

15. Seismic retrofitting of quays and seawalls employing steel materials

Reinforcing existing caissons by installing steel pipe sheet piles and other steel materials in front or back side of them.

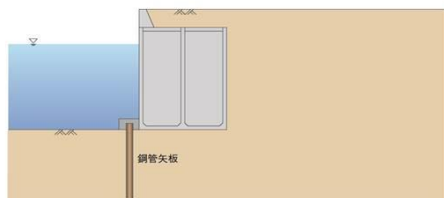
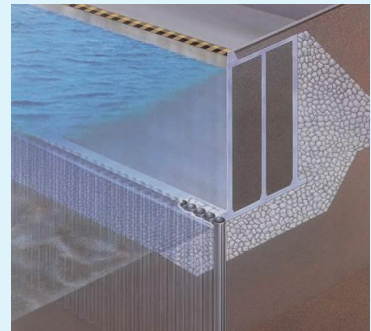
■ Remarkable improvement in seismic resistance of existing caisson quays and seawalls.

1. Outstanding seismic resistance

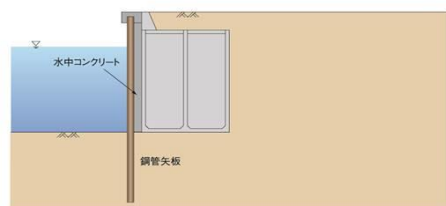
- Seismic resistance is enhanced, controlling liquefaction damage.
- Installing steel materials in the front face of the caisson can prevent scouring by tsunami or waves.

2. Efficient reinforcement

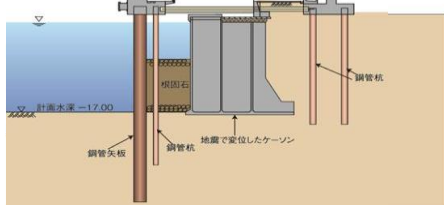
- The retrofitting can also add the depth of piers besides the resistance.



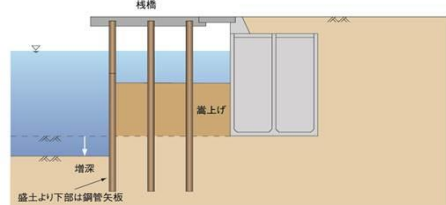
① Foundation-consolidating sheet pile method



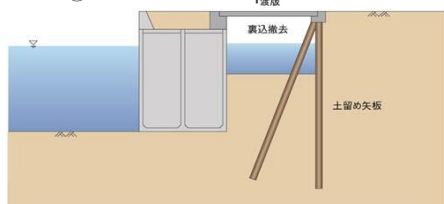
② Combined sheet pile method



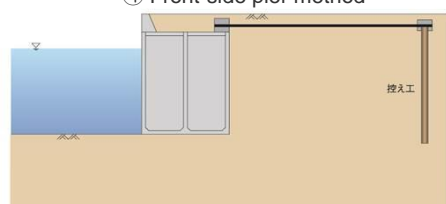
③ Front-side sheet pile method



④ Front-side pier method



⑤ Back-side sheet pile method (backfiller removed)



⑥ Anchoring method

Applicable Sector

Port

Disaster
Prevention

Both reinforcement in advance and restoration after disaster are applicable

Standard Condition of application

Foundation of existing structure shall be gravity type.

Feature

Option is available to meet required conditions such as increased depth at pier, utilizing existing structure, alteration of berth line and limitation of construction period.

	Increased depth	Existing structure	Alteration of berth line	Construction period
① Consolidated foundation sheet pile method	×	Utilized	No	○
② Consolidated sheet pile method	△	Utilized	Yes(Small)	○
③ Front-side sheet pile method	○	Unutilized	Yes(Large)	△
④ Front-side pier method	○	Utilized	Yes(Large)	△
⑤ Back-side sheet pile method (backfilling removed)	×	Utilized	No	△
⑥ Anchoring method	×	Utilized	No	△

Track Record

Overseas : Not yet

Japan : 1~2 cases per method
(Kobe port etc.)

Cost

To get information, please ask the contact shown bellow.

Contact

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