

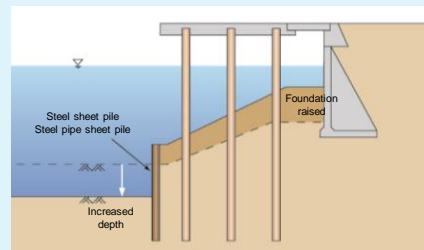
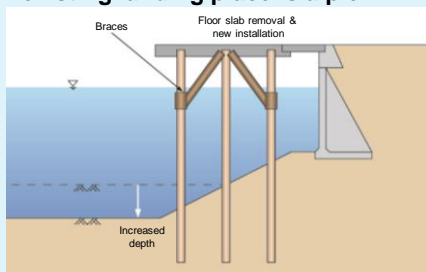
# 23. Port renovation method employing steel materials

Construction method employing steel pipe piles and steel pipe sheet piles for “increasing size of vessels (increase in port depth)” “improvement in seismic resistance,” and “renovation of aged structures,” for quays, revetments and other existing port structures.

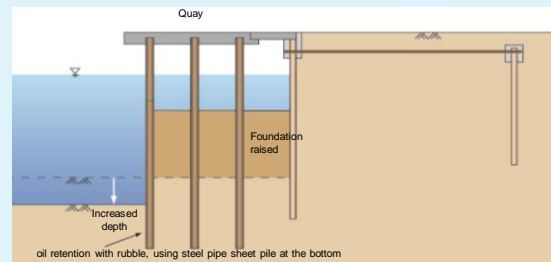
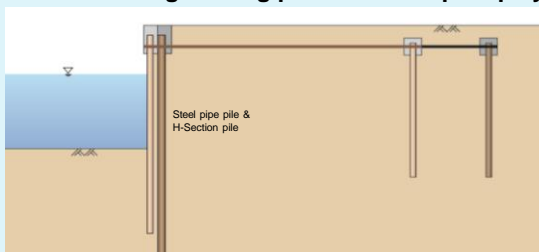
## ■ Merits

Because this method is a reinforcement by using the strength of the existing structure, construction cost and period can be reduced compared with the newly constructing structure.

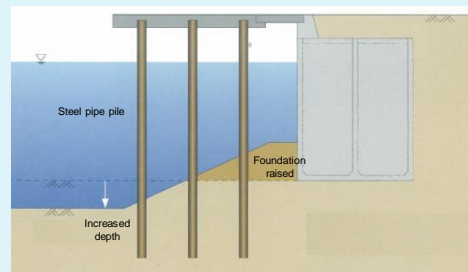
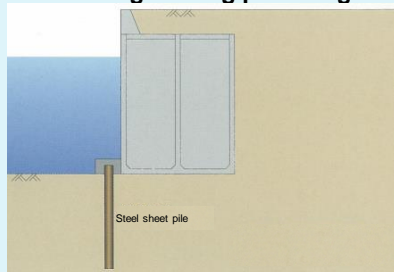
### • If existing landing place is a pier



### • If the existing landing place is sheet pile quay



### • If the existing landing place is gravity type quay



■ Because this method is renewal construction that makes the best use of the merit of the steel material, all the effects are demonstrated.

"larger sea vessels (increase in port depth)" "renovation of aged structures," "greater seismic resistance," Stability improvement of the structure

## Applicable sector

Ports • River structures

Standard Condition of application

Depth of the water  
around -16m

## Features

1. Reduction of construction period and cost
  - Reduction of construction cost by making use of existing structures.
  - Reduction of construction period by using steel material.
2. Space-saving type of execution method
  - Work is fast and easy even in small areas.
3. Applicable to all the existing structures
  - Applicable to various types of the existing structure (pier type, sheet pile type and gravity type).
4. Upgrade
  - Not only improvement in seismic resistance but also increasing in port depth can be attained.

## Track Record



The third berth of Tokyo Ooi container wharf

Japan: many records  
Pier : Tokyo port, Osaka port, Hakata port , Tomakomai port, etc  
Sheet pile quay : Tokyo port, Kawasaki port, Yokohama port, Kochi port, etc  
Gravity type quay : Tokyo port, Kobe port, Yokohama port, Muroran port, etc

## Cost

Refer to the under-mentioned contact section about details

## Contact

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