

KAHSUING PORT COMBI WALL, TAIWAN

COMBI WALL PROJECT

Project Name	Kaohsiung Port Combi Wall, Taiwan
Main Subcontractor	Meng-Deng Construction Co. Ltd, of
Location	Kaohsiung, Taiwan
Product	Tubular Piles and Sheet Piles
Total Tonnage	10,282 MT
Delivery Date	2011

INTRODUCTION

Meng-Deng Construction Co. Ltd, of Taiwan had a project for the Port expansion in Kaohsiung, Taiwan. The options they were given by the normal large sheet pile providers were just not cost effective enough for the budget and design constraints that the Port had.

ESC Pile Steel Trading (Shanghai) Co, Ltd looked at the best method for the contractor and the Kaohsiung Harbour Bureau, Ministry of Communications. After several discussions and design options ESC and Meng-Deng settled on the Tubular sheet pile combi wall.

The Existing structure was unable to take the larger size of the newer vessels as well as the required dredge depth for the larger vessels that were calling in Kaohsiung. The method approved was to install the main wall of the tube and sheet pile in front of the existing structure and then proceed with the removal of the old wall and installation of the rest of the system.

With Ports globally getting deeper and deeper in order to handle the post Panamax Container vessels and other newer and larger conventional vessels it is expected that more and more clients and Port owners will look to these solutions for their

ESC SCOPE OF SUPPLY

TUBULAR PILES & SHEET PILES

The unbeatable combination of ESC's design and sourcing allowed the contractor to manufacture the 1470mm diameter, 15mm thickness tubes in 31 metre lengths (approx. 8000 tons) in Taiwan. Then, we sourced 28, 19 and 13 metre sheet piles from Nippon Steel in Japan (2,282 tons of Illw in SY390) and finally the 109 tons of specially made Illw sheet pile clutches that are unique to ESC.

The project saved considerable time and money for the contractor and was a very successful first tubular combi wall

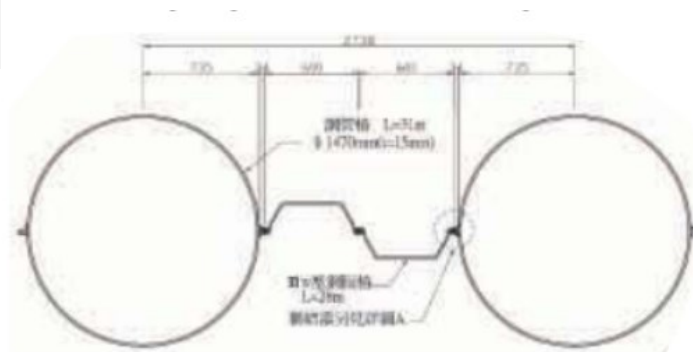


Figure 1 Plan view of the Combi wall profile

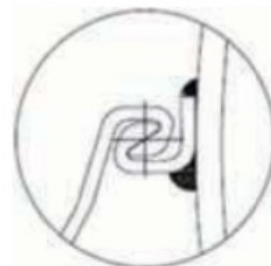
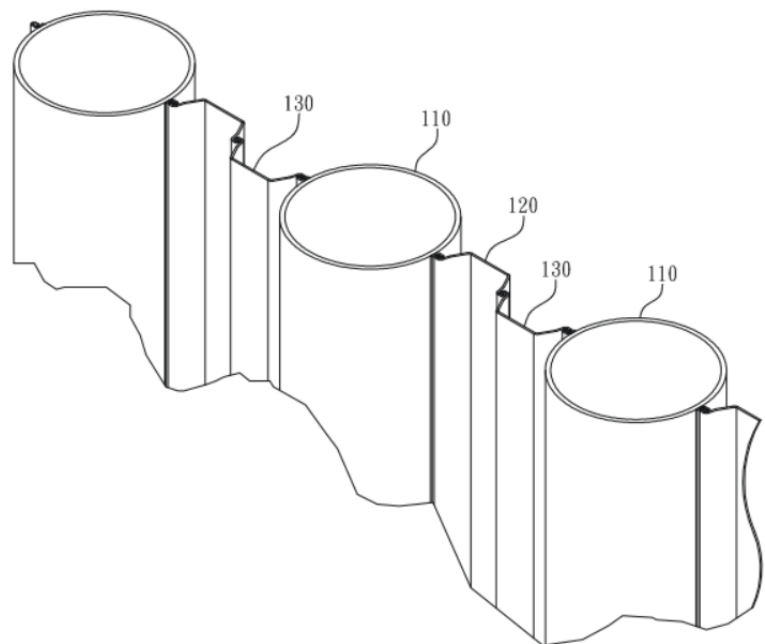


Figure 2 Clutch configuration detail

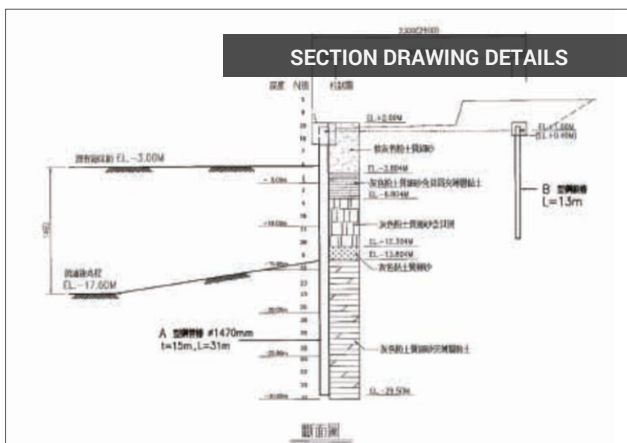
PROJECT DETAILS

Here is the isometric drawing of the wall profile showing the two IIIw infill sheet piles in between the 1470mm tubes. This system is installed with the tubes or king piles first using a driving guide. Once the tubes are installed the guide is removed and the IIIw sheet piles installed between the spaces and slotted in using the special clutches attached to the tubular piles. Below, we can see the schematic drawing which allows for five tubular piles to be installed before the guide is removed. This guide is essential in the efficient installation of long marine sheet pile walls. Without it productivity is greatly reduced as well as the straightness and aesthetics of the final wall. As you can well imagine if you get the tubular piles out of alignment then it will be nearly

ISOMETRIC DETAIL OF THE MAIN WALL SYSTEM



SECTION DRAWING DETAILS



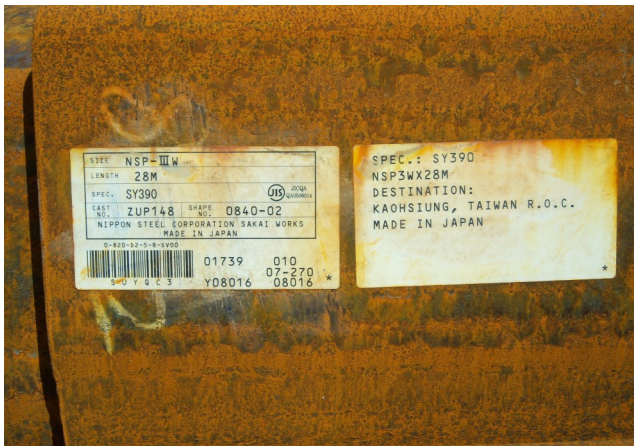
DRIVING GUIDE DESIGNED BY ESC



PROJECT DETAILS



DELIVERY TO SITE



ON-SITE INSTALLATION

