

CWC®SMARTCEM V1

Non-Shrink High Strength Ready To Use Cementitious Free Flow Grout

Description

CWC®SMARTCEM V1 is a ready to use chloride free blend of dry powder when mixed with clean water, it produces a free flowing, non-shrink high strength 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. **CWC®SMARTCEM V1** conforms to **ASTM C 1107, Grade-A**

Indicative Characteristics

Appearance	Free flowing grey 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	30	27	20
	3 days	55	50	40
	7 days	70	63	55
	28 days	77	70	65
Free linear Expansion, ASTM C 827	0.2-2%			
Coefficient of Thermal Expansion, per °C	11-12x10 ⁻⁶ (Similar to Concrete)			
Young's Modulus, N/mm²	~37000			
Bond Strength, 28days, N/mm²	16			
Tensile Strength, 28 days, N/mm², W/P=0.15	5.5			
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	11			
Fresh wet density, kg/m³	2150 -2300			
Material required for 1m³ Volume of Grout, kg	1850-2000			
28 days Comp. Strength	70 N/mm ² (Typical) at 27°C using W /P = 0.17 (, Blended with 70% 10mm aggregate)			

Note : Compressive strength is determined by using 7cm cube specimen at laboratory controlled condition, Water demand may vary depending upon site condition.

Domains of Application

- Machine and steel column foundation
- Anchorage of bolt and steel bar
- Base plate grouting of cold as well as hot rolling mills in steel plants.
- Grouting of bearing pads
- Grouting of heavy Turbines base

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

Use mechanical mortar mixers, preferably of the slow speed (250-350 rpm) paddle mixer or revolving drum type mixer. Hand mixing rarely achieves the desired result. Allow approx 5 minutes for mixing. Thorough mixing is essential for achieving maximum results. Add **CWC®SMARTCEM V1** slowly into recommended amount of clean water in a mixer. Use as little water as is required for ease of placement.

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

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

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

Job placing conditions, including temperatures may require mixing water adjustments as may be essential for practical purposes. Small trial batches to ascertain the best working consistency for the operation are recommended.

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Application

To prevent air voids, apply mixed **CWC®SMARTCEM V1** from one side or corner only. **CWC®SMARTCEM V1** should be placed within half an hour of mixing. Flowable mix may be used with low pressure cement grouting equipment or may be hand rodded into restrained sections. High points must be adequately vented to allow entrapped air to escape. Plastic mortar may be rodded into place. Consistency can range from thick cream to smooth plastic. For large volume of placement areas **CWC®SMARTCEM V1** may be pumped with a heavy-duty diaphragm pump, screw, or any other standard pump. **CWC®SMARTCEM V1** shall be used in the thickness range of 20mm to 100mm in single pour. For thickness of a section is more than 100mm, 50-70 % (by weight of **CWC®SMARTCEM V1**) 6-10 mm down washed coarse graded aggregate shall be used to reduce temperature built up in the hardened grout.

Curing

After completion of concreting work, the open edges shall be cured by applying suitable **CWC®Kure WP** or any other effective curing membrane manufactured by **CWC**. Other curing methods, such as covering with plastic sheet, wet hessian cloth is also accepted.

Advantages

- Controlled expansion to ensure positive surface contact and low water permeability.
- Quickly develops high compressive strength to facilitate early reinstatement.
- High ultimate strength and zero water permeability.
- Chloride and iron free, hence no rusting or staining on exposed edges.
- Pre-mixed, addition of water is only needed.
- Easy to pour free flowing and self-levelling nature; it can be pumped or poured into restricted locations.

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.cwcchemical.in

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