

GUIDE LINES FOR INSTALLATION OF JGT RIVER BANK PROTECTION

METHOD OF INSTALLATION OF JGT IN RIVER BANK PROTECTION

Sequence in installation of JGT

1. The bank should first be cut to a stable slope preferably at the angle of internal friction of the bank soil. The surface shall be leveled and made free from angular projections, undulation, soil-slurry or mud.
2. Anchoring trench (usually rectangular) should be excavated at the top of the slope. Recommended dimensions of the trench-- 500 mm deep and at least 250 mm wide at the bottom. The trench should be free from foreign materials, mud etc.
3. JGT should then be unrolled across the trench and along with slope from top to down side to the lowest water-level.
4. JGT should be stapled with U-shaped nails (usually 11 gauge) within the anchoring trench both at the sides and bottom at an interval of 300 mm along the length of the trench. There should be at least 2 staples both depth-wise and width wise in each cross-section.
5. JGT should be laid with the overlapping in the direction of water-flow. Care should always be taken to ensure that JGT does not suffer damage due to puncture, tear and installation stresses.
6. The recommended overlap is 150 mm (minimum). The overlapped portion should be stapled at an interval of 300 mm.
7. The anchoring trench should then be filled with stones/boulders for securing and protecting the JGT. Care should be taken to ensure that JGT touches the bank slope at all points (proper drapability).
8. Armour overlay of stone/boulder should then be placed on the JGT carefully and properly arranged. A thin layer of sand (25 mm) as a cushion on top of the JGT is recommended to avoid puncture of the fabric by granular armour.

Similar care in laying should be taken when a combination of granular filter and JGT is used under reversing flow-condition. There must be a beam at the toe of slope. This can be done by folding the JGT as per dimensions (usually 500 mm dia) with sand fill and duly stapled on the other side preferably at an interval of 75 mm.

Alternatively, an angular trench may be dug at the toe and the JGT placed on it ensuring full contact with the soil, duly stapled at a spacing of 75 mm and ballasted. Care should be taken to see that the overlapping layer is not displaced during installation. Suitable grass-seeds should then be spread on the treated bank. Alternatively, saplings of suitable plants that thrive in similar geotechnical and hydraulic conditions may be planted at close intervals through the interstices of the overlay, taking care to place them into the bank soil.

Note : the weight and specific gravity of each boulder shall be at least 25 kg - 30 kg with Specific Gravity of 2.8

Monitoring and Maintenance :

The treated bank should be kept under watch for at least one full season-cycle. Frequent visits to sites during and after the rains or any natural calamity are necessary. Siltation may take place after about a month covering up the granular overlay gradually under favourable conditions. Maintenance involves, besides monitoring, re-arrangement of the overlay, if displaced, in position. No part of JGT should be allowed atmospheric exposure due to displacement of the overlay. The JGT-strength may be ascertained after one season - cycle and the overall performance analysed.

