

# TOUGHPHALT SUPER MX

## أسفلت

### What is TOUGHPHALT SUPER MX?

TOUGHPHALT SUPER MX is the polymer-modified asphalt especially for porous paving that contributes to extend the life and add extra value. TOUGHPHALT SUPER MX has superior properties in terms of plastic deformation resistance, aggregate scattering resistance to twist and at low-temperature. Also, porous paving using TOUGHPHALT SUPER MX can be add extra value, such as lower road noise.

### Difference in surfaces



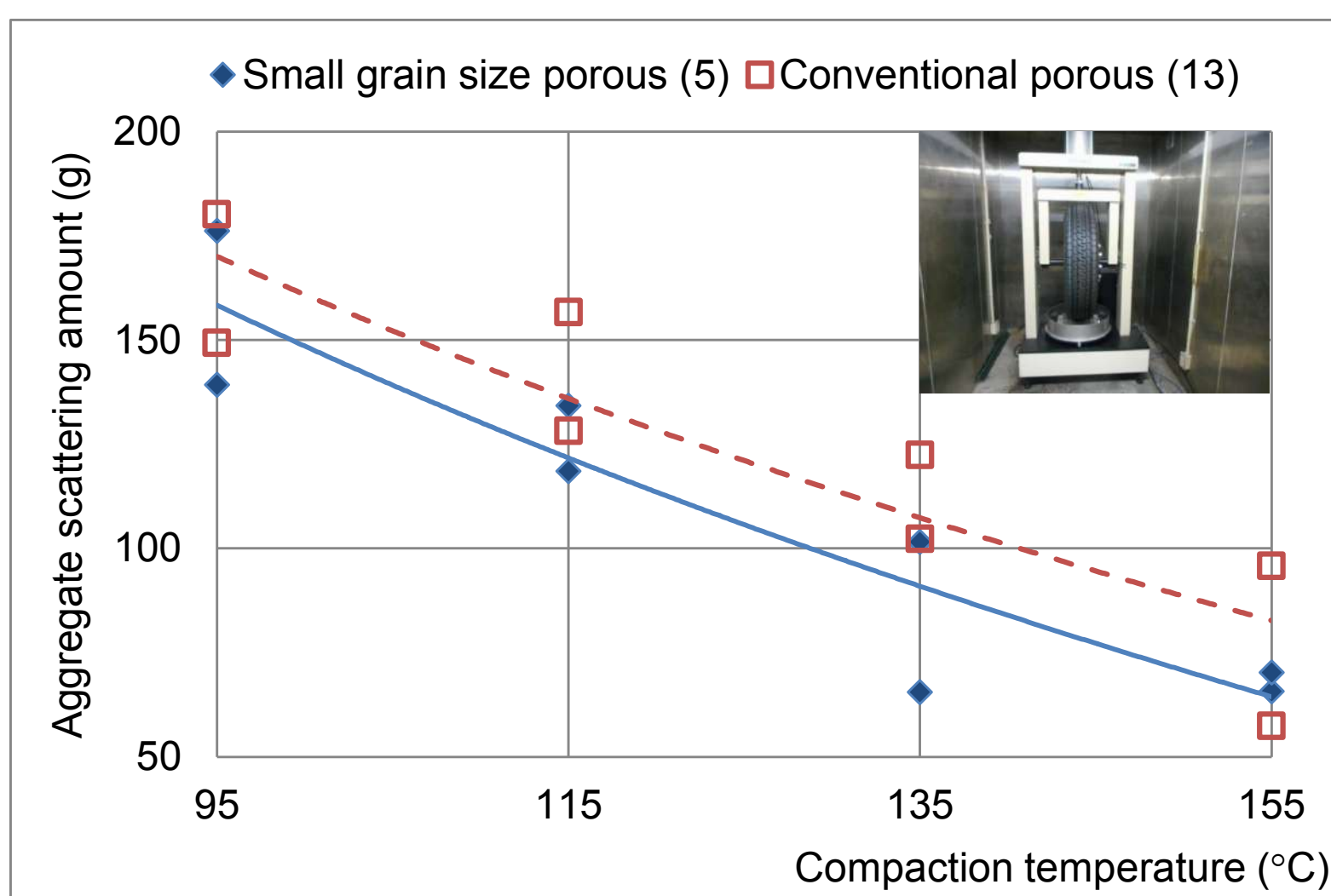
Smaller aggregates porous asphalt with **TOUGHPHALT SUPER MX**



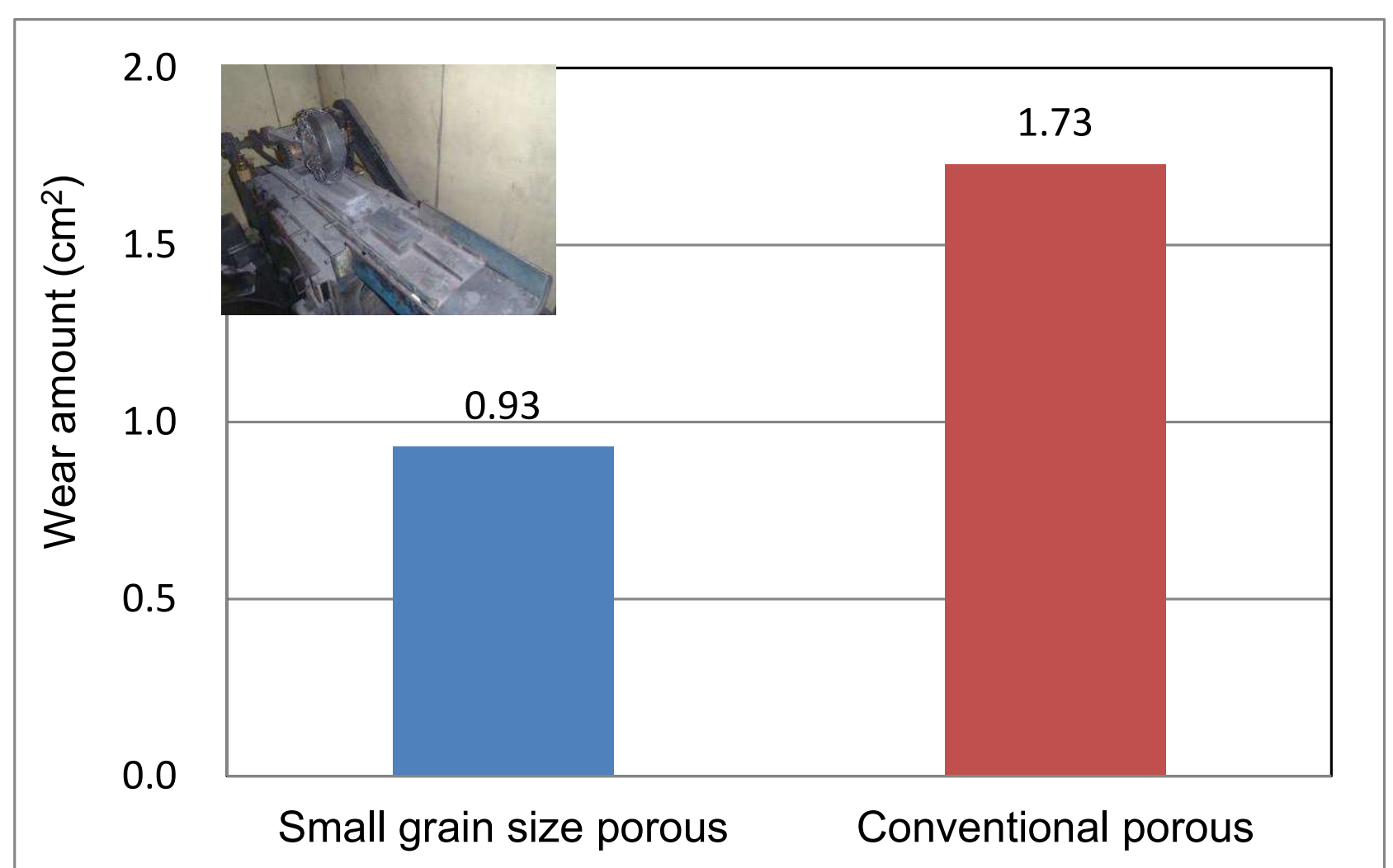
Conventional porous asphalt with conventional binder

### Features

- ◆ Has superior aggregate scatter resistance at higher temperatures even at the intersections which affected by twisting from tires
- ◆ Has extra durability even when the mixture with higher porosity and smaller aggregates are used for lower road noise
- ◆ Has excellent clogging resistance and maintains water permeability for a longer time



Relationship between compaction temperature and tire stationary steering aggregate scattering amount



Chain raveling wear amount

### Application areas

- ◆ Locations requiring extended-life porous asphalt pavements
- ◆ Porous asphalt pavements at intersections and other locations which affected by twisting from tires
- ◆ Higher porosity asphalt pavements
- ◆ Porous asphalt pavements with a smaller aggregate size



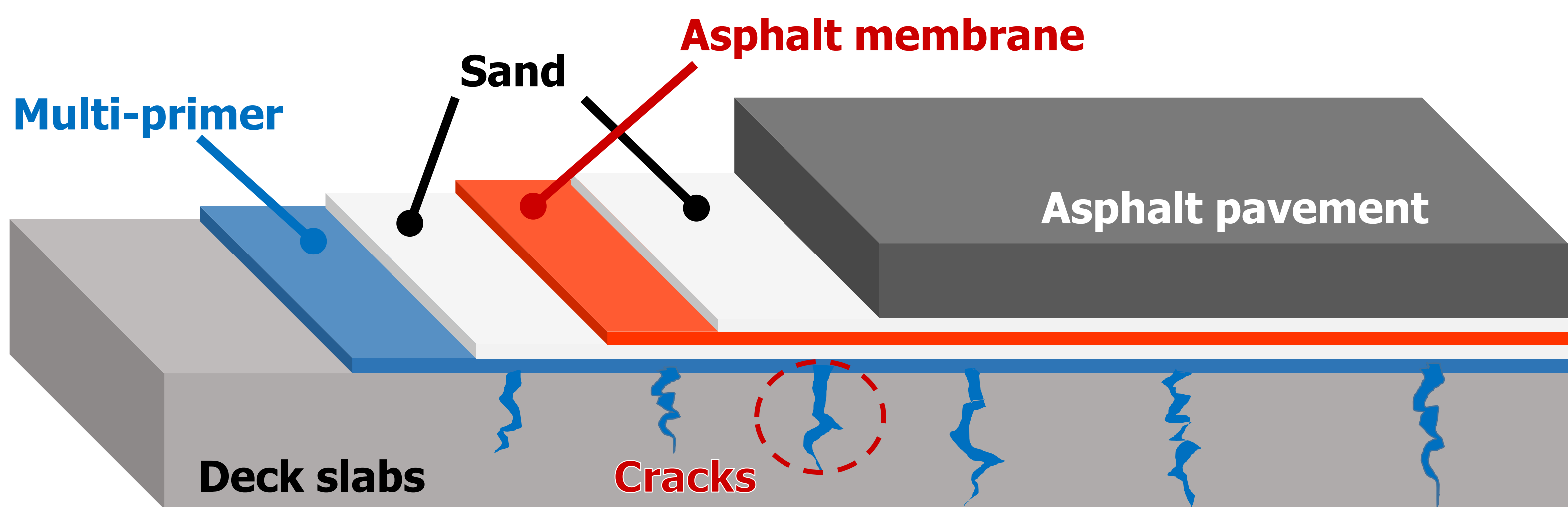
# MULTI-FRESH WATERPROOFING

## أسلوب منع التسرب

### What is MULTI-FRESH WATERPROOFING?

MULTI-FRESH WATERPROOFING is the "high permeating bridge deck waterproofing method" jointly developed technology with the Metropolitan Expressway Co., Ltd.

MULTI-FRESH WATERPROOFING improves the durability of bridge deck with rapid application from top surface of the deck slab.



### Features

- ◆ Multi-Primer deeply penetrates the cracks on the deck slab and gives higher waterproofing performance
- ◆ Penetrated Multi-Primer filling and adhering the cracks, and the improvement of the rigidity and the fatigue durability for damaged deck slab is expected
- ◆ Multi-primer has higher permeability and quicker curing ability even at low temperatures, and enabling rapid applications

### Application Procedure:



Preparing Multi-Primer



Application of Multi-Primer



Spreading Sand



Application of membrane

### Application areas

- ◆ Existing road bridge deck slabs with cracks occurring on the top surface, which expecting high waterproofing effect and improvement of deck slabs rigidity.
- ◆ Bridge deck slabs which require rapid construction when replacing asphalt pavement



# SUPER TACKZOL

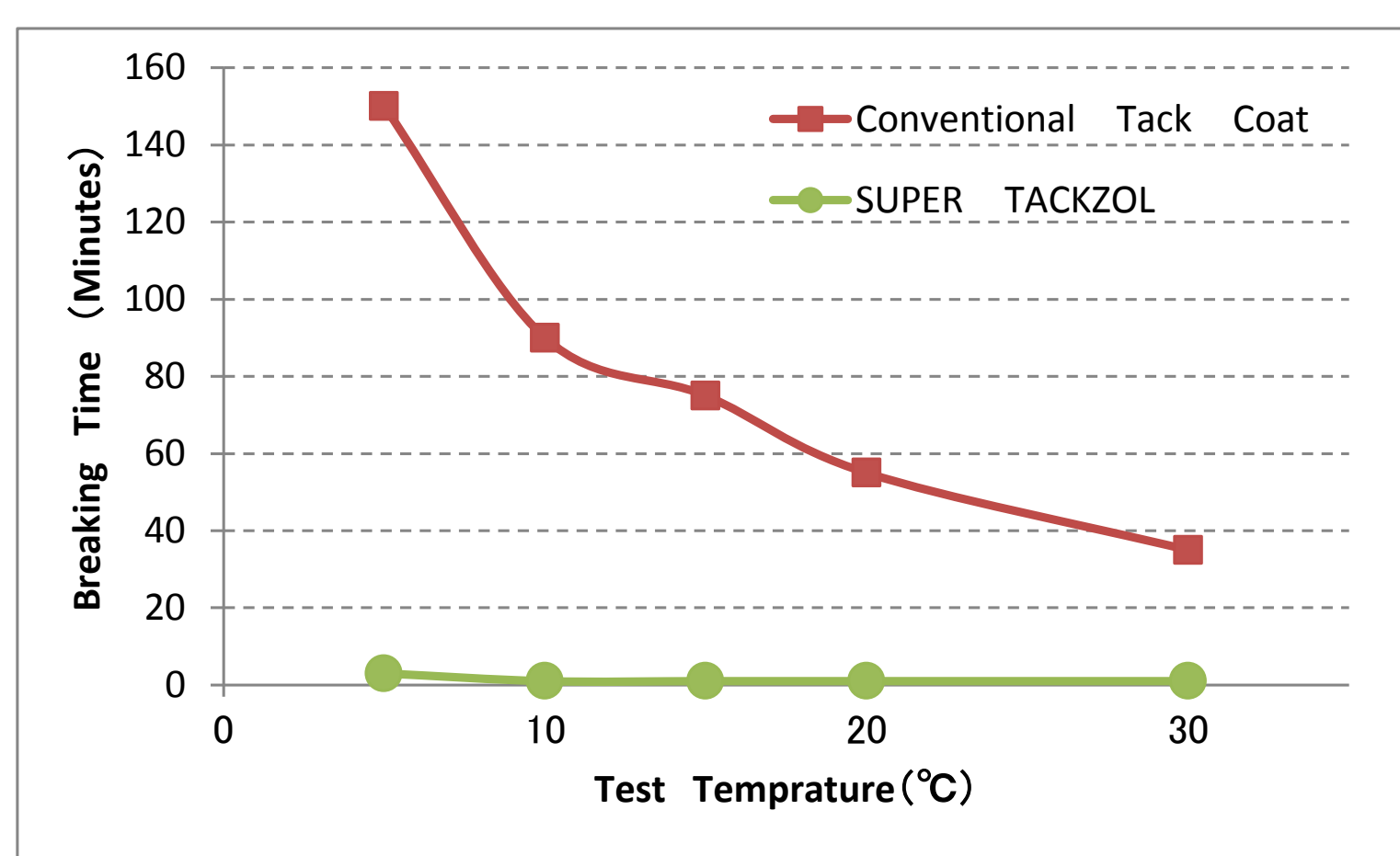
## طبقة لصق

### What is SUPER TACKZOL?

SUPER TACKZOL is rapid setting tack coat emulsion in which the breaking time has been greatly shortened compares to conventional tack coat.

SUPER TACKZOL conforms to the specifications of PKM-T (Trackless type asphalt emulsion) for the Japan Emulsified Asphalt Association.

### Features



Relationship between test temperature and breaking time

- ◆ The breaking time is faster than conventional tack coat in any temperature.
- ◆ The set emulsion does not easily stick to the tires of construction vehicles, so surrounding road will not be messy.
- ◆ The emulsion has outstanding adhesive ability after breaking, which enhances the paving durability.

### 1 minute after spraying:



Conventional Tack Coat



SUPER TACK ZOL

### Application areas

- ◆ Paving construction work in which the tack coat curing time is required to be shortened
- ◆ Locations where one must not make mess on surrounded roads.
- ◆ Locations where higher adhesiveness is required, such as porous asphalt paving and bridge surface paving.



# ASWOOD PAVING

## تعبيد

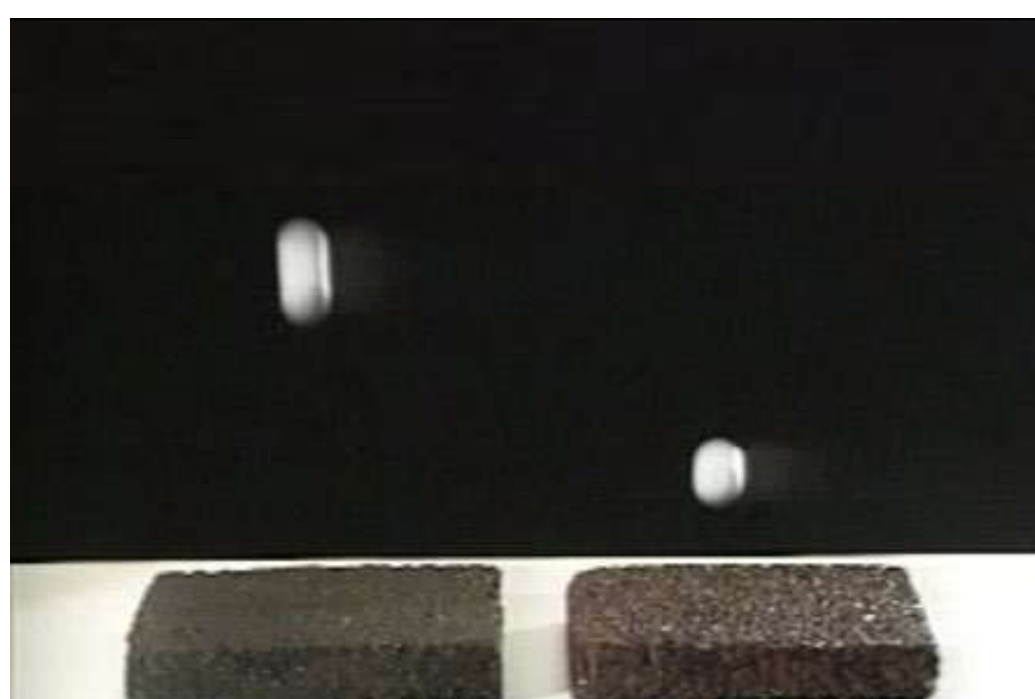
### What is ASWOOD PAVING?

ASWOOD PAVING is cold mix pavement composed of tinned wood chip and rubber modified asphalt emulsion. ASWOOD PAVING is great for environment for cold mix paving, higher water permeability and using recycled materials. It is also great for people for excellent cushioning from elastic materials.



### Features

- ◆ Cushioning characteristics provides comfort for feet
- ◆ Higher water permeability forms no puddles
- ◆ Excellent for energy savings and environment preservation for cold mixing and using recycled materials



Asphalt ASWOOD

Cushioning Characteristics



Water Permeability



### Application areas

- ◆ Walkways, garden paths, cycling roads, etc.
- ◆ Internal paving for various facilities such as care houses, schools and stations

