# FUJIBETON

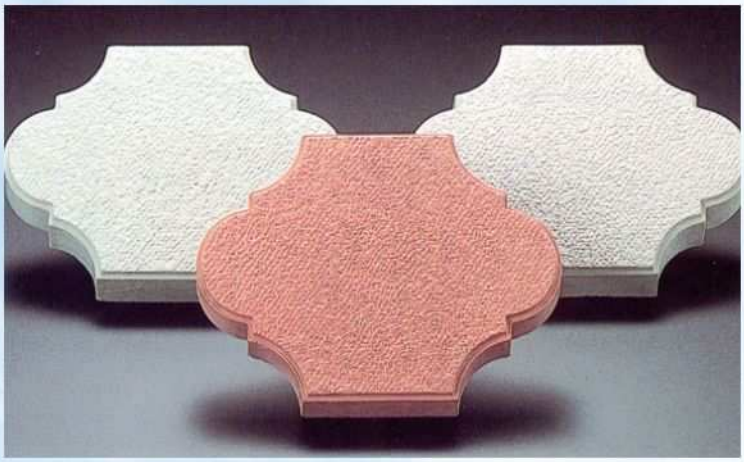
CREATE SYSTEM CO.,LTD.

# FUJIBETON

## Cement hardening agent for soil

## FUJIBETON has a high reputation in various fields.

FUJIBETON is the first cementitious solidified material in Japan that has been used since 1950's. We have earned a high reputation for short term construction due to short term hardening and the high quality of hardening at many construction sites such as sandy soil, clay,organic soil, sludge etc. In addition the solidified product has also a confirmed containment and non-dissolution performance of toxic substances (heavy metal sludge, incinerated ash) and obtained a recycling development patent.



### ●Range of application

**For construction**

- ●Road construction
- ●Animal husbandry paddock
- ●Soft ground
- ● Coustruction of residentialand
- ●Runway

**For building material**

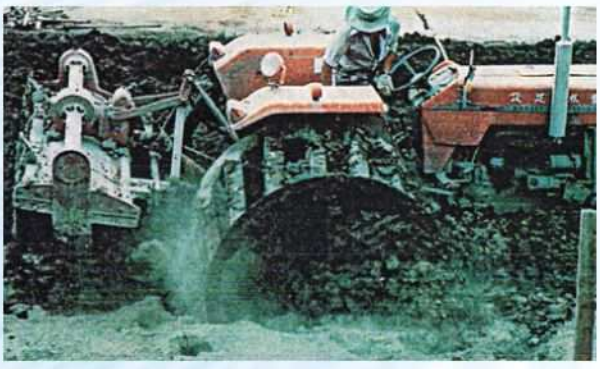
- ●Noncombustible building materials

**For waste treatment**

- ●Industrial waste recycling
- ●Insolubilization

### ●Example

●Roadbed improvement



●Solidification treatment of sludge(Harbor・River・Lake)

●Used as new building material

●Industrial waste intermediate treatment(Solidification of sludge・Insolubilization)

# FUJIBETON has the following excellent features.

## 1.Excellent solidification ability

### ●Strength development and durability

Long-term curing unnecessary. You can pass the road immediately after construction. That is because FUJIBETON promotes the formation of ettringite and early strength better than early strength Portland cement can obtain. Because of high durablity due to long-term strength increase, high density after coagulation and resistance to freezing and thawing.(chart-1,2)

### ●Solidification ability of organic matter.

FUJIBETON has the excellent ability to solidify objects that are difficult to handle with Portland cement etc., such as soil and sludge containing a large amount of organic matter/fine clay particles.(table-2)

### ●Ability to block and solidify hazardous heavy metals

FUJIBETON has the ability to block and solidify harmful substances(heavy metals) contained in industrial waste(incineration ash, sewage sludge, various sludge, etc.), and to stop its elution is excellent compared with Portland cement.(table-1)

## 2.Dehydration effect

FUJIBETON solidifies in a hydration reaction, but since the formation of ettringite requires a large amount of moisture from the surrounding soil, it has a very large dehydration effect on soft ground/sludge.

## 3.Effectively utilize expandability

FUJIBETON causes expansion of solidified matter by the formation of ettringite. In addition to hardening consolidation such as supplemention solidification and shrinkage of cement.(chart-3)

## 4.Usage advantage

FUJIBETON improves durability, water shielding, frostresistance, etc. in the solidified matter. In addition, FUJIBETON is an organic pollution-free substance made of inorganic matter, it is an environment-friendly solidifying agent and does not generate heat or foul odor at the time of use.

## 5.Easy and Economical construction

FUJIBETON can obtain high solidification density with small compaction energy, so it is possible to carry out economical construction with little mechanical force and labor required.

## ●Manufactured goods

### FUJIBETON ST

For soil hardening. In addition as in construction work such as road construction and housing construction, it can also be applied in recycling of various kinds of waste.

Use
- road construction
- housing construction
- Industrial waste recycling

### FUJIBETON PC

For pollution prevention. Solidifies contaminated soil with hazardous substances and stops elution.
Ideal for industrial waste disposal to safe dispose of sludge and dust containing heavy metals.

Use
- prevention of elution of heavy metals
- Industrial waste recycling

### FUJIBETON FK

For sludge treatment. It is suitable for improving soil containing a lot of water and soft ground. In the 1970s, we have had a great track record in sludge treatment of harbor throughout the country.

Use
- high water content
- soft ground
- industrial waste/sludge treatment

### FUJIBETON CERAMICS

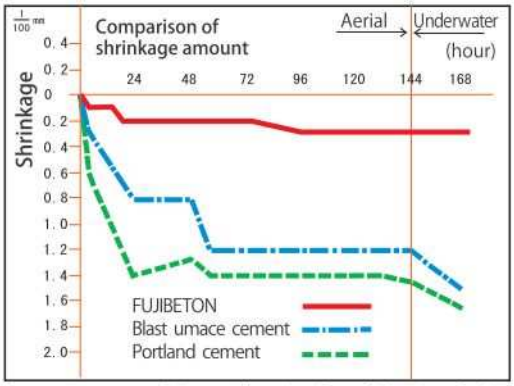
Developed for industrial waste such as garbage incineration ash. It can be hardened just by mixing, and molding is free. It has a high strength and beautiful finish and it is suitable for wall materials.

Use
- Noncombustible building materials
- Industrial waste recycling

# FUJIBETON Solidification method has high performance, is safe, inexpensive and strong.

## ●Fujibeton: Various data

Shrinkage comparison test (chart1)

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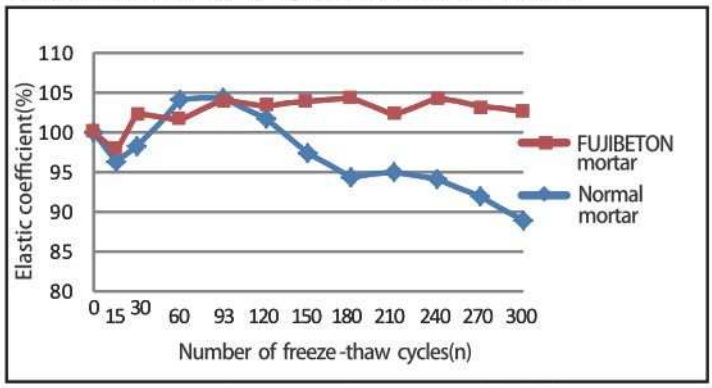
Comparison of durability against freeze-tham (chart2)

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Shrinkage test Specimen of Characteristics(table1)

| Types of additives Additive | Humidity weight g | Humidity density g/cm³ | Dry density g/cm³ | Water content ratio % |
|---|---|---|---|---|
| FUJIBETON | 4, 532 | 2, 053 | 1, 885 | 8, 93 |
| Portland Cement | 4, 673 | 2, 116 | 1, 938 | 9, 19 |
| Blast furnace Cement | 4, 618 | 2, 091 | 1, 918 | 8, 99 |

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Incinerated ash / heavy metal elution test data(table2)

| component | lead | cadmium | chrome | mercury | arsanic | phosphorus | cyanide |
|---|---|---|---|---|---|---|---|
| unit (mg/L) | 246 | 6. 8 | 970 | 0. 06 | 2. 0 | 2690 | 0. 1 |
| special maintenance criterion(JAPAN) | 0. 3 | 0. 09 | 1. 5 | 0. 005 | 0. 3 | 1. 0 | 1. 0 |
| criterion of tap water | 0. 1 | 0. 01 | 0. 05 | 0. 001 | 0. 05 | 0 | 0 |
| elution amount after treatment | without detection | without detection | without detection | without detection | without detection | without detection | without detection |

※compression strength of specimenfor elution test:average 33N/㎟

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Usege range of sach solidified material according to the type of soil(table3)

| type | gravel | sand | silt | clay | organic soil |
|---|---|---|---|---|---|
| Particle size(mm) | 50～20 | 2～0. 05 | 0. 05～0. 005 | 0. 005以下 | — |
| Scope of application | concrete | | | | |
| | Soil cement | | | | |
| | FUJIBETON | | | | |

Fujimasu Chemistry Reserch Institute Co.,Ltd.


Manufacturer

CREATE SYSTEM CO.,LTD.

URL. : http://www.create-system.jp/

Sales Agent

FUJIBETON Laboratory ,Inc.