



# Method Statement

*Ref. #: DCP00/05-0006-A-2021*



## Cemflow GPU

[Self-smoothing floor leveling underlayment]



## Table of Content

<b>SECTION A: GENERAL COMMENTS</b>	<b>3</b>
General Notes	3
High Temperature Working	3
Low Temperature Working	3
System Products	3
Tools and Equipment	4
<b>SECTION B: APPLICATION</b>	<b>5</b>
Substrate Preparation	5
Priming	6
Mixing	8
Application	9
Curing	10
Cleaning	10
<b>SECTION C: CAUTIONS</b>	<b>11</b>
Health & Safety	11
<b>SECTION D: APPROVAL AND VARIATIONS</b>	<b>11</b>



## Section A : General Comments

### General Notes:

The information below is a detailed overview for the application of DCP's **Cemflow GPU** flooring system and should be read in conjunction with the relevant technical data sheet prior to application. All DCP Products should be applied by experienced specialist contractors.

All the points below assume correct preparation of the relevant surface.

### High Temperature Working:

Application temperature ranges from 10°C - 35°C and Substrate's relative humidity must not exceed 75% unless a suitable primer is used

It is suggested that, for temperatures above 35°C, the following guidelines are adopted as good working practice:

- i. Unmixed materials and equipment should be stored in a cool shaded area and away from direct sunlight.
- ii. Avoid application during peak temperature of the day.
- iii. Plan for enough materials, tools and labor to ensure continuous applicant process.
- iv. Cool water is advised for mixing (temperature around 20°C).
- v. Avoid applying the material if the ambient temperature is around 35°C and rising.

### Low temperature working:

It is suggested that, for temperatures below 10°C, the following guidelines are adopted as good working practice:

- i. Unmixed materials should be stored in a warm.
- ii. Cold temperatures will affect the properties of the material.
- iii. Avoid applying the material if the temperature is around 10°C and falling.

### System products:

Primer: **Cemflow Primer, Strongcoat Primer, or Strongcoat DPM.**

Floor underlayment: **Cemflow GPU.**

## Tools and Equipment:

It is suggested that the following list of equipment are adopted as a minimum requirement


<i>Personal protection</i>	:	<i>Protective overalls</i>	
	:	<i>Goggles or a face mask</i>	
	:	<i>Good quality gloves</i>	
	:	<i>Safety shoes</i>	
	:	<i>Safety helmet</i>	
<i>Preparation equipment</i>	:	<i>Brush (Fig.1)</i>	
	:	<i>Grinder (Fig.2)</i>	
	:	<i>Concrete vacuum (Fig.3)</i>	
<i>Application equipment</i>	:	<i>Power-whisk fitted in a heavy-duty slow speed electric drill (Fig.4)</i>	
	:	<i>Empty Bucket (Fig.5)</i>	
	:	<i>Pump (if required) (Fig.6)</i>	
	:	<i>Trowel (Fig.7)</i>	
	:	<i>Pin rake (Fig.8)</i>	
	:	<i>Roller (Fig.9)</i>	
	:	<i>Rubber spike shoes (Fig.10)</i>	
	:	<i>Masking tape and Spike roller (if required) (Fig.11)</i>	



Fig.1: Brush



Fig.2: Grinder



Fig.3: Concrete vacuum



Fig.4: Power-whisk fitted in a heavy-duty slow speed electric drill



Fig.5: Empty Bucket



Fig.6: pump (if required)

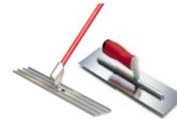


Fig.7: Trowel



Fig.8: pin rake



Fig.9: Roller



Fig.10: Rubber spike shoes

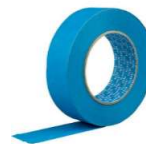


Fig.11: Masking tape



Fig.12: Spike roller

## Section B : Application

### 1.0 Substrate Preparation

- 1.1 Concrete substrates should be fully cured and achieve a minimum compressive strength of 25 N/mm<sup>2</sup> and a minimum pull-off strength of 1.5 N/mm<sup>2</sup>.
- 1.2 The concrete substrate should be below 75% RH and have less than 4% moisture content. Alternatively, Strongcoat DPM should be applied according to the priming section.
- 1.3 Perform relative humidity test using in situ devices according to ASTM F2170.



*Note: When the substrate's RH is above 75% after it is fully cured, this indicates that there is a rising damp condition and the substrate should be primed using **Strongcoat DPM**.*

- 1.4 Oil and grease contamination must be completely removed using degreasing products, torching or any other suitable method which assures the surface is free from any oil traces. Alternatively, grit blasting techniques can be used to provide the required substrate.



- 1.5 Excess laitance deposits are best removed mechanically by grit blasting, any surface irregularities must be removed using profiling equipment (scraping, grinding, milling, etc.) followed by vacuum cleaning to remove dust debris. All preparation equipment should be of a type approved by DCP.



- 1.6 Surfaces should be sound and with no irregularities as they can affect the finish of the applied product.
- 1.7 Old, loose and weak underlayments should be removed mechanically.
- 1.8 Surface defects and imperfections such as cracks, voids and blowholes should be repaired and patched before application to prevent material flowing into them and producing air bubbles or reflective cracks in the surface in case of substrate movement. Consult the DCP's Technical Department for specific recommendations.



*Repair of surface imperfections using cementitious repair mortar*

### Joints and Moving Cracks:

- **Cemflow GPU** shouldn't be installed over any non-filled/sealed joints or any moving cracks.
- Open up and clean the existing joints in between the concrete slab and vacuum thoroughly.
- All dust, loose and friable material must be removed from all joint voids before application of any joint sealant.
- All existing joints such as (expansion, isolation, construction and control joints) as well as all moving cracks, must be sealed using a proper sealing compound specifically designed for use in joints.
- It is advisable to reflect any existing joints in the same width, direction and location on the surface of the finish screed.

### For Substrates Such as Ceramic Tiles and Wooden Floors

- Substrates should be thoroughly cleaned.
- Use dry cleaning methods such as vacuum cleaning.
- Avoid using powerful cleaning agents that may be absorbed by the substrate; this could lead to a negative effect on adhesion.

## 2.0 Priming

Adequate evaluation of the substrate conditions will determine the type of priming required, reducing the risk of failures. Priming is mandatory to prevent air release from the mechanically prepared substrate. Choice of primer depends on the substrate surface.

The following priming options are available:

### **Cemflow Primer** [For application onto sand/cement screeds, concrete and other porous substrates]

- Dilute **Cemflow Primer** with 3 parts potable water.
- Apply one coat of the diluted **Cemflow Primer** at rate of (16 - 17 m<sup>2</sup>/kg per coat) to achieve dry film thickness of 30 microns per coat, use a low pressure spray for application to the prepared surface, brush and roller can be used for small areas.
- Allow the applied coat to dry for 1-2 hours at 25°C.

*Note:* Drying time depends on the substrate and the ambient temperature.

- As soon as the first coat has initially dried, apply a second coat of the diluted **Cemflow Primer**.
- The primer must be allowed to dry before the application of **Cemflow GPU**.



*Note:* Adequate ventilation must be provided to ensure that necessary drying and curing of the material is achieved.



## **Strongcoat Primer** [For application onto both porous and impervious substrates]

### 1.1 For impervious substrates

- 1.1.1 Stir individual components of Strongcoat Primer and ensure that bottom and sides are thoroughly scraped.
- 1.1.2 Transfer the entire content of hardener into the base and mix for 2 - 3 minutes using slow speed mixer fitted with suitable paddle.
- 1.1.3 Apply one coat of the mixed **Strongcoat Primer** at rate of (5 m<sup>2</sup>/kg per coat) to achieve dry film thickness of 200 microns per coat, use brush or short hair lambs wool roller for application to the prepared surface.



*Note: Avoid any primer ponding on the floor.*

- 1.1.4 While the applied layer is still tacky, fully blind with Antislip Aggregate #2 or #3 (depending on the final application thickness) at approximately 3 kg/m<sup>2</sup> until the surface is covered and no resin spots remain.
- 1.1.5 Allow to dry fully overnight and remove excess aggregate before applying **Cemflow GPU**.

### 1.2 For porous substrates

*Note: for porous substrates, **Cemflow primer** is usually used. However, **Strongcoat Primer** is recommended for:*

- *Weak substrates*
- *Substrates with shrinkage cracks and spider web cracks, blow holes and voids.*
- *Hot climatic conditions*
- *Where the final floor will be exposed to heavy traffic.*

#### **Method of application:**

- Stir individual components of **Strongcoat Primer** and ensure that bottom and sides are thoroughly scraped.
- Transfer the entire content of hardener into the base and mix for 2 - 3 minutes using slow speed mixer fitted with suitable paddle.
- Apply one coat of the mixed **Strongcoat Primer** at rate of (5 m<sup>2</sup>/kg per coat) to achieve dry film thickness of 200 microns per coat, use brush or short hair lambs wool roller for application to the prepared and allow to cure.

*Note: Avoid any primer ponding on the floor.*

- Within the overcoating time, apply a second coat and whilst still tacky fully blind with Anti-slip Aggregate #2 or #3 (depending on the final application thickness) at approximately 3 kg/m<sup>2</sup> until the surface is covered and no resin spots remain.
- Allow to dry fully overnight and remove excess aggregate before applying **Cemflow GPU**.



### **Strongcoat DPM [For application onto surfaces with high relative humidity]**

- 1.1 For surfaces with relative humidity between 75 and 85%:
  - 1.1.1 Stir individual components of **Strongcoat DPM** and ensure that bottom and sides are thoroughly scraped.
  - 1.1.2 Transfer the entire content of hardener into the base and mix for 2 - 3 minutes using slow speed mixer fitted with suitable paddle.
  - 1.1.3 Use brush or short hair lambs wool roller for application to the prepared surface.
  - 1.1.4 Prime with 1 coat of **Strongcoat DPM** at rate of (5 m<sup>2</sup>/kg per coat) to achieve dry film thickness of 200 microns per coat and allow to dry.
  - 1.1.5 After the applied layer of **Strongcoat DPM** has been applied and left to cure, apply **Strongcoat Primer** at rate of (5 m<sup>2</sup>/kg per coat) to achieve dry film thickness of 200 microns.
  - 1.1.6 Whilst it is still tacky fully blind with Antislip Aggregate #2 at approximately 3 kg/m<sup>2</sup>, until the surface is covered and no resin spots remain.
  - 1.1.7 Allow to dry fully overnight and remove excess aggregate before applying **Cemflow GPU**.
- 1.2 For surfaces with relative humidity greater than 85%:
  - 1.2.1 Stir individual components of **Strongcoat DPM** and ensure that bottom and sides are thoroughly scraped.
  - 1.2.2 Transfer the entire content of hardener into the base and mix for 2 - 3 minutes using slow speed mixer fitted with suitable paddle.
  - 1.2.3 Use brush or short hair lambs wool roller for application to the prepared surface.
  - 1.2.4 Prime with 2 coats of **Strongcoat DPM** and allow the second coat to dry.
  - 1.2.5 After the second coat of **Strongcoat DPM** has been applied and left to cure, apply **Strongcoat Primer** at rate of (5 m<sup>2</sup>/kg per coat) to achieve dry film thickness of 200 microns.
  - 1.2.6 Whilst it is still tacky fully blind with Antislip Aggregate #2 at approximately 3 kg/m<sup>2</sup>, until the surface is covered and no resin spots remain.
  - 1.2.7 Allow to dry fully overnight and remove excess aggregate before applying **Cemflow GPU**.

*Note: the primer must be allowed to dry before the application of **Cemflow GPU**.*

### **3.0 Mixing**

- 3.1 Use power-whisk fitted in a heavy-duty slow speed electric drill to mix 25 kg of powder to 5 - 5.25 liter of potable water.



- 3.2 Place the mixing water into a clean container. And add the required weight of the dry powder slowly to the water while mixing continuously.
- 3.3 Continue mixing until a smooth, lumps free consistency is achieved. Total mixing time not to be less than 3 minutes.
- 3.4 Place Cemflow GPU within 2 minutes of completion of mixing.



**Notes:**

- *Cool water is advised for mixing (temperature around 20°C or low).*
- *Measure the necessary amount of clean water per bag.*
- *Never add the water to the powder or add it in stages, as this alters the properties of the product.*
- Ensure that sufficient labor is available to enable continuous mixing and pouring.
- After mixing ensure that the mix is free from segregation and lumps.

#### 4.0 Application

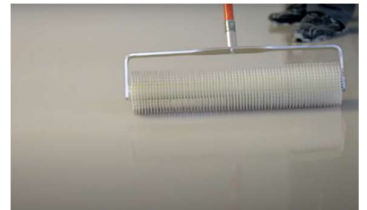
- 4.1 Each independent area of application should have sufficient materials, equipment and labour, it is always better to work in manageable sections of approximately 20 m<sup>2</sup>.



- 4.2 Starting in one corner, pour or pump the mixed material onto the prepared surfaces in a continuous stream along one edge of the area and spread with trowel or adjustable pin rake to the required thickness and allow to attain a smooth finish.
- 4.3 Apply at a thickness between 1-10 mm in one pass only.



- 4.4 The use of a spiked roller while the applied layer is still wet will help eliminate entrapped air and smooth out flow lines.



**Note:**

- *Do not over roll as this may cause an unsightly appearance.*
- *Do not roll material that has been applied for more than 2 - 3 minutes.*

- 4.5 Keep a continuous supply of mixed material flowing and place efficiently to maintain a “wet edge” which will reduce the differences between mixes where the material has already started to dry and set.

- 4.6 Avoid contact to vertical structures by putting in an edge strip such as foam tape.
- 4.7 For best results, pouring and leveling should be done in a continuous process.
- 4.8 Fresh mixed **Cemflow GPU** should be placed within 6 minutes of the previous adjacent batch being poured to reduce the formation of seam lines.



*Notes:*

- If the mixing batch stiffens, it should be discarded, do not remix it with water.
- Do not exceed the recommended water content and only use cool potable water.
- If the ambient and the substrate temperature is less than 10°C or above 35°C, do not apply the material.
- Freshly laid **Cemflow GPU** should be protected from direct sunlight or sources of heat and strong drying winds.
- **Cemflow GPU** should not be used on new concrete less than 14 days old or floors where rising damp is valid, unless a suitable primer is used.
- Protect from frost.
- Use polyethylene sheets to protect **Cemflow GPU** from rain, snow, water, and other forms of moisture.

## 5.0 Curing

- 5.1 Curing is not required in normal conditions.
- 5.2 In harsh climatic conditions like direct sunlight, flow of wind, elevated temperatures, etc.; freshly hardened concrete surfaces should be cured with damp Hessian or to be covered with polyethylene sheets to minimize rapid evaporation and plastic shrinkage

## 6.0 Cleaning

- 6.1 All tools used with **Cemflow GPU** should be cleaned with water immediately after finishing.
- 6.2 **Cemflow Primer** can be cleaned with water when still wet.
- 6.3 **Strongcoat Primer** can be cleaned by DCP solvent prior to setting.
- 6.4 **Strongcoat DPM** can be cleaned by DCP solvent prior to setting.



## Section C : Cautions

### Health and safety

**Cemflow GPU** may cause irritation to skin or eyes. Apply in well ventilated areas. In case of accidental contact with eyes, immediately flush with plenty of water for at least 10 minutes and seek medical advice if necessary.

### Fire:

**Cemflow GPU** is nonflammable.

**For further information on refer to the Material Safety Data Sheet.**

## Section D : Approval and Variations

This method statement is offered by DCP as a 'standard proposal' for the application of **Cemflow GPU**. It remains the responsibility of the Engineer to determine the correct method for any given application. Where alternative methods are to be used, these must be submitted to DCP for approval, in writing, prior to commencement of any work. DCP will not accept responsibility or liability for variations to the above method statement under any other condition.