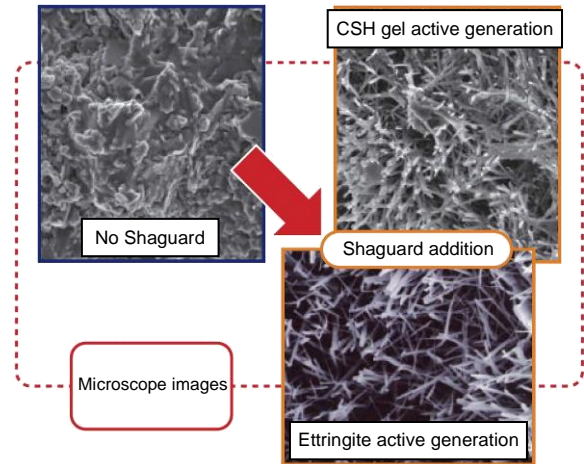


# DENKA SHAGUARD

## Water-Tightness Additive for Concrete

### Description

When **DENKA SHAGUARD** is added to cement, ettringite crystals and CSH gel are generated within the cement capillaries and pores; imparting fineness to the microstructure of cement and increasing its water-tightness.



### Features

- Mitigates water leaking
- High water-tightness
- Minimizes bleeding
- High dispersability
- Ease of use

### Applications

- Water supply and drainage facilities
- Water tanks
- Swimming pools

### Packaging and General Information

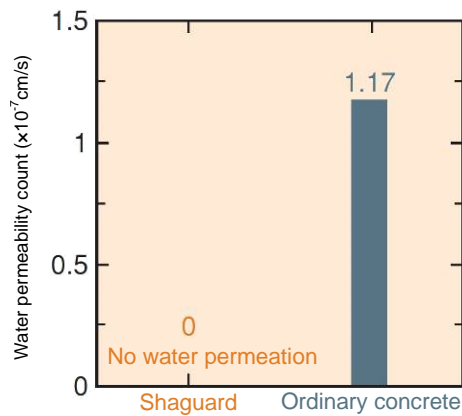
- 8kg, 20kg paper bags
- Density: 2.58g/cm<sup>3</sup>
- Appearance: Light gray

### Standard Mix Proportions and Usage Instructions

- 8kg/m<sup>3</sup> of cement is recommended. Replace an equivalent amount of sand by **DENKA SHAGUARD** when adding into concrete.
- Add **DENKA SHAGUARD** together with cement and other aggregates into the mixer when mixing the concrete.

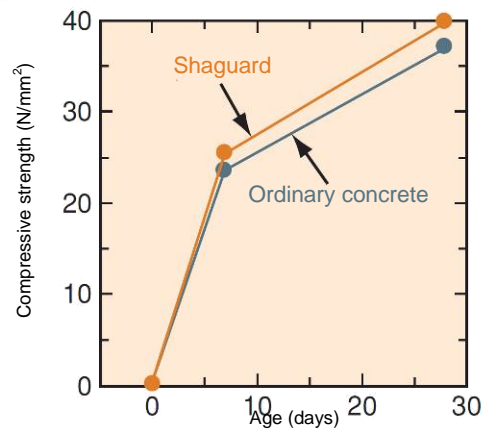
## Physical Properties

Water Permeability Count Measurements (Arbitrary)  
(Output method measurements)



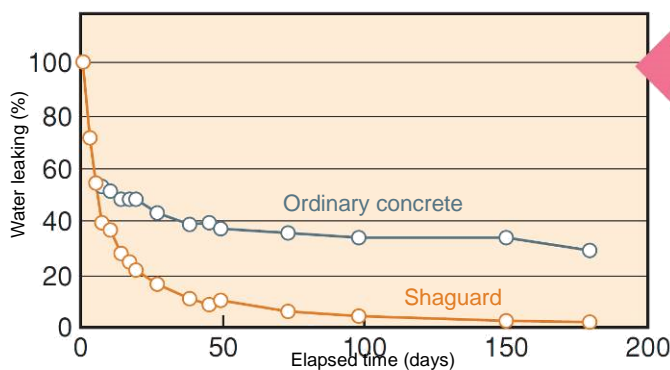
It was shown that with Denka Shaguard, the water permeability was remarkably reduced; i.e. water-tightness was greatly enhanced.

Compressive Strength Measurements (Arbitrary)  
(In Accordance with JIS A 1108)



There was virtually no effect on compressive strength with Denka Shaguard.

Water Permeability Count Measurements (Arbitrary)  
(Output method measurements)



With Denka Shaguard, water leakage due to cracking was minimized.

With Denka Shaguard, excellent water-tightness and water leakage mitigation performance were established. At the same time, it was determined that the use of Denka Shaguard has no effect on the concrete strength.

Concrete Mix Proportions: W:C Ratio = 60%, Fine Aggregates Ratio: 46%

## Handling Instructions / Precautions

- Put into the mixer together with cement and/or aggregates for well mixing.
- Refer to the Safety Data Sheet (SDS) before use.
- Wear protective gear (goggles, mask, gloves, and rubber boots) while handling the product.
- Put **DENKA SHAGUARD** into the concrete mixer together with cement and/or aggregates.
- Standard addition rate is 8kg/m<sup>3</sup> of concrete. Replace sand by equivalent amount of **DENKA SHAGUARD** when preparing the cement mixture
- Use a concrete mixer and not an agitator car for mixing **DENKA SHAGUARD**.
- Keep and store in a cool and dry place.
- Once opened, the product should be used up completely.
- Run trials before use at the actual job site.

## Limitation of Liability

The information contained in this brochure provides general advice for potential customers of DENKA about the basic properties and characteristics of various DENKA products (hereafter referred to as "the Product Information"). DENKA makes no warranty or representation as to the entire accuracy or completeness of the Product Information in this brochure. Nothing in this brochure will be deemed to create any express or implied warranty or obligation of DENKA with respect to the Product Information or its use, including, but not limited to, any warranty of merchantability, fitness for a particular purpose, or infringement of any intellectual property rights. Each user of the Product Information and DENKA products assumes their own responsibility to properly determine the manner and suitability of use of the Product Information and DENKA products in its own operations. The user should exercise proper care in considering the Material Safety Data Sheet, Product Information and any other technical information provided by DENKA, including descriptions of the conditions of use, warnings, and other cautionary instructions. DENKA reserves the right to change the Product Information from time to time at its discretion and without notice.

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