

Sika® Grout 212, 215

High strength, shrinkage compensated, pourable cementitious grouts

Positioning

Description

- Sika Grout 212 and Sika Grout 215 are cementitious grouts containing carefully formulated blends of natural aggregates and other materials, plus Sika admixtures which enable them to achieve high early age strengths. Sika Grouts have been designed to incorporate a two-stage process that counteracts the effects of shrinkage often associated with cement grouts.
- Sika Grouts contain materials that provide positive expansion in the plastic phase and shrinkage compensation once hardened.
- Sika Grouts are normally used in details where the material can be confined and restrained during placement and curing to optimise these characteristics.
- Sika Grout 212 and Sika Grout 215 are one component grouts and only require the addition of clean, fresh water.

Uses

Sika Grout 212

Sika Grout 212 is ideal for many types of structural grouting applications. It can be mixed at different stages of fluidity to produce the desired level of workability. Add the required amount of water for:

- Rammable dry pack material.
- Trowel applied medium flow mortar.
- Pourable high flow grout.

Typical applications for Sika Grout 212 are:

- Under machine foundations and base plates.
- General cavities, voids and recesses
- Grouts for anchor bolts, ground anchors, rods, etc.
- Reinforcement ducts in the connection detail between precast columns and beams.

Sika Grout 215

Sika Grout 215 contains very fine natural aggregates. It is used as a high flow grout where dimensions are minimal.

Typical applications for Sika Grout 215, in addition to those listed for Sika Grout 212, are:

- Grouting into details and voids with narrow width dimensions (3 - 4 mm).
- Grouting under base plates, tanks, etc., where dimensions are minimal.
- Grouting around pipe sleeves and liners.
- Grouting of rock anchors, tensioning cables, etc.
- As the grout in pre-packed aggregate repair systems.

Advantages

Sika Grouts offer the following advantages:

- Positive shrinkage compensation.
- High early age strength development.
- High final strengths.
- Excellent substrate adhesion.
- Adjustable consistency.
- High flow characteristics.
- Controlled bleeding and segregation while plastic.
- Ideal for use in pre-packed aggregate systems of repair - Sika Grout 215.
- Non-corrosive, non-toxic.
- Impact and vibration resistant.
- Increased resistance to aggressive liquid penetration when hardened.

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09 42 68 101

sales@everitts.co.nz

www.everitts.co.nz

Product Data	Grout 212	Grout 215
Form:	Grey powder	Grey powder
Packaging:	Sika Grout 212 and Sika Grout 215 are supplied in 25 kg multiwall bags.	
Storage & Shelf Life:	Six (6) months in unopened, original containers when stored free from frost and below +25°C.	

Technical Data

Wet density (approx.):	2.2 kg/litre	2.1 kg/litre
Application temp:	5°C to 25°C	5°C to 25°C
Approx. compressive strength at 20°C:	24 hour 20 MPa 7 days 50 MPa 28 days 60 MPa Tested in accordance with BS1881	10 MPa (approx.) 40 MPa 55 MPa
Yield as a pourable grout (approx):	25 kg = 13.5 litres when mixed with 4.5 litres of water	25 kg = 15.5 litres when mixed with 6.5 litres of water
Flow times (approx) at high flow condition:	30 seconds	25 seconds
Maximum water content:	4.5 litres/25 kg bag	6.5 litres/25 kg bag

Application Conditions

Surface Preparation

- Concrete surfaces should be clean, sound and free from dust, oils, grease, loosely adhering particles or any other surface contaminants that will affect bond.
- The surface must be scabbled or sandblasted to remove all weak cement laitance.
- Dry concrete substrates shall be saturated with water for some time, and the surface allowed to dry (to achieve what is referred to as a 'saturated surface dry' condition) before grouting commences.
- Metal surfaces (iron and steel) should be free from rust, scale, oil, grease, etc.

Formwork Preparation

- Formwork must be constructed to prevent any leakage of the plastic grout.
- Formwork should be constructed in such a manner as to ensure that a minimum horizontal surface area is left exposed. The formwork must be able to rigidly confine the grout during its expansion process.
- When grouting under base plates, etc, formwork should be constructed to ensure that a head of grout higher than the level of the base plate is maintained. This will provide a constant full flow of grout under the base plate to avoid the occurrence of air entrapment under the plate.
- When filling any detail ensure that an adequate volume of mixed grout is available to allow for a continuous and uninterrupted flow.
- In areas of formwork where air pockets may occur it is necessary to install bleed tubes or openings that will allow entrapped air to escape.
- When providing formwork for pre-packed aggregate repairs the forms may need to be built up in layers to allow for the aggregate to be packed into the cavity.
- In many cases it may be necessary to install grouting tubes or pipes that enable the cavity to be filled from bottom to top. This will force any air upwards and help to eliminate the possibility of air locks being formed.
- Ensure that all formwork has been thoroughly treated with a suitable mould release agent.
- Flush out all forms with clean, fresh water prior to grout placement.

Mixing

- Pour the required amount of clean, fresh water into a suitable mixing container and slowly add all of the powder while mixing continuously with a Sika mixing paddle attached to a low speed electric drill (max. 500 rpm).
- Thoroughly mix until a smooth, lump free consistency is achieved.



Application	Grout should be placed into forms immediately after mixing, taking care to ensure no air is trapped.
Cleaning	<ul style="list-style-type: none"> • Clean all tools and equipment with water immediately after use. • Hardened Sika Grout can only be removed mechanically.
Important Notes	<ul style="list-style-type: none"> • Formwork should be left in place for at least 5 days if possible, to prevent moisture evaporation and provide restraint to early age hardened expansion. Once formwork is removed the use of a suitable curing membrane such as Sika Antisol should be applied to any exposed faces. Refer to separate data sheet for further information. • For further information on pre-packed aggregate repairs contact the Sika Technical Department. • Some large volume details may require the addition of an acrylic polymer to the grout for assistance with early age curing and improved bond. Refer to Sika Technical Dept for further information. • Large volumes of cement rich grout can generate excessive amounts of heat whilst hardening as a result of the cement hydration process. This heat build up may in some cases lead to thermal cracking within the grout as it cools down. For applications requiring larger volumes it is recommended that our high strength, flowing micro concrete, Sika MonoTop 634 (refer separate data sheet) be used.
Notes	All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.
Local Restrictions	Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.
Safety Instructions	
Protective Measures	<ul style="list-style-type: none"> • To avoid rare allergic reactions, we recommend the use of protective gloves. Change soiled work clothes and wash hands before breaks and after finishing work. • Local regulations as well as health and safety advice on packaging labels must be observed. • For further information refer to the Sika Material Safety Data Sheet which is available on request. • If in doubt always follow the directions given on the pack or label.
Important Notes	<ul style="list-style-type: none"> • Residues of material must be removed according to local regulations. Fully cured material can be disposed of as household waste under agreement with the responsible local authorities. • Detailed health and safety information as well as detailed precautionary measures e.g. physical, toxicological and ecological data can be obtained from the safety data sheet.
Legal Notes	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 in accordance with Sika's recommendations. 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 written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. 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.



Project Reference SKY CITY TOWER

**Requirement:**

The Sky Tower comprises a 226m tall 12m-diameter reinforced concrete shaft stiffened by eight raking 2m-diameter reinforced concrete legs at the base. These raking legs are connected to the shaft via a reinforced concrete collar.

To ensure that the weight of the tower was transferred from the concrete collar into the eight raking legs, the tower was jacked up and the gap between the raking legs and the concrete collar grouted.

Solution:

Sika Grout 212 was used to transfer the load from the tower onto the eight legs.

Products Used:

Sika Grout 212 (15 tonnes)

Reference:

AKL211

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