

WIRE MESH GABIONS AND MATTRESSES
TWISTED (WOVEN) OR WELDED MESH

1. APPLICABILITY

Construction Specification 64 is applicable to the installation of wire mesh gabion baskets and mattresses, including bedding, filter or geotextile where specified.

2. MATERIAL SPECIFICATIONS

Material Specification 523, Rock for Riprap, is complementary to this specification.

Material Specification 521, Aggregates for Drainfill and Filters, is complementary to this specification.

Material Specification 592, Geotextile, is complementary to this specification.

Construction Specification 95, Geotextile, is complementary to this specification.

3. ITEMS TO BE INCLUDED IN CONTRACT SPECIFICATIONS AND DRAWINGS

- a. Complete drawings showing alignment, layout, size of baskets or mattresses required, interior support details, lacing, connecting or fastening plans as applicable, and any other related appurtenances or details.
- b. Gabions designated as basket or mattress, as appropriate. Type of gabion construction: Twisted or Welded Mesh.
- c. Specify in Section 8 if alternate ring fasteners as recommended by the manufacturer, are to be allowed for basket interconnection and closure of tops. The specification only allows the use of alternative ring fasteners for the assembly of empty gabion baskets or mattresses. If it is determined that the use of these fasteners can provide a minimum strength of 1,400 lb. per linear foot for gabions and 900 lb. per linear foot for gabion mattresses; then Section 8 of this specification may be used to allow their use to join gabions together and to close the lids of gabions. The manufacturer's recommendations are to be followed concerning the proper interlocking of fasteners and their spacing to attain the required strength.
- d. Specify the type of wire (plain, galvanized, or PVC coated), if specific design requirements need to be met, coating color, and any special requirements such as different wire size or mesh openings, etc., as applicable, in Section 8. (Note that in Table 2 only PVC coated gabion mattresses are specified.)
- e. Details of bedding, filter material and/or geotextile; including gradation for materials, compaction requirements of materials, class of geotextile and any special requirements, if required. Refer to the respective construction specifications as applicable. Both types of gabions perform best when placed on relatively smooth and unyielding foundations. A coarse aggregate or a stone

leveling course can be successfully used under gabions to enhance good support and grade control.

- f. Source of rock and pre-qualification of other materials as appropriate.
- g. Rock size if different than that specified.
- h. Requirements for concrete cap, if applicable, including location and placement details. Include and refer to Construction Specifications 31, 32, or 33 as necessary.
- i. Rockfill and lid closure requirements for gabions placed on a slope to serve as a chute with flow down the top surface. It is very important that these gabions be filled as densely as possible to avoid movement and distortion during design flow events.
- j. The specified batter to the front face of vertical gabion walls. A maximum wall batter of 6 degrees is recommended (1 horizontal to 10 vertical). Where possible, design stepped faced gabion walls instead of vertical faced walls.
- k. Method of measurement and payment in Section 8.

4. DISCUSSION OF METHODS

a. Section 7, Measurement and Payment

- (1) Method 1 is used when payment is to be made for gabions or mattresses and rock filler. Bedding, filter or geotextile are to be paid under a separate item.
- (2) Method 2 is used when payment is made for gabions or mattresses and rock filler including the bedding or filter and geotextile. Include a description of the subsidiary items in Section 8 of this specification and in the items of work and construction details of the appropriate companion construction specification.
- (3) Method 3 is used when payment is to be made for gabion mattresses and rock filler. Bedding, filter or geotextile are to be paid under a separate item of work.
- (4) Method 4 is used when payment is made for completed gabion mattresses and rock filler including the bedding or filter and geotextile. Include a description of the subsidiary items in Section 8 and in the items of work and construction details of the appropriate companion construction specification.

When specifications are prepared using electronic procedures and all but one of the methods is deleted for use in the contract specification, delete "All Methods The following provisions apply to all methods of measurement and payment." and left justify the remaining text.