



## General Purpose Non-shrink Ultra High Strength Flowable Cementitious Grout.

### Description:

**TechnoCem™ ConFlow®40** is a general purpose, Pre-bagged, High flow, Non-shrink cementitious grouting compound contains a blend of Portland cement, graded fillers and special chemical additives that provide positive expansion when the grout is in its plastic state and is also shrinkage compensated when in the hardened state. Characteristics include high flow, plastic expansion, high strength, shrinkage compensation, excellent substrate adhesion and durability.

**TechnoCem™ ConFlow®40** has excellent characteristics of adhesion, impermeability and chemical resistance. It has also a thermal expansion coefficient similar to high quality concrete. **TechnoCem™ ConFlow®40** is suitable for placement under structural elements for use in thicknesses between 20 mm and 100 mm grouting steel columns, bearing plates, pre-cast concrete, and anchoring applications. Its non-shrink properties ensure that plastic settlement and shrinkage are negated. **TechnoCem™ ConFlow®40** is free from chlorides, making it suitable for application in contact with steel.

### Application Includes:

TechnoCem™ ConFlow®40 is recommended for use in the following areas of application-

- All general purpose grouting applications
- Structural bearing pads
- Machine and equipment support
- Tank support
- Structural base plate support
- Precast connections and between precast elements
- Anchors, bolts, starters & dowels
- Void filling
- Tunnel lining grouting
- Dry packing

### Features & Benefits:

- Non-shrink & High early strength
- No chlorides content
- Low water cement ratio to ensure minimum permeability and high durability
- Does not contain metallic aggregate
- Free flow and self-compacting
- Easy to use by trowel or pouring
- Excellent bond to substrates
- Non-shrink property of the grout provides maximum contact with bearing surface
- Grouting from 20mm to 100mm thickness between plate and foundation in a single application
- It is watertight and withstands chemically aggressive agents

### Applications Instructions:

#### Substrate 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 **TechnoCem™ ConFlow®40**

#### Typical Properties at 25°C:

Appearance		Free flowing grey powder (Typical Value)				
Fresh Wet Density		Approx. 2150-2300Kg/m <sup>3</sup>				
Application thickness		20mm – 100mm				
Application temperature		5-30°C				
Placement Time		Within 25mins of mixing				
Compressive Strength, N/mm <sup>2</sup> (Typical) at 27°C, as per IS 4031 * 7cm cube	Consistency	Unit	W/P Ratio	3 Days	7 days	28 days
	Stiff Mix	* 7cm cube	(W/P=0 .14)	35	45	60
	Pourable Mix	* 7cm cube	(W/P=0 .16)	30	40	55
	Free flowing Mix	* 7cm cube	(W/P= 0.18)	25	35	50
Set Time	Stiff Mix Pourable Mix Free flowing Mix	Initial		Final		
		2.5hrs -3hrs		4.5hrs -5hrs		
		3.5hrs -4hrs		6.5hrs -7hrs		
		4.5hrs -5hrs		7.5hrs -8hrs		
Free Linear Expansion, ASTM C 827		0.2-2%				
Tensile Strength at 28 days, N/mm <sup>2</sup>		>4.3				
Pull Out Bond Strength, at 7 days, N/mm <sup>2</sup>		>14				
Material required for 1m <sup>3</sup> Volume of Grout, kg		1800-2000				
28 days Comp. Strength,		50 N/mm <sup>2</sup> (Typical) at 27°C (Blended with 50% 6-10mm aggregate)				
Standards		Meets ASTM C 1107, Grade-A.				
Note: Compressive strength is determined by using 7cm cube specimen at laboratory controlled condition, Water demand may vary depending upon site condition.						

## Curing

On completion of grouting the exposed area should be covered with wet hessian, plastic sheeting or **TechnoFinish® ConKure 101/102** to prevent excessive moisture loss. At ambient temperature, formwork should be removed no sooner than 24 hours after completion of grouting. The covering should stay in place for a further 6 days. Lack of sufficient curing could result in plastic cracking and drying shrinkage on the surface.

## Cleaning

All tools should be cleaned immediately after application on using fresh water. Hardened materials must be cleaned mechanically

## Packaging

**TechnoCem™ ConFlow@40** is available in 30 kg bags.

## Storage

**TechnoCem™ ConFlow@40** has a shelf life of 12 months from date of manufacture if stored at temperatures between 5°C and 40°C in original unopened bags. If these conditions are exceeded, STIPL Technical representative should be contacted for advice.

## Placing

Grouting should be done continuously. Therefore make sure that sufficient grout is prepared before starting. While filling voids, grout should be poured from one end to avoid air pockets. The following measures shall be taken while placing the grout:

- Grouting operations should be preferably carried out in a shaded condition.
- Avoid grouting at the hottest time of the day. Place the grout within 15 minutes of mixing to obtain best results
- Grouting should not be done in free & unrestrained areas as the gaseous expansion of the grout will lead to development of cracks.

**TechnoCem™ ConFlow@40** can be poured from minimum 20mm up to 100mm in one single pour. However, for depths greater than 100mm it is recommended to add well graded aggregates of 5 to 8mm (up to 50%) to the grout in order to reduce the heat generated during the exothermic reaction when the grout is mixed and poured for larger depths. Cover the exposed areas immediately after placing with a polythene sheet, to protect from drying winds.

## Formwork

It is essential that the formwork to be constructed is leak proof and water tight. In order to achieve this it is recommended that foam rubber strips or a suitable sealant such as polyurethane or silicone be used underneath the formwork. The formwork should be constructed, which will allow and ensure a grout head is maintained on the side above the level of the underside at the base plate. The formwork should allow for gravity flow of grout with a suitable grout head allowing for continuous flow between the base plate and the concrete substrate.

To ensure ease of formwork removal, the formwork should be coated with form oil or release oil prior to grouting (consult STIPL's Technical representative for additional information). It is recommended that **TechnoCem™ ConFlow@40** be kept in a cool environment and the use of cold water be used for mixing. It is recommended that in instances where the temperature is greater than 30°C, the grouting be conducted early in the day or late in the evening and sheltered from sunlight and direct heat.

## Unrestrained Surface

As **TechnoCem™ ConFlow@40** is an expanding grout, it is advisable not to have any unrestrained areas.

## Low Temperature Working

At temperatures below 5°C the cure rate and strength development rate will be dramatically reduced. If early strength is required, it is advisable to use heated water and condition **TechnoCem™ ConFlow@40** to 25°C. Do not exceed this temperature.

## High Temperature Working

At temperatures above 30°C, it is advisable to use water below 20°C when mixing grout. All materials must be kept cool and away from direct sunlight. If practical, the installation area should be shaded by erecting shade screens. If ambient temperatures are excessive, grouting should be scheduled for early morning or late afternoon.

## 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 **TechnoCem™ ConFlow@40** slowly into recommended amount of clean water in a mixer. Use as little water as is required for ease of placement.

Consistency	TechnoCem™ ConFlow@40	Potable Water Addition (Litres)	W/P Ratio
For Flowable Mix	30 Kg	4.50- 5.70 Litre	0.15 to 0.19
For Plastic Mix	30 Kg	4.20 -4.80 Litre	0.14 to 0.16
For Stiff Mix	30 Kg	3.60- 4.50 Litre	0.12 to 0.15

Caution: Unopened bags are to be kept in a shaded area water used for mixing should be below 25°C, particularly in high ambient temperature conditions. Do not mix by hand. Do not add additional water. Discard any unused grout that has stiffened or hardened. Do not retemper.

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## Health & Safety Instructions

Protect your health while working with this material, always use safety goggles, gloves and safety clothing. When handling hazardous materials or pressurized materials, or during any application that may result in spills, splashes or airborne particles, a full face shield is strongly recommended. Protect yourself and others on the jobsite. Consider property in proximity of the application area to prevent loss or damage. Protect your jobsite from unauthorized persons. Store all materials and equipment safely and out of reach of children and animals.

Observe container labels, SDS, applicable laws and regulations and all instructions before using the product and equipment. In case one of the components comes in contact with the skin, wash thoroughly with soap and water. Provide adequate ventilation in volume and pattern in working area.

## Action

**TechnoCem™ConFlow@40** begins to act as soon as water has been added to the mix effecting the controlled expansion characteristics. This reaction continues until firm contact is made with the confining surfaces or until the material sets. The controlled expansion of **TechnoCem™ConFlow@40** will offset shrinkage due to settlement, hydration and evaporation.

**Additional Information:** Techno Builders Solutions® By Sterling Technotrade India Pvt.Ltd -The Specialist Construction Chemicals Company® range of associated products includes high performance concrete Admixtures, Adhesives, Protective Coatings, Concrete Repairs, Industrial Flooring, Grouts & Anchors, Joint Sealants, Surface Treatments, curing compounds, repair mortars, release agents, Grinding Aids & Waterproofing.

\*Separate datasheet are available on these products.

**Disclaimer:** The product information & application details given by the company & its agents has been provided in good faith & meant to serve only as a general guideline during usage. Users are advised to carry out tests & take trials to ensure on the suitability of products meeting their requirement prior to full scale usage of our products. Since the correct identification of the problems, quality of other materials used and the on-site workmanship are factors beyond our control, there are no expressed or implied guarantee / warranty as to the results obtained. The company does not assume any liability or consequential damage for unsatisfactory results, arising from the use of our products.

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Edition: 08/2017/001 Identification No: PD-020  
This datasheet supersedes all previous versions.