



Case Study

## **A Post-Stressed Concrete Silo to Store 30,000 t of Cement**

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The paper describes important predesign design, tendering and construction aspects of a single cell 30,000 t cement silo owned and operated by Adelaide Brighton Cement Limited and located on a wharf in Port Adelaide, South Australia. All elements of the structure are discussed and particular emphasis is given to those factors which determine the design of the silo wall and the out loading cone. Reference also made to current European practice in the design of large cement silos.

The export of cement in the form of clinker has been an important part of the trade of Adelaide Brighton Cement Limited (ABC) for a number of years. This trade has recently been extended to the West Coast of the US and to the Middle East. ABC will soon commence delivery to California of substantial, annual amounts of the more refined product, cement. This cement is required to be of one type only and each shipload will be a maximum of 30,000 tonnes.

Because of the high demurrage cost on ships, it is essential to store a full shipload near the wharf, and to be able to load the ship at a fast rate. It was decided to build the new 30,000 tonne storage facility on the wharf adjacent to the existing clinker ship loader, which was to be modified to handle cement.

The silo project was developed and implemented by the Group Engineering of ABC who commissioned Consulting Engineers, Macdonald Wagner & Priddle Pty. Ltd. to undertake design supervision and contract administration of all civil engineering works.