

# TECHNICAL INFORMATION

## TOPFLOW TRENCHFLOW

Topflow Trenchflow is a superior quality self-compacting concrete that reduces labour overheads on site – typically one man can place, level and finish the concrete.

### APPLICATIONS

- All residential foundations
- Mass commercial foundations
- Industrial trenches

### CHARACTERISTICS

- A self-compacting concrete for use in all mass fill concrete foundation applications
- Delivered in a highly fluid form with high deformability, allowing quick changes of direction and easy flow around the foundation trenches
- Trenchflow has a high resistance to segregation and it consolidates easily and efficiently within the pour location

### ADVANTAGES

- Reduced labour – convenient and time saving, permitting the flexible use of labour on site
- Health and Safety – reduced number of employees needed to lay Topflow Trenchflow, reducing the health and safety risks on site
- No vibration – this procedure requires no vibration at any stage of the installation process, eliminating the inherent problem of vibration white finger and reducing noise pollution
- Flexible placing – can be placed either by direct discharge, pump, crane or skip
- Noise – eliminates traditional methods of placing and finishing concrete, ideal when working in inner-city and built-up residential areas
- Flexible supply – available from all Tarmac Readymix Plants

### SPECIFICATION

Maintenance of fluidity – up to two hours depending on customer's and site requirements  
Topflow Trenchflow can be formulated to suit the majority of environmental classifications  
Compressive strength at 28 days – typically designed in either 20N/mm<sup>2</sup> or 35N/mm<sup>2</sup> grades  
If a greater strength at 28 days is required, Tarmac will work to the customer's specification  
Up to 25% recycled aggregate content mixes are available on request  
Topflow Trenchflow is designed with cementitious replacements as standard, thus enhancing its sustainability credentials  
Maximum sulphate resistance classification – DC-3. DC-3z mixes are available on request

## CHECK LIST BEFORE POURING

In order to achieve the full potential of Topflow it is necessary to follow established best practices. Please review and initial the guidelines below before pouring commences:

TOPFLOW TRENCHFLOW	CUSTOMER INITIAL
<p>Intended usage - Topflow Trenchflow is a highly fluid, self-compacting concrete for use primarily in house foundation construction. It is delivered in a liquid form with a rheology that will quickly allow changes of direction and enables it to flow easily around foundation trenches. Please check correct product has been specified.</p>	
<p>Substrate types - Topflow Trenchflow can be poured into any foundation trench. The trench should be free from water and loose material where possible. The concrete should be poured to a minimum depth of at least 300mm to ensure full flow and consolidation within the trench.</p>	
<p>Ambient conditions - Topflow Trenchflow may only be laid when the air temperature is between 5°C and 30°C. The substrate must not be frozen and ideally should be within the above temperature range. There must be no risk of freezing for at least 48 hours after placement.</p>	
<p>Slump-flow measurement - when Topflow Trenchflow arrives on site the slump-flow of the material should be 700mm +/- 50mm when measured using the appropriate equipment. If the mix is outside of the target range then advice should be sought from your Tarmac representative as to the appropriate course of action.</p>	
<p>Placement (1) - the material can be placed directly by the truck chute. The material has been designed to be discharged directly from the truck mixer into the foundation trench. A typical house foundation can be poured from one or two discharge points. Check to ensure adequate access for the mixer truck and that it can discharge into the trench safely.</p>	
<p>Placement (2) - the material will self-compact so no vibration will be necessary. It is possible that levels may need to be adjusted following placement, if this is the case a rake or spade can be used to move the material.</p>	

## FREQUENTLY ASKED QUESTIONS

### 1. IS IT APPROVED BY THE NHBC?

Topflow Trenchflow and other products are accepted by NHBC and should be used in accordance with the normal requirements of the scheme.

### 2. HOW FAR WILL IT FLOW?

Depending on the dimensions of the trench, the soil type and the number of turns, Topflow Trenchflow will flow between 15 and 20m in a straight line.

### 3. HOW MANY ACCESS POINTS DO I NEED?

The number of access points will depend on the configuration of the trench, normally only one location will be sufficient for the foundation of a typical semi-detached property.

### 4. WILL IT FIND ITS OWN LEVEL ALL THE WAY AROUND THE TRENCH?

No, but the level difference between the pouring point and the extremity will be minimal, around 100mm for a 20m trench. One man with a rake or a shovel will very easily, and quickly, draw the surface to a level.

### 5. WHAT IS THE MINIMUM DEPTH I CAN LAY IT?

The minimum depth that may be placed in a foundation is 300mm, or the dimension specified on the drawings or other site instructions.

### 6. WHAT IS THE SETTING TIME OF THE MIX?

Topflow Trenchflow sets in a similar time to conventional concrete. Following trades are normally allowed after 24 hours, however this may be longer in winter and shorter in hot weather. Topflow Trenchflow will maintain its fluidity for at least two hours after batching.

### 7. WHAT STRENGTH IS THE MIX?

Normally Topflow Trenchflow is either grade C20 or C35, however the strength can be adjusted to other values without difficulty.

### 8. CAN YOU PUMP IT?

Yes, but to reduce site costs the product is intended to be placed without the use of site plant.

### 9. CAN I HAVE STEEL REINFORCEMENT IN THE TRENCH?

Yes, but because of the restriction caused by the presence of reinforcement, the concrete may not self compact as well as unreinforced situations.

### 10. WHAT IS THE MAIN DIFFERENCE BETWEEN THIS AND NORMAL CONCRETE?

Topflow Trenchflow is a self-compacting concrete. It means that when you use this product productivity will increase without loss of quality.

### 11. CAN I JUST GET THE SAME BY JUST ADDING WATER TO NORMAL CONCRETE?

No, adding water to normal concrete will cause segregation, bleeding and dramatic strength loss. Under the concrete standard EN 206, we are no longer allowed to add water in this manner.

### 12. CAN I PUT STEPS IN MY FOOTING?

Yes, this can be done by placing some simple shutters in the trench, it is important to ensure each shutter cannot move. To help prevent the shutter moving try to fill the trench from two positions. Firstly from the 'low' side of the shutter, as this will help reduce the uneven load. The shutter must be 'sealed' against the side and base of the trench, this should be done using timber stakes driven into the angle formed by the shutter and trench wall. The base may be simply sealed by gently ramming some of the excavated material against both sides of the bottom of the shutter.

### 13. HOW MANY PEOPLE WILL I NEED TO PLACE IT?

For a normal pour you will only need one person to place the concrete and draw the concrete level if this is required. A second person may be necessary if the foundation is particularly complex or large.

### 14. HOW DO I FINISH IT?

You need to draw the surface level using a rake or similar implement. Usually this activity will be sufficient to ensure the surface is suitable to receive block or brickwork. If the concrete needs to be smoothed gently tamp the surface with the flat of a rake.

### 15. WHAT DO YOU PUT IN IT TO MAKE IT FLOW?

The fluidity of Topflow Trenchflow is obtained by using very powerful admixtures and ensuring the grading of the mix follows some specific rules. This combination of admixture and mix design ensures the concrete is very fluid without segregation or bleeding occurring.

### 16. CAN YOU PLACE IT IN RECLAIMED LAND?

Yes, provided you remember to specify the mix required. Under normal circumstances one of the designated mixes, prefixed FND, will be specified by the project engineer. If you do not have a specification for the concrete you should seek specialist advice before ordering any concrete. Topflow Trenchflow can be designed up to DC-3 sulphate resistance if required.

### 17. WHAT IS THE MAXIMUM TIME I CAN HAVE BETWEEN LOADS?

To ensure a second load can still move or 'push' the first load we recommend a maximum of 30 minutes between loads. It is preferable to have the second load on site before the first has completed discharging.

### 18. WHAT ABOUT ITS ENVIRONMENTAL CREDENTIALS?

Topflow Trenchflow is supplied as standard with cementitious replacements. Recycled aggregates can also be used if required by the customer and available at the supplying plant.

For more details contact

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