

# FLOORWORX SELF LEVELLER TECHNICAL SPECIFICATIONS\_

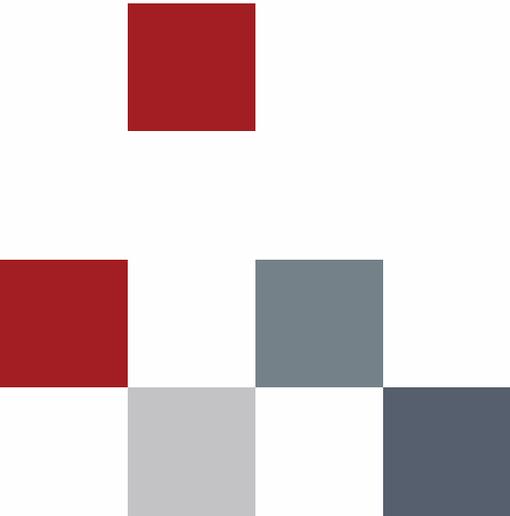
## DESCRIPTION

FloorworX Self Leveller is a single pack, rapid hardening cement based screed for levelling floors where quick setting is essential. FloorworX Self Leveller can be hand applied by trowel (0-20mm) or can be pumped (4-20mm). For pumped applications, an 8mm average thickness would be a typical expectation on a reasonably level base.

## AREAS OF USE

For refurbishment and new construction where finishes such as carpets, ceramic tiles, vinyl, wood block or cork need to be applied quickly. Used for smoothing floors in office buildings, dwellings, shops, public buildings, schools, hospitals, airports, prisons, factories, workshops, warehouses and other places exposed to similar loads.

## ADVANTAGES

- Quick setting
  - Self-levelling
  - Can be pumped up to 2000m<sup>2</sup> per day, under suitable conditions
  - Walk on after 6-8 hours at 25°C under normal conditions
  - Can normally apply coverings onto a 10mm thick screed after 24 hours
  - Pumpable or hand laid
  - Single pack - just add water
  - Protein free, will not harbour bacteria
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## SURFACE PREPARATION

The sub-floor surface must have a minimum thickness of 40mm and a minimum compressive strength of 25MPa. All surfaces must be sound, clean, free of friable and deleterious material such as paint, laitance, mould release agents, oil, curing compounds, mud, plaster and any other contaminants that may impair the bond. This is typically achieved by shot blasting, vacuum blasting or vacuum grinding. The final floor level must not have a fall of less than 1 in 400 for self levelling. Ceramic, quarry, terrazzo or similar tiled surfaces must be sound, well bonded and undamaged. The tile surface must be prepared by shot blasting, vacuum blasting or vacuum grinding. All sub-floor imperfections and holes must be filled using FloorworX Pavelite.

## TYPICAL PHYSICAL PROPERTIES

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Compressive strength @ 28 days (N/mm <sup>2</sup> )	30 (typical)
Flexural strength @ 28 days (N/mm <sup>2</sup> )	9 (typical)
Adhesion to concrete @ 28 days (N/mm <sup>2</sup> )	>1
Shrinkage (%)	<0.06
Maximum particle size (mm)	0.5
Protein content	Nil
Pumped thickness (mm)	4 - 20
Hand applied thickness (mm)	0 - 20
Application temperature (°C)	5*1 -25
Working time @ 20°C (mins)	20
Walk-on time @25°C (hrs)	6-8
Over-coating time @ 20°C, 50% RH & 10mm thick (hrs)	24
Flow: ring 30mm dia x 50mm high (mm)	Target 160-190

Please Note: Application at low temperatures will result in extended set times and strength gain.

## PRIMING

The prepared sub-floor surface must be primed using FloorworX Acrylic Primer prior to the application of FloorworX Self Leveller to improve the bond strength between the screed and the sub-floor, prevent the formation of bubbles in the screed and reduce water absorption into the sub-floor. Depending on the nature of the sub-floor, apply one or two coats of suitably diluted FloorworX Acrylic Primer to the sub-floor by means of a brush or roller and allow each coat to dry. The temperature of the sub-floor should be in the range of 10°C - 25°C, but not less than 5°C.

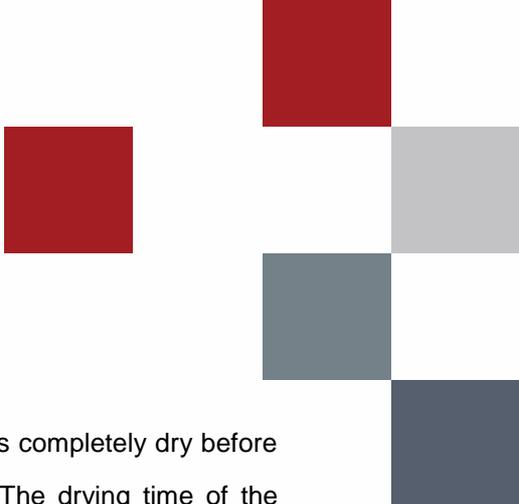
<b>Substrate</b>	<b>Dilution Rate (using clean water)</b>	<b>Approximate Coverage (undiluted Primer)</b>
<b>Normal concrete or screed</b>	1:5 – 1 coat required	0.06 litres per m <sup>2</sup>
<b>Porous concrete or screed</b>	1:5 – first coat 1:3 – second coat	0.06 litres per m <sup>2</sup> 0.05 litres per m <sup>2</sup>
<b>FloorworX Self Leveller followed by a 2<sup>nd</sup> layer</b>	1:5 – first coat 1:3 – second coat	0.06 litres per m <sup>2</sup> 0.05 litres per m <sup>2</sup>
<b>Impermeable tiled base</b>	1:3 – 1 coat required	0.05 litres per m <sup>2</sup>

### Example:

Assume 1000m<sup>2</sup> of porous concrete i.e. two coats required.

First Coat: 60 litres of undiluted FloorworX Acrylic Primer added to 300 litres of clean water to make 360 litres of diluted Primer. Apply the full 360 litres to the 1000m<sup>2</sup> sub-floor.

Second Coat: 50 litres of undiluted FloorworX Acrylic Primer added to 150 litres of clean water to make 200 litres of diluted Primer. Apply the full 200 litres to the 1000m<sup>2</sup> sub-floor.



Do not allow the FloorworX Acrylic Primer to pond and ensure that it is completely dry before the application of either a second coat or FloorworX Self Leveller. The drying time of the FloorworX Acrylic Primer is approximately 3 hours at 20°C, dependent on surface absorbency, temperature and humidity.

For best results, apply the first coat in the late afternoon, while the substrate is cooling, and then follow with the second coat early the next morning.

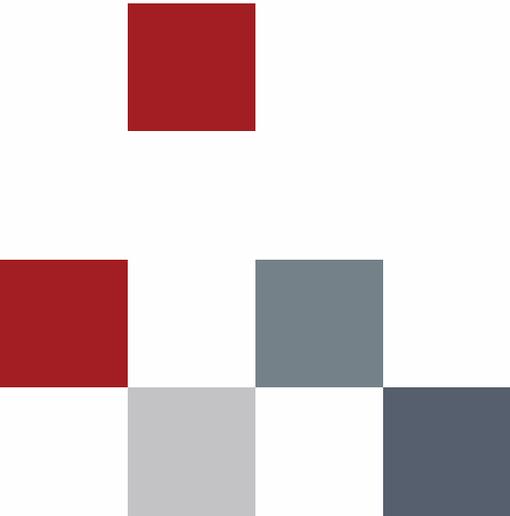
### **COVERAGE (POWDER)**

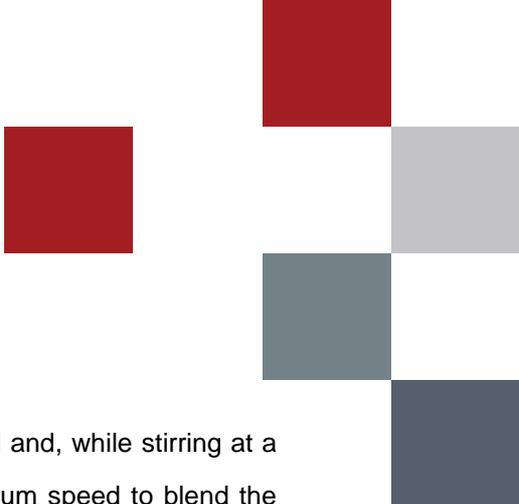
1.7kg of dry powder per m<sup>2</sup> per mm thickness

### **MIXING**

The correct mixing methodology involves mechanical mixing using a heavy duty drill fitted with a helical stirrer, or continuous mixing using a mixer/pump apparatus. For pumped applications it is essential to ensure the availability of electricity and fresh water. When using a heavy duty drill fitted with a helical stirrer for single bag mixing, the drill should provide a minimum of 1100W input power, 600w output power with a torque of 45Nm and a variable speed range of 0 to 700rpm. The stirrer must have a paddle diameter of 120mm and a helical stirrer height of 100mm and must be suitable for mixing cement mortars and grouts. The direction of rotation of the stirrer must be such that the material being mixed is upwards from the bottom of the mixing container during the mixing process.

**WARNING:** During the mixing process the stirrer head must be kept underneath the material at all times whilst it is rotating to reduce the amount of entrapped air in the mix.





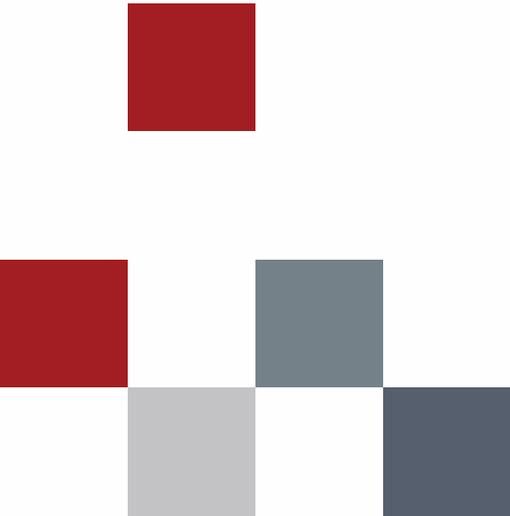
Add approximately 4 litres of clean potable water to the mixing vessel and, while stirring at a low speed, slowly add the 25kg of powder. Mix the mortar at a medium speed to blend the water and powder, followed by high speed mixing for 3 minutes to induce mechanical shear and good dispersion of the polymers to result in a smooth, lump-free and homogenous mortar paste. Add the remaining water, starting with 500ml, and mix the mortar at a low to medium speed for 1 minute. Allow the mortar to stand for 1 minute and then, within 30 seconds, perform a Flow Ring Test.

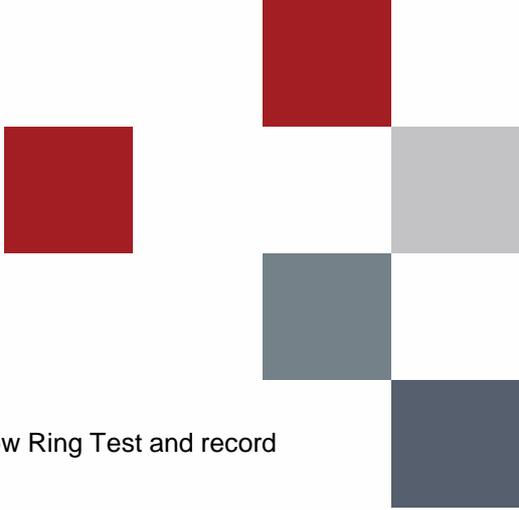
Should the flow rate, as determined by the Flow Ring Test, be less than 160mm then add increments of 250ml water, mix at a low to medium speed for 1 minute, allow the mix to stand for 1 minute and thereafter carry out another Flow Ring Test.

This process must be repeated until the correct flow rate is obtained. Generally, 4.5 to 5.0 litres of water per 25kg bag should be adequate to produce an acceptable mix. **Do not exceed 5.5 litres of water per 25kg bag of FloorworX Self Leveller.** Excess water will result in a friable surface and will reduce the strength of the FloorworX Self Leveller.

The working temperature of the mortar mix must be in the range of 5°C to 25°C. Use warm water, not exceeding 25°C, in cold conditions. Do not mix more FloorworX Self Leveller than can be applied in 10 minutes. The Flow Ring Test procedure must be repeated on every new batch number of FloorworX Self Leveller.

If any loss of workability is experienced due to the product standing too long prior to placing, discard the product and mix fresh material. **Never re-temper the mix by the addition of water.**





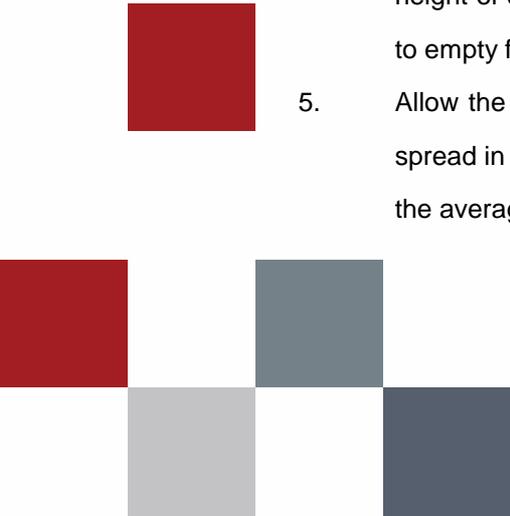
It is the responsibility of the flooring/main contractor to carry out the Flow Ring Test and record the results together with the relevant product batch numbers.

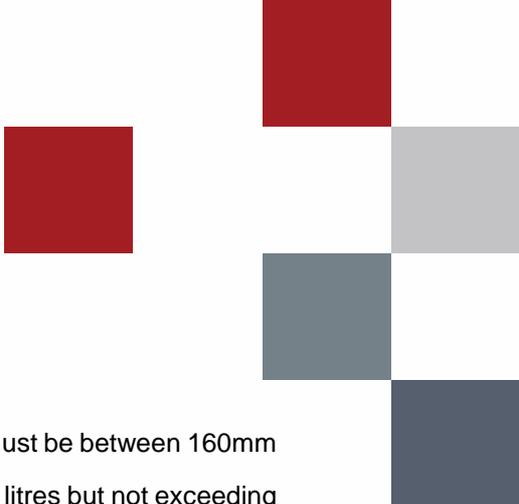
## **FLOW RING TEST**

### Equipment

- Steel cylinder (flow ring), 30mm internal diameter x 50mm high, to contain 35.3ml as per ASTM C 1708.
- Stainless steel plate, melamine, glass or non-absorbent board measuring 200mm x 200mm.
- Measuring tape or ruler.
- Timing device (watch or stop watch)
- Container to collect the screed sample and pour it into the flow ring.
- Cleaning equipment (water and cloths)

### Procedure

1. Ensure that the flow ring, plate and sample collection container are clean and pre-dampened, but not wet, before use.
  2. The mortar to be tested must be collected from the mixing vessel (if mixing using a drill) or from the end of the pump hose (if mixing continuously).
  3. Place the flow ring at the centre of the plate and place this assembly on a firm horizontal surface.
  4. Within 30 seconds of the completion of the 1 minute standing period following mixing, collect a sample using the container and completely fill the flow ring. As soon as the flow ring is completely full, lift it vertically from the plate and simultaneously start the timing process. The flow ring must be lifted vertically to a height of 50mm to 100mm above the plate within 2 seconds to allow the sample to empty from the ring onto the plate.
  5. Allow the mortar to spread for 4 minutes and then measure the diameter of the spread in two directions at right angles using the measuring tape or ruler. Record the average diameter as the flow rate of the sample.
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6. The average diameter of the circle of material (flow rate) must be between 160mm and 190mm at an approximate water demand of 4.5 to 5.0 litres but not exceeding 5.5 litres at 20°C ± 3°C.

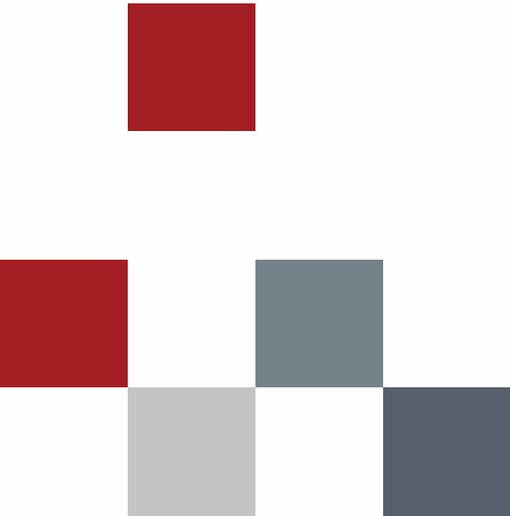
#### Notes

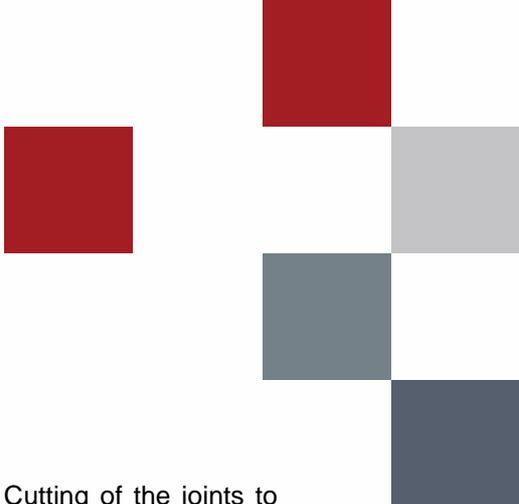
If the circle diameter is too large, the water content is too high and the screed strength will be reduced. If the circle diameter is too small, the water content is too low and although the screed strength will be good, the self-levelling properties will be poor.

#### **APPLICATION**

Pour or pump the mix over the sub-floor surface and distribute using a Skeg Leveller fitted with the appropriate skeg insert for the desired material thickness. Fresh material must be fed into a wet edge and temporary stop edges can be used to create bays or to prevent material from flowing into areas where it is not required. For optimum flow properties, whether placing by hand or using a pump, a minimum thickness of 5mm is recommended. FloorworX Self Leveller can be spread up to 20 mm thick and can be featheredged if required.

FloorworX Self Leveller will level out into a smooth, even finish. Where necessary, and within 5 minutes of application to avoid interfering with the final levelling properties, release air bubbles from the newly laid screed using a Spiked Roller. Use suitable Spiked Shoes when walking on newly laid wet screed.





## **JOINTS**

All joints in the sub-floor must be honoured and not screeded over. Cutting of the joints to coincide with the existing sub-floor joints must take place as soon as the joint edges of the product will not ravel as a consequence of the cutting process, typically between 12 and 24 hours after application.

## **CLEANING OF EQUIPMENT**

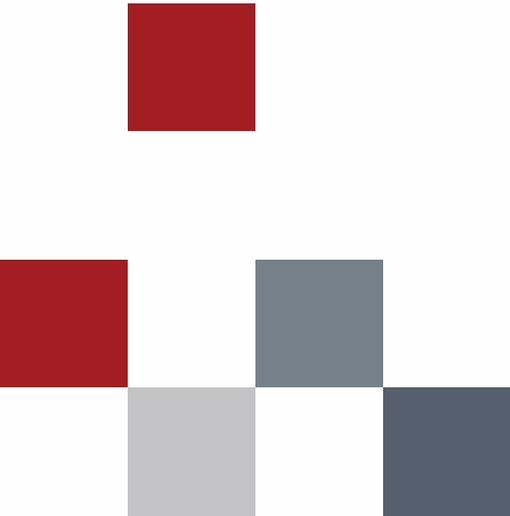
All tools, testing and mixing equipment must be cleaned with water immediately after use and before the material has set. Note that hardened material can only be removed by mechanical means.

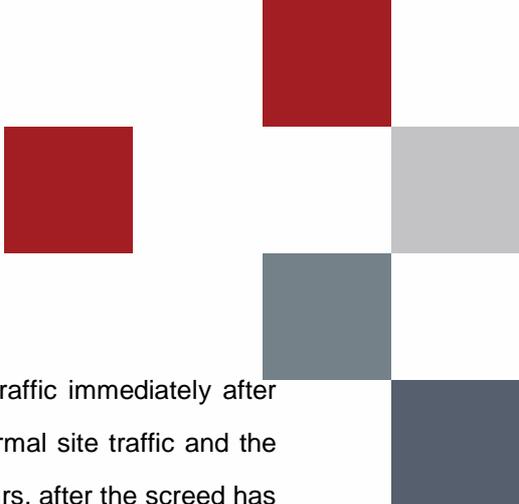
## **AFTER SCREEDING**

It may be necessary to use a sanding machine or hand stone to remove surface defects such as dip marks or to smooth across the line of temporary joints at bay edges or doorways. This may be done 24 hours after application i.e. after the material has hardened and before it has gained full strength.

## **PROTECTION DURING CURING**

The screed must be protected from draughts and strong sunlight during installation and for 24 hours thereafter, but there must be sufficient ventilation to allow the screed to dry. The areas to be screeded must be weather-tight i.e. all gaps in roofs, windows and doors must be covered, as draughts and uneven temperatures may lead to cracking and crazing.





To ensure that there is adequate protection from other trades and traffic immediately after installation, access to the floor should be restricted for 24 hours. Normal site traffic and the erection of partitions on the screed can be permitted after 24 to 48 hours, after the screed has hardened. It is important to prevent contamination by any form of water spillage and by following trades that may cause damage to the surface.

### **HARDENING AND DRYING TIMES**

FloorworX Self Leveller may be walked upon after 6-8 hours @25°C and may be sanded at joints, if required, 24 hours after application. A floor covering can be installed after 24 hours, depending on the type of finish required, the dryness of the FloorworX Self Leveller and the ambient conditions. It is essential that an appropriate moisture test be conducted to verify the moisture content of the sub-floor before any flooring is installed, and that the resulting moisture reading meets the pre-requisites for the specific flooring product.

### **HANDLING AND STORAGE**

FloorworX Self Leveller has a shelf life of 6 months if stored in a cool dry place in the original packaging. In more extreme conditions this period may be shortened.

### **IMPORTANT NOTICE**

This information is issued as a guide for the use of the product concerned. Whilst FloorworX endeavours to ensure that any advice, recommendation, specification or information provided is accurate and correct, the company cannot – because FloorworX has no direct or continuous control over where and how FloorworX products are applied – accept any liability, either directly or indirectly, arising from the use of FloorworX products, whether or not in accordance with any advice, specification, recommendation or information given by the company.

