

SIKAGROUT® 212

High-performance, cementitious grout



Description

SikaGrout 212 is a non-shrink, cementitious grout with a unique 2-stage shrinkage compensating mechanism. It is non-metallic and contains no chloride. With a special blend of shrinkage-reducing and plasticizing/water-reducing agents, SikaGrout 212 compensates for shrinkage in both the plastic and hardened states. A structural grout, SikaGrout 212 provides the advantage of multiple fluidity with a single component. SikaGrout 212 meets Corps of Engineers' Specification CRD C-621 and ASTM C-1107 (Grade C).

Where to Use

- Use for structural grouting of column base plates, machine base plates, anchor rods, bearing plates, etc.
- Use on grade, above and below grade, indoors and out.
- Multiple fluidity allows ease of placement: ram in place as a dry pack, trowel-apply as a medium flow, pour or pump as high flow.

Advantages

- Easy to use...just add water.
- Multiple fluidity with one material.
- Non-metallic, will not stain or rust.
- Low bleed.
- Low heat build-up.

- Excellent for pumping: Does not segregate...even at high flow. No build-up on equipment hopper.
- Non-corrosive, does not contain chlorides.
- Superior freeze/thaw resistance.
- Resistant to oil and water.
- Meets CRD C-621.
- Meets ASTM C-1107 (Grade C).
- Shows positive expansion when tested in accordance with ASTM C-827.
- SikaGrout 212 is USDA-approved.

Coverage

Approximately 0.44 cu. ft./bag at high flow.

Packaging

6 lb. pail, 6/case, 36/pallet; 50-lb. multi-wall bags; 36 bags/pallet.

How to Use

Surface Preparation

Remove all dirt, oil, grease, and other bond-inhibiting materials by mechanical means. Anchor bolts to be grouted must be de-greased with suitable solvent. Concrete must be sound and roughened to promote mechanical adhesion. Prior to pouring, surface should be brought to a saturated surface-dry condition.

Typical Data (Material and curing conditions @ 73°F (23°C) and 50% R.H.)

Shelf Life:	One year in original, unopened bags.		
Storage Conditions:	Store dry at 40°-95°F (4°-35°C). Condition material to 65° 75°F before using.		
Color:	Concrete gray		

Flow Conditions:	Plastic¹	Flowable¹	Fluid²
Typical Water Requirements:	6 pt.+	6.5 pt.	8.5 pt.
Set Time (ASTM C-266): Initial	3.5-4.5 hr.	4.0-5.0 hr.	4.5-6.5 hr.
Final	4.5-5.5 hr.	5.5-6.5 hr.	6.0-8.0 hr.

Tensile Splitting Strength, psi (ASTM C-496)

28 day: 600 (4.1 MPa) 575 (3.9 MPa) 500 (3.4 MPa)

Flexural Strength, psi (ASTM C-293)

28 day 1,400 (9.6 MPa) 1,200 (8.2 MPa) 1,000 (6.8 MPa)

Bond Strength, psi (ASTM C-882 modified): Hardened concrete to plastic grout

28 day 2,000 (13.7 MPa) 1,900 (13.1 MPa) 1,900 (13.1 MPa)

Expansion % (CRD C-621)

28 day +0.021% +0.056% +0.027%

Compressive Strength, psi (CRD C-621)

1 day: 4,500 (31.0 MPa) 3,500 (24.1 MPa) 2,700 (18.6 MPa)

7 day: 6,100 (42.0 MPa) 5,700 (39.3 MPa) 5,500 (37.9 MPa)

28 day: 7,500 (51.7 MPa) 6,200 (42.7 MPa) 5,800 (40.0 MPa)

¹CRD C-227: 100-124% (plastic), 124-145% (flowable)
²CRD C-611: 10-30 sec efflux time.

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Forming

For pourable grout, construct forms to retain grout without leakage. Forms should be lined or coated with bond-breaker for easy removal. Forms should be sufficiently high to accommodate head of grout. Where grout-tight form is difficult to achieve, use SikaGrout 212 in dry pack consistency.

Mixing

Mix manually or mechanically. Mechanically mix with low-speed drill (400-600 rpm) and Sika mixing paddle or in appropriately sized mortar mixer. Product Extension: For deeper applications, SikaGrout 212 (plastic and flowable consistencies only) may be extended with 25 lbs. of 3/8" pea gravel. The aggregate must be non-reactive, clean, well-graded, saturated surface dry, have low absorption and high density, and comply with ASTM C33 size number 8 per Table 2. Add the pea gravel after the water and SikaGrout 212.

Mixing Procedure

Make sure all forming, mixing, placing, and clean-up materials are on hand. Add appropriate quantity of clean water to achieve desired flow. Add bag of powder to mixing vessel. Mix to a uniform consistency, minimum of 2 minutes. Ambient and material temperature should be as close as possible to 70°F. If higher, use cold water; if colder, use warm water.

Application

Within 15 minutes after mixing, place grout into forms in normal manner to avoid air entrapment. Vibrate, pump, or ram grout as necessary to achieve flow or compaction. SikaGrout 212 must be confined in either the horizontal or vertical direction leaving minimum exposed surface. After grout has achieved final set, remove forms, trim or shape exposed grout shoulders to designed profile. SikaGrout 212 is an excellent grout for pumping, even at high flow. For pump recommendations, contact Technical Service. Wet cure for a minimum of 3 days or apply a curing compound which complies with ASTM C-309 on exposed surfaces.

Limitations

- Minimum ambient and substrate temperature 45°F and rising at time of application.
- Minimum application thickness: 1/2 in.
- Maximum application thickness (neat): 2 in. Deeper applications are possible, please contact Sika's technical services department.
- Do not use as a patching or overlay mortar or in unconfined areas.
- Material must be placed within 15 minutes of mixing.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur Hi-Mod 32.

Caution Irritant

Suspect carcinogen - contains portland cement and crystalline silica. Skin and eye irritant. Avoid breathing dust. Use only with adequate ventilation. May cause delayed lung injury (silicosis). IARC lists crystalline silica as having sufficient evidence of carcinogenicity in laboratory animals and limited evidence of carcinogenicity in humans. NTP also lists crystalline silica as a suspect carcinogen. Use of safety goggles and chemical resistant gloves is recommended. In case of high dust concentrations or exceedance of PELs, use an appropriate NIOSH approved respirator. Remove contaminated clothing.

First Aid

In case of skin contact, wash thoroughly with soap and water. For eye contact, flush immediately with plenty of water for at least 15 minutes; contact physician immediately. Wash clothing before re-use.

Clean Up

In case of spillage, ventilate area of spill, confine spill, vacuum or scoop into appropriate container. Dispose of in accordance with current applicable local, state and federal regulations. Uncured material can be removed with water. Cured material can only be removed mechanically.

Sika warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current technical data sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES.