**PRODUCT DATASHEET**

**DESCRIPTION:** KOMPONENT® is a calcium sulfoaluminate (CSA) based additive used to create shrinkage-compensating concrete, toppings, low shrinkage concrete, and non-shrink grouts. It is engineered to minimize or eliminate drying shrinkage cracking by creating controlled expansion during placement and cure that overcomes the inherent shrinkage of the portland cement and aggregates. KOMPONENT is combined with regional portland cement to produce an ASTM C845 - Type K shrinkage-compensating cement. Type K cement made with KOMPONENT reduces permeability, provides up to 40% increased abrasion resistance, prevents slab curling, spalling and corner breaks, and helps maintain dimensional stability, helps maintain dimensional stability, and long-term floor flatness and floor levelness. Design and construction are simplified by significantly increasing placement sizes, reducing mobilizations, and minimizing or eliminating control joints, waterstops and pour strips. When combined with Type V portland cement, KOMPONENT contributes to high sulfate resistance for placements where high sulfate conditions exist. KOMPONENT has a proven, unsurpassed track record of use since the 1960s improving concrete durability and dimensional stability, minimizing maintenance costs, and maximizing asset life.

**USES:** Use KOMPONENT to make Type K and System-K™ shrinkage-compensating concrete, low shrinkage concrete and non-shrink grouts. KOMPONENT is added at the batch plant or on-site using common batching & mixing equipment and incorporation methods. When using bagged units for smaller projects, or portable silos on-site, a high pressure, high shear colloidal slurry machine is used for ease of production and to ensure effective mixing. (Contact CTS Engineering for slurry machine support.) Typical mix designs use 90 lbs to 100 lbs (41 kg to 45 kg) of KOMPONENT to replace an equivalent weight of portland cement per cubic yard of concrete. Bulk KOMPONENT must be weighed before the portland cement to ensure proper dosage. For System-K® Microfiber Reinforced mix designs, K-Fibers™ are added at a rate of one (1) pre-packaged 2.2 lb unit per cubic yard. For batching and mixing instructions, refer to the CTS Shrinkage-Compensating Concrete Reference Guide for design details and installation considerations. Contact your CTS Engineering representative for project support at 1-800-929-3030.

**ENVIRONMENTAL ADVANTAGES:** Use KOMPONENT to reduce the carbon footprint and lower the environmental impact of a project. Production of KOMPONENT emits significantly less CO2 than portland cement. Contact a CTS Engineering representative for LEED values, environmental, and sustainability information.

**APPLICATION:** Use KOMPONENT to replace approximately 15% of the portland cement material in the concrete mix design to create shrinkage-compensating concrete. Actual mix designs vary depending on application, regional portland cement characteristics, regional aggregate characteristics, supplementary cementitious materials, admixtures, and concrete performance requirements. Shrinkage-compensated materials made with KOMPONENT are produced by conventional concrete and grout production equipment and installation practices. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Do not place concrete if ambient temperatures exceed 90°F (32°C); Ambient conditions must be a minimum of 40°F (4°C) at time of placement. Concrete temperature at placement must not be less than 40°F (4°C) at time of placement. Concrete temperature at placement must not be less than 55°F (13°C). Protect concrete from freezing temperatures for 7 days after placement. Do not place concrete that is 90 minutes or older measured from the time of initial hydration, the following water/cement ratios are recommended: Interior placements – 0.45; Exterior placements – 0.50; Dry shake applications – 0.55. Ensure thorough mixing and dispersion throughout the load after all components have been added into the truck. Concrete production must comply with ASTM C394/94M except where otherwise stated in CTS Cement’s published literature. For lower water/cement ratio designs, contact your CTS Engineering representative for project support at 1-800-929-3030.

**WATER/CEMENT RATIO:** Due to KOMPONENT’s efficient consumption of mix water during hydration, the following water/cement ratios are recommended: Interior placements – 0.45; Exterior placements – 0.50; Dry shake applications – 0.55. Ensure thorough mixing and dispersion throughout the load after all components have been added into the truck. Concrete production must comply with ASTM C394/94M except where otherwise stated in CTS Cement’s published literature. For lower water/cement ratio designs, contact your CTS Engineering representative for project support at 1-800-929-3030.

**CONFORMS TO:**
- ASTM C845 - Type K
- Used to create Type K Shrinkage-Compensating Concrete (ACI 229)

**MasterFormat® 2016**
- 03 33 00 Architectural Concrete - Cast-In-Place Concrete
- 03 37 13 Shotcrete
- 03 37 16 Pumped Concrete
- 03 37 19 Pneumatically Placed Concrete
- 03 47 00 Site-Cast Concrete
- 03 48 00 Precast Concrete Specialties
- 03 49 00 Glass-Fiber-Reinforced Concrete
- 03 53 19 Concrete Overlayment
- 03 61 00 Cementitious Grouting
- 03 62 13 Non-Metallic Non-Shrink Grouting
- 03 64 00 Injection Grouting
- 03 70 00 Mass Concrete

**OVERRIDE**

<table>
<thead>
<tr>
<th>Highlights</th>
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<tbody>
<tr>
<td>Prevent drying shrinkage cracking</td>
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<tr>
<td>Reduce control joints by 90-95%</td>
</tr>
<tr>
<td>Increase abrasion resistance 30-40%</td>
</tr>
<tr>
<td>Increase durability and lower permeability</td>
</tr>
<tr>
<td>Improve sulfate resistance</td>
</tr>
<tr>
<td>Protect against corrosion and deterioration</td>
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<tr>
<td>Increase pour sizes and minimize mobilizations</td>
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<tr>
<td>Prevent slab curling and maintain FF/FL</td>
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**Manufacturer:**
CTS Cement Manufacturing Corp.  
12442 Knott St.  
Garden Grove, CA 92841  
Tel: 800-929-3030 | Fax: 714-379-8270  
Web: www.CTScement.com  
E-mail: info@CTScement.com
Curing: For general applications, seven (7) days of wet curing is required. Refer to the CTS Shrinkage-Compensating Concrete Reference Guide and ACI 223 for additional details.

Cold Weather: Environmental and material temperatures below 70°F (21°C) may delay setting time and reduce the rate of strength gain. Lower temperatures will have a more pronounced effect. Thinner sections will be more significantly affected. To compensate for cold temperatures, keep material warm, use heated mix water and follow ACI 306 Procedures for Cold Weather Concreting. When average high and low temperature is expected to fall below 40°F (4.4°C) for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301 (ACI 301M). Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

Warm Weather: Environmental and material temperatures above 70°F (21°C) may speed setting time and increase the rate of strength gain. Higher temperatures will have a more pronounced effect. To compensate for warm temperatures, keep material cool, use chilled mix water and follow ACI 305 Procedures for Hot Weather Concreting.

Packaging & Availability: KOMPONENT® is available in 50-lb (22.7-kg) and 90-lb (40.8-kg) polyethylene-lined bags and 2000-lb (907-kg) bulk bags. It is also available in bulk tankers trucks and railcars.

Shelf Life: KOMPONENT bagged units have a shelf life of 6 months when stored properly in a dry location, protected from moisture, out of direct sunlight, and in an undamaged package. Sealed bulk storage containers extend the shelf life of KOMPONENT up to 2 years when stored properly and protected from adverse environmental conditions.

User Responsibility: Before using CTS products, read current technical data sheets, bulletins, product labels and safety data sheets at www.CTScement.com. It is the user’s responsibility to review instructions and warnings for any CTS products prior to use.

Technical Support: CTS Cement Manufacturing Corp. provides contractors, engineers, and project owners with professional technical services on any KOMPONENT application. For detailed information on use and applications of KOMPONENT, refer to the CTS Shrinkage-Compensating Concrete Reference Guide or contact your CTS Engineering representative for project support at 1-800-929-3030.

Warning: Do not breathe dust. Avoid contact with skin and eyes. Use material in well-ventilated areas only. Exposure to cement dust may irritate eyes, nose, throat, and the upper respiratory system/lungs. Silica exposure by inhalation may result in the development of lung injuries and pulmonary diseases, including silicosis and lung cancer. Seek medical treatment if you experience difficulty breathing while using this product. The use of a NIOSH/MSHA-approved respirator (P-, N- or R-95) is recommended to minimize inhalation of cement dust. Eat and drink only in dust-free areas to avoid ingesting cement dust. Skin contact with dry material or wet mixtures may result in bodily injury ranging from moderate irritation and thickening/cracking of skin to severe skin damage from chemical burns. If irritation or burning occurs, seek medical treatment. Protect eyes with goggles or safety glasses with side shields. Cover skin with protective clothing. Use chemical resistant gloves and waterproof boots. In case of skin contact with cement dust, immediately wash off dust with soap and water to avoid skin damage. In case of skin contact with wet concrete, wash exposed skin areas with cold running water as soon as possible. In case of eye contact with cement dust, flush immediately and repeatedly with clean water and consult a physician. If wet concrete splashes into eyes, rinse eyes with clean water for at least 15 minutes and go to the hospital for further treatment.

Please refer to the SDS and www.CTScement.com for additional safety information regarding this material.

Limited Warranty: CTS CEMENT MANUFACTURING CORP. (CTS) warrants its materials to be of good quality and, at its option, will replace or refund the purchase price of any material proven to be defective within one (1) year from date of purchase. The above remedies shall be the limit of CTS’s responsibility. Except for the foregoing, all warranties expressed or implied, including merchantability and fitness for a particular purpose, are excluded. CTS shall not be liable for any consequential, incidental, or special damages arising directly or indirectly from the use of the materials.

⚠️ Warning
CANCER and REPRODUCTIVE HARM - www.P65Warnings.ca.gov

### Typical Physical Data

Type K Shrinkage-Compensating Concrete, low shrinkage concrete, and non-shrink grout can be made using KOMPONENT® mixed with local portland cement or on site using pre-blended Type K Cement. Listed below are typical mix designs using KOMPONENT. For mix designs using pre-blended Type K Cement, refer to the Type K Cement data sheet. For assistance developing project specific mix designs or very low permeability mixes, contact CTS Cement’s Engineering or Technical Service team.

All mixes should be tested in a lab using methods designed for shrinkage-compensating cements to ensure suitability for the required application.

**Type K Concrete made with KOMPONENT**
- Portland Cement: 470 lb
- Komponent: 90 lb
- Fine Aggregate, ASTM C33: 1095 lb
- Coarse Aggregate, ASTM C33: 1800 lb
- Water: 37 gal
- Water Reducer, ASTM C949: 24 oz

**Performance**
- Slump: +/−1.5": 5.75 in
- Expansion, 7 days (minimum): 0.045%
- Compressive Strength, 7 days (minimum): 3400 psi (23.4 MPa)
- Compressive Strength, 28 days (minimum): 4500 psi (31.0 MPa)
- Specific Gravity, Komponent: 2.87 g/cm³

**Non-Shrink Grout made with KOMPONENT**
- Portland Cement: 846 lb
- KOMPONENT: 100 lb
- Fine Aggregate ASTM C33: 2640 lb
- Water: 52 gal
- Water Reducer, ASTM C949: 24 oz

**Performance**
- Expansion, 7 days (minimum): 0.045%
- Compressive Strength, 7 days (minimum): 4800 psi (33.1 MPa)
- Compressive Strength, 28 days (minimum): 7250 psi (49.6 MPa)
- Specific Gravity, Komponent: 2.87 g/cm³