

DENKA POWER CSA TYPE-R

Shrinkage-Reducing and Compensating Additive

Description

DENKA POWER CSA TYPE-R is a shrinkage-reducing, high-performance expansive additive used in concrete and mortar.

Features

- High expansion CSA-type (50~30% dosage reduction at equivalent expansion rate compared to CSA #20)
- Dramatically improves shrinkage compensation (reduces cracking caused by drying shrinkage)
- 3~8% dosage rate by cement weight; depending on mix proportion and cement affinity

Applications

- Raw material for premixed (formulated) dry mortar
- Applicable for most mass concrete structures, such as parking decks, bridge decks, water tanks and underground structures etc.

Packaging

- 25kg paper bags
- 1000kg bulk bags

Shelf Life

- 6 months from production date
- Determine the production date by reference to the lot number. A lot number of "1AXXX" corresponds to production in Jan 2001; "2BXXX" to Feb 2002 and so on.

Chemical Composition (Typical Values)

SiO ₂ (%)	Fe ₂ O ₃ (%)	Al ₂ O ₃ (%)	CaO (%)	SO ₃ (%)	Total (%)	f-CaO (%)
1.0	0.8	7.2	70.6	18.5	98.1	49.8

The above may vary depending on equipment, temperature, mixing methods, application methods, test methods, actual site conditions and curing conditions.

Physical Properties

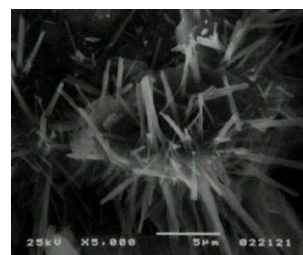
- Expansion & Shrinkage

Expansion after 7 days: $\geq 0.020^*$

*Test method is in accordance with JIS A6202 modified with ordinary Portland cement in water

- Effect on Strength

Negligible effect on strength when dosage rate is $< 8\%$ by weight. (Trial tests are recommended as actual onsite conditions may differ.)



Handling Instructions/Precautions

- Mixing Design

◇ Treat POWER CSA TYPE-R as a binder during mix calculations.

◇ Excessive dosage will cause over-expansion, leading to reduced strength and durability. Mix POWER CSA TYPE-R together with cement in the mixer. Uneven mixing may cause partial expansion.

- Curing

◇ Improper ettringite formation may occur when the surroundings are dry.

◇ The longer the curing period, the smaller the dry shrinkage.

- Affinity with admixtures and additives

◇ If admixtures and other additives are used, perform trial mixes to confirm the physical properties of the resultant mix.

- Refer to the Safety Data Sheet (SDS) before use.

- Wear protective gear (goggles, mask, gloves, and rubber boots) while handling the product. Do not dispose of the product in drains.

- Once opened, the product should be used up completely. Otherwise, reseal for storage.

- The product should be stored in a dry area, indoors, and out of direct sunlight.

- For further information, please contact DENKA.

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.

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- DENKA reserves the right to change the Product Information from time to time at its discretion and without notice.

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