



PROJECT AT A GLANCE

Application

Slope protection – Green Roof

Subgrade/Soil

Concrete roof with geomembrane

Region

Western Europe

Installation

2018

Client

Souto Moura Arquitectos SA, Cristal d'Água, Lda – is an architectural office in Portugal, headed by award winning architect Eduardo Souto de Moura, known for integrating the clean lines of minimalism with color and local materials. The office portfolio comprises a wide range of projects including, infrastructure, public facilities, residential, cultural, and commercial architecture.

Souto Moura
Arquitectos

Neoloy® Tough-Cells Green & Protect Hydropower Station Roof, Portugal

Stabilized cover protection system enables green roofscape on the steep façade and protection for the building's sealant layer

A leading architectural firm was tasked with designing the new hydroelectric power station at the Foz Tua Dam to mitigate the visual/environmental impact of the construction. Their idea was to cut into the mountainside and embed the facility as a “machine” inserted in the landscape rather than building a concrete structure. The plan for the lower technical building called for steeped terraces covered with vegetated topsoil, with the only visible concrete for access and ventilation ducts. This 28.5m long green roof at 27 and 45° angles was possible by PRS Neoloy® Tough-Cells.

Neoloy Tough-Cells create a stabilized slope protection system that protects the facility's roof/geomembrane waterproofing from weather and damage while providing a stabilized mattress for vegetated cover. The system anchored with tendons at the crest adds high tensile strength to the cover system to resist the down slope driving forces with a large factor of safety against sliding. Neoloy Tough-Cells retain their geometry with negligible permanent deformation (<3%) over 75 years for guaranteed durability for the project design life. The green landscape integrated with the mountain terrain.

BENEFITS

- **Geomembrane Protection** – high tensile strength and creep resistance
- **Engineered Design** – permanent solution for extreme sliding driving force
- **Sustainable** – green construction and green facade
- **High Durability** – strong, highly resistant Novel Polymeric Alloy (NPA)
- **Ideal Solution** – for challenging slopes, environments, loading

ABOUT PRS

PRS Geo Technologies (www.prs-med.com) is a global engineering, manufacturing and technology company providing the unique PRS Neoloy Tough Cells 3D mechanical soil stabilization technology. Since its establishment in 1996, PRS has implemented thousands of successful projects in 80+ countries worldwide.





SLOPE & CHANNEL PROTECTION

Neoloy® Tough-Cells Green & Protect Hydropower Station Roof, Portugal

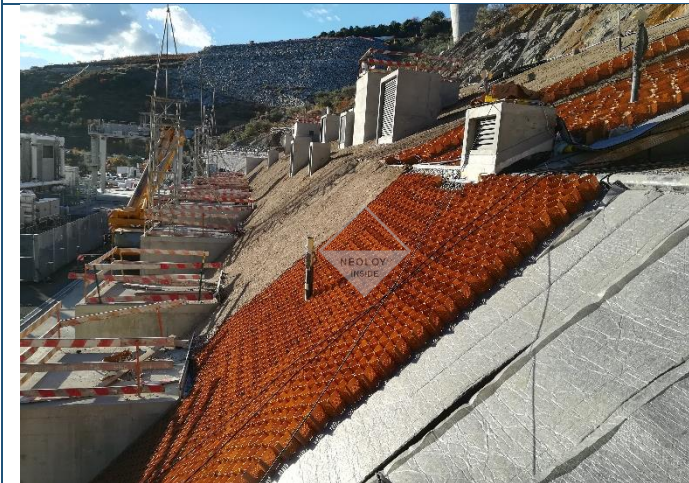
Neoloy® Tough Cells Slope Protection Solution for Green Roofs



Neoloy sections opened downslope from crest anchors



Tendons anchored at crest and toe inserted in cells



Roof gemembrane, Neoloy layout, infilled with soil (r to l)



Vegetated slope – visual aesthetic & erosion control



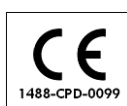
Architectural section drawing of technical station



Completed green roof slope protection



ISO- 9001
ISO-14001
ISO-18001



EN-CS-SC-2155

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