

GUIDE FOR THE USE OF WISCONSIN CONSTRUCTION SPECIFICATION 17**WIRE MESH GABIONS AND MATTRESSES**1. Applicability

Wisconsin Construction Specification 17, Wire Mesh Gabions and Mattresses, (Spec 17) is applicable to the installation of wire mesh gabion baskets and mattresses, including bedding, filter, or geotextile where specified.

2. Material Specifications

Wisconsin Construction Specifications that are complimentary to this specification include:

- Specification 8, Drainfill
- Specification 9, Loose Rock Riprap
- Specification 13, Geotextiles

3. Items to be Included in 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 must be designated as basket or mattress, as appropriate. The type of gabion construction should be stated (woven or welded mesh), if one is preferred over the other. Foundation conditions with respect to bearing strength and smoothness of the final grade, should be evaluated when making this determination. Woven mesh gabions have an inherently better capacity to deform to foundation settlement and rough surface conditions. Welded mesh gabions need to be placed on relatively smooth and unyielding foundations. The use of a coarse aggregate or a stone leveling course has been successfully used under welded mesh gabions to enhance good support and grade control.
- c. For ring fasteners, the manufacturer's recommendations are to be followed concerning the proper interlocking of fasteners and their spacing to attain the required strength.
- d. Type of wire or PVC coating 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 7, Spec 17.
- 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 specification as applicable.
- f. Source of the 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 Wisconsin Construction Specification 4, Concrete, as necessary.
- i. Rockfill and lid closure requirements for gabions placed on a slope to serve as a chute with flow on the gabion surface. It is very important that these gabions be filled as densely as possible to avoid movement and distortion during design flow events. Where possible, these gabions should be carefully overfilled to form a “rounded” surface when the lid is fastened. This provides better containment to prevent shifting of rock by the overflow of water.
- j. The specified batter to the front face of gabion walls. A maximum wall batter of 6 degrees is recommended. Special design and construction procedures must be taken when gabion walls will be placed with a vertical face. Avoid constructing vertically faced walls with gabions whenever possible.

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