



**PRODUCT DATA SHEET**

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NON-METALLIC, NON-SHRINK GROUTING

# SikaGrout®-212 HP

## HIGH-PERFORMANCE, NON-SHRINK, SILICA FUME MODIFIED CEMENTITIOUS GROUT FOR DRY PACK TO FLUID APPLICATION

<b>Description</b>	SikaGrout®-212 HP is a high-performance, non-shrink, fluid, cementitious grout with silica fume and a unique two-stage mechanism, compensating for shrinkage in both the plastic and the hardened states. It is non-metallic, contains no chlorides and it may be placed at various consistencies ranging from dry to fluid by simply adjusting the quantity of mix water.
<b>Where to Use</b>	<ul style="list-style-type: none"> <li>On grade, above and below grade, interior and exterior applications, especially where the grout is required to resist increased exposure to freeze/thaw, the presence of salts or other such aggressors.</li> <li>Structural grouting of machine base plates, paper presses, column base plates, anchor bolts, bearing plates, and bridge seats.</li> <li>On grouting projects where the consistency of the grout needs to be adjustable to allow for accelerated strength development requirements, for example wind turbine grouting.</li> </ul>
<b>Advantages</b>	<ul style="list-style-type: none"> <li>Pre-blended for easy application and maximum field control. Just add water, mix and place.</li> <li>Versatile, can be applied in any consistency from dry, plastic or fluid by varying water content.</li> <li>Reducing water content accelerates strength development and ultimate compressive strength values.</li> <li>Non-corrosive, does not contain chlorides.</li> <li>Formulated with inert, non-reactive aggregates to eliminate potential Alkali-Aggregate Reactivity (AAR).</li> <li>Excellent pumpability - does not segregate, even in fluid state. No build-up on equipment hopper.</li> <li>Low heat development.</li> <li>Superior freeze/thaw resistance.</li> <li>Meets ASTM C1107, Grade C type grouts.</li> <li>Meets H. A. Simons grout specification 1S-05-01 for grout types 1, 2a, 2b, 2c, 3, 4, 5 and 6.</li> <li>Ministère des Transports du Québec acceptance.</li> <li>Product qualified by The Road Authority (TRA).</li> <li>Ministry of Transport Ontario approval for use in grouting bridge bearings as well as anchor bars. (Reports MI-110, MI-120 respectively).</li> <li>Product recognized by the British Columbia Ministry of Transportation (BC MoT).</li> </ul>

<b>Technical Data</b>	
<b>Packaging</b>	25 kg (55 lb) bag
<b>Colour</b>	Concrete Grey
<b>Yield</b>	Approx. 13 L (0.46 ft³) of fluid grout per bag
<b>Shelf Life</b>	12 months in original, unopened bag. Store dry, ensuring that product is not exposed to rain, condensation or high humidity. For best results, condition product at 18 to 29 °C (65 to 84 °F) before using.
<b>Mix Ratio</b>	4.4 L (1.16 US gal.) water/bag
<b>Properties at 23 °C (73 °F) and 50 % R.H.</b>	
<b>Flow CAN/CSA A23.2-1B</b>	20 to 35 sec
<b>Plastic Expansion CAN/CSA A23.2-1B</b>	0.8 %
<b>Height Change ASTM C827</b>	1.4 %
<b>Final Set Time ASTM C191</b>	7 hrs 12 min
<b>Hardened Expansion ASTM C1090</b>	0.04 %
<b>Bond to Steel</b>	
<b>(Lane and Best Method)</b>	> 0.2 MPa (29 psi)
<b>Plate Void Test</b>	
<b>(H.A. Simons/Levelton Method)</b>	0.2%
<b>Compressive Strength CAN/CSA A23.2-1B, MPa (psi) @ 4.4 L (1.16 US gal.)/bag *</b>	
1 day	25 (3625)
3 days	42 (6094)
7 days	50 (7255)
28 days	62 (8996)

**Compressive Strength ASTM C109, MPa (psi)  
(tested with Sikacem® Accelerator)\***

Temperature	Dosage	24 hrs	2 days	3 days	28 days
0 °C (32 °F)	1 bottle (150 mL)	5 (725)	16 (2363)	30 (4350)	42 (6090)
10 °C (50 °F)	1 bottle (150 mL)	25 (3668)	38 (5511)	47 (6827)	50 (7250)
23 °C (73 °F)	1 bottle (150 mL)	38 (5511)	46 (6631)	51 (7440)	65 (9425)

\*Fluid consistency compressive strengths are given as minimum guidelines. Pourable and dry pack consistencies will easily exceed these values. All moulds, mixing tools and powder components were pre-conditioned to the test temperatures. Prepared test specimens were cast and then cured at the indicated test temperatures until the time of testing. Lid should be clamped on mold at all time. Liquid/solids ratio (water + Sikacem® Accelerator/SikaGrout®-212 HP) = 0.176; [4.4 L (1.16 US gal.) of liquid per 25 kg (55 lb) bag of SikaGrout®-212 HP].

**Porosity ASTM C642** Absorption, boiled 9.3%

**Resistivity (H.A. Simons/Levelton Method)**  
14 days 6220 Ohm-cm

**Rapid Chloride Permeability ASTM C1202**  
28 days 1045 (Mtl) - 1770 (Edm) Coulombs

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

## HOW TO USE

### Surface

#### Preparation

All grease, oil laitance, ice or snow and foreign deposits shall be removed from all surfaces with which the grout will come in contact. The concrete foundation shall be roughened to the extent that it does not present a smooth surface, which would impede the bond of the grout to the foundation. All dust and loose particles shall be removed by sandblasting, high pressure waterblasting or other suitable means.

Concrete foundations less than 28 days old shall be kept wet for at least 12 hours, and older foundations for a minimum of 24 hours before placing grout (SSD condition). All free-standing water shall be removed from concrete surfaces prior to grouting. All items to be grouted into place shall be properly positioned and anchored prior to grouting except for anchor bolts and dowels, which may be placed into the fresh grout if job conditions permit and at the discretion of the engineer in charge. For grouting of base plates the formwork used to contain the grout shall be constructed in a workmanlike manner and caulked to prevent leakage of grout. Provisions shall be made at the high points for air to be vented as it is displaced by grout.

#### Mixing

Mix using a heavy duty low-speed drill/mixer (300 - 450 rpm) and mixing paddle (*Jiffy* or *Exomixer*®/spiral type) or using a grout mixer. In a clean pail or mixer, add only the necessary amount of water for the required consistency without exceeding 4.4 L (9.3 pt) of water per bag. Add the bag content and mix for three (3) minutes until a uniform consistency is achieved. For application greater than 150 mm (6 in) in thickness, add up to 12 kg (26.5 lb) of 10 mm (3/8 in) coarse aggregate (as per ASTM C33, Table 2, size number 8). The aggregate must be non-reactive, clean, well graded, saturated surface dry (SSD), have low absorption, high density and comply with ASTM C33.

#### Application

Make sure not to use the grout in unconfined areas. The prepared grout may be pumped or transported to the forms in buckets or wheelbarrows and deposited without delay. External vibration and agitation of the grout in the forms is permitted. Prepared grout shall be agitated until used. Grout having been prepared but not placed within 45 minutes after mixing shall be discarded. After initial set, exposed grout may be trimmed or shaped to desired finish. Forms should be left as long as possible but not removed before 24 hours at 23 °C.

**Dry pack application:** Refer to the Sika Cementitious Grouting Method Statement.

#### Curing

To achieve performance consistent with Technical Data, curing is required and must be provided as per ACI 308 recommendations for cement concrete. Execute curing by recognized methods such as wet burlap covered with white polyethylene film, misting with water, or approved water-based curing compound, such as Sika® Florseal WB-18 & -25. Alternatively, the use of Sika® UltraCure DOT™ or NCF™ wet curing blankets is strongly recommended. Curing must commence immediately after placing and finishing. Protect freshly applied product from direct sunlight, strong winds, rain and freezing.

#### Clean Up

Clean all tools and equipment after use with water. Once hardened, the product can only be removed mechanically. Wash soiled hands and skin thoroughly in hot soapy water or use Sika® Hand Cleaner towels.

#### Limitations

- Minimum application thickness (neat without additional aggregate): 25 mm (1 in).
- Maximum application thickness (neat without additional aggregate): 150 mm (6 in). Thicker applications are possible with the addition of suitable aggregate (see Mixing section). Please contact your Sika Canada Technical Sales Representative if needed.
- Extending with aggregates will reduce compressive and flexural strengths. Dimensions and grading of aggregates will influence effect on physical properties; pre-testing is recommended.
- For best results, condition product to 18 to 29 °C (65 to 84 °F) prior to mixing and installation. Lower temperatures may result in slower strength development and longer cure times.
- Maintain wet grout, ambient and substrate temperatures between 5 - 32 °C (41 - 89 °F) for a period of 72 hours after initial placement unless using Sikacem® Accelerator (refer to Technical Data section). Protect the grout from freezing during the application and setting.
- Storage is particularly important, it is essential to protect material from exposure to rain, condensation and high humidity as moisture may penetrate packaging, causing lumps.
- For anchor bolt/dowel grouting, hole diameter should be 25 mm (1 in) greater than bar diameter.
- Anchor bolt/bar holes should be pre-dampened for a period of 1 hour prior to grouting. Holes must be in saturated surface dry (SSD) condition at time of grouting: ensure no excess water is left in anchor/bolt holes.
- Do not use as a patching or overlay mortar or in unconfined areas.
- Use only potable water.

**Health and Safety  
Information**

For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the most recent SAFETY DATA SHEET containing physical, ecological, toxicological and other safety-related data.

**KEEP OUT OF REACH OF CHILDREN  
FOR INDUSTRIAL USE ONLY**

The Information, and in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions, within their shelflife. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request or may be downloaded from our website at: [www.sika.ca](http://www.sika.ca)

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