

Pedestrian Bridges Copenhagen

Project Owner:

City of Copenhagen

Client:

E. Pihl Søn A.S.

Quick Info:

Deep foundation and anchoring for the erection of three pedestrian bridges in the harbour of Copenhagen

Technical Information:

System:	GEWI Ø 40, 50, and 63,5 DKS
Quantity:	110 pcs.
Length:	13,50 – 35,00 m
Test Load:	Up to 1.835 kN
Technique:	overburden drilling
Building Ground:	Clay, limestone
Time Frame of Works:	February – September 2012

For better pedestrian and bike traffic flow in the harbour of Copenhagen, several pedestrian and bike pathway bridges are planned. This necessitated reinforcement of the existing harbour structure, for which purpose we were contracted to produce 110 pcs GEWI-micropiles and ground anchors with steel diameters of 40, 50 and 63,5 mm. The project posed special technical and logistical challenges to all parties involved. We produced GEWI-piles mainly for the deep foundation and uplift protection of the bridge foundations. Additional GEWI-anchors were needed as tie-backs for the harbour quay wall. We conducted part of our works from land, other parts from the waterside.



Image 1: Our drill rig drilling „over head“

The work process required frequent movement of our equipment such that we found the best location for our site installation on top of pontoons. In large parts we were challenged by restricted work space and varying work levels. Thanks to our flexible machine park, we were able to drill selected micropiles „over head“ only 2 m from the water, as shown in Image 1. In close conjunction with our client, we were able to locate and establish just enough work space as well as other minimum working conditions, so we were able to carry out all our works free of technical flaws. Drilling in Danish grounds posed challenges to our machinery, as the perforated limestone was of particularly hard consistency and mixed with sandstone layers. Additional obstacles of all kinds produced further disruptions. Unexpected hollow gaps underneath the existing wood pile grid were bridged by us with PE tubes in a technically proficient manner in order to guarantee a continuous grout body.