



CTS Type-K™ — DATASHEET

Cement for Type-K Shrinkage-Compensating Concrete

PRODUCT NAME:

CTS Type-K Cement for Shrinkage-Compensating Concrete

PRODUCT DESCRIPTION:

CTS Type-K is a hydraulic cement designed for use in shrinkage-compensating concrete. CTS Type-K provides an effective and economical way to minimize the cracking caused by drying shrinkage in portland cement concrete. By producing controlled compressive stresses in the concrete, CTS Type-K reduces the detrimental tensile stresses, which lead to shrinkage cracking in the concrete. CTS Type-K is designed to keep the concrete in compression through the life of the concrete.

Significant volume changes Do NOT occur as the concrete is typically restrained by the reinforcing steel and the sub-base friction. The design and placement techniques for concrete produced with CTS Type-K are similar to regular portland cement concrete; however, concrete can be installed in placements as large as 25,000 square feet without joints. Super flat floor profiles may be obtained through the use of laser screeds and proper finishing techniques.

- While CTS Type-K can eliminate shrinkage cracks — the most common type of concrete crack — concrete may crack from other causes, such as structural overloading, settlement, and plastic shrinkage.

APPLICATIONS:

CTS Type-K can be used in any application where regular portland cement concrete is used, including:

- **Bridge Decks and Parking Structures:**
CTS Type-K's ability to minimize shrinkage cracks and reduce porosity provides long-term protection against seepage of salts and other corrosive materials from penetrating bridge decks and parking garage decks, thus reducing the corrosion of the reinforcing steel and improving the life of the structures.
- **Reinforced Slabs and Slabs on Grade:**
By using CTS Type-K, larger concrete slab placements may be made and within those larger placements, joints can be eliminated. Slab placements should be as square as possible without exceeding a 3:1 length-to-width ratio. Additional reinforcement may allow for placements with increased length-to-width ratios. Warping and curling of slabs can be significantly reduced when CTS Type-K is used. Concrete with a slump of 4-1/2 to 6-1/2 inches is normally used for slabs. Due to the absence of bleed water, finishing on the Type-K concrete slabs may begin earlier than finishing on similar portland cement concrete slabs.
- **Containment Vessels:**
Due to the nature of the CTS Type-K Cement, jointing and the resulting water stops can be reduced and, in many cases, eliminated to provide a containment vessel or structure with fewer potential leaks. CTS Type-K Concrete's reduced bleed water provides a denser wall and slab section that decreases the permeability and lessens the possibilities of seepage.
- **Post-Tensioned Structural Concrete:**
Using CTS Type-K Cement will reduce support column movement and shear wall stresses in

post-tensioned structures, allowing a reduction in reinforcing steel. Due to the internal compressive forces with CTS Type-K Concrete, there is no need to post-tension a slab on grade at an early age to induce internal compression. This developed compression can be utilized in reducing the stressing steel required in normal concrete.

- **Toppings:**

In both bonded and unbonded toppings, the use of the CTS Type-K Cement offers the same advantages as the ones described for the full-depth CTS Type-K slabs, such as fewer joints and a more durable wearing surface.

- **Additional Uses:**

Waste Water Treatment Plants, Hazardous Waste Containment, Swimming Pools, Non-Shrink Grout, Soil and Rock Anchoring, Roof Decks, Precast Concrete, Cast-in-Place Concrete.

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