

SPECIFICATION FOR GABION WALL

1.0 INTRODUCTION

- 1.1 This specification is intended to be used for the gabion wall. The specification is suitable for most purposes but there may be special conditions existing at some sites which are not treated in this document and which should be taken into account in arriving at a properly engineered gabion wall.
- 1.2 The work shall be carried out all in accordance with the Specification and as shown on the Drawings and/or as approved by the S.O.

2.0 MATERIALS

2.1 Wire Mesh

- 2.1.1 The flexible wire mesh shall be hexagonal woven mesh with the joints formed by triple-twist which does not unravel if cut.
- 2.1.2 All wires used in the manufacturing of the gabion units shall conform to BS 1052:1980 (1999), in mild steel wire, annealed, having a tensile strength of 38-55 kg/mm² before PVC coating and fabrication of the netting.
- 2.1.3 All wires shall be heavily galvanized to BS 443:1982 (1990) and conforming to its minimum weight zinc coating weight and zinc coating adhesion requirement which is checked by rigorous wrapping test.
- 2.1.4 All edges of the gabion units shall be mechanically selvage to prevent raveling of the mesh and to develop the full strength of the woven mesh.
- 2.1.5 Each gabion units shall have diaphragms at every 1000mm intervals.

2.2 Galvanizing

- 2.2.1 All wires including the PVC coated type shall be heavily zinc coated to BS 443:1982 (1990) and Class A coating in BS EN 10244-2:2001, with minimum zinc coating weights as shown below:

Wire Diameter (Heavily Galvanized)	Type of Wire	Minimum Zinc Coating Weight	Heavily Galvanized with PVC Coating
3.4 mm	Selvage wire	275 g/m ²	3.4 mm (core dia.), 4.4mm (Overall Dia.)
2.7 mm	Mesh wire	260 g/m ²	2.7 mm (core dia.), 3.7mm (Overall Dia.)
2.2 mm	Lacing wire	240 g/m ²	2.2 mm (core dia.), 3.2mm (Overall Dia.)

- 2.2.2 The adhesion of the zinc coating to the wire shall be such when the wire is wrapped six turns round a mandrel of 4 times the diameter of the wire, it does not flake or crack to such an extent that any flakes zinc can be removed by rubbing with bare fingers.

2.3 Mesh Size

- 2.3.1 The average mesh width D, measured at right angles between twisted sides over 10 meshes shall conform to the tolerance limits specified in BS EN 10223: 1997 Part3: Hexagonal steel wire netting for engineering purposes.
- 2.3.2 For Mesh D= 8cm or 80mm, the tolerance limit shall be 8cm+16%, -4%.

2.4 Polyvinyl Chloride (PVC) Coating

- 2.4.1 All wires used in the fabrication of the Gabion cages shall be extruded with a U.V stabilized poly vinyl chloride (PVC) coating compound.
- 2.4.2 The coating shall be grey color and having an average thickness of 0.5mm and not less than 0.4 mm in thickness.
- 2.4.3 The PVC compound shall be capable of resisting deleterious effects of natural weather exposure and immersion in salt water without much material changes in its initial properties.
- 2.4.4 The PVC coating compound shall have the following initial material properties:
- | | | |
|------------------------|---|--|
| Specific Gravity | : | Shall be 1.30 to 1.35 in accordance with ASTM D 792-91 |
| Durometer Hardness | : | Shall be 50 to 65 Shore D in accordance with ASTM D2240-86 |
| Tensile Strength | : | Shall not be less than 210 kg/cm ² in accordance with ASTM D412 |
| Elongation | : | Shall not be less than 190% and shall not be greater than 280% in accordance with ASTM D412-87 |
| Resistance to Abrasion | : | The loss weight shall not be greater than 0.19g in accordance with ASTM D1242-56(75) |

2.5 Stone

- 2.5.1 Stone fill for gabion units shall be clean rough quarry stone or pit or river cobbles or a mixture of any of these materials, and shall be essentially free from dust, clay, vegetative matter and other deleterious materials.
- 2.5.2 Individual pieces of stone shall have least dimensions not less than 20mm larger than the gabion mesh openings and greatest dimensions not more than 2/3 of the thickness for gabion.
- 2.5.3 The stone shall be hard, tough, durable and dense, resistant to the action of air and water, and suitable in all aspects for the purpose intended. The material shall be approved by the S.O.

3.0 CONSTRUCTION METHOD

- 3.1 Prior to placing gabions, the surface on and against which they are to be constructed shall have been prepared and finished in accordance with the relevant provisions of the appropriate Sections of this Specification.
- 3.2 Notwithstanding any earlier approval of these finished surfaces, any damage to or deterioration of them shall be made good to the satisfaction of the S.O before gabions are placed.

- 3.3 Each gabion baskets shall be put in place in its turn, completely fabricated except for the fastening down the lid, stretched to the correct shape and dimensions, and fastened securely to all contiguous baskets along each edge with tying wire.
- 3.4 The basket shall be tightly packed with approved stone by hand in such a manner that voids are kept to a practicable minimum and are uniformly distributed in the stone mass.
- 3.5 The lid of the basket shall be securely fastened down with tying wire along all hitherto unfastened edges, all to the satisfaction of the S.O.



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