

Introduction of New Technologies for Multifunctionality and Durability in Pavements

出口
EXIT
8 新清水
Shin-Shimizu

GAEART

What is GAEART?



~PROFILE OF GAEART~

- Founded in 1963
- Road construction company
Airports, harbors, bridges...
- 38 sales offices
- 31 factories producing HMA

- Multifunctional Drainage Pavement
「Full · Function · Pave」
- Precast concrete slab that can be rapidly constructed
「High-strength PRC slabs」
- Normal-temperature pavement repair material
「Ninja Seal」

Multifunctional Drainage Pavement

Full • Function • Pave (FFP)



Feature of FFP

Special paver scratches the surface in paving work



Longitudinally grooved surface brings various functions, so...

FFP is called "Multifunctional Drainage Pavement"

WHY does FFP have high durability?

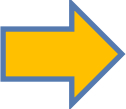
Dense-graded pavement



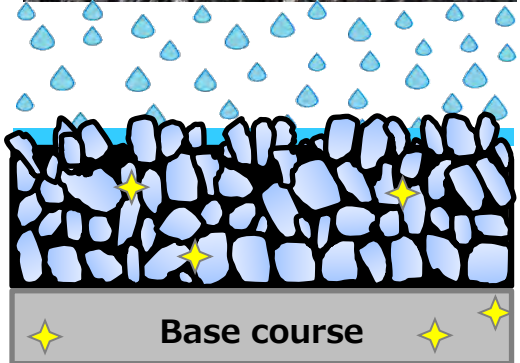
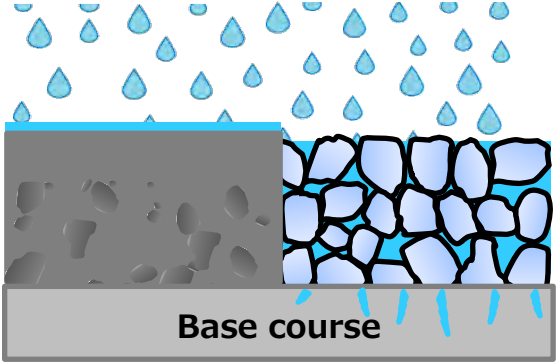
Drainage pavement



FFP



- ✓ **MATERIAL**
specially modified binder is used
- ✓ **STRUCTURE**
Waterproof layer prevents rainwater from penetrating



DRAINAGE layer
WATERPROOF layer

Functions as “Multifunctional Drainage Pavement”

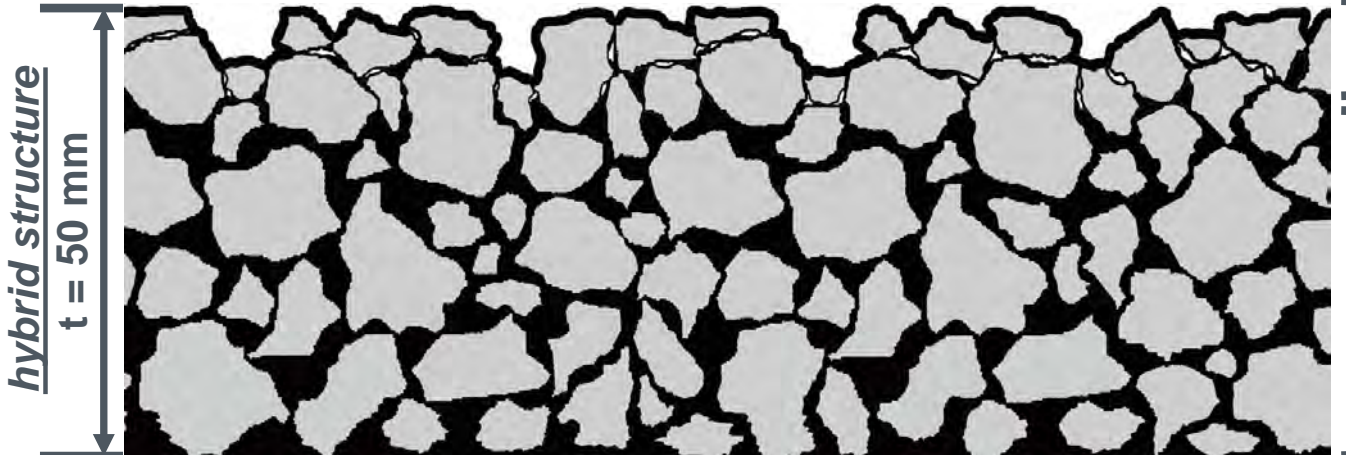
Water does not pool

Noise reduced

Glare free

Traffic accident reduced

Freeze suppressing



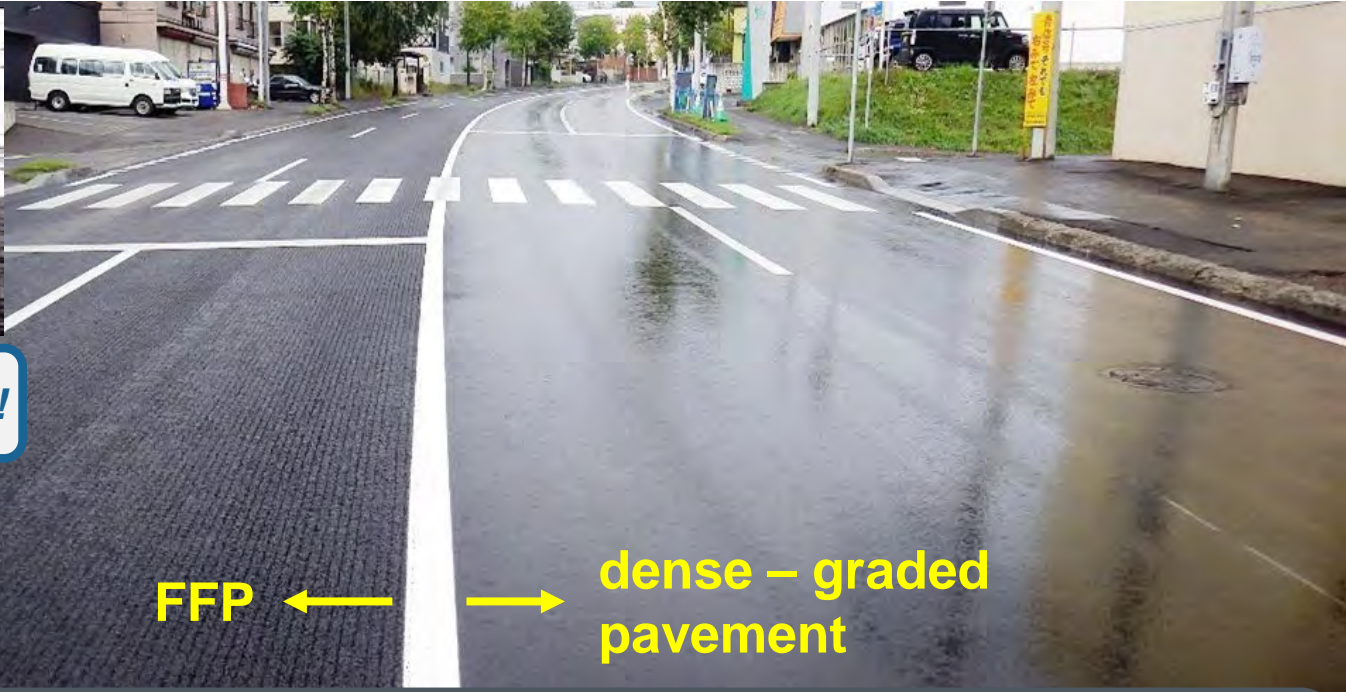
Rough and Longitudinal grooves

Waterproofing

Function Drainage function



Water does not pool !



FFP ←

→ **dense – graded pavement**

The drainage function can prevent standing water on the pavement. FFP improves the visibility when you drive a car.

Function Freeze-suppressing function



Freeze-suppressing agent remains to the longitudinal groove.
↓
Long-lasting antifreezing effect

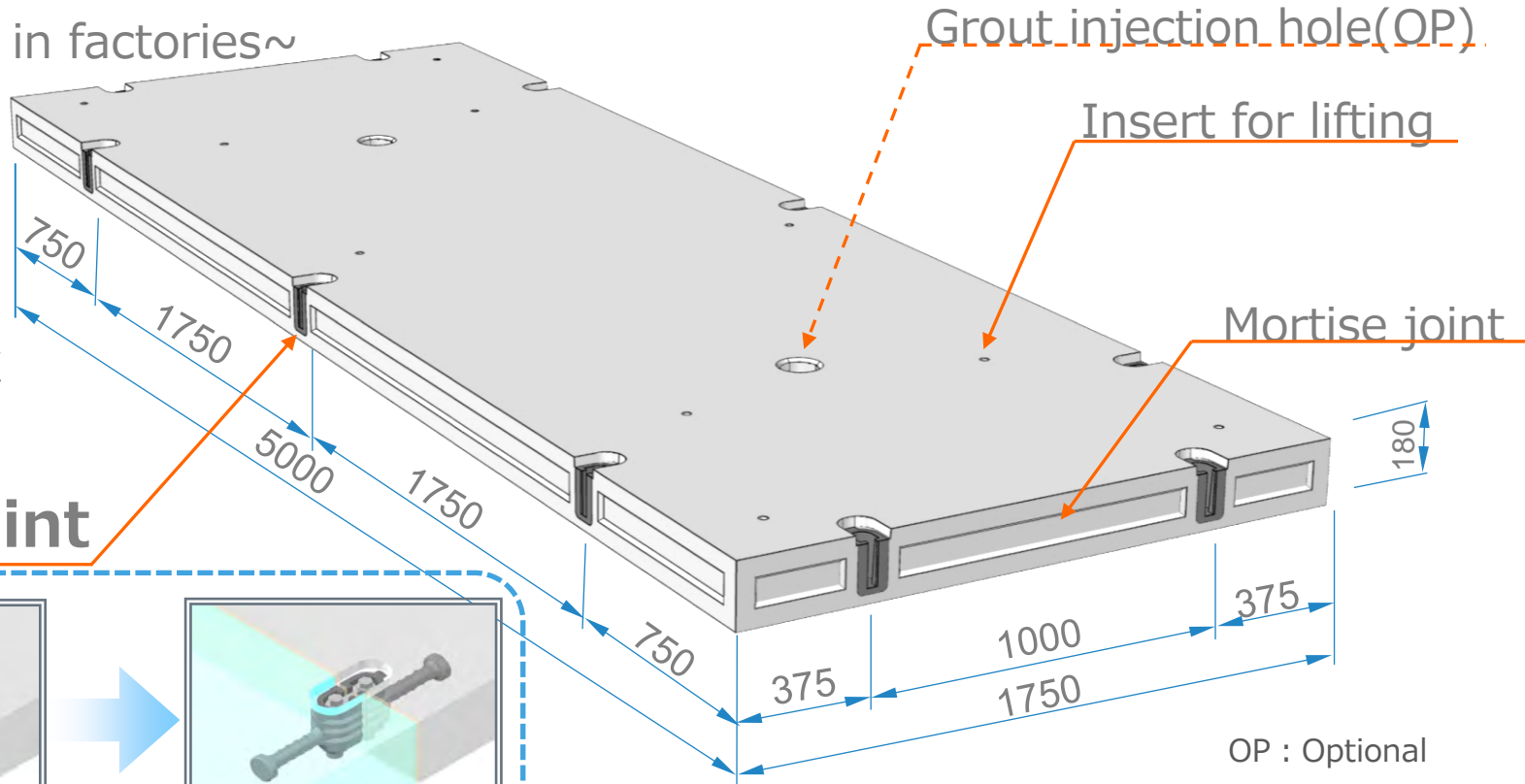
Precast concrete slab that can be rapidly constructed

High-strength PRC slabs



Specification of standard slab

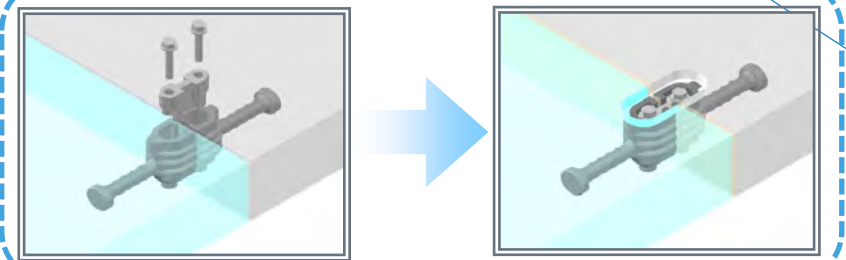
~Produced in factories~



OP : Optional

Slabs are connected by

Cotter joint

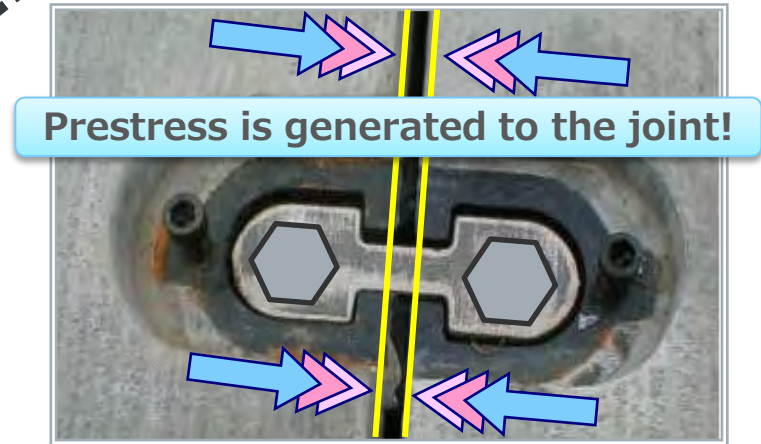
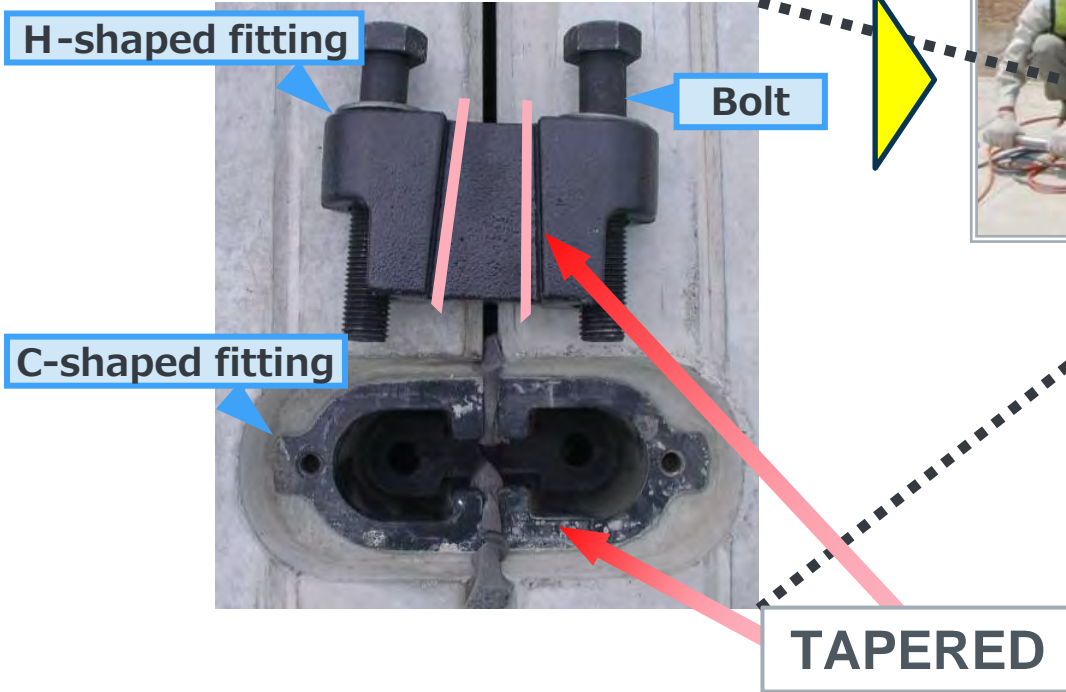


Features of PRC slab



- ◆ High quality and great durability
- ◆ Reduces work time
→ suited for airports etc...
- ◆ Connected by cotters
→ suited for soft grounds
- ◆ Sectional replacement is possible

Cotter joint (wedge joint)



Snow melting type

Built-in heating unit in slab



General pave



Heating cable

PRC slab

50

▲ Heating element in the rebar assembly

Snow melting type

Snow melting test at "SHIRAITO Highland Way" in Karuizawa, a snowy area in Nagano prefecture.

OFF

ON





Normal-temperature pavement repair material

Ninja Seal 



punch-out



crack

Road maintenance product from GAEART

Features of Ninja Seal



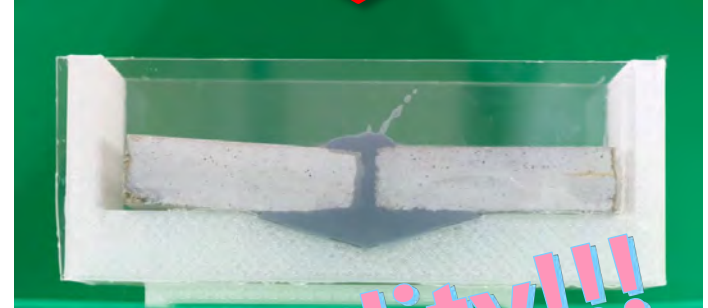
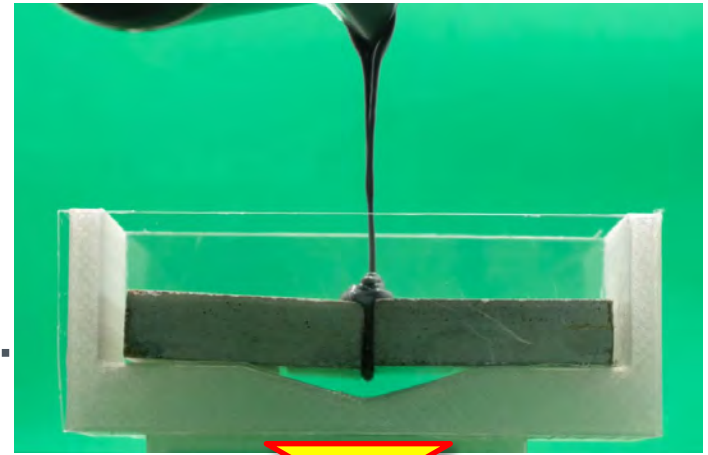
Flexible!!!

Stretching rate is more than 300%!!!

The behavior is like a ...



Ninja



Fluidity!!!

~Suitable for large cracks~



✓ Easy to use !!

✓ Quiet !!

✓ Long lasting !!

Ninja solves cement concrete problems !!!



How to use Ninja?

i)Stir two liquids by handy mixer.



ii)Add rubber tip and mix it again.



iii)Pour mixture into cracks.



iv)Appy this material by trowel



Easy!!!!!!!



Ninja

- No need for heavy-machinery !!
- Easy to handle for non-experts !!

Ninja

Key takeaways of today

No.1 Full Function Pave [FFP]

-high durability and various functions

No.2 High-strength PRC slabs

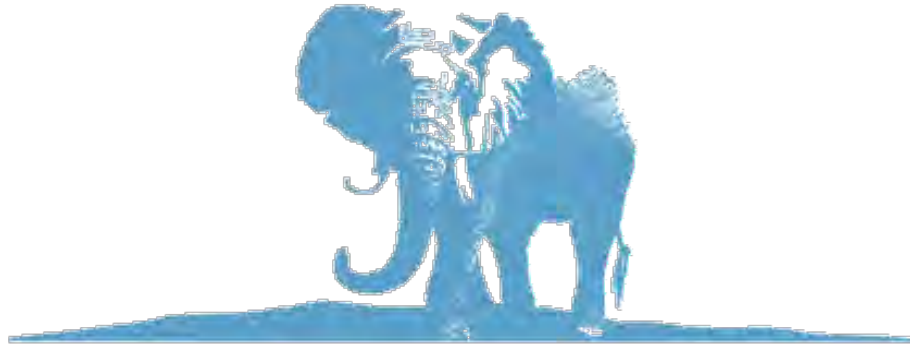
-high quality slabs, rapid installation

No.3 Ninja Seal

-flexible and fluidity material to repair cement concrete

GAEART produces valuable pavements!!

THANK YOU!



GAEART