

RIP-RAP

Erosion Control

REHABILITATION BANK AND DIKE

MANUFACTURER:

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PRODUCT DESCRIPTION:

RIP-RAP EROSION CONTROL is a blend of cement and aggregate packaged in a biodegradable, polyester reinforced, kraft paper bag. This versatile material is used to prevent or control erosion of earth banks adjacent to highways, landfills, lakes, canals, culverts and dikes. It is widely used underwater for seawall construction and repair, the construction of coffer dams, pier construction and repair, as well as anchoring underwater cables and similar devices. The material can be blended to meet Federal, State and Municipal Government specifications or in any proportion of cement and aggregates required.

USES:

- ▶ Control bank erosion
- ▶ Construct coffer dams and repair seawalls
- ▶ Raise levels of banks and dikes
- ▶ Underwater anchoring

ADVANTAGES:

- ▶ No costly forms required
- ▶ Fast installation
- ▶ No finishing
- ▶ Easily transported to site
- ▶ No skilled labor required
- ▶ Uniform blending, quality controlled strength
- ▶ Uniform size, attractive finish
- ▶ Easily warehoused for periods of time

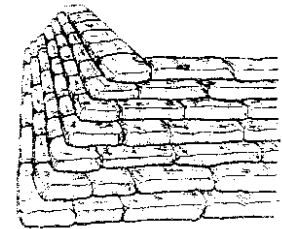
INSTALLATION:

Surface Preparation:

The base surface to receive the bottom layer of *RIP-RAP* should be solid and free from loose material. No special site preparation, other than rough grading and leveling is required.

Mixing:

No mixing is required. Place material in bag as



supplied.

Placement:

Bags should be placed, large flat side down, in a running bond pattern, ½ bag overlap, with ends butted together. Due to the fact that the bags are not rigid when placed, they take on the contour of their surroundings, forming an interlock assuring tightness of the wall and better erosion control. The bags are embossed (pebbled) to achieve flexibility and reduce slippage problems. When additional stability is needed, this can be accomplished by driving pins or steel rods through the bags.

Curing:

Although bags of *RIP-RAP* will eventually set up from natural moisture from the ground and air, rapid hydration of the material is recommended. This may be accomplished by puncturing the tops of the bags after placing them and wetting them. The bag is biodegradable and will break down into fine pieces over an extended period of time, leaving the polyester reinforcement for support.

Coverage:

When filled, these bags measure approximately 13 inches wide, 21 inches long and 4½ inches thick. Each bag fills a space of approximately 0.75 cubic feet, with 38 bags required per cubic yard. For a vertical wall with *RIP-RAP*, place one bag on top of another and end to end, multiply the wall area by 1.5. Example: If area to be covered is 5 feet x 20 feet, or 100 square feet, then multiply 100 by 1.5 to get 150 bags. This results in a completed wall 5 feet x 20 feet x 13 inches thick. If the bags are laid side by side, multiply by 2.3. This method gives you a wall approximately 21 inches thick. To deduct area of drain pipes through the wall, refer to the following chart for area to be deducted.

<u>Diameter of Pipe of Pipe (Feet)</u>	<u>Square Feet</u>
2	3.14
3	7.10
4	12.56
5	19.63
6	28.26
8	50.24
9	63.60
10	78.50

Packaging:

Available in 80 pound biodegradable, polyester reinforced, kraft paper bags.

Color:

Light Gray

TECHNICAL DATA:

Each job is blended to specification. Typical data for standard formulations can be provided upon request.

LIMITATIONS:

RIP-RAP can be warehoused for periods of time similar to Portland Cement based mixes. Keep dry before use.

CAUTION:

Contains Portland Cement CAS #65997-15-1. Freshly mixed cement products may cause skin injury. Avoid contact with skin where possible and wash exposed areas promptly with water. If any product gets into the eye, rinse immediately and repeatedly with water. If ingested, **do not** induce vomiting and get prompt medical attention. Also contains Sand CAS #14808-60-7. Avoid breathing dust. Prolonged exposure to dust may cause delayed lung injury (silicosis) or cancer IARC Class 2A. Wear NIOSH approved mask for silica dust. **Keep Out Of Reach Of Children.**

WARRANTY:

Due to the use of this product beyond our control, we assume no liability for damages of any kind, and the user accepts the product "as is" and without warranties, expressed or implied, from either Empire Blended Products or its agents. The suitability of the product for an intended use shall be solely up to the user. Our only obligation shall be to replace or pay for any material proved defective, with our liability limited to the purchase price of materials supplied by us.