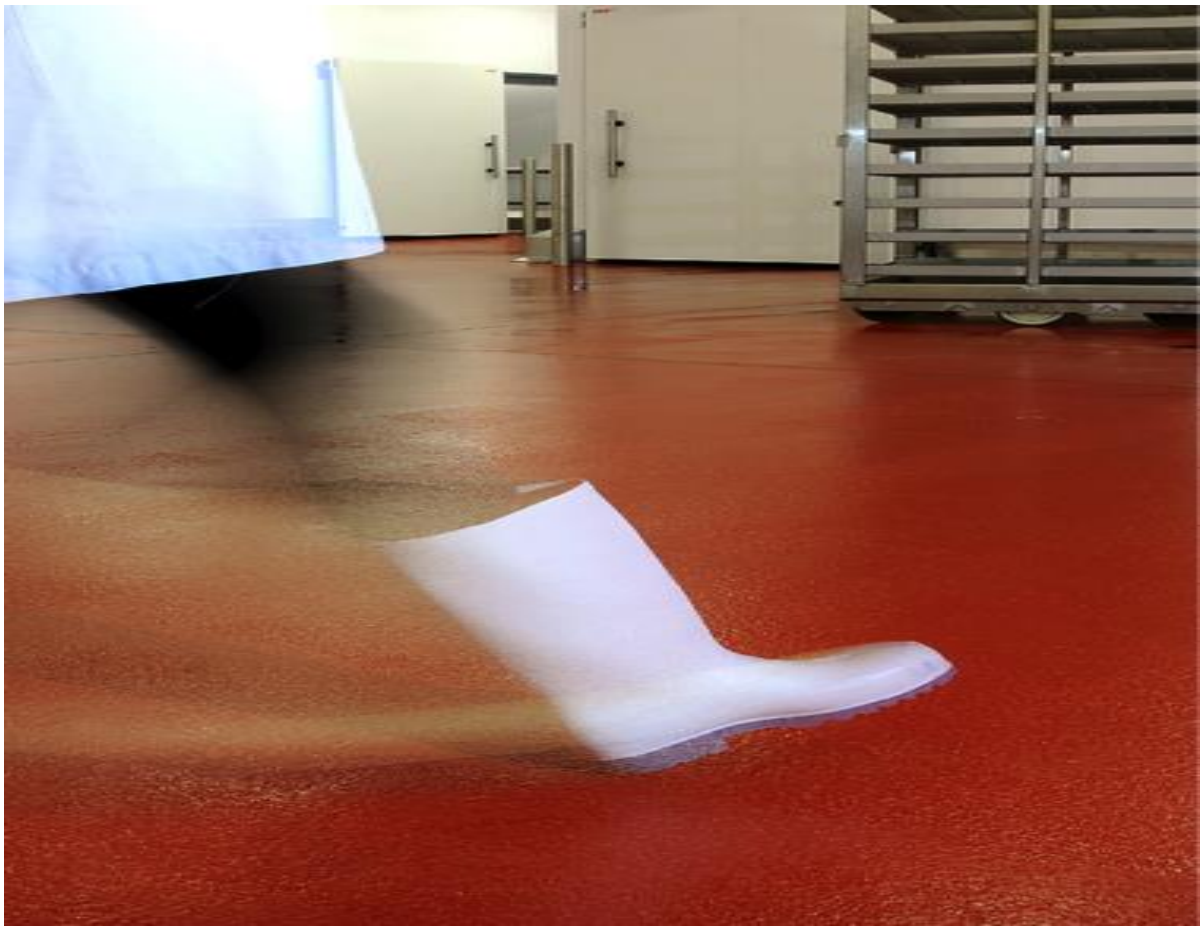
Flowcrete
for the world at your feet



FLOWFRESH

APPLICATION MANUAL (Mai 2022)

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CONTENTS

1. GENERAL INFORMATION

These instructions for processing FLOWFRESH polyurethane concrete surface protection systems are intended exclusively for contractually authorized partners.
The information and recommendations contained herein correspond to our current state of knowledge at the time of printing. It is the buyer's responsibility to determine whether the company's products are appropriate for the individual case by means of their own tests.

- The FLOWFRESH polyurethane concrete systems (or simply FLOWFRESH systems) are a build-up of different layers. The system selection depends on the type and conditions of the substrate, the prescribed use and load to which the FLOWFRESH system will be subjected to.
- Flowfresh is a very low odour and VOC product and is compliant with Indoor Air Comfort Gold..
- There is no or taste transfer during processing and subsequent use of the floor covering. In addition, all FLOWFRESH systems contain the additive Polygiene®. This additive based on silver ions prevents rapid re-germination of the substrate after cleaning, in which it prevents the growth of bacteria and fungi to 99.9%.
- Furthermore, most FLOWFRESH systems are HACCP International tested and certified according to ISO 22196. FLOWFRESH systems are highly chemically resistant to a variety of media, offer a high temperature resistance, even with permanent hot water exposure. Particularly noteworthy is the very high thermal shock resistance and the mechanical resistance. In addition, the coverings are characterized by their work-safe surfaces.
- They meet the various slip resistance classes according to the Technical Rules for Workplaces (TGRA ASR A1.5/1.2) or the previously valid BGR 181. Tested according to DIN 51130.
- For each area of application and the expected loads, there are various FLOWFRESH systems to choose from which differ in layer thickness, type, processing technology and appearance.
- When using a FLOWFRESH system in areas exposed to UV radiation, yellowing of the floor covering can occur which does not impair the assured technical properties.
- A poor, insufficiently load-bearing substrate cannot be improved by reworking with a FLOWFRESH system.
- FLOWFRESH products must under no circumstances be mixed with water, dispersions, solvents, monomers, plasticizers or other such substances!
- FLOWFRESH systems are applicable to 7 days old concrete and 3 days old screeds as long as the support properties are respected and with a residual moisture content not exceeding the value of what is recommend for the used primer.
- Deviations from the specified processing quantities lead to problems during curing. Under no circumstances may foreign fillers be used in FLOWFRESH products. Only complete work packs are to be mixed and processed.
- For further details on the correct selection of FLOWFRESH systems, please consult the relevant data sheets and/or contact our Technical Customer Service.
- Any procedural changes made, without prior written approval, will lead to a withdrawal of our Technical Service and a negation of any Warranty.

- Test results (bond strength, residual moisture, etc.) as well as the daily measurements of the climate conditions (air temperature, substrate temperature, dew-point) on the construction

site and the material consumption including the batch numbers must be documented in the construction site day report.

2. STORAGE

All components of FLOWFRESH products should be stored under cover and free of the ground, in dry conditions. This is especially important for all the FLOWFRESH components part C (fillers) and part D (pigment packs) to prevent them becoming hard and lumpy and unsuitable for use.
The ideal storage temperature lies in the range of 5 to 30°C; The last 24hrs before processing the material should be between 18 °C and 25 °C. This is the preferred temperature range for mixing, applying and curing.
Exposure to direct sunlight or other intense heat sources will cause uneven temperature gradients in the stored material; such product must not be used until the temperature has become uniform, otherwise application inconsistencies may arise.
FLOWFRESH components are storage stable under the before mentioned storage conditions for 12 months from the date of production for part A and part B. For part C, depending from the product, it's 6 or 12 months. Detailed information can be found in the TDS of the product.

Remark: Keep all parts free from freezing even during transport!

2.1 Low temperatures:

When site temperatures fall below 15°C the following should be noted:

1. All grades of FLOWFRESH will become more difficult to apply, consequently laying rates are reduced. Furthermore, the consumption of materials per m² can be increased. The time period for reworking FLOWFRESH Primer or applied Scratchcoat is extended.
2. At all times the minimum application temperatures (see paragraph 5.2.) must be observed in order to ensure that the desired surface quality or finish is achieved
3. In practice it is often necessary to heat the material to facilitate processing. When heating is required, the material should be stored in a heated room to ensure even temperature distribution in the material. If this solution is not feasible, the use of a portable heating in the mixing area is recommended. For large projects a heat tent facilitates heating. All components should be heated, taking care that there is no uneven temperature distribution in the material.

2.2 High temperatures:

FLOWFRESH products must not come into contact with direct sunlight or hot surfaces under any circumstances! High temperatures shorten the specified processing times. If temperatures of more than 25° are expected to prevail during installation, air-conditioned storage is recommended. Storing the materials at 15-20°C reduces the risk of premature curing and other undesirable effects. Under no circumstances should FLOWFRESH products be laid under direct sunlight or on hot surfaces! Also a warmer climate grade FLOWFRESH/Flowcrete TRP part B is available and optimised for use in application temperatures 20 – 40°C.

3. PACKAGING QUANTITIES

Product	A/kg	B/kg	C/kg	D/kg	Unit/kg

FLOWFRESH Primer	2,5	2,6	1,4	----------	6,5
FLOWFRESH SL (*)	2,5	2,6	12,0	0,5/1,0	17,6 / 18,1
FLOWFRESH SL (*)	2x 2,5	2x 2,6	24,0	1,0/2,0	35,2 / 36,2
FLOWFRESH MF (*)	2,5	2,6	15,0	0,5/1,0	20,6 / 21,1
FLOWFRESH HD (*)	2,5	2,6	19,6	0,5/1,0	25,2 / 25,7
FLOWFRESH RT (*)	2,5	2,6	20,4	0,5/1,0	26,0 / 26,5
FLOWFRESH HF (*)	2,5	2,6	24,1	0,5/1,0	29,7 / 30,2
FLOWFRESH HF/LT	2,6	2,8	25,0	0,5/1,0	30,9 / 31,4
FLOWFRESH Mortar (*)	2,5	2,6	26,4	0,5/1,0	32,0 / 32,5
FLOWFRESH Cove	1,2	1,25	22,05	0,5/1,0	25,0 / 25,5
FLOWFRESH Coating Matt	1,2	1,25	2,0	0,5/1,0	4,95 / 5,45
FLOWFRESH Cove Coating	1,5	1,25	1,5	--	4,25
FLOWFRESH ESD SL	2x 2,5	2x 2,6	16,73	0,04	26,97
Flowprime	9,4	4,7			14,1
Hydraseal DPM	8,47	3,53			12,0
Peran ESD Primer WB	1,72	8,28	--	--	10,0
Peran STC (for SRQ)	8,0	2,0			10,0
Hermapur 3002 (for SRQ UV)	5,86	4,14	--	--	10,0

(*) the Quick versions are using the same packaging quantities but uses Flowfresh/Flowcrete Quick part A instead of Flowfresh/Flowcrete part A.

REMARKS:

- The standard colours (Dark Blue, Dark Green, Dark Grey, Mustard, Ochre, Red) are supplied in 0.5 kg pigment packs but Mid Grey and Cream in 0.5 or 1 kg pigment packs. Only Cream requires the use of a double pigment quantity compared with the other colours.
- Part C of Flowfresh ESD SL is pigmented.
- Part A of Flowfresh Cove Coating is pigmented.
- Flowprime is an epoxy resin primer
- Hydraseal DPM is an epoxy primer when conventional primers are not suitable due to high moisture content.
- Peran STC (epoxy) and Hermapur 3002 (polyaspartic) are transparent, clear sealers.

4. TOOLS AND EQUIPEMENT LIST

- Vacuum impact shot blasting (for example type Blastrac)
- Scabbling machine (for example type Von Arx)

- Mechanical mixer (for example type Festo)
- Mechanical mixer (for example type Beba)
- Spirit level hand mixer (drill with mix device),
- Sufficient electrical cables and connecting devices
- Industrial vacuum cleaner
- Rubber gloves, safety goggles and other personal protection equipment
- Levelling rod
- Buckets (10L / 25L …)
- Trowels (flat/curved/small)
- Brushes and brooms
- Paint rollers
- Knee protectors
- Spike shoes
- Spiked rollers
- Dispersion disc
- Stainless Steel Hexagonal High Precision Wet Film Thickness Gauge
- …

See also the pictures below and on the next page.

Toothed rake


Spread rake


Spiked roller


Spiked shoes

Dispersion disc for FLOWFRESH Primer, FLOWFRESH Coating Matt and FLOWFRESH Cove Coating

Mechanical mixer for FLOWFRESH SL/MF/HD/ESD SL

BEBA-Mixer for FLOWFRESH HF, HF/LT, Mortar, RT, Cove

Always use 2 mixing pails to mix

For bigger Flowfresh applications also automatic mixers with timer can be used.
It's important to evaluate the mixing quality in advance before using on larger scale.
It's also important to have enough mixing vessels. They need to be changed when they could influence the quality of the final mix. A transport trolley is needed for bringing the material to the working area.

5. APPLICATION CONDITIONS

5.1 General

Property	Condition
Air temperature	+10°C min. - +28°C max.
Surface temperature	+10°C min. - +25°C max.
Substrate humidity	< 6% (TRAMEX scale) or < 97% RH (BS 8203)
Ambient Relative humidity	40 % < xx% < 85%

The minimum temperature of 10°C must be observed to ensure that the desired surface quality or finish is achieved. Application temperatures lower than 10°C will reduce flow/levelling and result in an inferior finish. For more detailed information per product see 5.2.
During application and initial curing of product, **substrate temperature needs to be at least 3°C higher than dew point temperature.**
Do not apply the system when atmospheric condensation is occurring or likely to occur before full cure is obtained. Do not allow ambient temperature to drop below +5°C during first 24 hours after application.
Special care should be taken when using propane heaters in cold conditions. The exhaust gas of such heaters often contains moisture that can lead to condensation. Also Diesel fuel heating is not recommended due to their incomplete combustion which can create a film of soot and paraffine on the surface which can affect the adhesion.
FLOWFRESH systems can neither be used as a damp proof membrane nor as a vapour barrier.

REMARK: Best application temperature conditions for “standard” Flowfresh

Property	Condition
Ambient temperature range:	+15°C - +25°C
Substrate temperature range:	+15°C - +25°C

In above mentioned temperatures resin flow is optimized for best application effect and assumed material consumptions can be maintained. For substrate conditions and ambient relative humidity see table above. **Substrate temperature needs to be at least 3°C higher than dew point temperature!**

For more detailed information of the Standard, Quick and TRP versions see 9.16

5.2 Minimum application temperatures per product type

Product	Layer thickness	Minimum application temperature material and substrate
FLOWFRESH Primer	≈ 200-360 µm	8°C
FLOWFRESH SL (*) (Scratchcoat)	≈ 800 µm	10°C
FLOWFRESH SL (*)	2-4 mm	10°C
FLOWFRESH MF (*)	4-6 mm	12°C
FLOWFRESH HD (*)	5-6 mm	12°C
FLOWFRESH RT (*)	6-9 mm	10°C
FLOWFRESH HF (*), HF/LT	6-9 mm	10°C
FLOWFRESH Mortar (*)	6-9 mm	10°C
FLOWFRESH Cove	---	10°C
FLOWFRESH Coating Matt	System dependant	10°C
FLOWFRESH Cove Coating	System dependant	10°C
FLOWFRESH ESD SL	2-3 mm	12°C

(*) Layer thickness and minimum application temperature of material and substrate is also valid for the Quick version.

The minimum temperature must be observed to ensure that the desired surface quality or finish is achieved. Application temperatures lower than these of the table will reduce flow/levelling and result in an inferior finish

5.3 Relative Humidity

When processing FLOWFRESH Primer or Scratchcoat, the relative humidity should not fall below 40%, otherwise the curing is delayed and the Primer or the Scratchcoat can only be reworked at a later stage. **A still sticky Scratchcoat or a still sticky Primer may not be reworked since this leads to bubble formation in the top layer.**

If a FLOWFRESH system is installed at too low relative humidity, the waiting time is extended. If FLOWFRESH systems are still sticky and / or contaminated, contamination cannot be removed.

The relative humidity on the building site must not exceed 85%, as otherwise the appearance of the finished floor covering will be adversely affected.

6. CONTROL AND PREPARATION OF THE SUBSTRATE

6.1 Substrates types

Suitable substrates:

- Cement screeds (min. CT-C 30, according to EN 13813), polymer-modified, mechanically compacted and reinforced, on a separating layer, >6cm
- Concrete (min. C 25/30)
- Old, substrate pre-treated FLOWFRESH surfaces
- Cement-based terrazzo coverings

For other substrates planned for revision with a FLOWFRESH system, please contact our Technical Service.

6.2. General properties of the substrate

During application the substrate or support should always have the following properties:

Property	Requirement
Surface conditions	Free from oil, fat and other contaminants and mechanically prepared
Surface tensile strength	> 1,5 N/mm^2
Concrete / Screed	min. compressive strength 25 N/mm^2

A Flowfresh system is applicable to 7 days old concrete and 3 days old screeds, if the above-mentioned support properties are respected. THE SUBSTRATE MUST BE AS FLAT AS POSSIBLE! See the tolerances given in the applicable standard used in the country.

6.3 Control slopes, unevenness, cavities, etc… in the substrate

FLOWFRESH products generally follow the profile of the underlying substrate due to the manual method of laying. The agreed standards for evenness and/or slopes, should therefore be produced in the base concrete as close as possible.

6.3.1 Unevenness:

FLOWFRESH products in general, should not be used to compensate for uneven surfaces. The substrate should be applied to the desired flatness prior to the application of a FLOWFRESH system.

Gravity slopes cannot be produced with FLOWFRESH, and must be designed in the substructure. The maximal slopes depend on the FLOWFRESH system and are listed in the following table. However, when it is possible in accordance to the floor drainage needs, a smaller slope gradient is recommended to obtain the best application efficiency/installation rate.

System	Maximum Slope
FLOWFRESH SL, MF, HD, RT, ESD SL	**2.0 %**
FLOWFRESH Mortar, HF, HF/LT	**2.5 %**

6.3.2 Holes and cavities:

When the substrate shows holes, cavities or other unevenness, there should be a repair before the FLOWFRESH is applied.

- Holes less than 3 cm deep can be filled and smoothened with a FLOWFRESH Scratchcoat with extra dry quartz sand or aggregate from 1 cm onwards. FLOWFRESH RT, Mortar or

HF can also be used. For further advice please take contact with your local CPG representative.

- Holes deeper than 3 cm can be filed with a hydraulic cement (f.e. Vandex repair mortars). Please follow instructions as mentioned on the technical data sheet of the product that is used.
- When there are severe limitations on time, FLOWFRESH itself may be used to form falls or fill deep holes by bulking FLOWFRESH or FLOWFRESH SL grade with dry natural quartz (2-32 mm). Ensure sufficient aggregate is added to prevent excessive resin bleeding. For further advice please take contact with your local CPG representative.
- Cracks in the substrate can be filled with resinous mortar or by injection.

6.4 Standard Treatment of the substrate surface

Surface preparation is the most vital aspect of all flooring applications. The substrate should be prepared according to the relevant technical standards for substrates of industrial floor system.
The preparation operations should be delayed until shortly before the FLOWFRESH Floor is to be applied to avoid the risk of fresh contamination or further accumulation of dirt. In order to prevent the rising of moisture or high ground water pressures, make sure, a waterproof membrane is present below the substrate.

6.4.1 New concrete or screed:

A mechanical treatment (scabbling or shot-blasting) is always necessary to remove laitance and to obtain and open surface for a good adhesion.
Loose debris and dirt as well as all separating substances should be removed completely.

6.4.2 Old concrete or screed:

Remove oil and grease residues carefully.
Never use solvents, as they facilitate the penetration of oil into concrete. In the case serious contaminations, cleaning by means of flame-blasting and subsequent milling is.
A mechanical treatment scabbling and / or shot-blasting is always necessary to roughen the surface.
All debris and dirt should be removed completely.
Grinding the substrate with diamond grinders or single-disc grinding machines is an impermissible form of surface pre-treatment and should only be confined to the edge zones.

Floor bases and screeds that are to receive the FLOWFRESH Floor should be of sufficient strength. This must be checked with an adhesion test (i.e. a pull-off test). A minimum tensile strength of 1.5 N/mm^2 is required with a cohesive break in the substrate. The number of measurements to be carried out depends on the surface area to be revised.

Waterproofing additives should not be included in screeds unless their compatibility with FLOWFRESH system has previously been tested.
Any laitance present on the concrete surface must be removed by mechanical methods (see above) before the FLOWFRESH system is applied, otherwise it may lead to adhesion problems and subsequent delamination will occur.
Existing concretes / screeds may be contaminated with mould-release oils, chemical spillage or previously applied coatings.
In order to ensure proper adhesion, contaminated concrete / screed must be pre-treated mechanically before the FLOWFRESH system is applied.

6.4.3 After pre-treatment of the substrate:

- All installation parts, drains (drains, slotted channels, etc.) and walls are equipped with corresponding measures against contamination. Dried residues of a FLOWFRESH system on tiles or stainless steel can only be removed mechanically.
- Check the tools to be used for cleanliness.
- Adjust the pin or screed blade to the required thickness. Control the layer thickness when applying the first m^2 of the material and adjust the pin-rake if necessary. High fluid materials need higher pins than the required thickness. Do this control also from time to time to check if the layer thickness is still good (wear of the pins).
- Ensure that the spiked roller is dry and free from adhering dirt.
- Use clean spiked shoes with fixed nails or studs.
- Remove tapes as soon as possible after the application of the FLOWFRESH system, because after setting of the flooring systems removing tapes will be very time-consuming.
- During transportation of the individual mixtures, it is an advantage to cover the walkways with PVC film.
- If there are any door openings, check that the doors still have enough "slack" between the bottom of the door and the floor system. Pay attention to brushes and / or rubber bands on the door bottom.

Check whether existing dewatering installations are cavity-free under grouted with a hydraulic expansion mortar.

6.5 Treatment of details

6.5.1 Expansion and construction joints:

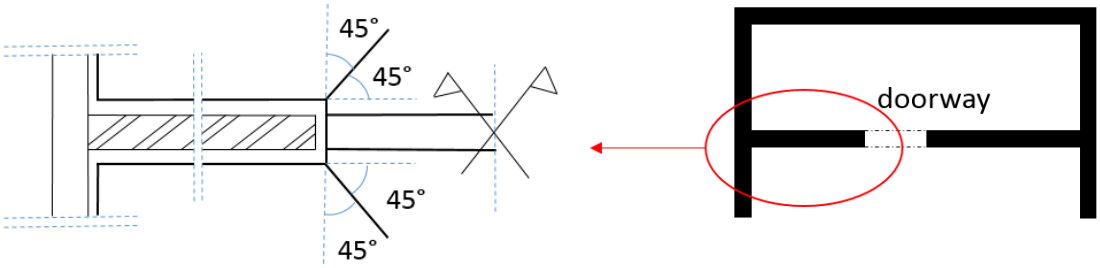
Expansion joints and construction joints in the support are marked at the ends in the wall area, regrooved and grouted with the selected FLOWFRESH sealant after the floor surface has cured.

Please also refer to the figures under section 7.1 "Construction and expansion joints" with possible solutions depending on the needed expansion capacity, as well as the installation of the reinforcement profiles in these areas.
If there are no joints in the floor surface to be overcoated, it is not necessary to cut the joints afterwards. FLOWFRESH systems do not require additional joints themselves.

6.5.2 Anchorage grooves

Anchorage grooves are needed wherever there is a free edge of the FLOWFRESH system. For example, around the perimeter, along channels (f.e. drains and gutters) or expansion joints, at doorways and around machinery plinths and columns, extra anchorage must be provided to help distribute mechanical and thermal stresses arising from possible shrinkage and
temperature changes. The use of anchorage grooves as a part of details build-up is illustrated in chapter 7).
This is achieved by forming or cutting a groove in the concrete, with a **depth and width about twice the thickness** at which FLOWFRESH Flooring will be applied, using a diamond-cutting wheel.
When the substrate is freshly cast concrete, the grooves can also be made by putting wooden strips, covered with polyethylene film, into the wet concrete.
Anchorage grooves are needed because they take away the thermal and mechanical tension as well as the tensions due to shrinkage, that can occur during curing of the FLOWFRESH floor.
The use of anchorage grooves does dependent on the area. For large areas, the anchorage grooves must be installed in a grid of 90-110 m^2.

The figure below (plan) shows the principle of the anchorage grooves at a doorway. The doorway side wall is presented as hatched and the anchorage grooves are the thick lines. The principle is similar for both sides of the doorway



In the floor at doorways the anchorage grooves at the contours of the 2 neighbouring rooms/areas should be connected with 2 parallel anchorage grooves in line with the outer sides of the wall. Especially when the side wall is fixed (connected with reinforcement) to the floor support structure an extra anchorage groove is recommended at each contour anchorage groove outer corner, cut under 45 degrees with counter groove extends and with a **minimum length of twice the width of the side wall.**
Treating/filling the anchorage grooves can happen in 2 steps:
When using a Flowfresh Primer, the anchorage grooves are treated with primer. When started applying the wearing layer and when a smooth surface is required, they are filled with the material and afterwards, wet in wet, the wearing layer is applied over it.
When using a Scratchcoat, the anchorage groves are filled for 2/4 with Scratchcoat. When started applying the wearing layer and when a smooth surface is required, they are filled with the material and afterwards, wet in wet, the wearing layer is applied over it.
For SR systems, they are filled during application of the wearing layer.

6.5.3 Coves

Floor-wall connections will usually be formed in the FLOWFRESH Cove.
In the case of screeds on a separating layer that have to be coated, hollow profiles made of stainless steel should be used to ensure decoupling of the coves from the wall area. For bonded screeds, stainless steel profiles are recommended. Hollows or fillets can also be made of fine concrete with the same flatness as the screed and subsequently be covered with FLOWFRESH Cove.
Coves are sealed with FLOWFRESH Coating Matt or FLOWFRESH Cove Coating. They close the fine-pored surface of the cove, facilitates cleaning, and ensures a more uniform colour of the floor / wall surface.

6.5.4 Areas around ovens

Floor areas subject to high temperatures and thermal cycling need special attention. See also 10.15 Flowfresh temperature resistance. The oven area should be isolated from the surrounding floor by an expansion joint.
Where hot steel-wheeled trolleys are removed from ovens onto a FLOWFRESH flooring, it is recommended that FLOWFRESH be used in conjunction with dairy grids.

6.5.5 Cold rooms

The area within a cold room should be isolated from the surrounding floor by an expansion joint. Within a cold room, ideally the slab should be as square as possible, i.e. an aspect ratio near 1:1. The bay joints must be carried through the FLOWFRESH Flooring. In cases where the concrete floor is not laid on to an insulating layer, additional movement joints may be necessary. Special considerations should be given to areas where heater pads are used at access areas to cold rooms etc. Cold rooms often incorporate a heater pad at accesses and these units must be isolated from the floor surface either side of the access. It is recommended that an additional 1 mm thickness of the floor coating be applied on the heater pad for improved impact resistance.
When bringing cold rooms down to operating temperature the change in temperature must not exceed 5˚C per 24 hours.

6.5.6 Day and bay joints

Day joints are formed if the surface is applied in pieces or at resumption of work. These joints are made in the substrate and are covered with FLOWFRESH.
Remark: To obtain optimal results it is necessary to plan and mark out bay lines taking into consideration the following points:

- Day and bay joints show in the finished floor. Therefore it should be taken in consideration to apply the floor in such a manner that these joints are hidden by equipment to be installed, or similar. It can be useful to discuss the presence of these joints with the client before the start of the application.
- In order to reduce the trowelling and avoid inferior surface appearance, it is advised to keep the bay widths not wider than 6 meter for the application of FLOWFRESH system.
- The bay lengths are determined by the area that can be applied between breaks. This depends on a number of circumstances, like mixing equipment, temperature of the substrate, number of applicators etc. In order to obtain superior surface appearance, bay lines have to be absolutely straight. Wooden strips covered with polyethylene film can be used for this purpose. These strips should be slightly thicker than the thickness of the FLOWFRESH Floor.
- Field boundaries should be re-cut with a diamond disc before processing to ensure a perfect appearance of the contact surfaces after curing.

6.6 Installation rate guidelines:

The recommended application team to obtain the most efficient installation rate exists out of 4-5 persons site personnel.

For the interpretation of the guidelines listed in the table below, the values are:

- indicative and should rather be seen as a relative comparison, between the different systems, as the laying performance depends on the local conditions (supports, machine bases, processing of dewatering, etc.).

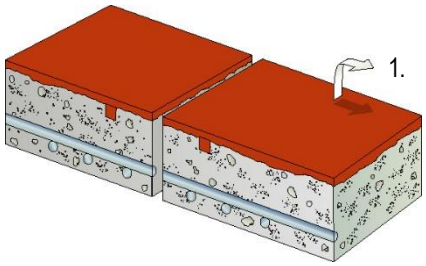
- based on the experience of the producer field assistance engineers and are an average for a normal construction site conditions (20°C, 40-80 % relative humidity).
- system values, but do not include the pre-treatment of the support.

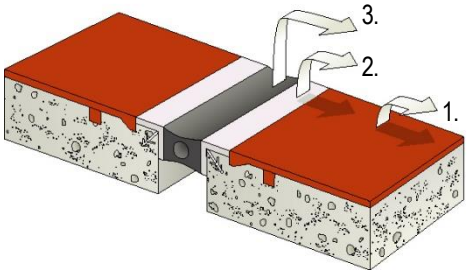
System	Rate [m²/day/4-5 trained persons]
FLOWFRESH SL (Scratchcoat)	≈1000
FLOWFRESH SL / MF	≈500
FLOWFRESH HD	≈400
FLOWFRESH SR / SRQ	≈300
FLOWFRESH RT	≈400
FLOWFRESH HF/LT	≈400
FLOWFRESH MORTAR	≈300
FLOWFRESH HF	≈250

7. TREATMENT OF DETAILS

7.1 Construction and expansion joints

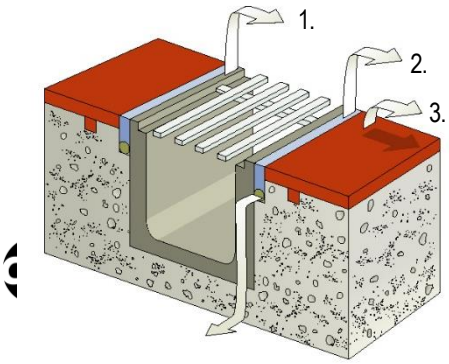
1. FLOWFRESH System
2. Metal expansion joint
3. Joint sealant compound or rubber part of dilatation joint (i.e. Flowfresh sealant, Flowflex or SP540)

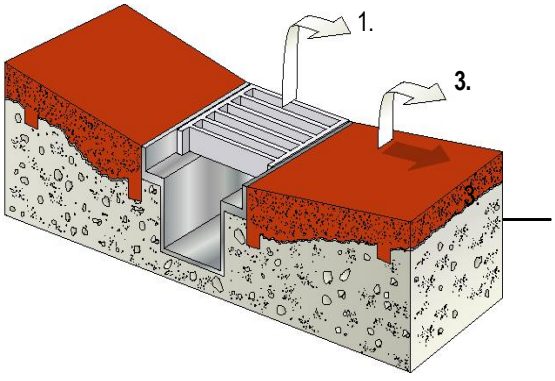




7.2 Connections to gutters and drains

1. Drainage
2. Sealant SP540/Flowflex/Flowfresh sealant
3. FLOWFRESH System
4. Backing rod





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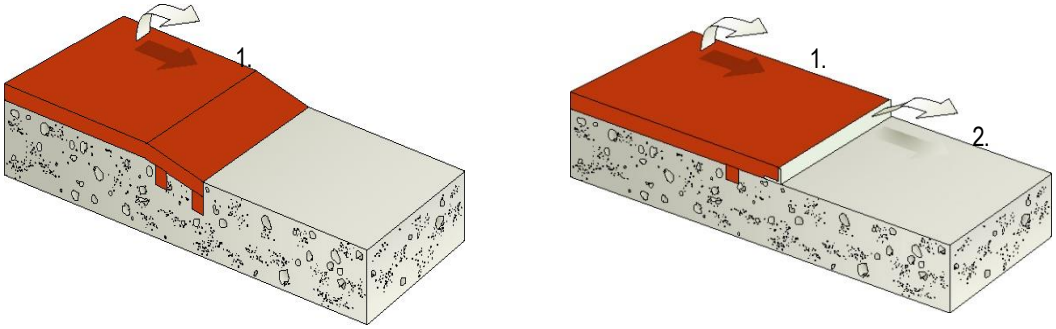
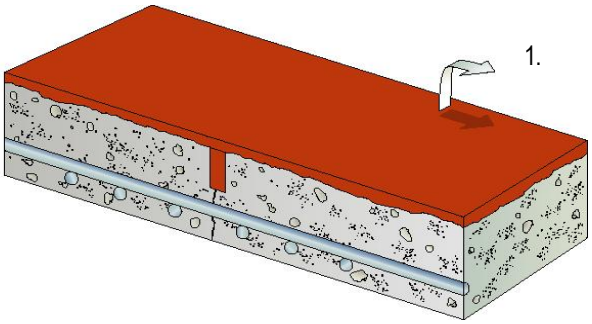
7.3 Connection to other floors

1. FLOWFRESH System
2. Metal profile



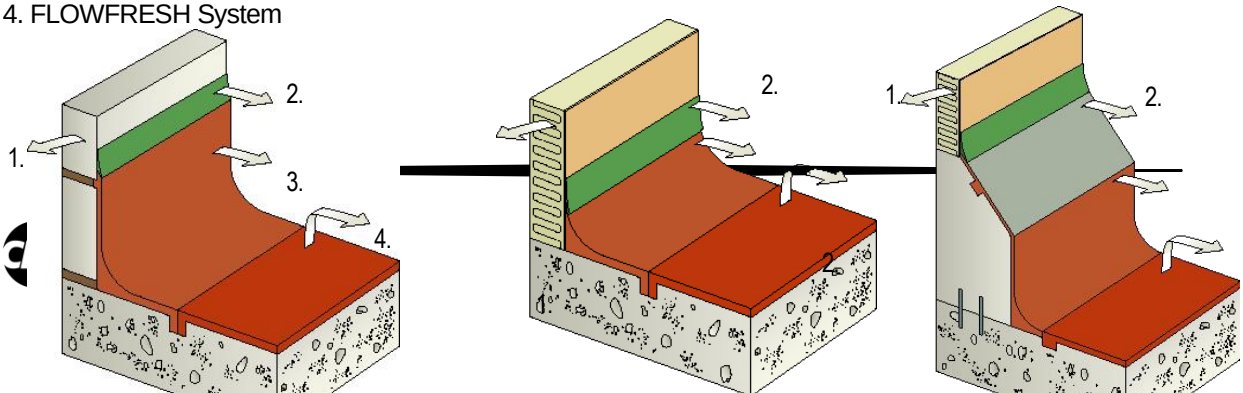
7.4 Shrinkage Joint / Acoustic joint

1. FLOWFRESH System



7.5 Coves

1. Block work – wall (left picture below) / Insulation panel (middle and right picture below)
2. Metal stop bead (optional)
3. FLOWFRESH Cove
4. FLOWFRESH System

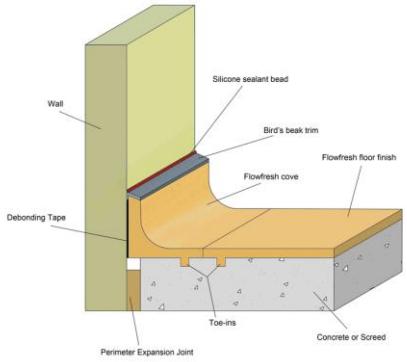


1. 3.

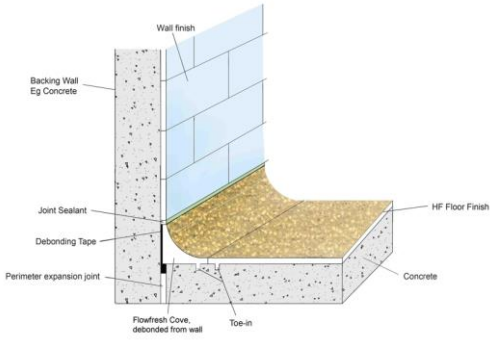
4. 3.

4.

Flowfresh cove debonded with bird's break trim



Flowfresh Cove debonded from wall



Remark:

Existing joints in the substrate should be marked before application of the FLOWFRESH Floor or System and sawn off / trimmed with a joint cutting machine after the coating hardens. The joints should be filled in with a polyurethane mastic such as Sealant SP540, Flowfresh Sealant or Flowflex or equivalent.

8. MIXING

Remark:
Ensure that the components are at a temperature in the range of 18°C and 25°C.

8.1 Equipment

The following mixing tools has been found suitable for FLOWFRESH systems:

Mixer	FLOWFRESH Product
Forced mixer with dispersing disc	FLOWFRESH Primer, Coating Matt, Cove coating
Collomatic Duo	FLOWFRESH SL, MF, HD, ESD SL
Collomatic XM 2-650	FLOWFRESH RT, HF/LT, Mortar, HF, Cove
Beba B53	FLOWFRESH RT, HF/LT, Mortar, HF, Cove

Other mixers should be tested for efficiency before use. Hand mixers must not be used except for FLOWFRESH Primer, Coating Matt or Cove Coating.

8.2 Quantities:

Normal mixes consist of the following components:
- Part A: a polyol emulsion
- Part B: a polyisocyanate curing agent
- Part C: fillers, additives
- Part D: pigment pack

Double quantities can be used. However, careful preparation and planning is required to ensure large mixes are applied quickly and uniformly.
Mixes larger than 2 units should not be undertaken.
Keep the mix size constant. Changing from 1 unit mix to 2 unit mix or vice versa could give colour differences.
Partial quantities cannot be used.

8.3 Mixing procedures:

Position the mixer as near to the working area as possible. Care should be taken to ensure that the individual components are arranged at the mixing location in such a way that a sensible circulation results and that unnecessary distances have to be covered.

During the mixing process the components will become warm. This is advantageous when the components are cold, as they will warm to a more correct temperature on mixing. However, when the stored components are already warm, overmixing must be avoided as the chemical curing reaction will proceed at too fast a rate, leading to decreased working time when trowelling.
Use a timer, allowing to mix every batch for the same period of time.

Part A and B are poured into the clean mixing vessel. Make sure that packaging's are completely emptied before mixing. Mix until a homogeneous dispersion is formed. As a rule, it should be stirred for 30-45 s. The wall and floor areas of the mixing vessel must also be incorporated. Pay attention to the emptying of the mixing vessel.

To the dispersion, Part D (= pigment pack) and subsequently half of Part C (= powder component) is added and for 60 s mixed, until it is lump-free and homogeneous.
Ensure that the C component is thoroughly made wet with resin. Then repeat by adding the other half of the C component and the mixture is mixed for 90-120 s. The mixing time may vary slightly depending on ambient and material temperature. When the mix is homogeneous with no lumps and the additives are thoroughly mixed, bring the material to the workplace without delay.

REMARK ESD SL

Mixing process of Flowfresh ESD SL is slightly different. Part D (metal fibres) is poured in the liquid Part A between 1 and 24 hours in advance to avoid fibre agglomerate during application. Afterwards component D and A are mixed into the pail for 2 minutes. When the conductive grains are transformed in fibres and the liquid resin mix is homogeneous with these fibres, then the component B is added. Mixing for 60 s until the mix is homogeneous. Rest of the mixing process follows the standard mixing procedure.

8.4 Final mixing time reference in function of temperature:

The table below should be used as a guideline.

Temperature (°C)	Mixing time after addition of component C (min)
10 – 12	6
13 – 15	5
16 – 19	4
20 – 22	3
23 – 28	2

8.5 Avoiding mix failures:

- It is important that the mixed FLOWFRESH Products are placed on the floor quickly and that mixing of the subsequent batch starts straight away. This ensures good uniformity between mixes.

  To ensure the time between mixes is kept to a minimum the mixer should have two mixing buckets that are used alternately.

- Incorrect mixing, i.e. either too short or too long a mixing time may cause:

  - Poor aggregate dispersion
  - Poor flow
  - Colour differences
  - Excessive trowel marking
  - Pimples or blisters in the cured floor
  - Surface unevenness

- Spills of components on to the substrate to be coated must be avoided as this may cause blisters during the subsequent application of FLOWFRESH in this area. Remove spills immediately.
- The mixing staff should not be allowed to walk over the prepared surface, thus minimizing the risk of spreading spilled liquid components from the mixing area to the surface. Transport routes are to be covered with PVC film.
- Always, drain all liquid from the Part A and Part B component cans to ensure that the correct formulation ratios are used.
- Scrape out the mixing vessel and paddles between each mix and thoroughly clean them whenever mixing ceases for 5 minutes or more. Solvents such as xylene may be used for cleaning. Care must be taken to ensure solvents do not spill into components, mixes or on

to coated floors. Solvents must be used strictly in accordance with the manufacturer's instructions. In order to avoid inhalation poisoning, care must be taken to ensure adequate ventilation, and always with extreme care. The use of solvents on the construction site should always be reduced to the necessary minimum.

8.6 Avoiding colour variations:

- The components should be used in numerical sequence of the batch numbers on the containers.
- For adjacent areas products from the same batch should be used
- Always use a constant mixing time (except where significant temperature variations occur)
- For mixing the FLOWFRESH Primer and Topcoat always use a dispersion disc
- Keep the mix size constant, i.e. always mix single or double mixtures
- Ensure sufficient mixing time at low temperatures

9. FLOWFRESH PRODUCT RANGE

This chapter summarizes the different FLOWFRESH Products or layers and their composition, preparation, application and coverage. The different FLOWFRESH Systems composed of various FLOWFRESH Products and the product quantities to use per layer are presented in chapter 10. The Systems Build-Up information in chapter 10 is also available as separate System Build Sheets (SBUs).

Remark:

The previous chapters of this manual contain very important preparation or processing boundary conditions and guidelines for the application of the FLOWFRESH Products. They must be taken into account before using the following products, as compliance or non-compliance will respectively lead to application success or failure.

9.1 FLOWFRESH Primer:

What:
A pre-dosed, 3-component curing material based on hybrid polyurethane concrete suitable as primer on concrete or screed for horizontal and vertical applications before applying FLOWFRESH Products.

Packaging:
Flowfresh primer is available in the following packaging;

Product:	Mass (kg)
Flowfresh/Flowcrete part A	2,5

Flowfresh/Flowcrete STD part B	2,6
Flowfresh Primer part C	1,4
Total:	6,5

A warmer climate grade Flowfresh/Flowcrete TRP part B is available and optimised for use in application temperatures 20 - 40°C (STD is for 10 - 30°C). Please ensure that the correct grade of hardener is used for the application conditions**.**

Coverage:
For 6.5 kg unit approximately 13 - 21 m² per unit (0.3 - 0.5 kg/m²), depending on the roughness, porosity and temperature of the surface to be coated and product loss during application.

Usage:
Prepared concrete substrates are to varying degrees porous. If FLOWFRESH Products are applied directly to prepared highly porous concrete, air displaced from the concrete can rise and cause defects in the finished floor. To avoid such problems, we recommend the use of FLOWFRESH Primer or FLOWFRESH Scratchcoat (see following point 9.2). In addition, priming facilitates the subsequent application of FLOWFRESH Systems.
Note: FLOWFRESH Primer is also suitable as a tack primer (wet in wet) for vertical surfaces. See application Flowfresh Cove System.

Application:
Before applying the product the conditions should be conform the criteria stated in the previous chapters. The substrate should be prepared as described in chapter 6. The mixing process is similar for all products and is described in the previous chapter 8.
When the mix is homogeneous with no lumps, bring the material to the workplace without delay. Apply FLOWFRESH Primer with a steel hand trowel or medium pile roller.

The material is immediately spread out with a rubber squeegee, medium pile roller or steel hand trowel with a consumption of 0.3 - 0.5 kg/m². Distribute the primer to ensure even spreading and no ponding. Ensure that existing anchoring grooves are not filled with primer (foaming). Broadcast the still moist primer with quartz sand. When applying FLOWFRESH RT, Mortar, HF or HF/LT sprinkle in the still wet prime coat quartz size 1.0 – 2.0 mm at ± 500 g/m² to improve the adhesion and application of mortars. When applying FLOWFRESH MF and HD, sprinkle in the still wet prime coat quartz size 0.4 – 0.8 mm at ± 150 g/m² to improve the adhesion and application. After the FLOWFRESH Primer is fully cured, (dry to the touch), apply the FLOWFRESH Product.

Remarks:
The ideal ambient and application temperatures range is between +15°C and +25°C.
FLOWFRESH Primer should be allowed to cure for minimum 15 hours and maximum 48 hours before applying the FLOWFRESH Products. At temperatures below 15°C and / or if the relative humidity is < 40 %, these periods must be extended.
FLOWFRESH Primer must be tack-free cured (dry to the touch) before overcoating. Too early overcoating can lead to blistering. If the primer has not been overcoated within 48 hours, it must be mechanically treated or removed and a new order of FLOWFRESH Primer has to be applied.

9.2 FLOWFRESH SL (Scratchcoat):

What:
A pre-dosed, 3-component curing material based on hybrid polyurethane concrete suitable as scratchcoat on concrete or screed..
FLOWFRESH SL (Scratchcoat) is a self-levelling resin designed to seal the substrate and to fill irregularities to ensure a smooth and even surface before applying the following system layers.

Packaging:
Flowfresh SL (Scratchcoat) is available in 2 different packaging sizes.

Product:	Mass (kg)
Flowfresh/Flowcrete part A	2,5 / 2x 2,5
Flowfresh/Flowcrete STD part B	2,6 / 2x 2,6
Flowfresh SL part C	12 / 24
Total	17,1 / 34,2

A warmer climate grade Flowfresh/Flowcrete TRP part B is available and optimised for use in application temperatures 20 - 40°C (STD is for 10 - 30°C). Please ensure that the correct grade of hardener is used for the application conditions**.**

Coverage:
For 17.1 kg unit approximately 8.5 – 11.4 m² per unit (1.5 – 2.0 kg/m²) depending on the roughness, porosity and temperature of the surface to be coated and product loss during application.

Usage:
Prepared concrete substrates are to varying degrees porous. If FLOWFRESH Systems are applied directly to prepared highly porous concrete, air displaced from the concrete can rise and cause defects in the finished floor. To avoid such problems we recommend the use of FLOWFRESH Primer (see 9.1) or FLOWFRESH Scratchcoat. In addition,the use of a Scratchcoat facilitates the subsequent application of FLOWFRESH Systems

Application:
Before applying the product the conditions should be conform the criteria stated in the previous chapters. The substrate should be prepared as described in chapter 6. The mixing process is similar for all products and is described in the previous chapter 8.
When the mix is homogeneous with no lumps, bring the material to the workplace without delay. The material must be immediately treated with a steel hand trowel or steel floor scraper. During the application of the Scratchcoat, existing anchorage grooves are sealed with this product (for more details see also section 6.5.2).

Remarks:
The ideal ambient and application temperatures range is between +15°C and +25°C.
FLOWFRESH Scratchcoat should be allowed to cure for minimum 16 hours and maximum 24 hours before applying the FLOWFRESH Products. At temperatures below 15°C and / or if the relative humidity is < 40 %, these periods must be extended.

FLOWFRESH Scratchcoat must be tack-free cured (dry to the touch) before overcoating. Too early overcoating can lead to blistering. If the Scratchcoat has not been overcoated within 24 hours, it must be mechanically treated or removed and a new order of FLOWFRESH Scratchcoat has to be applied.

9.3 FLOWFRESH SL

What:
FLOWFRESH SL is pre-dosed, 4-component curing material based on hybrid polyurethane concrete suitable as hard-wearing floor finish on concrete or screed.
Flowfresh SL is used a light-duty, hard-wearing floor finish with exceptional chemical resistance and a smooth surface. With the use of broadcasted aggregates and a sealer or topcoat high antiskid values can be obtained, and the system is called Flowfresh SR 12, 20 or 24. It is designed to be used in the food industry, especially when thermal, chemical and slip resistance in dry or wet conditions are required.

Packaging:
Flowfresh SL is available in 2 different packaging sizes.

Product:	Mass (kg)
Flowfresh/Flowcrete part A	2,5 / 2x 2,5
Flowfresh/Flowcrete STD part B	2,6 / 2x 2,6
Flowfresh SL part C	12 / 24
Flowfresh/Flowcrete “colour” part D	0,5 or 1
Total	17,6 (18,1) / 35.2 (36,2)

The standard colours (Dark Blue, Dark Green, Dark Grey, Mustard, Ochre, Red) are supplied in 0,5 kg pigment packs but Mid Grey and Cream in 0,5 or 1 kg pigment packs.
Only Cream requires the use of a double pigment quantity compared with the other colours.

A warmer climate grade Flowfresh/Flowcrete TRP part B is available and optimised for use in application temperatures 20 - 40°C (STD is for 10 - 30°C). Please ensure that the correct grade of hardener is used for the application conditions.

Coverage:

For 17,6 kg unit approximately 4,6 m² per unit (3,8 kg/m² for 2 mm thickness) depending on the roughness, porosity and temperature of the surface to be coated and product loss during application.
Layer Thickness: minimum 2 mm - maximum 4 mm

Application:
Before applying the product the conditions should be conform the criteria stated in the previous chapters. The substrate should be prepared as described in chapter 6. The mixing process is similar for all products and is described in the previous chapter 8.
When the mix is homogeneous with no lumps, bring the material to the workplace without delay. Spread the mix over the substrate using a pin rake (notched squeegee or steel hand

trowel is also possible) with the pins set to the desired thickness, each mix being well connected to the previous one. Corners, edges can be done with a steel trowel. To obtain a smoother surface and remove trowel marks the upper surface of the Flowfresh SL must be spike rolled.

Remarks:
The ideal ambient and application temperatures range is between +15°C and +25°C.

Flowfresh SL antiskid finish (Flowfresh SR):
For an antiskid finish, broadcast the complete non cured Flowfresh SL surface with quartz. The size of the quartz will determine the slip resistance value of the system and the SR type. The minimum amount per m² = 3,5 kg/m². After curing, remove the excess quartz with a brush and apply Flowfresh Coating Matt with a roller at a rate of 0,6 to 1,0 kg/m² depending from the used quartz size.

9.4 FLOWFRESH MF

What:
FLOWFRESH MF is a pre-dosed, 4-component curing material based on hybrid polyurethane concrete suitable as hard-wearing floor finish in a thickness of 4 mm on concrete or screed.
Flowfresh MF is used a medium-duty, hard-wearing floor finish with good thermal, mechanical and chemical resistance and a smooth surface.

Packaging:
Flowfresh MF is available in the following packaging:

Product:	Mass (kg)
Flowfresh/Flowcrete part A	2,5
Flowfresh/Flowcrete STD part B	2,6
Flowfresh MF part C	15
Flowfresh/Flowcrete “colour” part D	0,5 or 1
Total	20,6 / 21,1

The standard colours (Dark Blue, Dark Green, Dark Grey, Mustard, Ochre, Red) are supplied in 0,5 kg pigment packs but Mid Grey and Cream in 0,5 or 1 kg pigment packs.
Only Cream requires the use of a double pigment quantity compared with the other colours.

A warmer climate grade Flowfresh/Flowcrete TRP part B is available and optimised for use in application temperatures 20 - 40°C (STD is for 10 - 30°C). Please ensure that the correct grade of hardener is used for the application conditions.

Coverage:

For 20,6 kg unit approximately 2,6 m² per unit (± 8 kg/m² for 4 mm thickness) depending on the roughness, porosity and temperature of the surface to be coated and product loss during application.
Layer Thickness: minimum 4 mm - maximum 6 mm

Application:
Before applying the product the conditions should be conform the criteria stated in the previous chapters. The substrate should be prepared as described in chapter 6. The mixing process is similar for all products and is described in the previous chapter 8.
When the mix is homogeneous with no lumps, bring the material to the workplace without delay. Spread the mix over the substrate using a pin rake (notched squeegee or steel hand trowel is also possible) with the pins set to the desired thickness, each mix being well connected to the previous one. Corners, edges can be done with a steel hand trowel. To obtain a smoother surface and remove trowel marks the upper surface of the Flowfresh MF must be spike rolled.

Remarks:
The ideal ambient and application temperatures range is between +15°C and +25°C.

Flowfresh MF antiskid finish (Flowfresh SR):
For an antiskid finish, broadcast the complete non cured Flowfresh MF surface with quartz. The size of the quartz will determine the slip resistance value of the system and the SR type. The minimum amount per m² = 3,5 kg/m². After curing, remove the excess quartz with a brush and apply Flowfresh Coating Matt with a roller at a rate of 0,6 to 1,0 kg/m² depending from the used quartz size

9.5 FLOWFRESH HD

What:
FLOWFRESH HD is a pre-dosed, 4-component curing material based on hybrid polyurethane concrete suitable as hard-wearing floor finish in a thickness of 5-6 mm on concrete or screed. Flowfresh HD is used as heavy-duty, hard-wearing floor finish with high thermal, mechanical and chemical resistance. With the use of broadcasted aggregates and a sealer high antiskid values can be obtained and the system is called Flowfresh SR12, SR20 or SR24. It is designed to be used in the food industry, especially when thermal, chemical and slip resistance in dry or wet conditions are required.

Packaging:
Flowfresh HD is available in the following packaging:.

Product:	Mass (kg)
Flowfresh/Flowcrete part A	2,5
Flowfresh/Flowcrete STD part B	2,6
Flowfresh HD part C	19,6

Flowfresh/Flowcrete “colour” part D	0,5 or 1
Total	25,2 / 25,7

The standard colours (Dark Blue, Dark Green, Dark Grey, Mustard, Ochre, Red) are supplied in 0,5 kg pigment packs but Mid Grey and Cream in 0,5 or 1 kg pigment packs.
Only Cream requires the use of a double pigment quantity compared with the other colours.

A warmer climate grade Flowfresh/Flowcrete TRP part B is available and optimised for use in application temperatures 20 - 40°C (STD is for 10 - 30°C). Please ensure that the correct grade of hardener is used for the application conditions**.**

Coverage
For 25**,**2 kg unit approximately 2**,**5 m² per unit (± 10 kg/m² for 5 mm thickness) depending on the roughness, porosity and temperature of the surface to be coated and product loss during application.
Layer Thickness: minimum 5 mm – maximum 6 mm

Application:
Before applying the product the conditions should be conform the criteria stated in the previous chapters. The substrate should be prepared as described in chapter 6. The mixing process is similar for all products and is described in the previous chapter 8.
When the mix is homogeneous with no lumps, bring the material to the workplace without delay. Spread the mix over the substrate using a pin rake, (steel hand trowel is also possible) with the pins set to the desired thickness, each mix being well connected to the previous one. Corners, edges can be done with a steel trowel. To obtain a smoother surface and remove trowel marks the upper surface of the Flowfresh HD must be spike rolled.

Remarks:
The ideal ambient and application temperatures range is between +15°C and +25°C.

Flowfresh HD antiskid finish (Flowfresh SR):
For an antiskid finish, broadcast the complete non cured Flowfresh HD surface with quartz. The size of the quartz will determine the slip resistance value of the system and the SR type. The minimum amount per m² = 4 kg/m². After curing, remove the excess quartz with a brush and apply Flowfresh Coating Matt with a roller at a rate of 0,6 to 1,0 kg/m² depending from the used quartz size.

9.6 FLOWFRESH RT

What:
Flowfresh RT is a predosed, 4 component curing material based on hybrid polyurethane concrete suitable as hard-wearing floor finish in a thickness of 6 mm till 9 mm on concrete or screed.
Flowfresh RT is used as heavy-duty, hard-wearing floor finish with hight thermal, mechanical, chemical resistance, textured surface and decorative fleck. With the use of broadcasted aggregates and a sealer high antiskid values can be obtained and the system is called Flowfresh SR 12, 20 or 24. It is designed to be used in the food industry, especially
when thermal, chemical and slip resistance in dry or wet conditions are required.

Packaging:
Flowfresh RT is available in the following package:

Product:	Mass (kg)
Flowfresh/Flowcrete part A	2,5
Flowfresh/Flowcrete STD part B	2,6
Flowfresh RT part C	20,4
Flowfresh/Flowcrete “colour” part D	0,5 or 1
Total	26,0 / 26,5

The standard colours (Dark Blue, Dark Green, Dark Grey, Mustard, Ochre, Red) are supplied in 0,5 kg pigment packs but Mid Grey and Cream in 0,5 or 1 kg pigment packs.
Only Cream requires the use of a double pigment quantity compared with the other colours.

A warmer climate grade Flowfresh/Flowcrete TRP part B is available and optimised for use in application temperatures 20 - 40°C (STD is for 10 - 30°C). Please ensure that the correct grade of hardener is used for the application conditions**.**

Coverage:
For 26,0 kg unit approximately 2 m² per unit (± 12,6 kg/m² for 6 mm thickness) depending on the roughness, porosity and temperature of the surface to be coated and product loss during application.
Layer Thickness: minimum 6 mm - maximum 9 mm

Application:
Before applying the product, the conditions should be conform the criteria stated in the previous chapters. The substrate should be prepared as described in chapter 7. The mixing process is similar for all products and is described in the previous chapter 8.
When the mix is homogeneous with no lumps, bring the material to the workplace without delay. Spread the mix over the substrate using a pin rake (screed box or steel hand trowel are also possible) with the pins set to the desired thickness, each mix being well connected to the previous one. Corners, edges can be done with a trowel. To obtain a smoother surface and remove trowel marks the upper surface of the Flowfresh RT must be lightly spike rolled or finished with a structure roller.

Remarks:
The ideal ambient and application temperatures range is between +15°C and +25°C.

<u>Flowfresh RT antiskid finish (Flowfresh SR):</u>
For an antiskid finish, broadcast the complete non cured Flowfresh RT surface with quartz. The size of the quartz will determine the slip resistance value of the system and the SR type. The minimum amount per m² = 2,5 kg/m². After curing, remove the excess quartz with a brush and apply Flowfresh Coating Matt with a roller at a rate of 0,6 to 1,0 kg/m² depending from the used quartz size**.**

9.7 FLOWFRESH Mortar

What:
FLOWFRESH Mortar is a predosed, 4 component curing material based on hybrid polyurethane concrete suitable as hard-wearing floor finish in a thickness of 6 mm till 9 mm on concrete or screed.
Flowfresh Mortar has excellent thermal, mechanical and chemical resistance. Flowfresh Mortar is designed to be used particularly in the food Industry (dairies, cooking areas), especially when high chemical resistance and resistance to organic acids is required and for industrial floors that are subjected to hot water and steam cleaning.
With the use of broadcasted aggregates and a sealer or topcoat high antiskid values can be obtained, and the system is called Flowfresh SR 12, 20 or 24. It is designed to be used in the food industry, especially when thermal, chemical and slip resistance in dry or wet conditions are required.

Packaging:
Flowfresh Mortar is available in the following package:

Product:	Mass (kg)
Flowfresh/Flowcrete part A	2,5
Flowfresh/Flowcrete STD part B	2,6
Flowfresh Mortar part C	26,4
Flowfresh/Flowcrete “colour” part D	0,5 or 1
Total	32,0 / 32,5

The standard colours (Dark Blue, Dark Green, Dark Grey, Mustard, Ochre, Red) are supplied in 0,5 kg pigment packs but Mid Grey and Cream in 0,5 or 1 kg pigment packs.
Only Cream requires the use of a double pigment quantity compared with the other colours.

A warmer climate grade Flowfresh/Flowcrete TRP part B is available and optimised for use in application temperatures 20 - 40°C (STD is for 10 - 30°C). Please ensure that the correct grade of hardener is used for the application conditions**.**

Coverage**:**
For 32**,**0 kg unit approximately 2,4 m^2 per unit (± 13**,**2 kg/m^2 for 6 mm thickness) depending on the roughness, porosity and temperature of the surface to be coated and product loss during application.
Layer Thickness: minimum 6 mm - maximum 9 mm

Application:
Before applying the product, the conditions should be conform the criteria stated in the previous chapters. The substrate should be prepared as described in chapter 6. The mixing process is similar for all products and is described in the previous chapter 8.
When the mix is homogeneous with no lumps, bring the material to the workplace without delay. The material is levelled and compacted with a steel hand trowel or screed box; each mix being well connected to the previous one. To obtain a smoother surface and remove

trowel marks the upper surface of the mortar can be lightly spike rolled or finished with a structure roller.

Flowfresh Mortar antiskid finish (Flowfresh SR):
For an antiskid finish, broadcast the complete non cured Flowfresh Mortar surface with quartz. The size of the quartz will determine the slip resistance value of the system and the SR type. The minimum amount per m² = 2 kg/m². After curing, remove the excess quartz with a brush and apply Flowfresh Coating Matt with a roller at a rate of 0,6 to 1,0 kg/m² depending from the used quartz size.

Remarks:
The ideal ambient and application temperatures range is between +15°C and +25°C.

9.8 FLOWFRESH HF/LT

What:
Flowfresh HF/LT is a predosed, 4 component curing material based on hybrid polyurethane concrete suitable as hard-wearing floor finish in a thickness of 6 mm till 9 mm on concrete or screed with improved fluidity at low temperatures.
Flowfresh HF/LT is used as a heavy-duty, hard-wearing floor finish with high mechanical and thermal and exceptional chemical resistance, textured surface and decorative fleck. Flowfresh HF/LT is designed to be used particularly in the food Industry (dairies, cooking areas), especially when high chemical resistance and resistance to organic acids is required, and for industrial floors that are subjected to hot water and steam cleaning.

Packaging:
Flowfresh HF/LT is available in the following package:

Product:	Mass (kg)
Flowfresh HF/LT part A	2,6
Flowfresh HF/LT part B	2,8
Flowfresh HF/LT part C	25,0
Flowfresh/Flowcrete “colour” part D	0,5 or 1
Total	30,9 /31,4

The standard colours (Dark Blue, Dark Green, Dark Grey, Mustard, Ochre, Red) are supplied in 0,5 kg pigment packs but Mid Grey and Cream in 0,5 or 1 kg pigment packs.
Only Cream requires the use of a double pigment quantity compared with the other colours.

Coverage**:**
For 30**,**9 kg unit approximately 2,4 m² per unit (± 12**,**6 kg/m² for 6 mm thickness) depending on the roughness, porosity and temperature of the surface to be coated and product loss during application.
Layer Thickness: minimum 6 mm - maximum 9 mm

Application:
Before applying the product the conditions should be conform the criteria stated in the previous chapters. The substrate should be prepared as described in chapter 6. The mixing process is similar for all products and is described in the previous chapter 8.
When the mix is homogeneous with no lumps, bring the material to the workplace without delay. The material is levelled and compacted with a steel hand trowel or screed box; each mix being well connected to the previous one. To obtain a smoother surface and remove trowel marks the upper surface of the HF/LT can be lightly spike rolled or finished with a structure roller..

Remarks:
The ideal ambient and application temperatures range is between +15°C and +25°C.

9.9 FLOWFRESH HF

What:
FLOWFRESH HF is a predosed, 4 component curing material based on hybrid polyurethane concrete suitable as hard-wearing floor finish on concrete or screed.
Flowfresh HF is used as a heavy-duty, hard-wearing floor finish with high mechanical, thermal and exceptional chemical resistance, textured surface and decorative fleck. Flowfresh HF is designed to be used particularly in the food Industry (dairies, cooking areas), especially when high chemical resistance and resistance to organic acids is required, and for industrial floors that are subjected to hot water and steam cleaning.

Packaging:
Flowfresh HF is available in the following package:

Product:	Mass (kg)
Flowfresh/Flowcrete part A	2,5
Flowfresh/Flowcrete STD part B	2,6
Flowfresh HF part C	24,1
Flowfresh/Flowcrete “colour” part D	0,5 / 1
Total	29,7 / 30,2

The standard colours (Dark Blue, Dark Green, Dark Grey, Mustard, Ochre, Red) are supplied in 0,5 kg pigment packs but Mid Grey and Cream in 0,5 or 1 kg pigment packs.
Only Cream requires the use of a double pigment quantity compared with the other colours.

A warmer climate grade Flowfresh/Flowcrete TRP part B is available and optimised for use in application temperatures 20 - 40°C (STD is for 10 - 30°C). Please ensure that the correct grade of hardener is used for the application conditions**.**

Coverage:

For 29,7 kg unit approximately 2,3 m² per unit (± 12,6 kg/m² for 6 mm thickness) depending on the roughness, porosity and temperature of the surface to be coated and product loss during application.
Layer Thickness: minimum 6 mm - maximum 9 mm

Application:
Before applying the product, the conditions should be conform the criteria stated in the previous chapters. The substrate should be prepared as described in chapter 6. The mixing process is similar for all products and is described in the previous chapter 8.
When the mix is homogeneous with no lumps, bring the material to the workplace without delay. The material is levelled and compacted with a steel hand trowel or screed box; each mix being well connected to the previous one. To obtain a smoother surface and remove trowel marks the upper surface of the HF can be lightly spike rolled or finished with a structure roller..

Remarks:
The ideal ambient and application temperatures range is between +15°C and +25°C.

9.10 FLOWFRESH Cove

What:
FLOWFRESH Cove is a predosed, 4 component curing material based on hybrid polyurethane concrete suitable as cove for the Flowfresh range of products.
Flowfresh Cove is used as a heavy-duty hard-wearing floor coving finish with exceptional chemical resistance and a smooth surface.

Packaging**:**
Flowfresh Cove is available in the following package:

Product:	Mass (kg)
Flowfresh/Flowcrete part A	1,2
Flowfresh/Flowcrete STD part B	1,25
Flowfresh Cove part C	22,05
Flowfresh/Flowcrete “colour” part D	0,5 or 1
Total	25,0 / 25,5

The standard colours (Dark Blue, Dark Green, Dark Grey, Mustard, Ochre, Red) are supplied in 0,5 kg pigment packs but Mid Grey and Cream in 0,5 or 1 kg pigment packs.
Only Cream requires the use of a double pigment quantity compared with the other colours.

A warmer climate grade Flowfresh/Flowcrete TRP part B is available and optimised for use in application temperatures 20 - 40°C (STD is for 10 - 30°C) . Please ensure that the correct grade of hardener is used for the application conditions**.**

Coverage**:**
Approximately 2,4 linear metres per 10 kg with a radius of 2 cm and 10 cm height or approximately 1 m² with a thickness of 5 mm per 10,5 kg.

Remark: maximum thickness in one layer ± 6 mm

Application:
Before applying the product the conditions should be conform the criteria stated in the previous chapters. The substrate should be prepared as described in chapter 6. The mixing process is similar for all products and is described in the previous chapter 8.
When the mix is homogeneous with no lumps, bring the material to the workplace without delay. Apply with a trowel to the FLOWFRESH Primer wet in wet.

Remarks:
The ideal ambient and application temperatures range is between +15°C and +25°C.

9.11 FLOWFRESH Coating Matt

What:
FLOWFRESH Coating Matt is pre-dosed, 4-component curing material based on hybrid polyurethane concrete suitable as hard-wearing floor coating finish with exceptional chemical resistance.
Flowfresh Coating Matt is normally used as a sealer on the Flowfresh SR systems and coves. It gives a matt gloss and a good abrasion resistance to the floor.

Packaging:
Flowfresh Coating Matt is available in the following package:

Product:	Mass (kg)
Flowfresh/Flowcrete part A	1,2
Flowfresh/Flowcrete STD part B	1,25
Flowfresh Coating Matt part C	2,0
Flowfresh/Flowcrete “colour” part D	0,5
Total	4,95

The standard colours (Dark Blue, Dark Green, Dark Grey, Mustard, Ochre, Red) are supplied in 0,5 kg pigment packs but Mid Grey and Cream in 0,5 or 1 kg pigment packs.
Only Cream requires the use of a double pigment quantity compared with the other colours.

A warmer climate grade Flowfresh/Flowcrete TRP part B is available and optimised for use in application temperatures 20 - 40°C (STD is for 10 - 30°C). Please ensure that the correct grade of hardener is used for the application conditions**.**

Coverage**:**
For 4,95 kg unit approximately 8,2 m² per unit (± 0,6 kg/m² for SR system with quartz 0,4-0,8 mm but ± 1,0 kg/m² for SR system with quartz 1 - 2 mm) or 33 m² per unit (when applied on coves at ratio of 150 g/m²) depending on the roughness, porosity and temperature of the surface to be coated and product loss during application.

Application:
Before applying the product the conditions should be conform the criteria stated in the previous chapters. The substrate should be prepared as described in chapter 6. The mixing process is similar for all products and is described in the previous chapter 8.
When the mix is homogeneous with no lumps, bring the material to the workplace without delay. The material is immediately spread out with a squeegee and back rolled with a long-haired roller.

Remarks:
The ideal ambient and application temperatures range is between +15°C and +25°C.

9.12 FLOWFRESH Cove Coating

What:
FLOWFRESH Cove Coating is pre-dosed, 3-component curing material based on hybrid polyurethane concrete coating for concrete and cementitious substrates.
Flowfresh Cove Coating is suitable as a repair and coating product e.g. when renovating/freshening up “old” Flowfresh systems or painting Flowfresh Cove.

Packaging:
Flowfresh Cove Coating is available in the following package:

Product:	Mass (kg)
Flowfresh Cove/C “Colour” part A	1,5
Flowfresh/Flowcrete STD part B	1,25
Flowfresh Cove Coating part C	1,5
Total	4,25

Part A is pigmented and available in different standard colours.
A warmer climate grade Flowfresh/Flowcrete TRP part B is available and optimised for use in application temperatures 20 - 40°C (STD is for 10 - 30°C). Please ensure that the correct grade of hardener is used for the application conditions**.**

Coverage**:**

For 4,25 kg unit approximately 7 m² per unit (± 0,6 kg/m² for SR system with quartz 0,4-0,8 mm) or 28 m² per unit (when applied on coves at ratio of 150 g/m²) depending on the roughness, porosity and temperature of the surface to be coated and product loss during application.

Application:
Before applying the product the conditions should be conform the criteria stated in the previous chapters. The substrate should be prepared as described in chapter 6. The mixing process is similar for all products and is described in the previous chapter 8.
When the mix is homogeneous with no lumps, bring the material to the workplace without delay. The material is applied with a long-haired roller or a brush on the coves.

Remarks:
The ideal ambient and application temperatures range is between +15°C and +25°C.

9.13 FLOWFRESH ESD SL

What**:**
Flowfresh ESD SL is a predosed, four component, curing material based on hybrid polyurethane concrete conductive flooring.
Flowfresh ESD SL is an anti-static, heavy-duty, hard-wearing floor with a smooth surface with good thermal, mechanical and chemical resistance.

Packaging:
Flowfresh ESD SL is available in the following package:

Product:	Mass (kg)
Flowfresh/Flowcrete part A	2x 2,5
Flowfresh/Flowcrete STD part B	2x 2,6
Flowfresh ESD SL part C	16,73
Flowfresh/Flowcrete ESD SL part D	0,04
Total	26,97

Part C of Flowfresh ESD SL is pigmented.
A warmer climate grade Flowfresh/Flowcrete TRP part B is available and optimised for use in application temperatures 20 - 40°C (STD is for 10 - 30°C). Please ensure that the correct grade of hardener is used for the application conditions**.**

Coverage

For 26,97 kg unit approximately 6,74 m² per unit (4,0 kg/m² for 2-3 mm thickness) depending on the roughness, porosity and temperature of the surface to be coated and product loss during application.
Layer Thickness: 2-3 mm

Application:
Before applying the product, the conditions should be conform the criteria stated in the previous chapters. The substrate should be prepared as described in chapter 6. The mixing process is slightly different as described in the previous chapter 8.
Component D is poured in the liquid component A between 1 and 24 hours in advance to avoid fibre agglomerate during application. Afterwards component D and A are mixed into the pail for 2 minutes. When the conductive grains are transformed in fibres and the liquid resin mix is homogeneous with these fibres, then the component B is added. Mixing for 1 minute until the mix is homogeneous.
When the mixture is homogeneous, add half of the C component and thoroughly made wet with resin. Then repeat by adding the other half of the C component. The mixing time may vary slightly depending on ambient and material temperature.
When the mix is homogeneous with no lumps, bring the material to the workplace without delay.
Spread the mix over the substrate using a pin rake (steel hand trowel is also possible) with the pins set to the desired thickness, each mix being well connected to the previous one. Corners, edges can be done with a steel hand trowel.
To obtain a smoother surface and remove trowel marks the upper surface of the Flowfresh ESD SL must be thoroughly spike rolled.

Remarks:
The ideal ambient and application temperatures range is between +15°C and +25°C.

9.14 FLOWFRESH Quick

What:
FLOWFRESH Quick is available as Flowfresh SL Quick, Flowfresh MF Quick, Flowfresh HD Quick, Flowfresh RT Quick, Flowfresh Mortar Quick and Flowfresh HF Quick.
Other grades of Flowfresh are **NOT** suitable with the quick technology: Primer, Cove, Coating Matt, Cove Coating and Flowfresh ESD SL. These products are only available in the regular version
They are the faster curing versions of the standard types. The products are based on another part A (Flowfresh/Flowcrete Quick part A), same common part B for all Flowfresh types (exception Flowfresh HF/LT) and part C.
The final performance of the systems based on Flowfresh Quick and the final performance of the systems based on Flowfresh are identical, meaning the only difference between the systems is in the speed of curing and the systems with Quick version are ready for final use more rapidly.
Flowfresh STD and Flowfresh Quick are compatible with each other. There is no technical issue to use Flowfresh STD on Flowfresh Quick and vice versa. Only keep in mind, Flowfresh Quick cannot be used anymore when the temperature arise above 20°C.

9.15 Overview of the products

Product	Polygiene	Quick variant	Application characteristic	Finish type	Layer type
Flowfresh Primer			Flowing / Roller applied		Primer
Flowfresh SL	✓	✓	Self-levelling	Smooth / Broadcast	Primer/Basecoat
Flowfresh MF	✓	✓	Self-levelling	Smooth / (Broadcast)	Basecoat
Flowfresh HD	✓	✓	Self-levelling	(Smooth) / Broadcast	Basecoat
Flowfresh RT	✓	✓	Flowing /Trowel applied	Textured / Broadcast	Basecoat
Flowfresh Mortar	✓	✓	Trowel applied	(Smooth) / Broadcast	Basecoat
Flowfresh HF/LT	✓		Trowel applied	Textured	Basecoat
Flowfresh HF	✓	✓	Trowel applied	Textured	Basecoat
Flowfresh ESD SL	✓		Self-levelling	Smooth	Basecoat
Flowfresh Cove	✓		Trowel applied	Smooth	Coving Mortar
Flowfresh Coating Matt	✓		Flowing / Trowel and Roller applied	Broadcast	Topcoat
Flowfresh Cove Coating	✓		Flowing / Trowel and Roller applied	Smooth /(Broadcast)	Topcoat

9.16 Application Temperature

Product	Standard (°C)		Quick (°C)		TRP (°C)	
	Min. Max.	Ideal	Min. Max.	Ideal	Min. Max.	Ideal
Flowfresh Primer	8 - 30	15 - 25			20 - 40	20 - 30
Flowfresh SL	10 - 30	15 - 25	10 - 20	15 - 20	20 - 40	20 - 30
Flowfresh MF	12 -30	15 - 25	10 - 20	15 - 20	20 - 40	20 - 30
Flowfresh HD	12 - 30	15 - 25	10 - 20	15 - 20	20 - 40	20 - 30
Flowfresh RT	10 - 30	15 - 25	10 - 20	15 - 20	20 - 40	20 - 30
Flowfresh Mortar	10 - 30	15 - 25	10 - 20	15 - 20	20 - 40	20 - 30
Flowfresh HF/LT	10- 30	15 - 25				
Flowfresh HF	10 - 30	15 - 25	10 - 20	15 - 20	20 - 40	20 - 30
Flowfresh ESD SL	12 -30	15 - 25			20 - 40	20 - 30
Flwofresh Cove	10 - 30	15 - 25			20 - 40	20 - 30
Flowfresh Coating Mat	10 - 30	15 - 25			20 - 40	20 - 30
Flowfresh Cove Coating	10 - 30	15 - 25			20 - 40	20 - 30

9.17 Flow behaviour

9.18. Speed of cure

Speed of cure performance at 20°C					
5 hours (Quick products)					
Flowfresh SL Quick	Flowfresh MF Quick	Flowfresh HD Quick	Flowfresh RT Quick	Flowfresh Mortar Quick	Flowfresh HF Quick
16 hours (Regular products)					

Flowfresh SL	Flowfresh MF	Flowfresh HD	Flowfresh RT	Flowfresh Mortar	Flowfresh HF
Flowfresh HF/LT	Flowfresh Cove	Flowfresh Coating Matt	Flowfresh Cove Coating	Flowfresh ESD SL	

10. FLOWFRESH SYSTEMS

10.1 Use of primers and Scratchcoat

Prepared concrete substrates are to varying degrees porous. If FLOWFRESH Products are applied directly to prepared highly porous concrete, air displaced from the concrete can rise and cause defects in the finished floor. To avoid such problems we recommend the use of FLOWFRESH Primer (see 9.1) or FLOWFRESH SL (Scratchcoat - see 9.2) or an epoxy primer. Additionally, these products facilitate the subsequent application of FLOWFRESH Products
Only Flowfresh Primer and Flowfresh SL (used as Scratchcoat) should be used if the area is exposed to heat (above 50°C) or hot liquids (above 60°C).
When using Flowprime, the substrate humidity must not exceed 93% RH as per BS8203 (5.5% on Tramex scale) and be free from rising damp and ground water pressure otherwise the Flowprime must be substituted by Hydraseal DPM (surface dry). The Flowfresh Primer or Scratchcoat are also suitable for substrates up to 97% RH as per BS8203 (6.0% on Tramex scale).
The priming process may be omitted when applying Flowfresh RT, Mortar, HF and HF/LT over an Isopol SBR screed or when the consistency of the concrete base ensures minimal porosity and is free of voids and is surface dry up to 97% RH.
Flowfresh SL (smooth + SR) and MF (smooth) must always be applied onto a primed surface / Scratchcoat.
For SR systems priming is not necessary but recommended with exception of systems based on Flowfresh SL.

10.1.1 Mixing and application of Flowprime

The substrate humidity must not exceed 93% RH as per BS8203 (5.5% on Tramex scale)
Put Part A and Part B in a clean mixing pail and mix with slow speed drill and helical spinner for 90 seconds, taking care not to entrain air. After mixing apply directly using a squeegee and/or roller ensuring it is worked into all surface irregularities. Immediately broadcast silica sand into the wet primer to improve adhesion and application. +/- 150 g/m2 quartz size 0.4-0.8 mm when applying Flowfresh MF or HD and 500g/m2 quartz size 1.0 -2.0 mm when applying Flowfresh RT, Mortar, HF and HF/LT. Allow to cure for 15 hours at 20°C. Overlay within 24h with the next layer.

10.1.2 Mixing and application of Hydraseal DPM (two coat layer)

The substrate humidity must not exceed 97% RH per BS8203 (6% TRAMEX scale) and surface dry.
Pre-mix the Part A using a slow speed drill and helical spinner in its original container to re-disperse any settlement. Transfer to a clean mixing pail and mix with slow speed drill and helical spinner for 90 seconds, taking care not to entrain air. After mixing apply directly the red coloured product with a coverage of 0.28 kg/m^2 using a squeegee and/or roller ensuring it is worked into all surface irregularities.
Wait till first layer of primer becomes tack-free before overcoating.
Repeat procedure like described above but this time for the yellow coloured product. Apply with a coverage of 0.22 kg/m^2
Make sure that cured layer is free from pinholes. Otherwise, additional primer coat will be required.

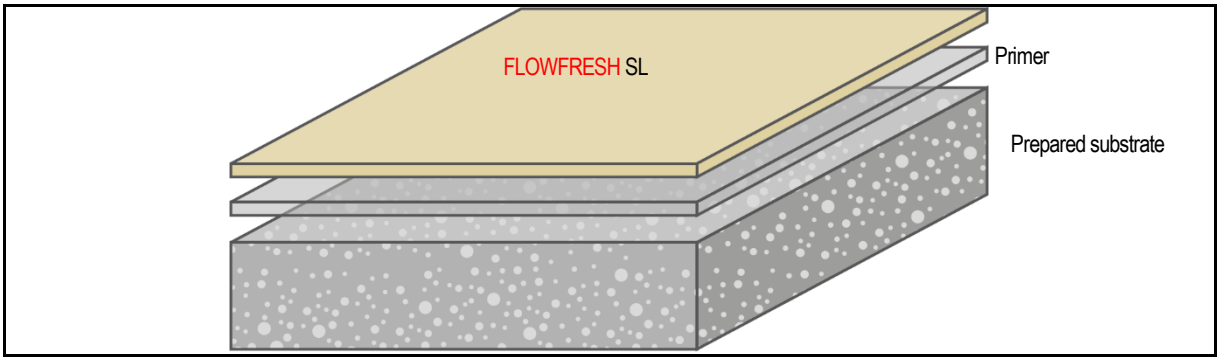
Final coating should be scattered with appropriate sand grade to improve adhesion and application. +/- 150 g/m2 quartz size 0.4-0.8 mm when applying Flowfresh MF or HD and 500g/m2 quartz size 1.0 -2.0 mm when applying Flowfresh RT, Mortar, HF and HF/LT. Allow to cure for 15hours at 20°C. Overlay within 24h with the next layer.

Processing FLOWFRESH:

The description of the processing of the individual products takes place in chapter 9

10.2 FLOWFRESH SL:

System design FLOWFRESH SL, approx. 2-4 mm matt surface:



Coverage rates

Primer options	Flowprime Hydraseal DPM Flowfresh Primer Flowfresh SL	0,3 – 0,5 kg/m² 0,5 kg/m² 0,3 – 0,5 kg/m² 1,5 kg/m²
Wearing layer	Flowfresh SL (2 mm)	3,8 kg/m²

	Flowfresh SL (4mm)	7,6 kg/m²

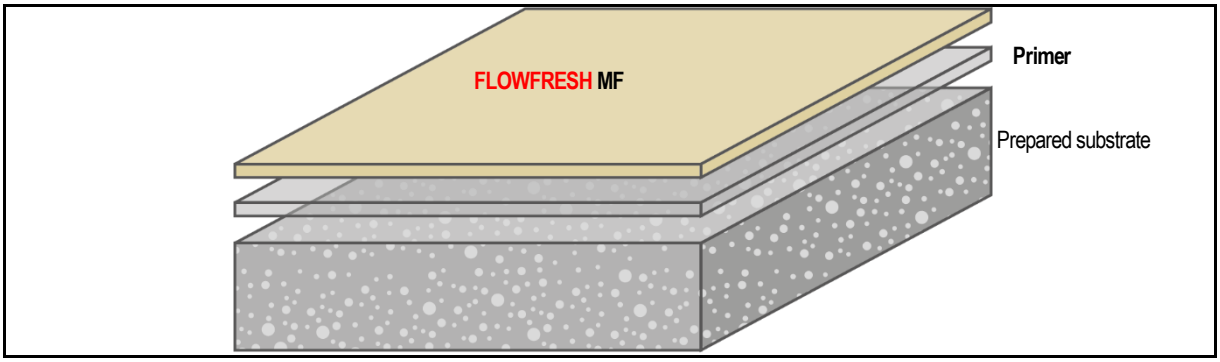
Remark: for use primer options see 10.1

Tip:
To obtain a more level surface, FLOWFRESH SL must be rolled immediately with the spike roller, without excessive pressure. Care must be taken not to roll further like 5cm into already tiled areas, otherwise there may be colour deviations and / or markings of the spine impressions. As a rule, the first mixture should be ready tiled when the third mixture is applied to the substrate.

The specified material quantities of resin and bedding unit are average values. The exact quantities depend on the flatness and roughness depth of the substrate. The quantities refer to processing at 20°C.

10.3 FLOWFRESH MF:

System design FLOWFRESH MF, 4-6 mm matt surface:



Coverage rates

Primer options	Flowprime Hydraseal DPM Flowfresh Primer Flowfresh SL	0,3 – 0,5 kg/m² 0,5 kg/m² 0.3 - 0.5 kg/m² 1.5 kg/m²
Quartz scatter (*)	Quartz sand 0.4 - 0.8 mm	150 g/m²
Wearing layer	Flowfresh MF (4 mm) Flowfresh MF (6 mm)	8,0 kg/m² 12,0 kg/m²

Remark: for use primer options see 10.1
(*) not valid when Scratchcoat used

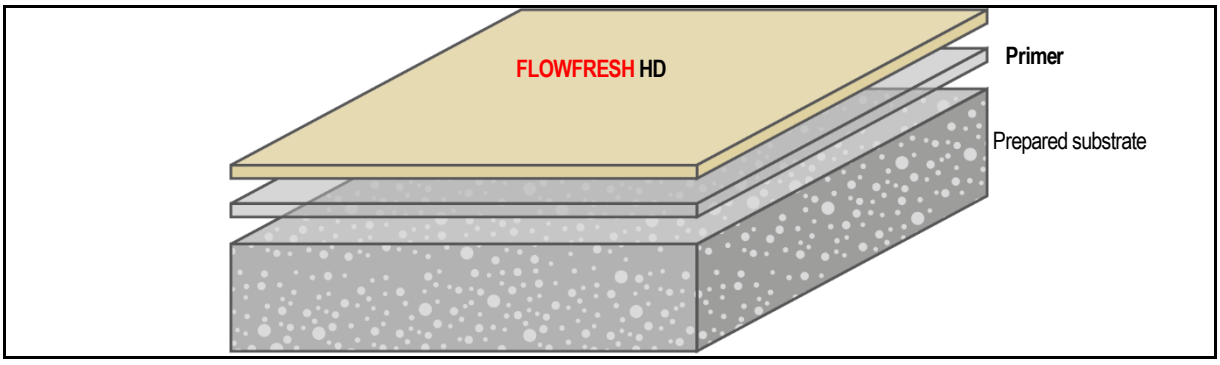
Tip:
To obtain a more level surface, FLOWFRESH MF must be rolled immediately with the spike roller, without excessive pressure. Care must be taken not to roll further like 5cm into already tiled areas,

otherwise there may be colour deviations and / or markings of the spine impressions. As a rule, the first mixture should be ready tiled when the third mixture is applied to the substrate.

The specified material quantities of resin and bedding unit are average values. The exact quantities depend on the flatness and roughness depth of the substrate. The quantities refer to processing at 20°C.

10.4 FLOWFRESH HD (for information only):

System design FLOWFRESH HD, 5-6 mm matt surface:



Coverage rates

Primer options	Flowprime Hydraseal DPM Flowfresh Primer Flowfresh SL	0,3 – 0,5 kg/m² 0,5 kg/m² 0,3 – 0,5 kg/m² 1,5 kg/m²
Quartz scatter (*)	Quartz sand 0.4 - 0.8 mm	150 g/m²
Wearing layer	Flowfresh HD (5 mm) Flowfresh HD (6 mm)	10,0 kg/m² 12,0 kg/m²

Remark: for use primer options see 10.1
(*) not valid when Scratchcoat used

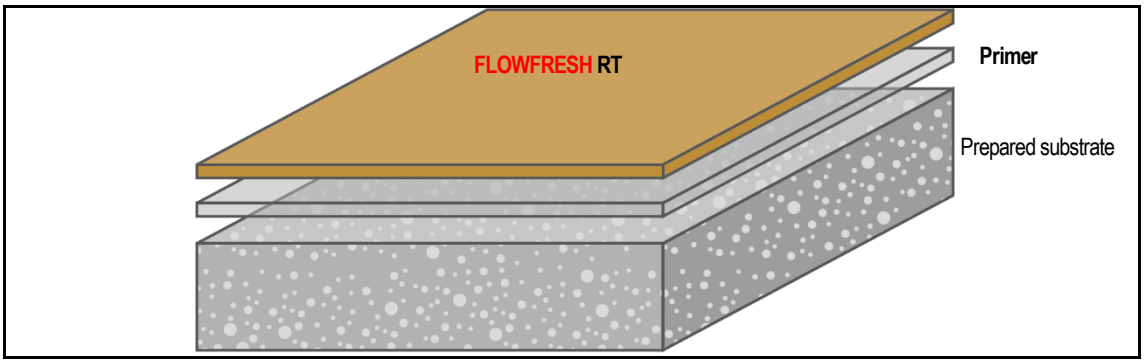
Tip:
To obtain a flat surface, FLOWFRESH HD must be rolled off immediately with the spike roller, without excessive pressure. It must be ensured that no further like 5cm in already tiled areas is spiked,

otherwise it can come to colour deviations and / or markings of the spine impressions. As a rule, the first mixture should be ready tiled when the third mixture is applied to the substrate.

The specified material quantities of resin and bedding unit are average values. The exact quantities depend on the flatness and roughness depth of the substrate. The quantities refer to processing at 20°C.

10.5 FLOWFRESH RT:

System design FLOWFRESH RT, ant-slip surface, 6 – 9 mm matt surface



Coverage rates

Primer options	No primer Flowprime Hydraseal DPM Flowfresh Primer Flowfresh SL	--- 0,3 – 0,5 kg/m² 0,5 kg/m² 0,3 – 0,5 kg/m² 1.5 kg/m²
Quartz scatter (*)	Quartz sand 1.0 -2.0 mm	500 g/m²
Wearing layer	Flowfresh RT (6 mm) Flowfresh RT (9 mm)	12,6 kg/m² 18,9 kg/m²

Remark: for use primer options see 10.1
(*) not valid when Scratchcoat used

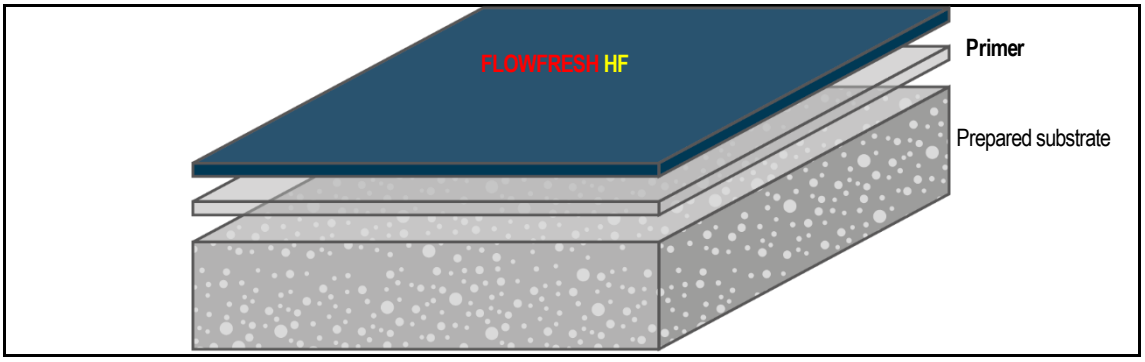
Tip:

The material is distributed with a squeegee and smoothed and compacted with a trowel. It is recommended to apply the system in field widths of no more than 5 meters. To obtain a flat surface and remove any trowel impacts, FLOWFRESH RT can be easily rolled off with a spike or structure roller. Care must be taken not to work further like 5cm into already rolled areas, otherwise there may be colour deviations and / or markings of the roller. As a rule, the first mixture should be rolled ready when the third mixture is applied to the substrate.

The specified material quantities of resin and bedding unit are average values. The exact quantities depend on the flatness and roughness depth of the substrate. The quantities refer to processing at 20°C.

10.6 FLOWFRESH HF:

System design FLOWFRESH HF, ant-slip surface, approx. 6 – 9 mm, matt surface



Coverage rates

Primer options	No primer Flowprime Hydraseal DPM Flowfresh Primer Flowfresh SL	--- 0,3 – 0,5 kg/m² 0,5 kg/m² 0,3 – 0,5 kg/m² 1,5 kg/m²
Quartz scatter (*)	Quartz sand 1.0 -2.0 mm	500 g/m²
Wearing layer	Flowfresh HF (6 mm) Flowfresh HF (9 mm)	12,6 kg/m² 18,9 kg/m²

Remark: for use primer options see 10.1
(*) not valid when Scratchcoat used

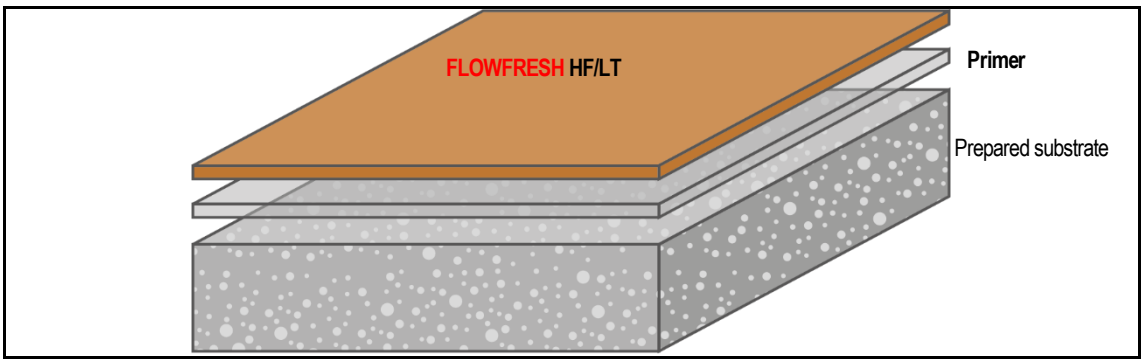
Tip:

The material is distributed with a squeegee and smoothed and compacted with a trowel. It is recommended to apply the system in field widths of no more than 5 meters. In order to obtain a flat surface and remove any trowel impacts, FLOWFRESH HF can be easily rolled off with a spike or structure roller. Care must be taken not to work further like 5cm into already rolled areas, otherwise there may be colour deviations and / or markings of the roller. As a rule, the first mixture should be rolled ready when the third mixture is applied to the substrate.

The specified material quantities of resin and bedding unit are average values. The exact quantities depend on the flatness and roughness depth of the substrate. The quantities refer to processing at 20°C.

10.7 FLOWFRESH HF/LT:

System design FLOWFRESH HF/LT, anti-slip system, approx..6 – 9 mm, matt surface



Coverage rates

Primer options	No primer Flowprime Hydraseal DPM Flowfresh Primer Flowfresh SL	--- 0,3 – 0,5 kg/m² 0,5 kg/m² 0,3 – 0,5 kg/m² 1,5 kg/m²
Quartz scatter (*)	Quartz sand 1.0 -2.0 mm	500 g/m²
Wearing layer	Flowfresh HF/LT (6 mm) Flowfresh HF/LT (9 mm)	12,6 kg/m² 18,9 kg/m²

Remark: for use primer options see 10.1
(*) not valid when Scratchcoat used

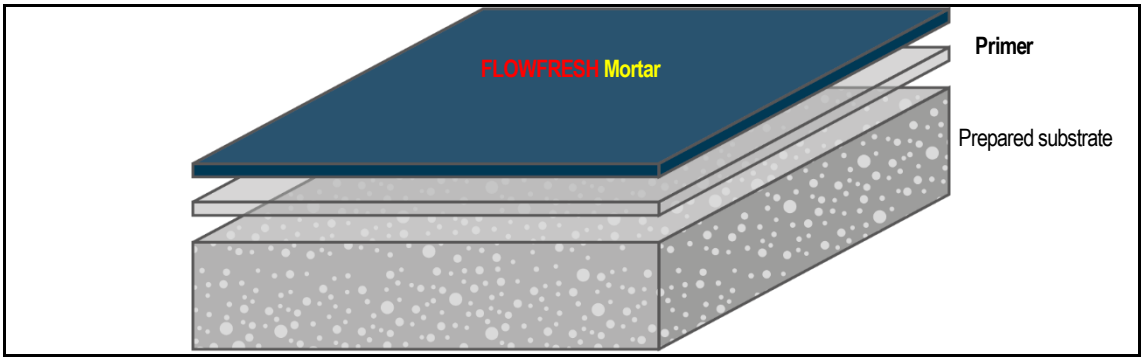
Tip:

The material is distributed with a squeegee and smoothed and compacted with a trowel. It is recommended to apply the system in field widths of no more than 5 meters. In order to obtain a flat surface and to remove any trowel impacts, FLOWFRESH HF/LT can be easily rolled off with a spike or structure roller. Care must be taken not to work further like 5cm into already rolled areas, otherwise there may be colour deviations and / or markings of the roller. As a rule, the first mixture should be rolled ready when the third mixture is applied to the substrate.

The specified material quantities of resin and bedding unit are average values. The exact quantities depend on the flatness and roughness depth of the substrate. The quantities refer to processing at 20°C.

10.8 FLOWFRESH Mortar (for information only):

System design FLOWFRESH Mortar, smooth surface, approx.. 6 – 9 mm, matt surface



Coverage rates

Primer options	No primer Flowprime Hydraseal DPM Flowfresh Primer Flowfresh SL	--- 0,3 – 0,5 kg/m² 0,5 kg/m² 0,3 – 0,5 kg/m² 1,5 kg/m²
Quartz scatter (*)	Quartz sand 1.0 -2.0 mm	500 g/m²
Wearing layer	Flowfresh Mortar (6 mm) Flowfresh Mortar (9 mm)	13,1 kg/m² 19,7 kg/m²

Remark: for use primer options see 10.1
(*) not valid when Scratchcoat used

Tip:

The material is distributed with a squeegee and smoothed and compacted with a trowel. It is recommended to apply the system in field widths of no more than 5 meters. In order to obtain a flat surface and remove any trowel impacts, FLOWFRESH Mortar can be easily rolled off with a spike or structure roller. Care must be taken not to work further like 5cm into already rolled areas, otherwise there may be color deviations and / or markings of the roller. As a rule, the first mixture should be rolled ready when the third mixture is applied to the substrate.

The specified material quantities of resin and bedding unit are average values. The exact quantities depend on the flatness and roughness depth of the substrate. The quantities refer to processing at 20°C.

10.9 FLOWFRESH SR Systems:

System design Flowfresh SR 12/20 and 24 system from 4 mm until 11 mm

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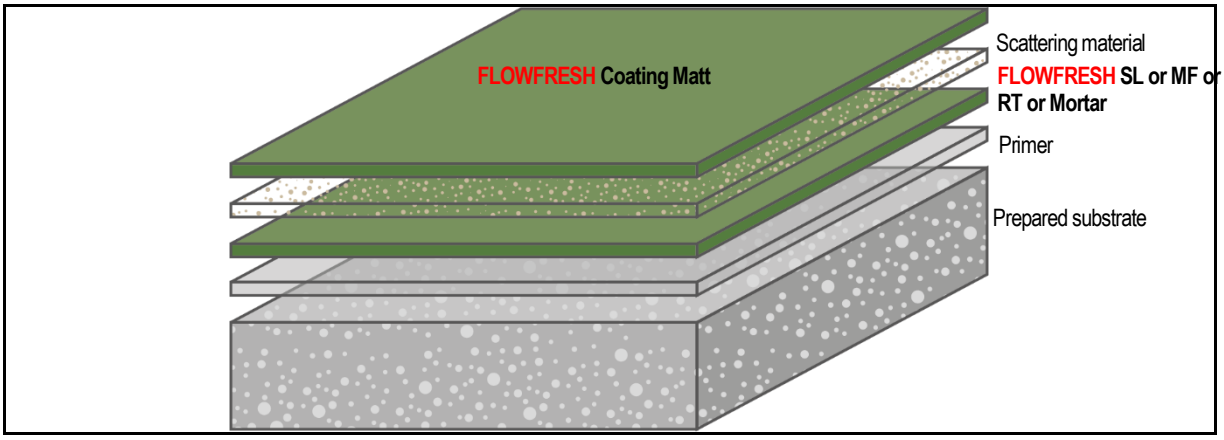


Coverage rates for SR12 with slip resistance R13V10

Primer	No primer Flowprime Hydraseal DPM Flowfresh Primer Flowfresh SL	--- 0,3 – 0,5 kg/m² 0,5 kg/m² 0,3 – 0,5 kg/m² 1,5 kg/m²
Wearing layer		
For 4 mm system	FLOWFRESH SL	3,8 kg/m²
Quartz scatter	Natural quartz 1-2 mm	3,5 kg/m²
For 5 mm system	FLOWFRESH SL	5,7 kg/m²
Quartz scatter	Natural quartz 1-2 mm	3,5 kg/m²
For 6 mm system	FLOWFRESH MF	8,0 kg/m²

Quartz scatter	Natural quartz 1-2 mm	4,0 kg/m²
For 7 mm system	FLOWFRESH HD	10,0 kg/m²
Quartz scatter	Natural quartz 1-2 mm	4,0 kg/m²
For 8 mm system	FLOWFRESH RT	12,6 kg/m²
Quartz scatter	Natural quartz 1-2 mm	2,5 kg/m²
or	FLOWFRESH Mortar	13,1 kg/m²
Quartz scatter	Natural quartz 1-2 mm	2,0 kg/m²
For 9-10 mm system	FLOWFRESH RT	18,9 kg/m²
Quartz scatter	Natural quartz 1-2 mm	2,5 kg/m²
For 11 mm system	FLOWFRESH Mortar	19,7 kg/m²
Quartz scatter	Natural quartz 1-2 mm	2,0 kg/m²
Sealing (all SR12 systems)	FLOWFRESH Coating Matt	1,0 kg/m²

Coverage rates for SR20 with slip resistance R13V6

Primer	No primer Flowprime Hydraseal DPM Flowfresh Primer Flowfresh SL	--- 0,3 – 0,5 kg/m² 0,5 kg/m² 0,3 – 0,5 kg/m² 1,5 kg/m²
Wearing layer		
For 4 mm system	FLOWFRESH SL	3,8 kg/m²
Quartz scatter	Natural quartz 0.9 – 1.2 mm	3,5 kg/m²
For 5 mm system	FLOWFRESH SL	5,7 kg/m²
Quartz scatter	Natural quartz 0.9 – 1.2 mm	3,5 kg/m²
For 6 mm system	FLOWFRESH MF	8,0 kg/m²
Quartz scatter	Natural quartz 0.9 -1.2 mm	4,0 kg/m²
For 7 mm system	FLOWFRESH HD	10,0 kg/m²
Quartz scatter	Natural quartz 0.9 -1.2 mm	4,0 kg/m²
For 8 mm system	FLOWFRESH RT	12,6 kg/m²
Quartz scatter	Natural quartz 0.9 -1.2 mm	2,5 kg/m²
or	FLOWFRESH Mortar	13,1 kg/m²
Quartz scatter	Natural quartz 0.9 – 1.2 mm	2,0 kg/m²
For 9-10 mm system	FLOWFRESH RT	18,9 kg/m²
Quartz scatter	Natural quartz 0.9 – 1.2 mm	2,0 kg/m²
For 11 mm system	FLOWFRESH Mortar	19,0 kg/m²
Quartz scatter	Natural quartz 0.9 – 1.2 mm	2,0 kg/m²
Sealing (all SR20 systems)	FLOWFRESH Coating Matt	0,8 kg/m²

Coverage rates for SR24 with slip resistance R12V4

Primer	No primer Flowprime Hydraseal DPM Flowfresh Primer Flowfresh SL	--- 0,3 – 0,5 kg/m² 0,5 kg/m² 0,3 – 0,5 kg/m² 1,5 kg/m²
Wearing layer		
For 4 mm system	FLOWFRESH SL	3,8 kg/m²
Quartz scatter	Natural quartz 0.4 – 0.8 mm	3,5 kg/m²
For 5 mm system	FLOWFRESH SL	5,7 kg/m²
Quartz scatter	Natural quartz 0.4 – 0.8 mm	3,5 kg/m²
For 6 mm system	FLOWFRESH MF	8,0 kg/m²
Quartz scatter	Natural quartz 0.4 – 0.8 mm	4,0 kg/m²
For 7 mm system	FLOWFRESH HD	10,0 kg/m²
Quartz scatter	Natural quartz 0.4 – 0.8 mm	4,0 kg/m²
For 8 mm system	FLOWFRESH RT	12,0 kg/m²
Quartz scatter	Natural quartz 0.4 – 0.8 mm	2,0 kg/m²
or	FLOWFRESH Mortar	13,1 kg/m²
Quartz scatter	Natural quartz 0.4 – 0.8 mm	2,0 kg/m²
For 9-10 mm system	FLOWFRESH RT	18,9 kg/m²
Quartz scatter	Natural quartz 0.4 – 0.8 mm	2,5 kg/m²
For 11 mm system	FLOWFRESH Mortar	19,7 kg/m²
Quartz scatter	Natural quartz 0.4 – 0.8 mm	2,0 kg/m²
Sealing (all SR24 systems)	FLOWFRESH Coating Matt	0,6 kg/m²

Remark: for use primer options see 10.1

The specified material quantities of resin and bedding unit are average values. The exact quantities depend on the flatness and roughness depth of the substrate. The quantities refer to processing at 20°C.

Tip:
In order to increase the resin content on the surface and thus ensure that a sufficient amount of bedding unit is integrated, the surface must be rolled over with a spike roller (without excessive pressure) before starting the scattering.
In order to achieve a non-slip surface, scatter the FLOWFRESH layer over the entire surface with an excess of quartz sand. After curing, remove the excess of quartz and grind lightly the surface with a single-disc grinding machine (i.e. Woodboy). Afterwards the surface must be thoroughly cleaned with an industrial vacuum cleaner. After cleaning, the mixed FLOWFRESH Coating Matt (see 9.11) is distributed on the surface with a rubber slider and finished with a sealing roller.

Remark:

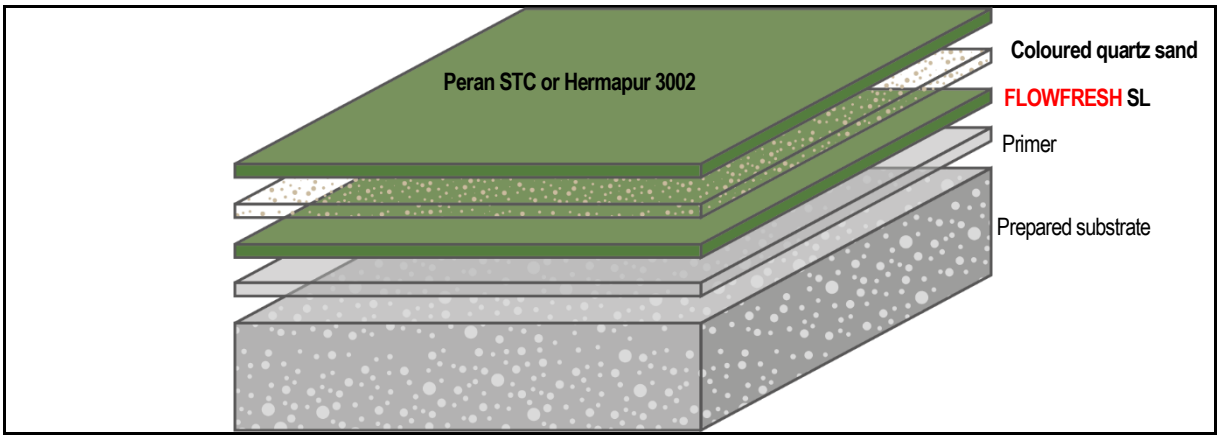
It is important that the sealing roller is rolled out on a piece of cardboard from time to time to ensure a uniform sealing application. Furthermore, for larger areas, the roller must be replaced **after approx. 100m2.**

10.10 FLOWFRESH SRQ and SRQ UV:

10.10.1 FLOWFRESH SRQ

System design Flowfresh SRQ and SRQ UV (5mm)

.



Coverage rates

Primer options	Flowprime Hydraseal DPM Flowfresh Primer Flowfresh SL	0,3 – 0,5 kg/m² 0,5 kg/m² 0,3 – 0,5 kg/m² 1,5 kg/m²
Wearing layer	Flowfresh SL	5,7 kg/m²

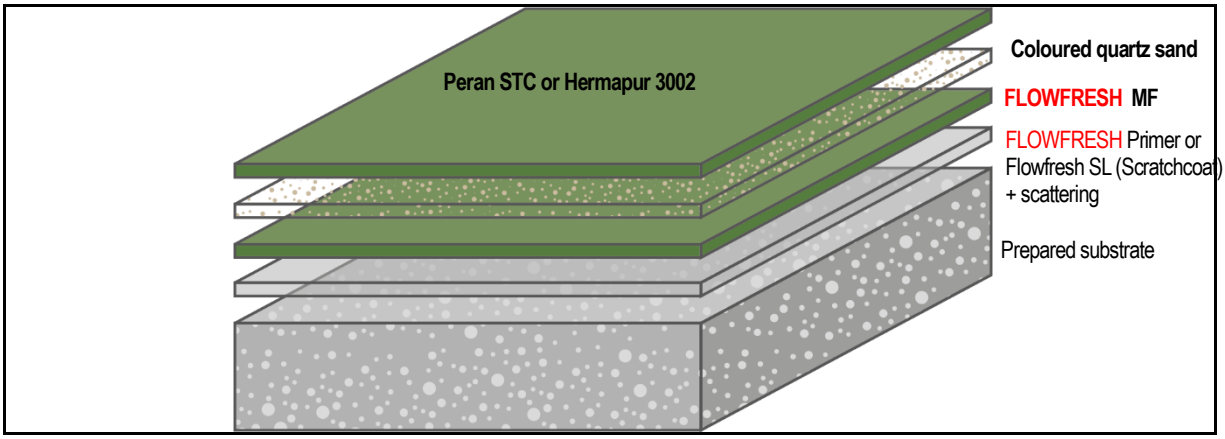
Scattering	Coloured quartz sand 0,3 – 0,8mm	4,0 kg/m²

Sealing

	Sealer	Coverage per m²
SRQ System	Peran STC	0,6 kg/m²
SRQ UV system	Hermapur 3002	0,6 kg/m²

10.10.2 FLOWFRESH SRQ UV

System design Flowfresh SRQ and SRQ UV (6 mm)



Coverage rates

Primer options	Flowprime Hydraseal DPM Flowfresh Primer Flowfresh SL	0,3 -0,5 kg/m² 0,5 kg/m² 0,3 -0,5 kg/m² 1,5 kg/m²
Wearing layer	Flowfresh MF	8,0 kg/m²
Scattering	Coloured quartz sand 0,3 – 0,8mm	5,0 kg/m²

Sealing

	Sealer	Coverage per m²
SRQ System	Peran STC	0,6 kg/m²
SRQ UV system	Hermapur 3002	0,6 kg/m²

Remark: for use primer options see 10.1

The specified material quantities of resin and bedding unit are average values. The exact quantities depend on the flatness and roughness depth of the substrate. The quantities refer to processing at 20 °C.

Tip:
In order to increase the resin content on the surface and thus ensure that a sufficient amount of bedding unit is integrated, the surface must be rolled over with a spike roller (without excessive pressure) before starting the scattering.
In order to achieve a non-slip surface, scatter the FLOWFRESH layer over the entire surface with an excess of coloured quartz sand. After curing, remove the excess of coloured quartz Afterwards the surface must be thoroughly cleaned with an industrial vacuum cleaner. After cleaning, the mixed Peran STC or Hermapur 3002 is distributed on the surface with a rubber slider and finished with a sealing roller.

Application of Peran STC (epoxy sealer)
Add all of Hardener B to Base A. Mix with slow speed drill and helical spinner for 90s, taking care not to entrain air.
After mixing apply the homogenous mixture directly. Distribute the mixture on the surface with a squeegee or rubber slider or similar tool and finish with a sealing roller.
Pot-life of the material is 30 min at 20°C.
Can be walked on after 15 hours curing at 20°C.

Application of Hermapur 3002 (polyaspartic sealer)
Add all of Part B to Part A. In order to achieve a homogeneous mixture, components have to be mixed intensively in compliance with the short pot life. A slow-running agitator with helical spinner should be used, and the components should be carefully mixed until you obtain a homogenous mixture.
Pour over – Do not apply directly from the furnished pail
Hermapur 3002 is applied on the floor with a squeegee or rubber slider or similar tool and is leveled immediately afterwards with a sealing roller.
Pot-life of the material is 15 min at 20°C.
Can be walked on after 4 hours curing at 20°C.

10.11 FLOWFRESH Cove:

System design FLOWFRESH Cove

Coverage rates

Primer	Flowfresh Primer	0,3 – 0,5 kg/m²
Wearing layer	Flowfresh Cove	See consumption
Coating	Flowfresh Coating Matt Or Flowfresh Cove Coating	150 g/m²

Remark:

- FLOWFRESH Primer is applied with a consumption of ± 0.30 kg/m². FLOWFRESH Cove is applied to the still sticky FLOWFRESH Primer (wet in wet).
- Consumption cove: About 8 running meters per 25 kg unit, with hollow throats with a radius of 5cm and 5 cm height, or about 2.38 m² with a layer thickness of 5 mm. The consumption is influenced by the roughness depth and temperature of the substrate to be revised.

10.12 FLOWFRESH Quick systems:

FLOWFRESH Quick surface protection systems are fast-curing systems that enable complete system installation in one day.

Processing FLOWFRESH Quick:
The processing of the individual systems takes place as described in chapter 9

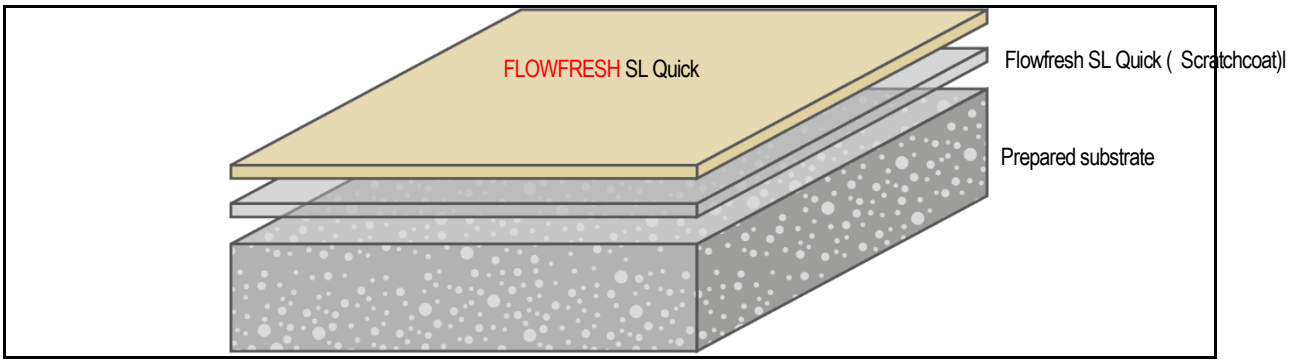
Curing time:

Minimal waiting time before the wear layer can be applied on the Scratchcoat Quick:
Valid for FLOWFRESH MF Quick, FLOWFRESH RT Quick, FLOWFRESH HD Quick, FLOWFRESH HF Quick and FLOWFRESH Mortar Quick:
Ambient temperature: 20 °C = 5 hours
Ambient temperature: 15 °C = 6 hours
Ambient temperature: 10 °C = 7 hours

Valid for FLOWFRESH SL Quick
Ambient temperature: 20 °C = 5 hours
Ambient temperature: 15 °C = 7 hours
Ambient temperature: 10 °C = 9 hours

10.12.1 FLOWFRESH SL Quick:

System design FLOWFRESH SL Quick, approx. 2-4 mm matt surface:



Coverage rates

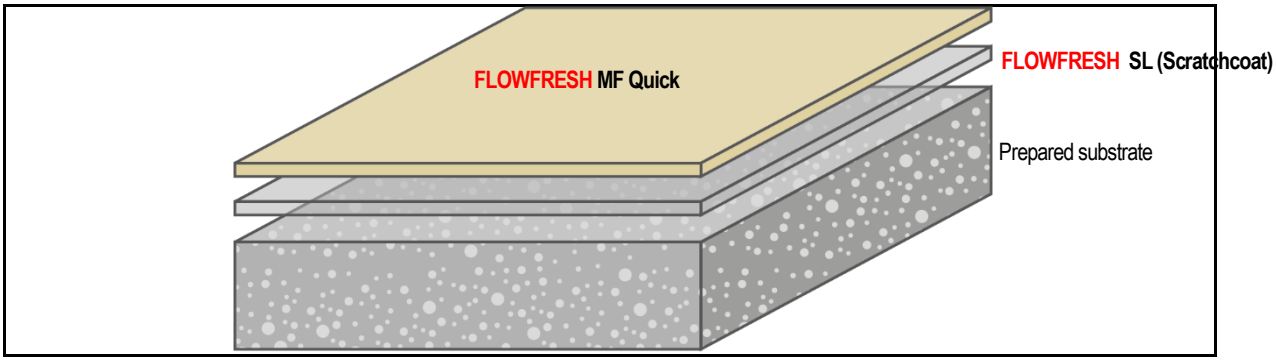
Scratchcoat	FLOWFRESH SL Quick	1,5 kg/m²
Wearing layer	FLOWFRESH SL Quick (2mm) FLOWFRESH SL Quick (2mm)	3,8 kg/m² 7,6 kg/m²

Tip:
To obtain a more level surface, FLOWFRESH SL must be rolled immediately with the spike roller, without excessive pressure, in the cloister. Care must be taken not to roll further like 5cm into already tiled areas, otherwise there may be colour deviations and / or markings of the spine impressions. As a rule, the first mixture should be ready tiled when the third mixture is applied to the substrate.

The specified material quantities of resin and bedding unit are average values. The exact quantities depend on the flatness and roughness depth of the substrate. The quantities refer to processing at 20°C.

10.12.2 FLOWFRESH MF Quick

System design FLOWFRESH MF Quick, ca. 4-6 mm matt surface:



Coverage rates

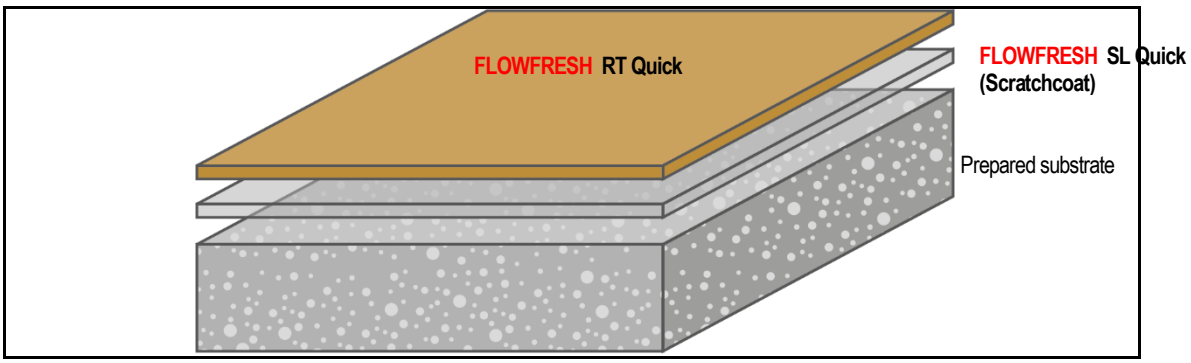
Scratchcoat	FLOWFRESH SL Quick	1,5 kg/m²
Wearing layer	FLOWFRESH MF Quick (4 mm) FLOWFRESH MF Quick (6 mm)	8,0 kg/m² 12,0 kg/m²

Tip:
To obtain a more level surface, FLOWFRESH MF must be rolled immediately with the spike roller, without excessive pressure, in the cloister. Care must be taken not to roll further like 5cm into already tiled areas, otherwise there may be colour deviations and / or markings of the spine impressions. As a rule, the first mixture should be ready tiled when the third mixture is applied to the substrate.

The specified material quantities of resin and bedding unit are average values. The exact quantities depend on the flatness and roughness depth of the substrate. The quantities refer to processing at 20°C.

10.12.3 FLOWFRESH RT Quick:

System design FLOWFRESH RT Quick, anti-slip surface, approx.. 6 – 9 mm, matt surface:



Coverage rates

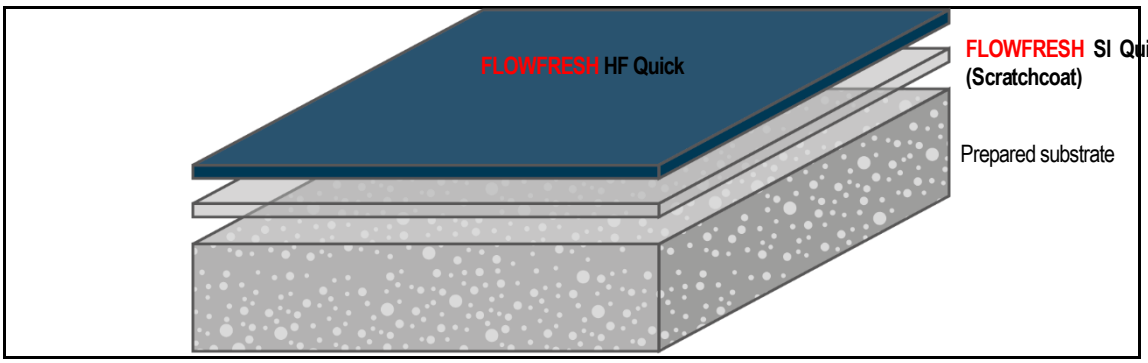
Scratchcoat	Flowfresh SL Quick	1,5 kg/m²
Wearing layer	Flowfresh RT Quick (6 mm) Flowfresh RT Quick (9 mm)	12,6 kg/m² 18,9 kg/m²

Tip:
The material is distributed with a squeegee and smoothed and compacted with a trowel. It is recommended to apply the system in field widths of no more than 5 meters. To obtain a flat surface and remove any trowel impacts, FLOWFRESH RT Quick can be easily rolled off with a spike or structure roller. Care must be taken not to work further like 5cm into already rolled areas, otherwise there may be colour deviations and / or markings of the roller. As a rule, the first mixture should be rolled ready when the third mixture is applied to the substrate.

The specified material quantities of resin and bedding unit are average values. The exact quantities depend on the flatness and roughness depth of the substrate. The quantities refer to processing at 20°C.

10.12.4 FLOWFRESH HF Quick:

System design FLOWFRESH HF Quick , ant-slip surface, approx. 6 – 9 mm, matt surface



Coverage rates

Scratchcoat	Flowfresh SL Quick	1,5 kg/m²
Wearing layer	Flowfresh HF (6 mm) Flowfresh HF (9 mm)	12,6 kg/m² 18,9 kg/m²

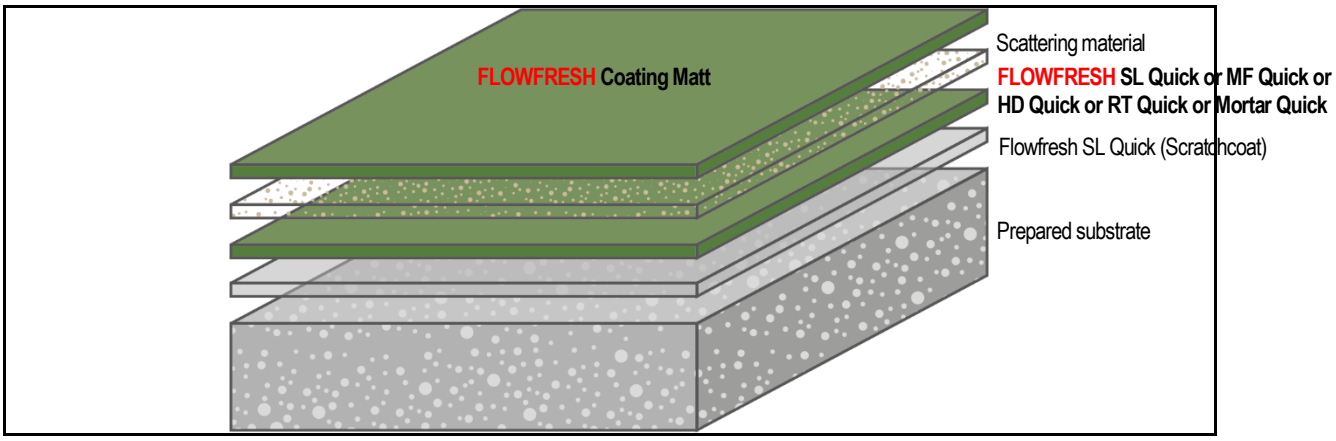
Tip:
The material is distributed with a squeegee and smoothed and compacted with a trowel. It is recommended to apply the system in field widths of no more than 5 meters. In order to obtain a flat surface and remove any trowel impacts, FLOWFRESH HF can be easily rolled off with a spike or structure roller. Care must be taken not to work further like 5cm into already rolled areas, otherwise there may be colour deviations and / or markings of the roller. As a rule, the first mixture should be rolled ready when the third mixture is applied to the substrate.

The specified material quantities of resin and bedding unit are average values. The exact quantities depend on the flatness and roughness depth of the substrate. The quantities refer to processing at 20°C.

10.12.5 FLOWFRESH SR Quick Systems:

System design Flowfresh SR 12/20 and 24 Quick systems from 4 mm until 11 mm

.



Coverage rates for SR12 Quick with slip resistance R13V10

Scratchcoat	Flowfresh SL Quick	1,5 kg/m^2
Wearing layer		
For 4 mm system	FLOWFRESH SL Quick	3,8 kg/m^2
Quartz scatter	Natural quartz 1-2 mm	3,5 kg/m^2
For 5 mm system	FLOWFRESH SL Quick	5,7 kg/m^2
Quartz scatter	Natural quartz 1-2 mm	3,5 kg/m^2
For 6 mm system	FLOWFRESH MF Quick	8,0 kg/m^2
Quartz scatter	Natural quartz 1-2 mm	4,0 kg/m^2
For 7 mm system	FLOWFRESH HD Quick	10,0 kg/m^2
Quartz scatter	Natural quartz 1-2 mm	4,0 kg/m^2
For 8 mm system	FLOWFRESH RT Quick	12,6 kg/m^2
Quartz scatter	Natural quartz 1-2 mm	2,5 kg/m^2
or	FLOWFRESH Mortar Quick	13,1 kg/m^2
Quartz scatter	Natural quartz 1-2 mm	2,0 kg/m^2
For 9-10 mm system	FLOWFRESH RT Quick	18,9 kg/m^2

Quartz scatter	Natural quartz 1-2 mm	2,5 kg/m^2
For 11 mm system	FLOWFRESH Mortar Quick	19,7 kg/m^2
Quartz scatter	Natural quartz 1-2 mm	2,0 kg/m^2
Sealing (all SR12 systems)	FLOWFRESH Coating Matt	1,0 kg/m^2

Coverage rates for SR20 Quick with slip resistance R13V6

Scratchcoat	Flowfresh SL Quick	1,5 kg/m^2
Wearing layer		
For 4 mm system	FLOWFRESH SL Quick	3,8 kg/m^2
Quartz scatter	Natural quartz 0.9 – 1.2 mm	3,5 kg/m^2
For 5 mm system	FLOWFRESH SL Quick	5,7 kg/m^2
Quartz scatter	Natural quartz 0.9 – 1.2 mm	3,5 kg/m^2
For 6 mm system	FLOWFRESH MF Quick	8,0 kg/m^2
Quartz scatter	Natural quartz 0.9 -1.2 mm	4,0 kg/m^2
For 7 mm system	FLOWFRESH HD Quick	10,0 kg/m^2
Quartz scatter	Natural quartz 0.9 -1.2 mm	4,0 kg/m^2
For 8 mm system	FLOWFRESH RT Quick	12,6 kg/m^2
Quartz scatter	Natural quartz 0.9 -1.2 mm	2,5 kg/m^2
or	FLOWFRESH Mortar Quick	13,1 kg/m^2
Quartz scatter	Natural quartz 0.9 – 1.2 mm	2,0 kg/m^2
For 9-10 mm system	FLOWFRESH RT Quick	18,9 kg/m^2
Quartz scatter	Natural quartz 0.9 – 1.2 mm	2,5 kg/m^2
For 11 mm system	FLOWFRESH Mortar Quick	19,7 kg/m^2
Quartz scatter	Natural quartz 0.9 – 1.2 mm	2,0 kg/m^2
Sealing (all SR20 Quick systems)	FLOWFRESH Coating Matt	0,8 kg/m^2

Coverage rates for SR24 Quick with slip resistance R12V4

Scratchcoat	Flowfresh SL Quick	1,5 kg/m²
Wearing layer		
For 4 mm system	FLOWFRESH SL Quick	3,8 kg/m²
Quartz scatter	Natural quartz 0.4 – 0.8 mm	3,5 kg/m²
For 5 mm system	FLOWFRESH SL Quick	5,7 kg/m²
Quartz scatter	Natural quartz 0.4 – 0.8 mm	3,5 kg/m²
For 6 mm system	FLOWFRESH MF Quick	8,0 kg/m²
Quartz scatter	Natural quartz 0.4 – 0.8 mm	4,0 kg/m²
For 7 mm system	FLOWFRESH HD Quick	10 kg/m²
Quartz scatter	Natural quartz 0.4 – 0.8 mm	4,0 kg/m²
For 8 mm system	FLOWFRESH RT Quick	12,6 kg/m²
Quartz scatter	Natural quartz 0.4 – 0.8 mm	2,5 kg/m²
or	FLOWFRESH Mortar Quick	13,1 kg/m²
Quartz scatter	Natural quartz 0.4 – 0.8 mm	2,0 kg/m²
For 9-10 mm system	FLOWFRESH RT Quick	18,9 kg/m²
Quartz scatter	Natural quartz 0.4 – 0.8 mm	2,5 kg/m²
For 11 mm system	FLOWFRESH Mortar Quick	19,7 kg/m²
Quartz scatter	Natural quartz 0.4 – 0.8 mm	2,0 kg/m²
Sealing (all SR24 Quick systems)	FLOWFRESH Coating Matt	0,6 kg/m²

The specified material quantities of resin and bedding unit are average values. The exact quantities depend on the flatness and roughness depth of the substrate. The quantities refer to processing at 20°C.

Tip:
In order to increase the resin content on the surface and thus ensure that a sufficient amount of bedding unit is integrated, the surface must be rolled over with a spike roller (without excessive pressure) before starting the scattering.
In order to achieve a non-slip surface, scatter the FLOWFRESH layer over the entire surface with an excess of quartz sand. After curing, remove the excess of quartz and grind lightly the surface with a single-disc grinding machine (i.e. Woodboy). Afterwards the surface must be thoroughly cleaned with an industrial vacuum cleaner. After cleaning, the mixed

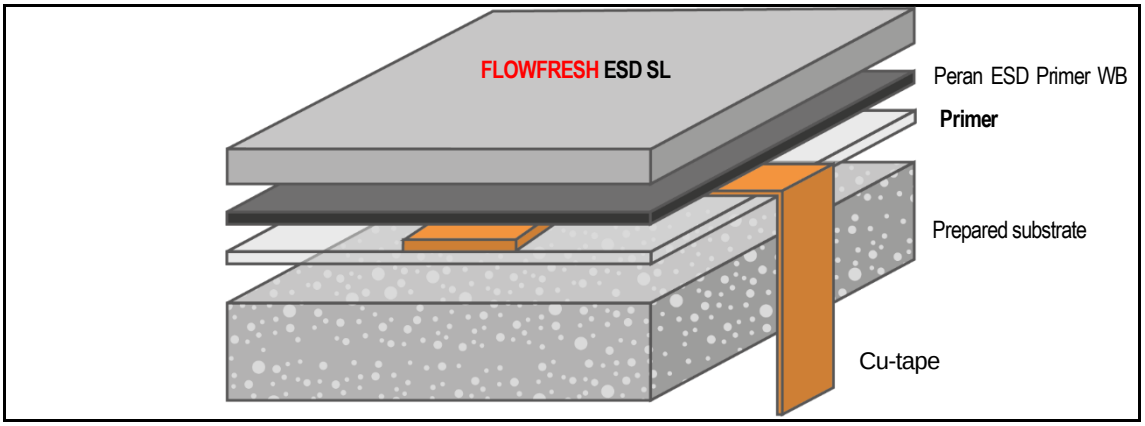
FLOWFRESH Coating Matt (see 9.11) is distributed on the surface with a rubber slider and finished with a sealing roller.

Remark:

It is important that the sealing roller is rolled out on a piece of cardboard from time to time to ensure a uniform sealing application. Furthermore, for larger areas, the roller must be replaced **after approx. 100m2.**

10.13 FLOWFRESH ESD SL

System design FLOWFRESH ESD SL (2-3 mm):



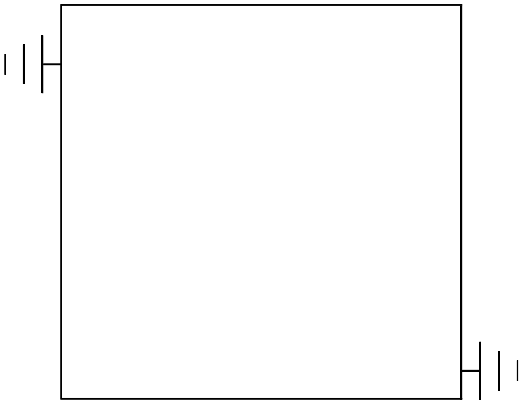
Coverage rates

Primer options	Flowprime Hydraseal DPM Flowfresh Primer Flowfresh SL	0,3 -0,5 kg/m² 0,5 kg/m² 0,3 -0,5 kg/m² 1,5 kg/m²
Conductive Grid of 10 mm wide copper tape.		
Conductive Primer	Peran ESD Primer WB	150 g/m²
Wearing layer	Flowfresh ESD SL	4,0 kg/m²

Remark: for use primer options see 10.1

Earth linkage

Foresee two grounding points per room ≤ 100 m2 at opposite corners of the room + one extra for every 100 m2 unless otherwise specified. Also steel columns can be used.



Undercoat
Prepared concrete substrates are porous to varying degrees. FLOWFRESH ESD SL is never applied directly to prepared concrete. FLOWFRESH Primer or Scratchcoat (FLOWFRESH SL Quick or FLOWFRESH SL) are used. Apply FLOWFRESH Primer with a consumption of 0.3 -0.5 kg/m² or a Scratchcoat with a consumption of 1.5 kg/m^2. Ensure to have a smooth surface before applying all the other steps. This avoids fluctuations in electrical resistance of the floor.

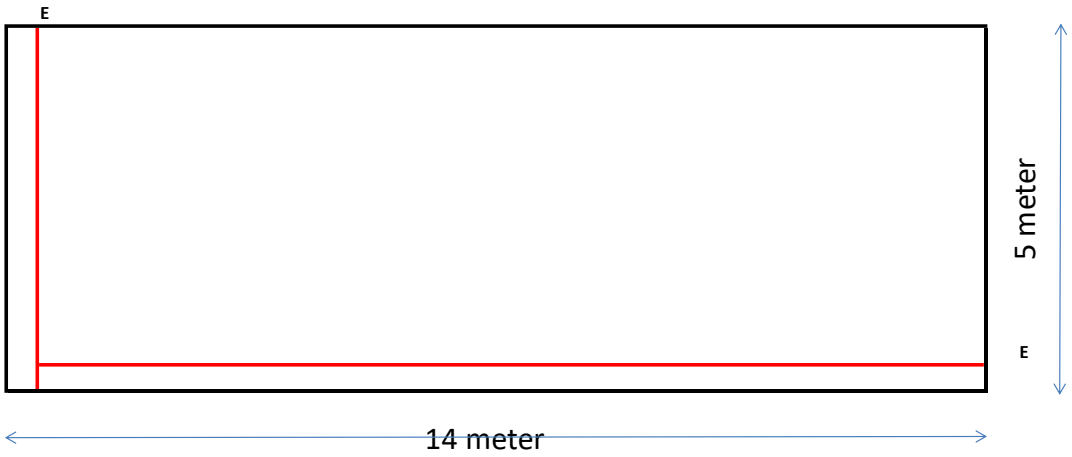
Copper tape
After curing, a copper adhesive tape is glued to the cured primer and/or Scratchcoat and bonded to the soil. This will make the connection of the Peran ESD Primer WB to the building's earth.
Apply the Cu-tape about 150 mm from the borders. No part of the floor should be more than 5 m from a copper tape. A grid pattern is made of 8m x 8m (64m2) or max 10m x 10m (100 m^2). The smaller the squares the lower the resistance of the conductive primer (Peran ESD Primer WB).

Conductive Primer
Pre-mix the Part B using a slow speed drill and helical spinner in its original container to re-disperse any settlement. When homogeneous add part A and mix with slow speed drill and helical spinner for min 90 seconds, taking care not to entrain air. Apply with a roller the Peran ESD Primer WB with a consumption of < 150 g/m² to the cured FLOWFRESH Primer or the Sratchcoat. It is important that the primer dries 24 hours with good air exchange.

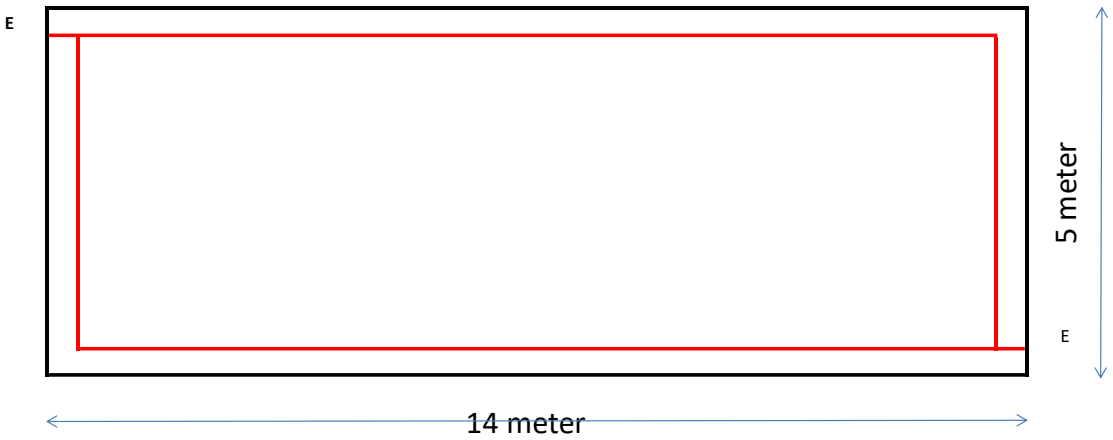
Mixing and processing of FLOWFRESH ESD SL
Component D is poured into liquid component A between 1 and 24 hours in advance and mixed for 2 minutes until the grains have changed to long fibers to prevent the fibers from clumping together during application. Subsequently, when the conductive grains are converted into fibers and the liquid resin mixture is homogeneous with these fibers, component B is added. Mix for 1 minute until the mixture is homogeneous.
When the mixture is homogeneous, add the C component and mix thoroughly for 3 minutes. The mixing time may vary slightly depending on the ambient and material temperature. If the mixture is homogeneous and has no lumps, bring the material to the workplace immediately. Pour the material on the surface into sheets and distribute it with a pin blade and then roll over with a spike roller in the cloister.

Some examples of applying the earth linkage and use of copper tape in a room

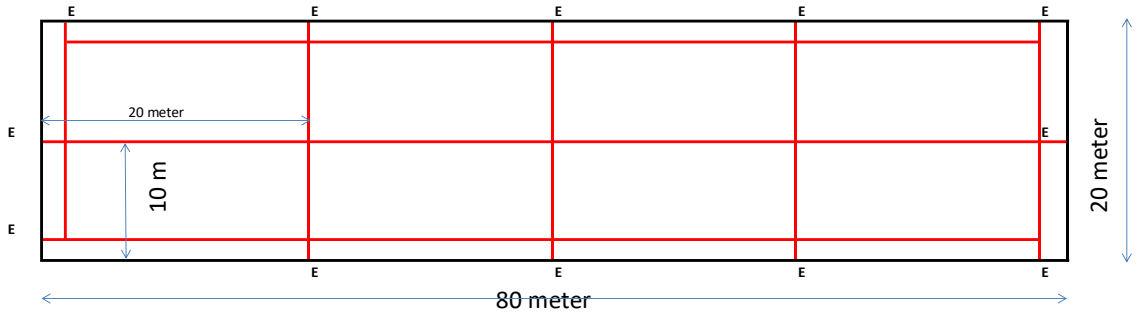
Example 1: Room 14 x 5 meter -The minimum



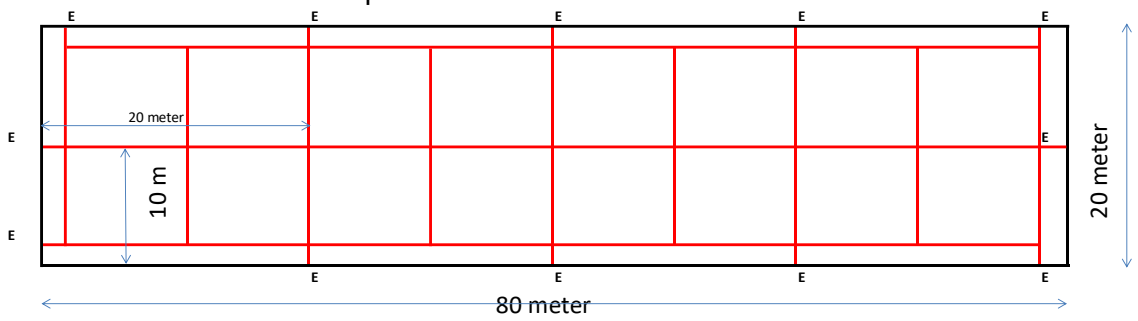
Room 14 x 5 meter - Improved



Example 2: Room 80 x 20 meter



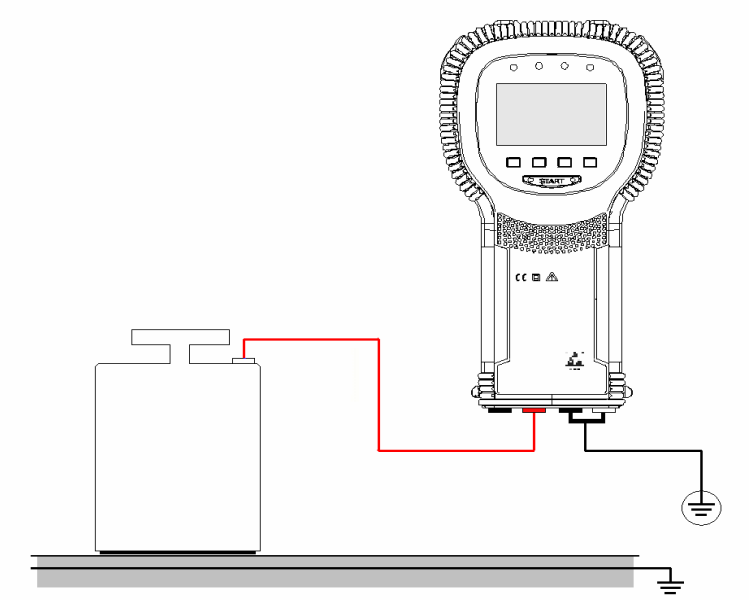
Room 80 x 20 meter Improved



How to control the electrical properties of the floor?

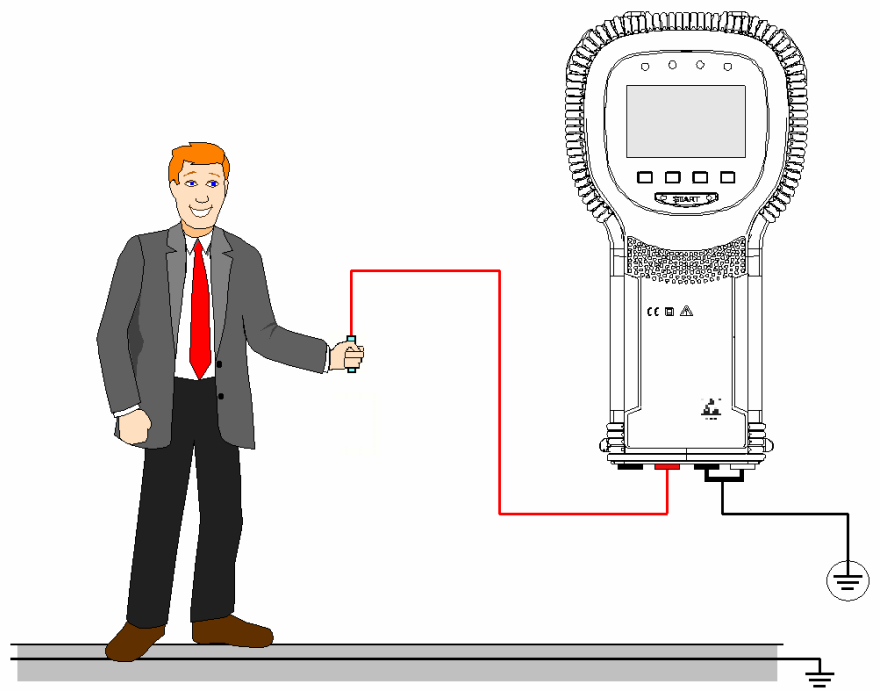
Measuring the resistance to earth according to IEC 61340-4-1

Requirement: see specification of the customer



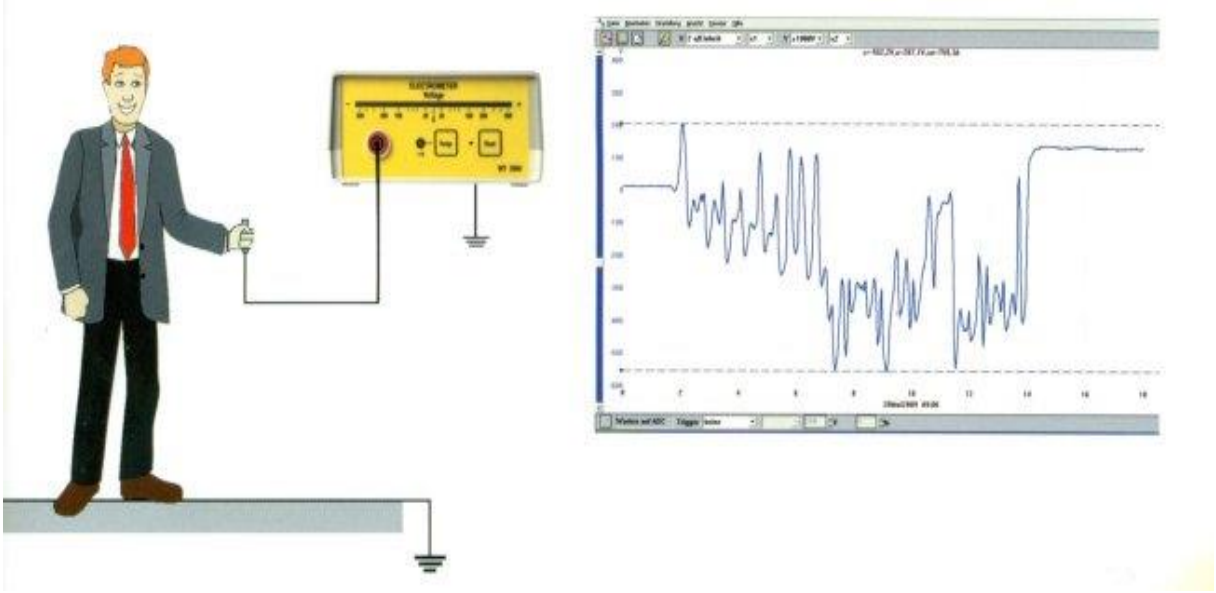
Measuring the resistance of the system (Person – Shoe – Floor) according to IEC 61340-4-5

Requirement: ≤ 10^9Ohm



Measuring the Body Voltage or Walking test according to IEC61340-4-5

Requirement < 100V



10.14 FLOWFRESH system map

System name	Primer options	Wearing layer	Topcoat	Remarks

Flowfresh SL	Flowprime Hydraseal DPM Flowfresh primer Flowfresh Scratcoat	Flowfresh SL (2-4 mm)	None	Light duty, smooth
Flowfresh MF		Flowfresh MF (4-6 mm)	None	Medium duty, smooth
Flowfresh RT	No primer or like SL/MF	Flowfresh RT (6-9 mm)	None	Heavy duty, textured (flowing)
Flowfresh HF		Flowfresh HF (6-9 mm)	None	Heavy duty, textured (trowelled)
Flowfresh SR24	No primer with exception of Flowfresh SL or like SL/MF	Flowfresh SL (2-4 mm) Flowfresh MF (4 mm) Flowfresh HD (5 mm) Flowfresh RT (6-9mm) Flowfresh Mortar (6-9mm)	Flowfresh Coating Matt	Structured, R12V4
Flowfresh SR20				Structured R13V6
Flowfresh SR12				Structured R13V10
Flowfresh ESD SL	Like SL /MF	Flowfresh ESD SL	None	Light duty, ESD, smooth
Flowfresh HD*	No primer or like SL/MF	Flowfresh HD (5-6 mm)	None	Heady duty, smooth (flowing)
Flowfresh Mortar*		Flowfresh Mortar (6-9 mm)	None	Heavy duty, smooth (trowelled)

(*) Possible but not promoted

10.15 FLOWFRESH Quick system map

System name	Primer options	Wearing layer	Topcoat	Remarks
Flowfresh SL Quick	Flowfresh SL Quick	Flowfresh SL Quick (2-4 mm)	None	Light duty, smooth

	(Scratchcoat Quick)			
Flowfresh MF Quick		Flowfresh MF Quick (4-6 mm)	None	Medium duty, smooth
Flowfresh RT Quick		Flowfresh RT Quick (6-9 mm)	None	Heavy duty, textured (flowing)
Flowfresh HF Quick		Flowfresh HF Quick (6-9 mm)	None	Heavy duty, textured (trowelled)
Flowfresh SR24 Quick		Flowfresh SL Quick (2-4 mm) Flowfresh MF Quick (4 mm) Flowfresh HD Quick (5 mm) Flowfresh RT Quick (6-9mm) Flowfresh Mortar Quick (6-9mm)	Flowfresh Coating Matt	Structured, R12V4
Flowfresh SR20 Quick				Structured R13V6
Flowfresh SR12 Quick				Structured R13V10
Flowfresh HD* Quick		Flowfresh HD Quick (5-6 mm)	None	Heady duty, smooth (flowing)
Flowfresh Mortar* Quick		Flowfresh Mortar Quick (6-9 mm)	None	Heavy duty, smooth (trowelled)

(*) Possible but not promoted

10.16 FLOWFRESH temperature resistance

System name	Thermal resistance range	Finish type
Flowfresh SL 2 mm	-20°C - + 50°C (+60°C spills)	Smooth
Flowfresh MF 4 mm	-20°C - + 70°C (+80°C spills)	Smooth
Flowfresh RT 6 mm	-20°C - + 70°C (+70°C spills)	Textured

	9 mm	-40°C - + 105°C (+120°C spills)	
Flowfresh HF	6 mm	-20°C - + 70°C (+70°C spills)	Textured
	9 mm	-40°C - + 105°C (+120°C spills)	
Flowfresh SR	4 mm	-20°C - + 70°C (+80°C spills)	Broadcast
	7 mm	-20°C - + 80°C (+90°C spills)	
	8 mm	-20°C - +80°C (+ 90°C spills	
	9 mm	-40°C - +105°C (+120°C spills)	
	10 mm	-40°C - +105°C (+120°C spills)	
	11 mm	-40°C - +105°C (+120°C spills)	
Flowfresh ESD SL 2-3 mm		-20°C - + 60°C (+70°C spills)	Smooth
Flowfresh Cove 9 mm		-40°C - + 105°C (+120°C spills)	Smooth
Flowfresh HD* 5 mm		-20°C - + 70°C (+80°C spills)	Smooth
Flowfresh Mortar* 9mm		-40°C - + 105°C (+120°C spills)	Smooth

(*) Possible but not promoted

11. ENVIRONMENTAL AND HEALTH

Follow the appropriate Occupational Health and Safety Guidelines applicable to the location where the application is undertaken.
Technical and Safety Data Sheet must be read and understood before use.

12. TECHNICAL SERVICE

Contact Tremco CPG (Country)