

Stability at the Precipice: Slope Stabilisation of the Cliffs

TITAN micropiles withstand the forces of nature on the Polish Baltic coast



The Baltic seaside resort Jastrzębia Góra is located at the northernmost point of Poland's Baltic coast. In this specific location, the cliffs are exposed to severe erosion from the sea and from landslides. These natural processes pose a threat to the structures on the ridge and therefore necessitate an investment in measures to fortify the coast.

The challenge

The main objective was to reduce the destructive impact of the Baltic Sea on the stretch of coast and enhance slope stability to prevent further landslides. One of the major challenges was working in an area with an increased risk of landslides. Additionally, the construction site could only be reached from the beach which further complicated the work. Thus, any solution that could be implemented here would require a high degree of caution and be highly technical & specialised.

The solution

Several measures were taken to stop erosion and increase slope stability. In addition to a bored pile wall and rockfill at the foot of the slope, TITAN micropiles were used as

soil nails to secure the embankment of the steep rock slope. TITAN 40/27 micropiles were installed in lengths of 3, 12 and 18 metres – a total of 5,500 metres at an angle of 30° to the horizontal.

Despite the challenges posed by the steep terrain, the soil nails were reliably installed. The TITAN system is perfectly suitable for such demanding conditions with only small-scale portable plant required for the installation. The soil nails were used in combination with a steel net and an erosion control mesh that allows for revegetation of the slope in the future. The revegetation will consist of a flowering meadow that would not only stabilise the slope but also restore the landscape's aesthetics.

This project aims to ensure the long-term stability of the cliffs at Jastrzębia Góra, while contributing significantly to coastal protection.

Project:

Slope stabilisation Baltic seaside resort Jastrzębia Góra, Poland

Construction period:

2023/2024

Public investor:

Maritime Office in Gdynia

Engineers:

D.A. – Project Dominik Adamczyk

Drilling contractor:

WMW Marek Pestilenz, Wojciech Pestilenz

Products used:

- 376 x TITAN 40/27 micropiles measuring 3, 12 and 18 metres (total 5,500 metres)



Stabilisation of the steep slope with TITAN micropiles as soil nails



Despite the challenging slope at the site, it was possible to install the soil nails with small plant



TITAN 40/27 micropiles as soil nails at an angle of 30°



The soil nails were used in combination with a steel net and an erosion control mesh



The future revegetation will restore the landscape's aesthetics

Would you like to find out more about TITAN micropiles?

We would be happy to advise you about your project. Simply get in touch with us. We look forward to hearing from you.