



Project Description

The Cardiff Coastal Defence scheme is a project to protect parts of south-east Cardiff from flood and erosion risks caused by rising sea levels and extreme weather events. The £35 million project, led by Knights Brown and involving rock armour, sheet piling and embankment raising, provides defence for properties and infrastructure along the River Rhymney and the Severn Estuary. The scheme is designed to provide protection for at least 100 years, defending against a 1-in-200-year storm event plus 40% for climatic change.

The Challenge

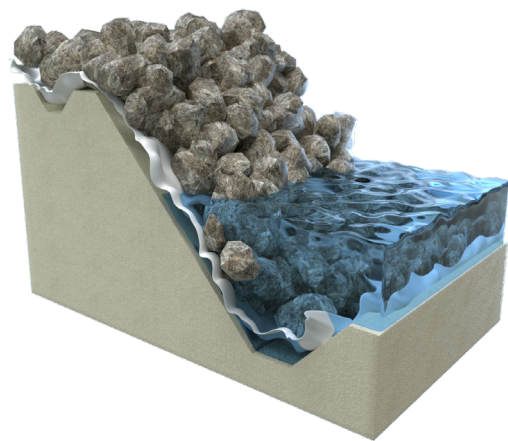
Coastal erosion is the process by which rising sea levels, storms and other phenomena wear down or carry away the rocks, land and sand making up a coastline. Coastal areas face relentless challenges from natural forces like waves, tides and currents, leading to erosion and threatening both infrastructure and ecosystems. To provide 1-in-200 year flood protection for 2,326 residential and 204 non-residential properties, the Cardiff council scheme includes several components to manage erosion and high tides.

The Solution

Geotextiles play a crucial role in stabilising shorelines and preventing erosion in coastal areas. Coastal protection structures like rock revetments rely on granular filters to prevent sand from washing away and to provide stability. Geotextiles can replace a significant portion of this granular filter, offering a more economical and ecologically friendly alternative. Terrex CG is designed especially for coastal applications to offer high durability, high energy absorption and excellent filtration properties.

Project Information

Client	Cardiff Council
Contractor	Knights Brown
Product	Terrex CG
Quantity	56,225 m ²
Benefits	<ul style="list-style-type: none">• The amount of material sinking into the beach is minimised, with the textile preventing drainage stone being lost into the soft subsoils• Differential settlement is reduced, helping with long-term alignment of the revetments• Available in widths up to 6.5m• The textile can often replace the need for a granular starter layer



ABG Terrex CG

Coastal Defences

Terrex CG, Cardiff Coastal Defence Scheme, Cardiff, UK

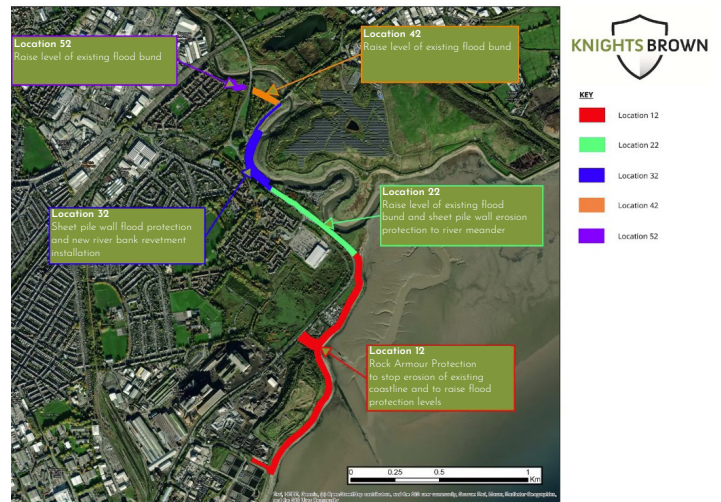


Placed onto the lower permeability beach materials present on the Lamby Way shoreline in south-east Cardiff, they prevent the migration of fine particles, while permitting the free passage of water. This creates a stable and consistent bedding layer for the rock armour, often replacing the need for more layers and generating significant cost savings.

The range has been designed to resist damage during construction loading, with high strength and elongation properties that prevent tearing or puncture.

The ABG Service

Assistance with cost comparisons and provision of permeability calculations.



Overview of the Cardiff coastal defence scheme



Coastline prior to revetment construction



The new rock armour structure installed onto the Terrex CG layer

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