



CWC®SMARTCEM V1

Non-Shrink, High Strength, Free Flow Cementitious Grout

Description

CWC®SAMARTCEM V1 is Non shrink cementitious dry mix powder used as free flow grouts. It is a blend of Portland cement, graded fillers and chemical additives which impart controlled expansion in the plastic state whilst minimizing water demand. The low water demand ensures high early strength. The graded fillers are designed to assist uniform mixing and produce a consistent grout. The material is based on cement, graded aggregate fillers and additives which imparts controlled expansion of mortar and reduces water demand, thus ensuring positive contact with machine base plate, high early strength, and long-term durability with all types of structure.

Advantages:

- Gaseous expansion system compensates for shrinkage and settlement in the plastic state
- No metallic iron content to cause staining
- Pre-packed material overcomes onsite batching variations
- Develops high early strength without the use of chlorides
- High ultimate strength ensures the durability of the hardened grout
- Free flow ensures high level of contact with load bearing area

Domains of application

- To grout bearings, machine foundations, columns joint in precast construction etc.
- To grout anchors in concrete
- To grout cavities, gaps, and voids in concrete
- To grout base plate of turbine, compressor, boilers, pumps, and heavy machinery.
- Sealing around penetrations

Standard Compliance

CWC®SAMARTCEM V1 conforms to ASTM C1107, Grade A (Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-shrink).

Technical Properties

Appearance / Colour	Free flowing powder		
Compressive Strength, N/mm² (Typical) at 27°C, as per IS 4031	Dry Pack (W/P=0.14)	Pourable (W/P=0.15)	Free flowing (W/P=0.17)
	24 hours		
	3 days		
	7 days		
28 days			
Free linear Expansion, ASTM C 827	3 – 2 %		
Coefficient of Thermal Expansion, per °C	11-12x10 ⁻⁶ (Similar to Concrete)		
Young's Modulus, (ASTM D 469-94)	30 KN/mm ²		
Bond Strength, 28days, N/mm²	22		
Tensile Strength, 28 days, N/mm², W/P=0.15	5.0		
Effect on Dynamic Load, 5-25 N/mm² 500cycle/minutes for 8 hours	No crack, no damage		
Flexural Strength, 28 days, N/mm², W/P=0.15	10		
Fresh wet density, kg/m³	2100 -2300		
Material required for 1m³ Volume of Grout, kg	50-2000		
28 days Comp. Strength	N/mm ² (Typical) at 27°C using W /P = 0.17 (, Blended with 70% 10mm aggregate)		



Method of Application

Surface Preparation

Surface laitance and unsound concrete must be chipped away so that a reasonable rough, but strong sound surface is provided. All surfaces must be free from oil, grease and dust, this particularly applies to the underside of base plates, bolts, pipes or other materials which may have surface contact with the grout. After cleaning, saturate the concrete surfaces with clean water. Ensure that no free standing water is present on surfaces of foundations or in bolt holes before applying of **CWC®SMARTCEM V1**

MIXING

SMARTCEM V1 can be mixed with a low speed (< 500 rpm) hand drill mixer to avoid entraining too much air. Mix only full bags for best results. Pour around 80 to 90% of the recommended water in a suitable mixing container. While stirring slowly, add the powder to the water and mix thoroughly at least for 3 minutes adding balance water within the mixing time to the maximum specified amount to adjust the grout to the required consistency and flow properties. Do not mix more grout, which cannot be used within pot life. Do not add extra water.

Consistency of grout mix

The quantity of clean water required to be added to a 25kg bag to achieve the desired consistency is given below:

For Flowable Mix : 3.75 – 4.75 kg of water to 25 kg of **CWC®SMARTCEM V1** (W/P Ratio : 0.15 to 0.19)

For Plastic Mix : 3.50 – 4.00 kg of water to 25 kg of **CWC®SMARTCEM V1** (W/P Ratio : 0.14 to 0.16)

For Dry-pack Mix : 3.00 – 3.75 kg of water to 25 kg of **CWC®SMARTCEM V1** (W/P Ratio : 0.12 to 0.15)

The selected water content should be accurately measured into the mixer. The total content of the SMARTCEM V1 bag should be slowly added, and continuous mixing should take place for minutes. This will ensure that the grout has a smooth even consistency.

APPLICATION

Remove excess water from substrate surface e.g. with clean sponge, until surface is dark matt in appearance without glistening (saturated surface dry). Surface pores and pits shall not contain water. Let the grout stand for ~5 minutes to release air entrained by mixing. Pour grout immediately after mixing into the prepared openings using a sufficient pressure head to maintain a continuous flow of grout. Ensure air displaced by the grout can easily escape, otherwise entrapped air will prevent full contact grouting. For optimum use of the expansion properties apply the grout as quickly as possible, within ~15 minutes after mixing.

CURING TREATMENT

Keep visible exposed grout surfaces to a minimum. Protect the fresh material from premature drying using appropriate curing method e.g. curing compound, moist textile membrane, polythene sheet etc. **CLEANING OF TOOLS** Clean all tools and application equipment with water immediately after use. Hardened/cured material can only be mechanically removed.

Shelf Life & Storage

12 months from the date of manufacturing when stored in un-opened, original sealed and dry condition at a temperature range from +5°C to 40°C

Packing

25kg waterproof laminated HDPE bag

Safety

- Wear hand gloves, safety shoes and safety goggles while using and handling the product.
- In case eyes or mouth are affected wash with plenty of clean water and seek medical treatment immediately.

Before use, refer to the Material Safety Data Sheet.

The MSDS is available on www.cwcchemicals.com