



Reference Details

Owner Newcrest Mining Limited,
NSW, Australia

DSI Unit DSI Pty. Ltd., Bennetts
Green, Australia

DSI Scope Modification and supply of
Hi-Ten Strand Bolts



Fast Heading Development Through Innovative DSI Strand Anchors

Construction of the Decline to Cadia East Orebody, New South Wales, Australia

For many years, raw materials have been extracted from the Cadia Valley, approximately 250km west of the Australian Metropolis of Sydney. Lately, comprehensive soil analyses revealed the presence of additional major gold and copper deposits in the eastern edge of the Cadia Hill open pit orebody. The orebody in this area is mined by Newcrest Mining Limited, a leading developer and owner of gold and copper mines. In 2005, Newcrest began to open up the raw material resources in Cadia East.

Geologically speaking, Cadia East is located in a porphyry zone with gold-copper mineralization. The system has a length of approximately 2.5km and is up to 600m wide. Test drilling indicated that the orebody extended to 1.9km below the surface. The mineralised resource estimate for Cadia East is 18 million ounces of gold and 2.9 million tonnes of copper.

Part of this general development project is a decline to access the Cadia East orebody. At the beginning, cross cuts were stabilized using common grouted cable bolts. However, for security reasons, during the grout curing time, heading development could not continue until the cable bolts had reached their defined loadbearing capacity.

DSI Australia was contacted by Newcrest Mining Limited to investigate possible alternatives to the traditional cable bolting methods. DSI proposed to adapt their Hi-Ten Strand Bolt to Newcrest's requirements. DSI recently developed this high capacity bolt especially for requirements in underground coal mines.

The Hi-Ten Strand Bolt is anchored "from the bottom up". At first, anchorage is achieved in a length of 2m by using resin. The Hi-Ten Strand Bolt is then tensioned to 250kN, thus providing immediate stabilization of the development area. Grout injection can be carried out immediately or at a later stage. Consequently, decline development can proceed at once, independent of the grouting process and curing time.

Post-groutable Hi-Ten Strand Bolts are especially suited for areas in which full resin encapsulation is impossible due to technical limitations or unstable rock layers.

Thanks to the use of Hi-Ten Strand Bolts, the Cadia East project was able to achieve recordbreaking development rates. Utilizing Hi-Ten Strand Bolts considerably accelerates the installation cycle because grouting of the Hi-Ten Strand Bolts is carried out independent of heading development.

Cadia East is an excellent example of DSI's innovative strength and commitment to fulfilling their customers' needs. The satisfied client Newcrest Mining Limited now uses Hi-Ten Strand Bolts at each of the declines for the new Cadia East Mine.



more information please call: + 49.89.309050.200 or fax: + 49.89.309050.252 or e-mail: [DSI Munich](mailto:DSI.Munich)