



TWINING RESISTANCE

NOTE:
 In slope applications, the normal force is the weight of the bag over the shear connectors. In flat slopes, the normal force is minimal.

 In areas of wave action and flow along the units, the bags may lift or "rock" from the water action. The Envirolok Connector Pin eliminates the chances of the units lifting off the connectors.

Shear resistance from Envirolok Pin Connector:
 $2(90 + N \times \tan(26)) = 2(90 + 45 \times \tan(26)) = 223 \text{ lbs/ft } (332 \text{ kg/m})$

Shear resistance from Envirolok Twining:
 $\text{width} \times T_{uk} / \text{unit width} = 4.75\text{in} \times 1500 \text{ ppf} \times 2 / 24 \text{ in} = 593 \text{ lbs/ft}$
 or;
 $\text{width} \times T_{uk} / \text{unit width} = 120 \text{ mm} \times 2232 \text{ kg/m} \times 2 / 61 \text{ mm} = 882 \text{ kg/m}$
 $T_{uk} = \text{Ultimate wide width tensile strength (based on ASTM D4595)}$

Total force to remove a unit from the wall is 816 lbs/ft (1214 kg/m)
= 1633 lbs/unit or 2430 kg/unit