

Geoforce Software Geosynthetic Containers

Alternative coastal protection structures using geosynthetic containers (GSCs) are increasingly being designed and constructed both in the UAE and regionally, mainly because of their performance in different construction works and environmental conditions. This is as opposed to natural materials, such as rock, to protect the coastline.

Geoforce is a software tool that assists in assessing feasibility and stability of GSC structures, resulting in maximum performance. It helps clients create graphs from their own data, offering different scenarios that assess waves, GSC size and stability.

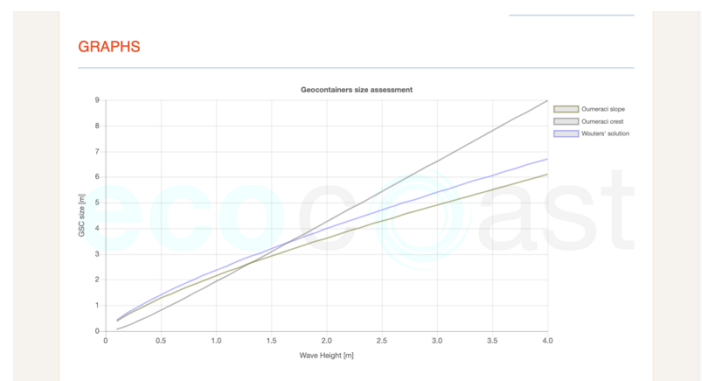
The image on the right (top) shows the interface where the input data can be added, such as but not limited to structure slope, wave height and structure freeboard.

The output (right bottom) shows the GSC size relationship with wave height, including a comparison between different models (Wouters versus Oumeraci et al.), in order to create a stable structure and get maximum performance.

All calculations are based on pre-defined dimension ratios, providing armour unit dimensions (influence of double layer still to be investigated). With this free tool, clients can do their own calculations in less than 10 minutes. Note however that the calculator is just a guide. It is important to be aware of limitations, fields of application and theoretical approaches, just to name a few.

Access the software here: <http://ecocoast.com/calculator>

The screenshot shows the 'Basic calcs' tab of the Geoforce software. Input parameters include: Weight of filling material (1800 kg/m³), Structure slope (45°), Wave Height (2 m), Wave Return period (8 s), Structure freeboard (2 m), and Water depth (5 m). A 'Calculate' button is visible. On the right, 'Wave data' is displayed with values: Wave shallow water length (99.92 m), Wave deep water length (53.08 m), Iribarren number (7.07), Wave relative depth (0.09), Wave regime (Shallow), Wave number (0.12), Wave Angular frequency (0.79), Wave Celerity (6.64 m/s), and Wave Group Velocity (6.64 m/s). Below this, 'Basic GCS sizes results' are shown: Slope GSC size (Oumeraci): 3.62, Crest GSC size (Oumeraci): 4.26, and GSC size (Wouters): 3.99. A red button labeled 'Please fill all data' is at the bottom right.



If you would like to know more, our technical experts will be pleased to help you or give you a demonstration free of charge. Email us at info@ecocoast.com.

Other available calculators: Moorforce for Aids to Navigation | Marineforce for marine barriers.