



Dogmersfield Ground Anchors

CASE STUDY

THE PROJECT

To provide a design for permanent ground anchors to support two new steel sheet pile walls required to stabilize the toe of the canal cutting following a series of landslips on the Basingstoke canal.

GEOLOGY

Windlesham Formation
(Part of the Bracklesham Group)

REMEDY'S SOLUTION

86no. double corrosion protection Dywidag Systems International Multi-Stage Permanent Stand Anchor System complete with anchor head, steel gusset and rear of wall waling beam. The design was carried out in accordance with BS8081:2015.

INNOVATION

The barge was set up as an exclusion zone and a rod manipulator was used, excluding the requirement for personnel

Ground Anchor Design

Remedy Geotechnics has carried out the design of 86no. permanent ground anchors to support two sheet pile walls on the Basingstoke Canal at Dogmersfield for specialist geotechnical contractor Aarsleff Ground Engineering. The anchored sheet pile walls were required to stabilize the toe of the cutting on each side of the canal following a series of landslips. The two sheet pile walls comprised AZ14-700 section piles. 110no. piles were driven on the offside of the canal and 68no. on the towpath side. A full ground anchor design package was therefore carried out by Remedy Geotechnics, which involved the geotechnical and structural design of the ground anchors, head plates, steel gussets and a rear of wall waling beam. The scheme comprised 55no. DCP ground anchors on the offside of the canal and 31no. on the towpath side. The ground conditions comprise firm to stiff clay with laminae of coarse sand and sand lenses overlying dense glauconitic coarse sand, which

in turn overlays stiff to very stiff sandy clay. Due to land ownership issues the maximum horizontal extent of the ground anchors was 12m. The ground anchors were designed to be 14m long with a declination of 30 degrees to provide a fixed anchor zone split between the stiff clay and the dense coarse sand. The total fixed anchor length was 8m and two 15.2mm tendons were designed within each anchor to stagger the tendon bond lengths at the optimum locations within the fixed anchor zone, producing an efficient design. The design was carried out in accordance with BS8081 (2015) employing in-house industry leading expertise. Two suitability tests were carried out to test the anchors up to 100% P_p and following the third load cycle the test anchors were reloaded up to $F_{Serv,k}$ to monitor the displacement – time data. All anchors were validated by acceptance testing. Remedy Geotechnics offer a full ground anchor design service, so you can..... leave the ground to us!

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