

Revetment Design

Hudson's Equation is used to design shore structures

Step 1: Determine what type of structure is best suited for the site and the goal of the structure (i.e. erosion control, access, etc).

Today's example is a revetment structure using armor stone.

Step 2: Calculate the weight and size of the armor stone units (rock) needed to resist the up-lift forces of the waves.

How: Coastal Engineers use Hudson's Equation to calculate the median weight of a rock needed to resist a given wave height.

Why: Hudson's Equation is used to design sloped rock revetments and breakwaters.

Step 3: Additional Considerations:

- How does required stone size change with:
1.) specific gravity of material, 2.) material type?
- Why is concrete rubble not effective?
- What other factors should be considered that aren't included in the equation including 1.) armor stone cracking, 2.) severe weather events, 3.) poor construction?
- What should be the Factor of Safety?

