



STEVIN ROCK BERTH—NEW QUAY WALL, UAE

NEW QUAY WALL PROJECT

Project Name	Stevin Rock Berth New Quay Wall, UAE
Main Contractor	MUC Engineering
Location	Ras Al Khaimah, UAE
Product	Sheet Piles
Total Tonnage	3280 MT
Delivery Date	2016

INTRODUCTION

The previous berth consisted of 4 staggered berths in sequence. Revised requirements by the owner meant that one continuous wall would be preferred with 5 berths between 117 to 134m length.

MUC Engineering, one of the leading multi-disciplinary engineering consultancies in the Middle East completed the design of the new quay wall. The sheet piling system was designed with an increased loading surcharge of 20kPa and a seismic rating of Zone 2A.

A cathodic protection was incorporated to act together with the corrosion protection coating to meet the 50 year design life. This decreased the sacrificial thickness of the sheet pile for the residual bending capacity at the 50 year design life.

The tie rods were wrapped in anticorrosion tape. The design of the tie rod connection to the main wall consisted of a waling beam with a mounting bracket for the eye of the tie rod, which could be

mated after the reinforced capping beam was installed and cast. An oversized 225mm diameter PVC pipe sleeve was placed over the tie rod, to compensate for any ground settlement without imparting significant vertical loads on the tie rods which would have compromised its structural integrity.

All construction works were completed while keeping the facility working. This allowed the client to continue operations at full or near full capacity.

Some of the existing sheet piles had to have 1.5m of its top cut off to allow the tie rods to pass through to the new anchor wall. The sheet piles were driven to -13.0m, 6m below the existing channel level.

ESC SCOPE OF SUPPLY

COATED SHEET PILES

ESC Middle East was awarded the contract for the supply of a new quay wall that spanned over 600 metres for one of the largest quarrying companies in the Middle East to replace an the existing quay wall system that was heavily corroded and collapsing. ESC supplied over 3000 tons of sheet piling material for this project which was integral to keeping the leading quarry operator in the Middle East with capacity of producing and exporting 45 million tons per year of high grade limestone, gabbro rock, concrete and asphalt aggregates in the Gulf Region and Asia.

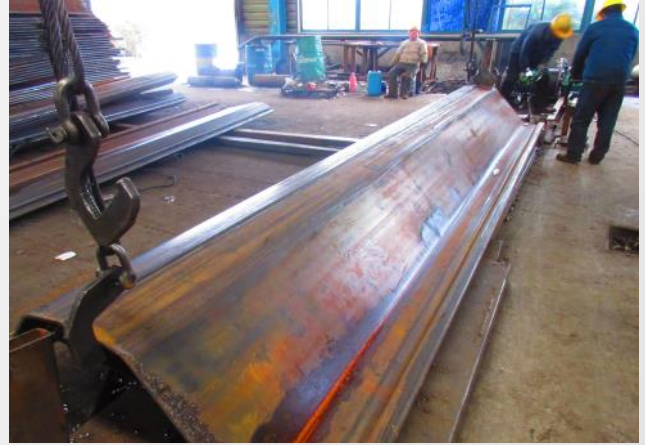
ESC's scope of products:

- ▶ ESC-CRZ42-700 in 19.65m lengths in Grade Q345B (2930 tons)
- ▶ ESC-CRZ14-770 in 5.5m lengths in Grade S430GP (350 tons)
- ▶ Jotamastic 87 coating of main sheet pile wall on top 7.0m both sides

The sheet piles were painted in the UAE facility with Jotamastic 87 to a 500 micron DFT (dry film thickness) in compliance with IM2 and C-5M of ISO 12944 for a 15 year durability rating. The total design life of the quay wall structure was 50 years.



FABRICATION OF SHEET PILES



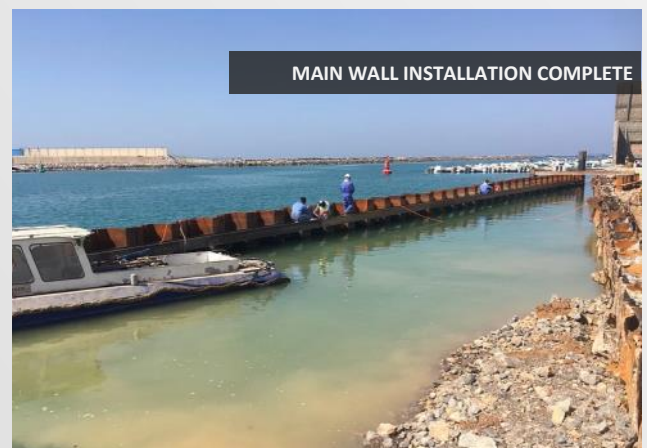
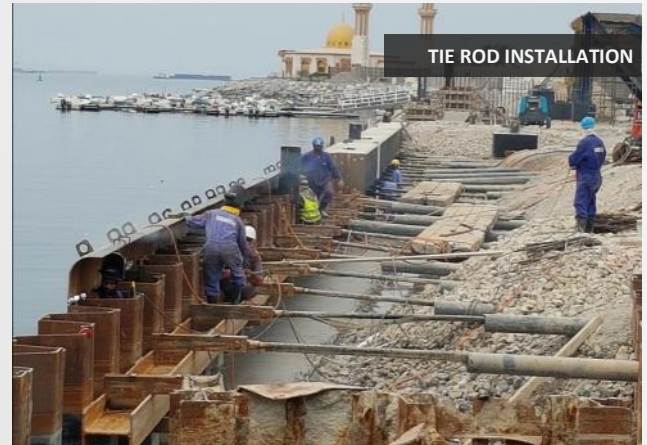
SHIP LOADING



ON-SITE INSTALLATION



ON-SITE INSTALLATION



PROJECT COMPLETED

