



CASE STUDY: ChemGrout CG500

PERIMETER PILING & SOIL ANCHORING

BACKGROUND

Fusion Civil are a Newcastle based operation specialising in construction of retaining walls, installation of permanent and temporary ground anchors, soil nailing, shotcrete works and reinforced earth walls.

JOB DESCRIPTION

Civil works including perimeter piling and temporary soil anchoring are currently in the process of being installed after the project was approved by Port Stephens council in 2012. The development will feature 3457 square metre shopping centre, including a liquor store and basement car park for 180 vehicles within the site.

With the piling process ninety five percent complete using the Continuous Flight Auger (CFA) method around the perimeter of the project, two hundred temporary soil anchors have been drilled and grouted by Fusion Civil. The soil anchors are installed, grouted through a spinning head fitted to the drill rig, then after several days are tensioned with hydraulic power packs to limit deformation during the construction process.



ANTEC SOLUTION

Utilising an Ingersoll Rand ECM-660 Drilling Rig and ChemGrout's CG500 High Pressure Series Mixer Pump which features a double acting positive displacement plunger pump, the Fusion Crew have been able to install 8-9 anchors per day minimum, spaced at 2200mm apart in most cases.



The anchor used is a 35mm Galvanised hollow bar, supplied in 3m lengths, installed to a length of 12m. Using a very low viscosity grout acting as a drilling fluid each hole took 35-40 minutes to drill. Prior to insertion of the third rod, the grouting operator utilised the second tank on the ChemGrout CG500HP to switch mixes to a higher density 0.45 brew.

With good communication between driller and grout plant controller, the twin tub setup proved exceptionally effective at this stage prior to locking off of the anchor and the noticeable increases in ground pressure. The CG500 High pressure Series is perfect for rock anchoring projects where pressures of up to 2000psi (137bar) are required in order to get grout to the end of the drill rod.



The centrally positioned hopper of the ChemGrout CG500HP is fitted with a fine mesh screen preventing grout packaging paper and hardened clumps of dry grout from entering the plunger pump. Having the ability to speed up and slow down the mixing paddle through manipulation of the hydraulic reversible control valve, proved incredibly valuable by limiting splashes of grout whilst bags were broken into the mix tanks. The reversible mixing paddle provides excellent and rapid shearing of the cementitious mix and when reversed continually very quickly creates a homogenous grout mixture ready for pumping.



CONTACT DETAILS

35 Forge St, Blacktown NSW, 2148

+61 2 9407 8099

antecconcrete.com.au

concrete@antec.com.au

