

TECHNICAL INFORMATION

TOPFLOW ARCHITECTURAL

Topflow Architectural offers exceptional quality on vertical applications without remedial work.

APPLICATIONS

- Walls
- Columns
- All types of building with vertical construction where a high quality aesthetic finish is required

CHARACTERISTICS

- Due to the high quality of Topflow Architectural, mixes are designed specifically for each contract once such factors as placing techniques, surface finish, formwork design and strength requirements are known
- Topflow Architectural technology provides the highest quality surface finish
- The highly fluid material will replicate exactly the shape and texture of formwork and as such can be used in design applications

ADVANTAGES

- Reduced labour – convenient and time saving, permitting the flexible use of labour on site
- Health and safety – reduced number of employees needed on site to lay Topflow Architectural, 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 pump, crane or skip
- Noise – eliminates traditional methods of placing and finishing concrete, ideal when working in inner-city and built-up residential areas

- Expert Advice – advice and consultation available from Tarmac to provide the best solution on achieving the best finish
- Can be pigmented to offer greater flexibility on appearance and effect
- No remedials – Topflow Architectural's exceptional surface finish eliminates the need for any further remedial works on site
- Waterproof – can be supplied with an integral waterproofing admixture

SPECIFICATION

Maintenance of fluidity – two hours, however longer retention can be specified once placing methodology has been determined.

Compressive strength at 28 days
= typically 35 - 50N/mm².

Water/cement ratio as specified by client.

Sulphate Classification – up to DC-3.

If a greater strength at 28 days is required, Tarmac will work to the customer's specification.

When considering the use and installation of Topflow Architectural it is important to contact your local Tarmac technical representative to discuss the following key points:

- Intended placing methods, for example pump or skip and access
- Distance/flow required by the concrete
- Proposed shutter system: type, design and pressure capability
- Intended mould release agents to gain best aesthetic performance

CHECK LIST BEFORE POURING

In order to achieve the full potential of Topflow Architectural it is necessary to follow established best practices.

Please review and initial the guidelines below before pouring commences:

TOPFLOW ARCHITECTURAL	Customer Initial
Minimum 3m ³ orders to ensure quality product.	
Form pressure: <ul style="list-style-type: none"> • Design small columns for hydrostatic head (already typical practice for regular concrete) • Walls – do not exceed designed pour rate (decrease rate in cooler temperatures) • For specific form pressure concerns, contact Tarmac for accurate form pressure predictions 	
Ensure all joints and holes are sealed (holes <5mm will tend to seal after leaking some paste – avoid gaps that may open)	
Ensure the bottom and corners of formwork are well braced to prevent blowouts.	
Do not place Topflow Architectural against hot formwork, as this may cause surface defects and pour lines. Cool with shading or sprinkling with water (remove water from forms).	
Ensure there is no water in forms to prevent sand streaking. Ensure no debris in forms.	
Do not apply vibration to Topflow Architectural as this will cause segregation.	
If using pumps, ensure pump lines are primed prior to start. Do not allow priming water/grout to be placed in forms. Pump off concrete until a consistent product is coming out of the line otherwise segregation may occur.	
If using a skip avoid saturating the skip with release agent as this can cause segregation or discolouration of the concrete. Ensure there is no water in the skip before filling up with concrete.	
Topflow Architectural must be placed within two hours of batching. Ensure your pour is sequenced correctly and your local Tarmac dispatch office is aware of your requirements.	
Synthetic or vegetable oil form release agents recommended. Depending on the formwork material and the ambient temperature when pouring, we can make recommendations on the optimal choice of the demoulding agent. DO NOT use mineral oil release agents. Wipe off any excess form release oil. Use as little as possible.	
Ensure forms are watertight. Leaks will cause voids, discoloration and honeycombing.	
Erect your forms as quickly as possible after applying the release oil. Do not leave longer than 12 hours before pouring the Topflow Architectural concrete.	
Avoid long gaps in placing between lifts to prevent pour lines. Ideally ensure a continual supply of concrete.	
Whether placed by skip or pump, the flow must be continuous and steady. Allowing Topflow Architectural to ‘trickle’ can cause segregation.	
Placing with collapsable tremmie pipes is preferred. The tremmie must be watertight.	

FREQUENTLY ASKED QUESTIONS

1. WHAT IS THE BEST METHOD OF PLACING?

The best method of placing for Topflow Architectural is by controlled placement, either by pumping or by crane, skip and tremmie. By following some simple rules excellent finishes are readily obtainable. We will be happy to provide guidance for your application.

2. HOW HIGH CAN I POUR?

The maximum height of concrete that can be placed is limited by the shutter design, Topflow Architectural can be pumped further vertically than ordinary pumpable concrete. As a rule of thumb, standard UK formwork design up to three metres in height is sufficiently robust to withstand the pressures exhibited by Topflow Architectural. Please ensure that you speak to your formwork suppliers before commencing a pour.

3. WHAT DO I HAVE TO DO DIFFERENTLY TO MY SHUTTER TO TAKE TOPFLOW?

There are two key factors affecting the design of formwork, hydrostatic pressure, which is the pressure exerted by the concrete, and the surface condition. As Topflow Architectural is used to obtain high quality finishes we normally recommend the concrete is placed to the full height in a single, unbroken pour. When designing the formwork the designer should allow for the development of the full hydrostatic head. Again we will be happy to provide advice for your specific application.

4. WHAT MOULD OIL DO I HAVE TO USE AND HOW MUCH DO I PUT ON?

We advise the use of 'Chrysodem Bio 2' supplied by Chryso as this product has been developed specially for self-compacted concrete. Chrysodem must be lightly sprayed onto the shutter face and the excess removed using a squeegee. We would also suggest experimenting with the application of the release agent to achieve the finish that best suits the application. Also, leave the application of the release agent as late as possible before erecting the forms.

5. DO I HAVE TO VIBRATE ONCE THE CONCRETE IS IN THE SHUTTER?

No, Topflow products should not be vibrated as this will cause segregation.

6. WILL I BE ABLE TO POUR MY WALL FROM ONE POINT?

That will depend on the length of the wall; the actual distance Topflow Architectural will flow depends upon a number of factors such as the dimensions of the section, reinforcement arrangement and cast in items. Typically if a wall is less than 12m long you can pour from the central point, if it is more than 12m you may need to place in two locations. To ensure the best possible finish the concrete should not flow more than six metres in each direction.

7. WHAT FLOW WILL I GET IN EACH DIRECTION FROM ONE POINT?

The concrete will flow freely for a distance of six or more metres from one central point. However, to preserve the quality of finish it is advisable to limit the distance to around six metres.

8. WHAT SORT OF FINISH CAN I EXPECT?

If all the recommendations for the construction and preparation of shutter faces and those for placing the concrete are followed, the surface finish will be of a highest quality. There will be few, if any, surface defects with a diameter greater than 5mm.

9. WILL THE DENSITY OF THE STEEL PROHIBIT THE FLOW OF THE CONCRETE?

No, even if there is a high-density and congested reinforcement, the concrete will flow freely around the steel without assistance.

10. HOW MANY PEOPLE WILL I NEED TO POUR?

Usually a team of two, possibly three persons will be sufficient to place substantial volumes relatively quickly. The main task is the control of the placing rate, finishing of the exposed surface is minimal.

11. WHEN CAN I STRIKE MY SHUTTER?

Normally the shutter can be struck the following day, as with conventional concrete longer times may be necessary during periods of cold weather. High early strength gain versions are available if required.

12. ARE ANY SPECIAL PRECAUTIONS NECESSARY IN COLD WEATHER?

Normally the precautions that apply to conventional concrete also apply to Topflow Architectural, there are no additional precautions. Depending on a number of factors such as mix design and geographic area, it may be possible to use conventional Topflow Concrete in vertical applications. Please note, when considering this route the surface finish achieved will not be as good. If temperatures when pouring are expected to be less than 5°C, then please consult with your Tarmac representative.

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