### Sheer seawater soil block

- Blocks hardened by seawater -

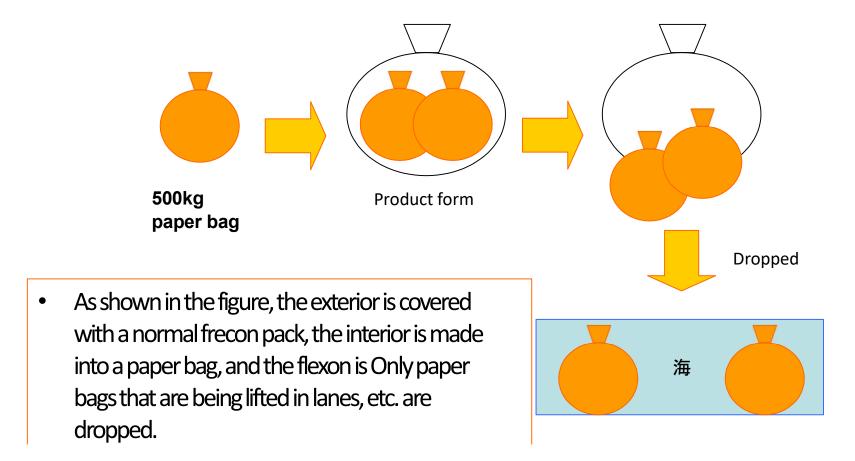
#### Overview and Features

- When submerged in seawater, it begins to solidify after about 3 hours, and it solidifies to about 18 N in about 12 days (IN, 9.8 kg) in about 7 days. It will be the final strength in about 1 month.
- Marine plants begin to grow after about 3 months because the basic raw material is natural materials and the binder does not contain any harmful substances.
- Concrete requires water at the site, but seawater soil blocks only need to be loaded like sandbags to contain water, so water is not required when entering the sea.
- Raw material iron slag is used for weight adjustment. X It is possible to change the weight at any time. By sea area.
- It has excellent workability and becomes a solid lump like a stone just by put it in seawater.

#### Product form

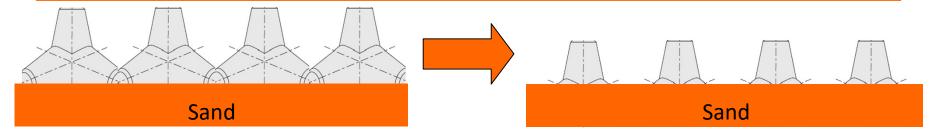
Product form

When two bags of kraft paper bag of 400 to 500 kg are put in a normal frecon pack and dropped, only the paper bag can be dropped.



# Current problems and wave-dissipating blocks

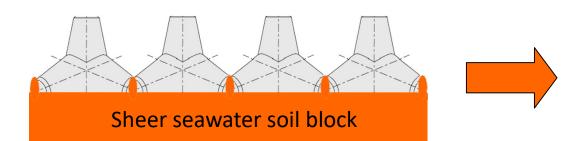
• The installation work of the wave-dissipating block is usually built with national money as a general public works project, in short, a coastal business. In general, such public works structures are built with 30 years of endurance, but in fact, if the bottom is sandy ground, there is a problem that it sinks in the sand before the endurance year. For example, if it subsides about 1m50cm, it will no longer demonstrate the wave dissipating effect. (It may sink 1m50cm due to a typhoon.) Then, it will raise the block further because it is embarrassed. The cost required for it is disaster recovery, that is, the national budget, and the disaster recovery recorded in the supplementary budget, that is, as a reserve expense, although it is not included in the initial budget, it is recorded in the supplementary budget, it is really assessed, and the budget has come down, and construction is being carried out.



It subsides as described above due to typhoons and natural subsidation.

## This proposal

- This proposal not only mitigates the subsidential for the subsidential block" as a solid material for the base and combination part for the subsidential problem of the wave erasing block of the separate sheet, but also "sheer mass seawater soil block" itself is formed mainly of natural materials, so it does not adversely affect the surrounding environment.
- Because the shape can be changed freely, it can be used in various parts, and it comes out to make it a free shape. In addition, since the construction method is simple enough to include seawater, it can be constructed using usual marine civil engineering equipment. The paper bag of the exterior uses kraft paper, so it naturally weathers.



"Sheer seawater soil block" is used for the underlying part of the wave dissipation block and the connection part, etc., and it is possible to relieve erosion and subsidation by solidifying and fixing it by including seawater.