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Bureau

**SUPERSEDED BY EI 85-039**
**EFFECTIVE 1/30/86**

# ENGINEERING INSTRUCTION

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

SUBJECT: GABIONS

Subject Code: 7.27-1-620

Distribution: [B] Main Office [F] Regions [ ] Special

Code: EI 82-36

Date: 5/21/82

Supersedes:

APPROVED: Roger H. Edwards

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The attached Special Specifications replace Item 15620.10—Gabions, and have been developed to provide an alternative to the existing item.

Item 15620.1001 Gabions (Galvanized)
Item 15620.1101 Gabions (Galvanized with Polyvinyl Chloride P.V.C.)

Also attached is a revision to the Standard Specification of January 2, 1981—Materials section 712-15 Gabions. This covers the material section referenced in the new specifications.

All designed walls shall be chosen based on an economic study of the wall types available for each specific location. When that study indicates that gabions are appropriate, the designers will determine which type gabion shall be required, based on the following criteria:

a. The P.V.C. coated gabion should be used where there are heavy concentrations of salt such as near heavily salted roads; salt water; or where other corrosive chemicals will be encountered.

b. The Galvanized only type should be used where there is anticipated abrasive action because of its heavier gage wire, or where no salt or other corrosive chemicals will be encountered.

c. When both conditions exist or when the project designer would like clarification on what type of gabion to use, the designer should contact a Department Soils Engineer.

This EI will be effective for the August 26, 1982 letting.

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15620.1001 GABIONS - (GALVANIZED)

15620.1101 GABIONS - (GALVANIZED with POLYVINYL CHLORIDE - P.V.C.)

Description. The Contractor shall furnish, assemble, tie, and fill with approved stones, open mesh wire baskets, constructed in accordance with these specifications and placed in conformity with the lines, grades and dimensions shown on the Plans or as required by the Engineer.

Materials. The materials used in this work shall conform to the requirements of the following subsection of Section 700-Materials.

Gabions 712-15

Construction Details. Each gabion unit shall be assembled by binding together all vertical edges with wire ties on approximately six inch spacing or by a continuous piece of connecting wire stitched around the vertical edges with a coil about every four inches. Empty gabion units shall be set to line and grade as shown on the plans. Wire ties or connecting wire shall be used to join the units together in the same manner as described above for assembling. Internal tie wires shall be uniformly spaced and securely fastened in each outside cell of the structure or where ordered by the Engineer. When gabions are being placed as slope protection the cross-connecting wires may be deleted if ordered by the Engineer.

A standard fence stretcher, chain fall, or iron rod may be used to stretch the wire baskets and hold alignment.

The gabions shall be filled with stone carefully placed by hand or machine to assure alignment and avoid bulges with a minimum of voids. After a gabion has been filled, the lid shall be bent over until it meets the sides and edges. The lid shall then be secured to the sides, ends, and diaphrams with the wire ties or connecting wire in the manner described above for assembling.

Method of Measurement. The quantity to be paid for under this Item shall be the number of cubic yards of gabions measured in its final position within the payment limits shown on the plans.

Method of Payment. The unit price bid, per cubic yard, shall include the cost of furnishing all labor, materials and equipment necessary to complete the work.

11/25/81

# GABIONS

Make the following changes to the Standard Specification of January 2, 1981:

On page 7-108

Under section 712-15-Gabions delete SCOPE and replace it with the following:

SCOPE

This specification covers the material and quality requirements for galvanized gabions and galvanized with poly-vinyl chloride (P.V.C.) gabions.

And under MATERIAL REQUIREMENTS, delete the first paragraph and replace it with the following:

MATERIAL REQUIREMENTS

A. Galvanized Gabions

The wire mesh shall be made of galvanized steel wire having a minimum size of U.S. Steel Wire Gage No. 11. The tensile strength of the wire shall be in the range of 60,000 to 85,000 psi. The minimum zinc coating of the wire shall be 0.80 oz./sq. ft. of uncoated wire surface as determined by tests conducted in accordance with ASTM A90. The maximum linear dimension of the mesh opening shall not exceed 4-1/2 inches and the areas of the mesh opening shall not exceed 9 square inches.

B. P.V.C. Coated Galvanized Gabions

The wire mesh used for P.V.C. Gabions shall be a minimum size of U.S. Steel Wire Gage No. 12 and the tensile strength shall be in the range of 55,000 to 75,000 psi. The wire shall be zinc coated with a minimum of .80 oz./sq. ft. when the galvanized wire is additionally coated with a minimum thickness of .015 inches of extruded P.V.C.; or the wire shall be zinc coated with a minimum of .20 oz./sq. ft. when the galvanized wire is additionally coated with a minimum thickness of .010 inches of bonded P.V.C. The minimum P.V.C. finished wire diameters shall be 0.137 inches for extruded P.V.C. mesh wire and 0.125 inches for bonded P.V.C. mesh wire. The P.V.C. Gabions shall be suitable to resist destructive effects of immersion in acidic, salt, and polluted water; exposure to ultraviolet light; and abrasion. The maximum linear dimension of the mesh opening shall not exceed 4-1/2 inches and the areas of the mesh opening shall not exceed 9 square inches.

Tiewire and Baskets