh Gabions and Revet Mattresses¹

This standard is issued under the fixed designation D 7014; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers standard practice for assembly, placement and filling of double-twisted wire mesh gabions and revet mattresses used for various erosion control, soil retention or freestanding structures. The product size, type and alignment must be determined by the user. Gabions and Revet Mattresses shall be installed in accordance with project plans and specifications when available.

1.2 This standard is expressed in SI (metric) units. American (inch-pound) units are provided in parenthesis for information purposes.

1.3 *This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

A 975 Specification for Double-Twisted Hexagonal Mesh Gabions and Revet Mattresses (Metallic-Coated Steel Wire or Metallic-Coated Steel Wire With Polyvinyl Chloride (PVC) Coating)

D 6711 Practice For Specifying Rock to Fill Gabions, Revet Mattresses, and Gabions Mattresses

2.2 AASHTO Standard:

AASHTO M288 Geotextile Specification for Highway Application³

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

¹ This practice is under the jurisdiction of ASTM Committee D18 on Soil and Rock and is the direct responsibility of Subcommittee D18.25.05 on Gabions and Mattresses.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from American Association of State Highway and Transportation Officials (AASHTO), 444 N. Capitol St., NW, Suite 249, Washington, DC 20001.

3.1.1 *gabion, n*—a wire mesh container of variable sizes, uniformly partitioned into internal cells, interconnected with other similar units, and filled with stone at the project site to form flexible, permeable, monolithic structures such as retaining walls, sea walls, channel linings, revetments and weirs for erosion control projects.

3.1.2 *revet mattress, n*—a double-twisted wire mesh container uniformly partitioned into internal cells with relatively small height in relation to other dimensions, having smaller mesh openings than the mesh used for gabions: revet mattresses are generally used for river bank protection and channel linings.

3.1.3 *double-twisted wire mesh, n*—a non raveling mesh made by twisting continuous pairs of wires through three one half (½) turns (commonly called double-twisted) which are then interconnected to adjacent wires to form hexagonal-shaped openings.

3.1.4 *selvedge wire, n*—a terminal wire used to edge the wire mesh perpendicular to the double twist by mechanically wrapping the mesh wires around it at least 2.5 times or by inserting it through the twists and folding one mesh length.

3.1.5 *edge wire, n*—a terminal wire used to edge the wire mesh parallel to the double twist by continuously weaving it into the wire mesh.

3.1.6 *lacing wire, n*—for gabions and revet mattresses, a metallic coated steel wire or metallic coated steel wire with PVC coating used to assemble and interconnect empty units, to close and secure stone filled units and for internal stiffeners.

3.1.7 *fastener, n*—an alternate connector to lacing wire, used for binding operations for gabions and revet mattresses.

3.1.8 *stiffener, n*—for gabions, a length of metallic coated steel wire or metallic coated steel wire with PVC coating used for support of facing by connecting the front panel to the back panel of a gabion (stiffener formed at the project site using wire having the same diameter as for the lacing wire) or across the corners of a gabion cell (pre-formed stiffener as specified in Specification A 975).

4. Significance and Use

4.1 Gabions and Revet Mattresses, as described in Specification A 975, are used to achieve soil stability and prevent soil erosion and are also used as retaining wall structures to resist