
CONSTRUCTION SPECIFICATION
INSTRUCTION FOR USE
CS-I-OR-064 GABIONS AND GABION MATTRESSES

064.1 APPLICABILITY

Construction Specification CS-OR-064 is applicable to the installation of wire mesh gabions and gabion mattresses, including bedding, filter, or geotextile where specified.

064.2 MATERIAL SPECIFICATIONS

The following material specifications complement Construction Specification CS-OR-064:

- a) MS-OR-521—Aggregates for Drainfill and Filters
- b) MS-OR-523—Rock for Riprap
- c) MS-OR-592—Geotextile

Construction Specification CS-OR-095, Geotextile, also complements this specification.

064.3 INCLUDED ITEMS

Items to be included in contract specifications and drawings follow:

- a) Complete drawings showing alignment, layout, size of gabions or gabion mattresses, interior support details, lacing, connecting or fastening plans as applicable, and any other related appurtenances or details.
- b) Where the type of gabion constructed is restricted to only one type, specify the type: twisted or welded-mesh. If either twisted or welded-mesh may be used, state that the gabions and gabion mattresses may be constructed of either twisted or welded-mesh.
- c) Specify in Section 064.6, Items of Work and Construction Details, the class of wire. Gabions and gabion mattresses are classified in the applicable ASTM standard (A974 for welded-wire or A975 for twisted-wire) according to coating. For welded-wire, specify coating Style 1, 2, 3, or 4 and select Style 5 if the wire is to be PVC coated. For twisted-wire, specify coating Style 1, 2, 3, or 4. For example, "Welded-wire shall be zinc-coated and coated with PVC (ASTM A974 Styles 1 and 5 or Styles 2 and 5). Twisted-wire shall be zinc-coated and coated with PVC (ASTM A975 Style 3)." Zinc coated wire with a PVC coating is adequate for most applications. For welded-wire there is a choice of wire that is coated before being welded into a fabric (Style 1) or wire that is coated after being welded into a fabric (Style 2). Either style is acceptable. Aluminum and zinc coated wire with no PVC

coating has performed well in arid climates. Aluminum-mishmetal alloy (Zn-5A1-MM) coated wire should be specified for marine and other corrosive environments.

- d) List specific requirements such as coating color or non-standard wire size or mesh openings, as applicable.
- e) When fill is required, specify material and compaction requirements in Section 064.6, Items of Work and Construction Details. If material and compaction requirements are specified in Construction Specification CS-OR-023, Earthfill, reference this specification in Section 064.6, Items of Work and Construction Details.
- f) Details of bedding, filter material, and/or geotextile including gradation for material, compaction requirements of material, class of geotextile, and any special requirements. 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 provide good support and grade control.
- g) Source of rock and prequalification of rock sources as appropriate.
- h) Rock size if different than that specified in Section 064.2, Material.
- i) Requirements for concrete cap, if applicable, including location and placement details. Include and refer to Construction Specifications CS-OR-220, Reinforced Concrete, or CS-OR-221, Concrete for Minor Structures, as necessary.
- j) Rockfill and lid closure requirements for gabions placed on a slope to serve as a chute with flow down the top surface. These gabions must be filled as densely as possible to avoid movement and distortion during design flow events.
- k) The specified batter to the front face of vertical gabion walls. A minimum wall batter of 6 degrees is recommended (1 horizontal to 10 vertical). Where possible, design stepped faced gabion walls instead of vertical faced walls.

064.4 ITEMS OF WORK AND CONSTRUCTION DETAILS

Starting at the top of page 064-4, prepare and outline job specific "Items of Work and Construction Details" (IWCD) in accordance with these instructions.