

neo Rise

To protect the lives,
and secure human life
against Tsunamis and
storm surge waves.

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neo RiSe

no energy no operation **Rising Seawall**

No power-driven machineries, no artificial operation.

Self-activating flap-gate

type rising seawall against storm surges and tsunamis





no energy no operation **Rising Seawall**

[Civil engineering specification] Example of installation in a gap of the seawall located at Hiwasa Port, Tokushima, Japan.
Mounted type: W5.0m × H1.0m



no energy no operation **Rising Seawall**

[Civil engineering specification] Example of installation in a gap of the seawall located at Toyomasu, Tokushima, Japan.
Buried type: W15.0m × H3.0m





no energy no operation **Rising Seawall**

[Civil engineering specification] Example of installation in a gap of the seawall located at Muya Port, Kuwashima-seto, Tokushima, Japan.
Buried type: W8.0m × H1.9m

neo Rise-A



no energy no operation Rising Seawall

[Architectural specification] Example of installation on an entrance for pedestrians located at Osaka, Japan.
Buried type: W6.4m × H1.09m



neo RiSe-L

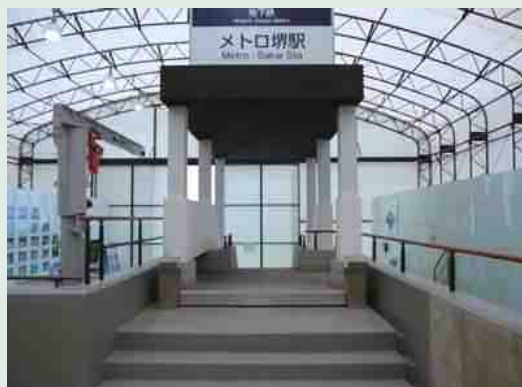


neo RiSe



no energy no operation Rising Seawall

[Architectural specification] Example of installation on an entrance of the subway located at Htz Disaster Prevention Solution Laboratory (Bosai Lab.), Osaka, Japan.
Mounted type: W2.0m × H0.5m



no energy no operation Rising Seawall

[Architectural specification] Example of installation on an entrance of the parking located at Osaka, Japan.
Buried type: W6.0m × H1.09m

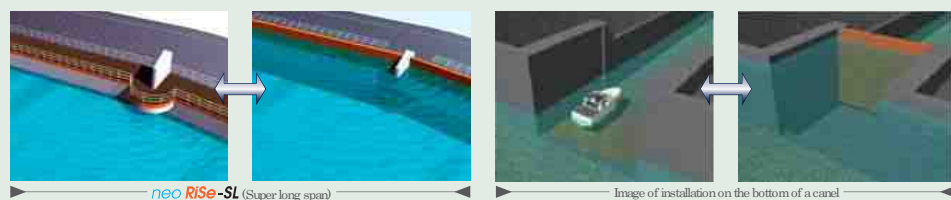
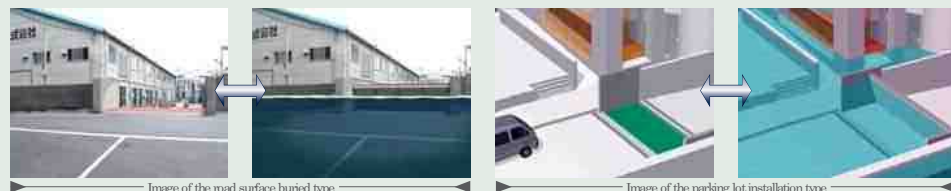
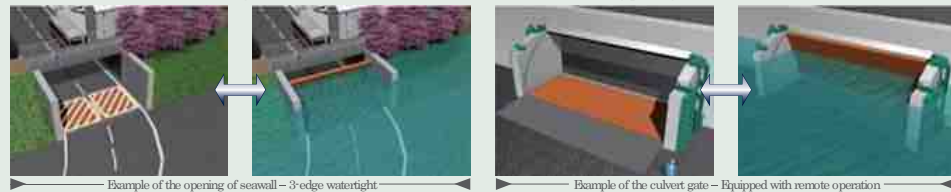


“*neo RiSe*” offers the basic specifications for the civil engineering and architectural fields.

“*neo RiSe*” stands for “*no energy, no operation Rising Seawall*”, which means the seawall that stands up without power-driven machineries and artificial operations. This system can be applied as the civil engineering or architectural use.

Civil engineering specification

- Main specification: ● Flap height: approx. 0.5-5m ● Wheel load: maximum T-25
- Application scope: ● Inland lock gates installed at the opening of the seawall or the opening of the along a river embankment.
- Inland lock gates installed at the box culverts at the two-level crossing passages.



Architectural specification

- Main specification: ● Flap height = approx. 0.3-1.5m ● Pedestrian load = maximum T2 ● Side grooves = None
- Application scope: ● Watertight doors installed at entrances into buildings or underground area.

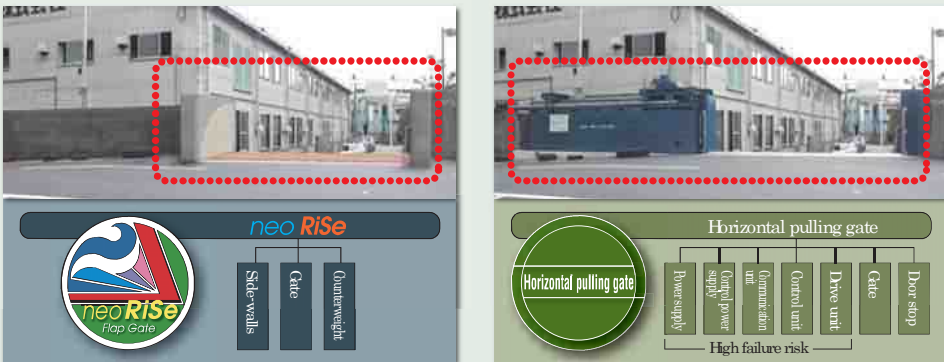


Standard specification / Performances

(Contact us for larger size.)

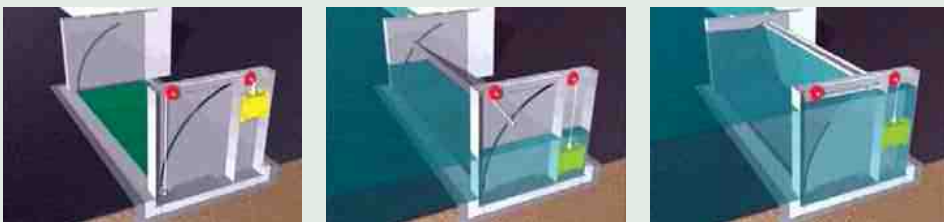
	Civil engineering specification		Architectural specification
Width	Maximum 20m	Width	Maximum 12m
Height	Approx. 0.5-5m	Height	Approx. 0.3-1.5m
Withstand load	Hydrostatic pressure 3 times as high as gate height	Withstand load	Hydrostatic pressure 3 times as high as gate height
Withstand contact pressure	Wheel load: Maximum T-25	Withstand contact pressure	Pedestrian load: Maximum T2

Features/Simple equipment configuration (No power driven machineries and no artificial operation)



"neo RiSe" realizes low failure risk and easy maintenance because of no power driven machineries and no artificial operation, and risk of operator is also avoided.

Features / Smooth motion according to water level (Rising quickly and Standing gradually)



Direction of force by the counterweight is turned according to the gate angle.
 When the gate lying, the force acts as the rising direction.
 On the other hand, when the gate standing, the force acts as the falling direction.
 By using this system, the gate responds quickly to water elevation and impacts are mitigated when upright, and then "neo RiSe" realizes gradual motions so as not to rise up carelessly and fall down suddenly.

Features / Resistance to upper load combined with lightness (Traveling vehicles)

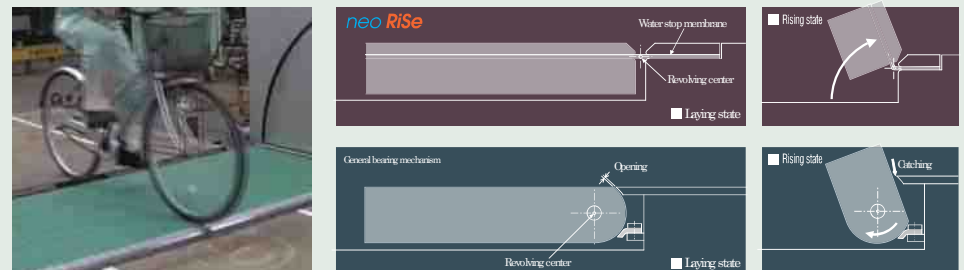


- Used as road surface under normal conditions
- Standard passenger cars
- Vehicles with high ground pressure such as fork lift trucks

Flap gate can be laid and used as road surface under normal conditions so as not to stand in the way of daily life. Therefore, the upper load by the traffic of heavy weight vehicles acts on the flap gate. Flap gate is required to rise in submerged condition. neo RiSe has achieved good balance between resistance to upper load and lightness.

Features / Prevent invasion of foreign matter by flat road surface

By adopting special structure to bottom bearing, unevenness of road surface can be minimized. Movement of road surface while flap gate operates can also be minimized and thus, opening through under the gate is eliminated. This structure help having flat road surface with no interference for passing over; minimizing invasion of foreign matter which affect movement of flap gate, making cleaning easy, and solving issue of jamming foreign matter, and so on.



Installation process * Note: Example of constructions

Removal of existing structures, excavating, levelling concrete, reinforcing bars/ form work and primary concrete placement

Preparation/Initial setup

Anchor bolts placement

Carry in of neoRiSe (Temporary installation/Inland transport)

Installation of neoRiSe

Hoisting the flap gate and fixing of anchors

Reinforcing bars/form work
Secondary concrete placement
Backfill
Restoration to the original condition

Installation of accompanying facilities

Commissioning

Inspection

Cleaning up the site

1 day
(Depending on the size)

1 day

1 day

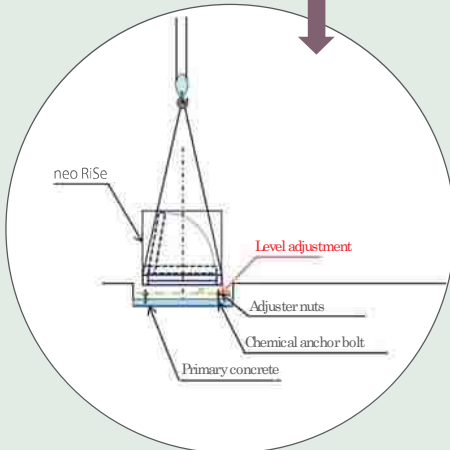
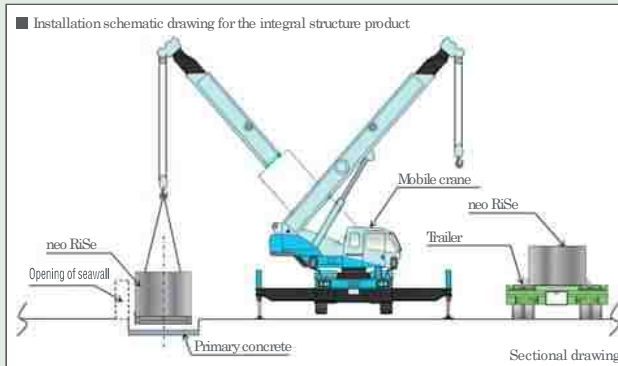
Around 7 days
(Rough standard)

1 day

1 day

1 day

1 day



Large scale flow test

neo RiSe
Product size:
Clear span 15m x
Height 3m



Performance of motions and watertight of the large scale "neo RiSe" is confirmed by water falling tank with 600 m³.

Load test (Fatigue strength against repetitious wheel load)



Repetitious loads corresponding to T-load, which is specified in the "Specifications for Highway Bridge", acted on a model of the gate over 2 million times, and then fatigue strength was confirmed.

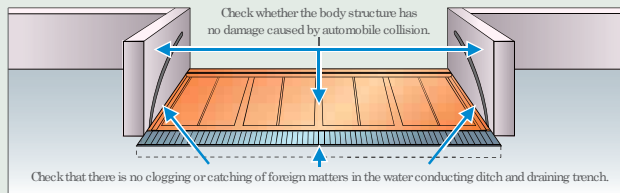
“neo RiSe” realized easy maintenance.

Disaster prevention equipment has to be kept suitable to work in emergency time. “neo RiSe” realizes easy maintenance since it needs neither power driven machineries nor artificial operation and consists of simple parts.

The inspection process of “neo RiSe” is the following.

① Daily inspection

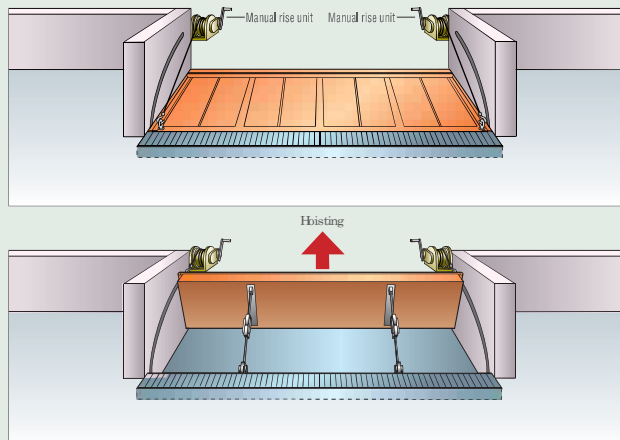
Check that there is no clogging in drain-pipe and gaps and structure has no damage caused by collision with automobile etc.



② Periodic inspection

■ Check of motions

Check whether the gate surely works from the lying position to the standing position using the manual rise unit or a crane.

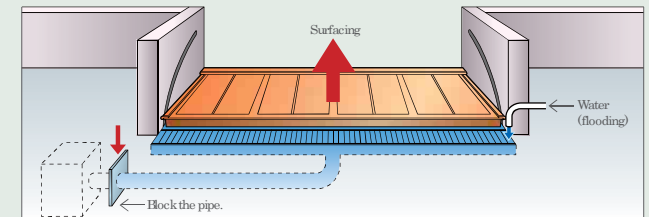
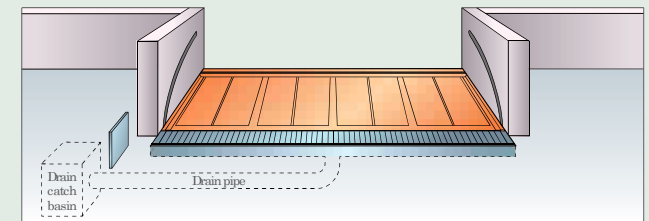


■ Water depth to start floating

Check whether the movable members work perfectly around once a year as a rough standard, for example; the water depth where the gate starts floating.

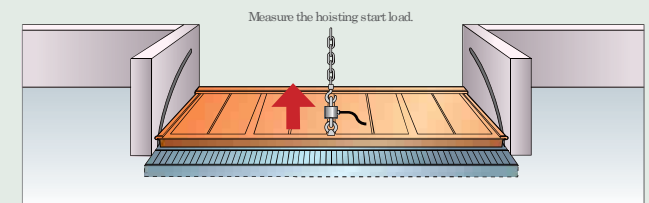
● Check with water

Block the drain-pipe, pour water into the housing section of the gate, and check water depth where the gate starts floating.



● Check without water (Use machine like a crane)

Hoist the top of the gate by a crane, measure the “hoisting load”, and compare the load with the buoyancy force equivalent at water depth where the gate starts floating.



③ Extra inspection

Carry out after the earthquake or flooding. On this occasion, decide whether detailed inspections are necessary and inspect the system on the level more than the periodic inspection if necessary. Perform the maintenance.

● After earthquake

Check whether deformation occurred because of the earthquake.

● After flooding

Check whether foreign substance came into gaps of the structure because of the flooding.



neo RiSe

no energy no operation Rising Seawall

We contribute to protect and secure more human life
and property against natural disaster through the development of flood disaster
management facility that needs no power driven machineries and no artificial operation.