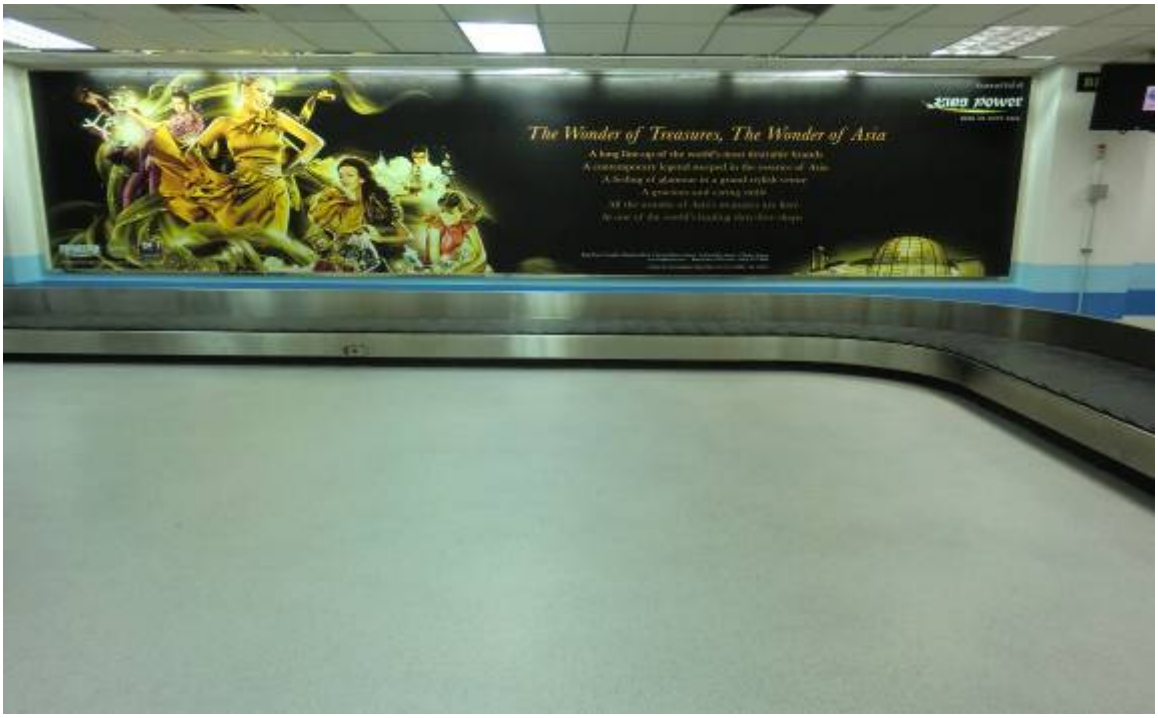
Construction

Method Statement
Sika CompactFloor
BU Contactors

Scope:

Method statement for the application of:

Sika CompactFloor, an economical, highly mechanical resistant and decorative solution for a dense, strong, resistant and durable floor based on a 2-part epoxy resin.



Construction

Table of Contents:

Construction

1. Products and Description

Sikafloor®-161

Two part, total solid epoxy resin binder for priming, levelling mortars and screeds

Sika-PU Quartz CF 0,3-1,2mm

multi coloured quartz sand, PU-coated, 0.4-1.2 mm

Sikafloor®-169

A solvent free, transparent epoxy resin with good UV- and chemical resistance designed as seal coat and binder for different decorative flooring solutions.

Sikafloor-Compact Filler

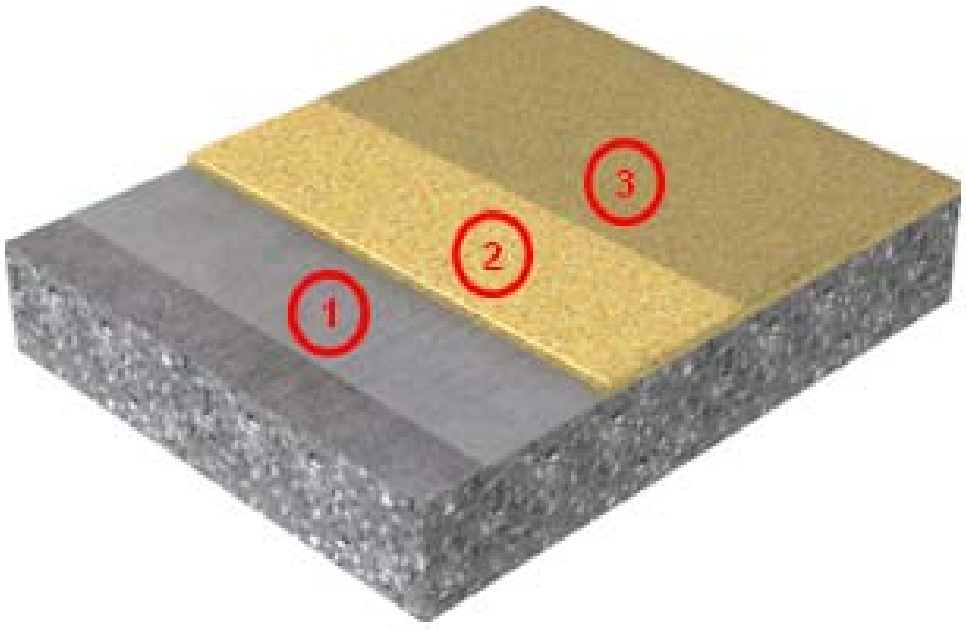
A fine Dolomite powder mixed with quartz sand used to saturate the slurry and improve its filling and flowing characteristics.

.

Construction

2. Sika®-CompactFloor® System Build Up

Sika®-CompactFloor®		
Coating System	**Product**	**Consumption**
① Primer	1-2 x Sikafloor®-156, 161 or 169 Slightly broadcast with Sika-PU Quartz CF 0,3-1,2mm	1-2 x ~0.3- 0.5 kg/m² ~1.0 kg/m2
② Wearing course	Slurry made of 1 pbw Sikafloor®-169 + 1 pbw Sikafloor®-Compact Filler Broadcast to saturation with Sika-PU Quartz CF 0,3-1,2mm Powerfloating Sikafloor®- 169 after removing the upstanding not fully embedded Sika-PU Quartz CF 0,3-1,2mm with a steel trowel and vacuuming of the surface	~1.5 – 1.7 kg/m² ~3 – 3.5 kg/m2 ~0.25 - 0.3 kg/m²
③ Seal coat (optional) Matt finish or glossy finish	Sikafloor®- 304 W or Sikafloor®- 169	~0.15 kg/m² or ~0.20 kg/m²



Construction

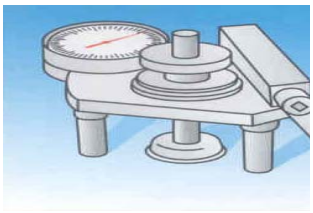
3. Substrate Requirements

3.1 Pull off and compressive strength

The concrete substrate must be sound and of sufficient compressive strength (minimum 25 N/mm^2) with a minimum pull off strength of 1.5 N/mm^2.

The substrate must be clean, dry and free of all contaminants such as dirt, oil, grease, coatings and surface treatments, etc.

If in doubt, apply a test area first.



Testing of the substrate
Pull-off strength > 1.5 N/mm^2.
E.g. Proceq, Dyna pull-off tester.

3.2 Moisture content

Prior to application, confirm substrate moisture content, r.h. and dew point.
If > 4% pbw moisture content, Sikafloor® EpoCem® may be applied as a T.M.B. (temporary moisture barrier) system.

Measuring of the substrate moisture:
Moisture content < 4% by weight.
E.g. Sika Tramex moisture meter.

Construction

Tramex moisture meter.

There must be no rising moisture according to ASTM D 4263 (Polyethylene sheet test)

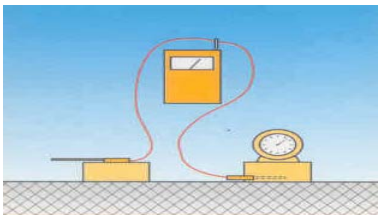
< 4% pbw if priming with Sikafloor®-144 / -161

> 4% pbw application of a temporary moisture barrier with Sikafloor®-81 EpoCem (please refer to Sikafloor-81 EpoCe m Product Data Sheet)

3.3 Ambient and surface temperature

Ambient and Surface temperature:

- Min. +10°C (but at least 3°C above dew point)
- Max. +30°C



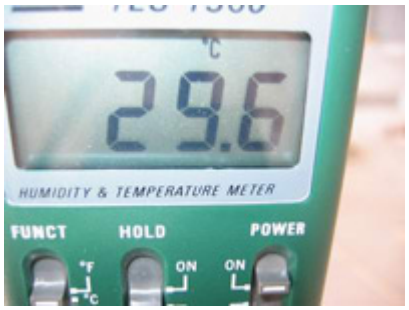
Defining the climatic conditions:
Substrate temp. > 3°C above dew point
E.g. thermometer, hygrometer, dew point table.

Construction

Substrate temperature:

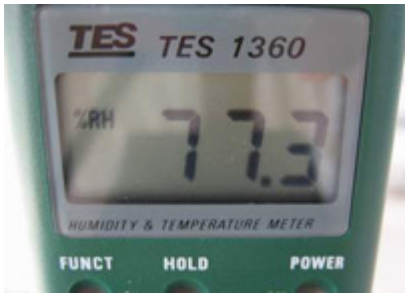
Substrate temperature > 10ºC

Ambient temperature:



Ambient temperature below 30ºC

Relative air humidity:



Relative air humidity max. 80%

Note: The speed of any chemical reaction is dependent on temperature. As a general rule, the higher the temperature, the more rapid the reaction.

Beware of condensation!
The substrate must be at least 3°C above dew point.

Construction

4. Substrate Preparation

Concrete substrates must be mechanically prepared using abrasive blast cleaning to remove cement laitance, existing coatings and achieve a gripping profile that is clean, dry and free from laitance, dirt, grease, oil and any other form of surface contamination. Vacuum blasting or similar techniques are ideally suited.

Weak concrete must be removed and surface defects such as blowholes and voids must be fully exposed.

Repairs to the substrate, filling of blowholes / voids and surface levelling must be carried out using appropriate products from the Sikafloor®, SikaDur® and SikaGard® range of materials.

Preparation of the substrate:
Blast cleaning or other mechanical means.
E.g. Blastrac.

The concrete or screed substrate has to be primed or levelled in order to achieve an even surface.

High spots must be removed by e.g. grinding.
All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush and/or vacuum.

The selected method of preparation will depend on the surface condition, environmental constraints and availability of services. The method may be selected on the basis of trial areas, approved by the Contract Administrator.

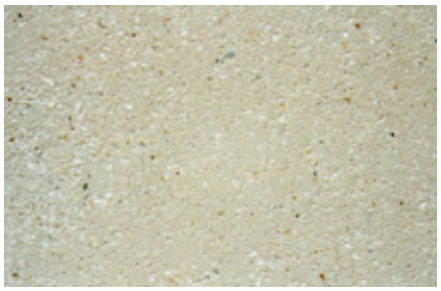
Construction

Vacuum shot blasting

Concrete substrates must be p repared mechanically using abrasive blast cleaning or scarifying equipment to remove cement laitance and achieve a profiled open textured surface

Cleaning of the surface

All dust, loose and friable material must be completely removed from all surfaces before application of the p roduct, preferably by brush and vacuum.



Clean substrate

The surface must be clean, dry and free of all contaminants, e.g. dirt, o ils, grease, coatings and surface treatments, etc.

Substrate defects, such as cracks, blow holes and voids must be repaire d using appropriate products f rom the Si kaTop®, Sika® MonoTop®, Sikafloor®, Sikadur® or Sikagard® range.

If in doubt apply a test area first.

Construction

5. Substrate Priming and Levelling

Primer:
Make sure that a continuous, pore free coat covers the substrate. If necessary, apply two priming coats. Apply Sikafloor®-161 at a consumption of 0.3 - 0.5 kg/m² by means of brush, roller or squeegee.

Average consumption for scratch coats and primer are shown in the table below:

Sikafloor-144 / -161	**0.3 - 0.5 kg/m²**
Levelling (Optional. In case of a surface roughness > 0.5 mm)	
<u>Surface roughness < 1 mm</u> Sikafloor-161	
1 pbw Sikafloor-161 + 0.5 pbw quartz sand F34*	1.0 kg/m² 0.5 kg/m²
Total consumption	1.4 - 1.5 kg/m²/mm
<u>Surface roughness up to 2 mm</u> Sikafloor -161	
1 pbw Sikafloor-161 + 1 pbw quartz sand F34*	1.0 kg/m² 1.0 kg/m²
Total consumption	1.6 - 1.7 kg/m²/mm
*All values have been determined using quartz sand 0.1-0.3 mm from Quarzwerke GmbH Frechen sand. Other quartz sand type will have an effect on the product, such as filling grade, levelling properties and aesthetics. Generally, the lower the temperature the less the filling grade.	

Construction

6. Mixing of Sikafloor®-161

Mix Component A and B of Sikafloor-161 using an electric or pneumatic stirrer (300 - 400 rpm) for at least 3 minutes or longer, until homogeneous, uniform mix is achieved.

Mix Ratio e.g. Sikafloor-161 of A : B = 79 : 21 by weight
Transfer mixed material to a clean container and mix for another minute.

Prior to mixing, stir component A (resin) and add all of component B (hardener).

Make sure the hardener is fully emptied into the resin component

Mix both components thoroughly with a low speed electric stirrer (300 - 400 rpm).

Construction

Mix for at least 3 min utes until a uniform mix has been achieved.

Transfer mixed material to a clean container.

Mix for another minute.

Construction

7. Application of Sikafloor®-161 as a Primer

Make sure, that all substrate requirements are met, such as temperature, moisture content of the prepared substrate etc. (please refer to section 5). Apply Sikafloor-161, if the moisture content is below 4%, (test method: Sika-Tra mex, or CM-measurement or Oven-dry-method; no rising moistur e according to ASTM (Polyethylen e-sheet)). If the moisture content is above 4%, apply Sikafloor EpoCem system as a temporary moisture barrier – please refer to the PDS).

Apply the mixed material by roller, taking care t o ensure good wetting of the substr ate but avoiding puddles on the surface. Work within the potlife of the material (15 minutes at 30°C).

Clean all t ools and a pplication equipment with Thinner C immedi ately after use. Hardened and / or cured material can only be removed mechanically.

Freshly applied Sikafloor®-161 should be protected from damp, condensation and water for at least 24 hours. Sikafloor®-161 mortar screed is not suitable for freque nt or permanent contact with water unless sealed.

Apply by brush, roller or squeegee and work well into the substrate.

When maximum waiting times are expected to be e xceeded lightly broadcast with kiln dried quartz sand (0.4 - 0.7 mm) at a maximum of 1.0 kg/m².

For the Sika CompactFloor slightly broadcast the primer with Sika®-PU Quartz CF 0,3-1,2mm

Construction

8. Mixing and Application of the Scratch Coat

Make sure, that the application of the scratch coat is still within the overcoating time.

Mix Component A and B of Sikafloor-161 using an electric or pneumatic stirrer (300 - 400 rpm) f or at least 2 minutes or longer, until homogeneous colour is obtained . Mix Ratio e.g. Sikafloor-161 of A : B = 79 : 21 by weight

When Parts A and B ha ve been mixed, add the quartz sand and if requ ired Extender T and mix for a further 2 minutes until a uniform mix has been achieved.

Surface roughness < 1 mm

1 pbw Sikafloor-161
+ 0.5 pbw quartz sand F34*

Surface roughness up to 2 mm

1 pbw Sikafloor-161
+ 1 pbw quartz sand F34*

*All values have been determined using quartz sand 0.1-0.3 mm from Quarzwerke GmbH Frechen. Other quartz sand type will have an effect on the product, such as filling grade, levelling properties and aesthetics. Generally, the lower the temperature the less the filling grade.

Transfer to a clean container and mix again shortly.

Pour onto the floor and then spread it evenly using a twin blade trowel o re squeegee in the required layer thickness. Work within the potlife of the material (15 minutes at 30°C).

Clean all t ools and a pplication equipment with Thinner C immedi ately after use. Hardened and / or cured material can only be removed mechanically.

After curing, grinding of the whole area is recommended to remove high spots.

Application of the scrat ch coat by squeegee / trowel to the required thickness – kneeling down or ...

Construction

…. standing up.

Construction

9. Application of the Sika CompactFloor

9.1 Substrate Priming and Levelling see chapter 5-8

Slightly broadcast the primer with Sika@-PU Quartz CF 0,3-1,2mm

9.2 Mixing of the Slurry (Sikafloor®-169 + Sika Compact Filler)

Mixing area:
Make sure that all materials are available and easy accessible so that during the application a "wet edge" can always be maintained.

Prior to mixing, stir part A mechanically. When all of part B has been added to part A, mix continuously for 2 minutes until a uniform mix has been achieved.

To ensure thorough mixing pour materials into another container and mix again to achieve a consistent mix.

Over mixing must be avoided to minimise air entrainment.

Construction

Mixing of Sikafloor®-169

Note: Please refer to the pictures in section 6 with regards to the mixing procedure, which is analogue to that of Sikafloor®-161.

When Parts A and B have been mixed, add the Sika@-Compact Filler (Mixing ratio: 1 part resin: 1 part Filler) and mix for a further 2 minutes until a uniform mix has been achieved.

Mixing of Sikafloor®-169 and Sika@ -Compact Filler

Construction

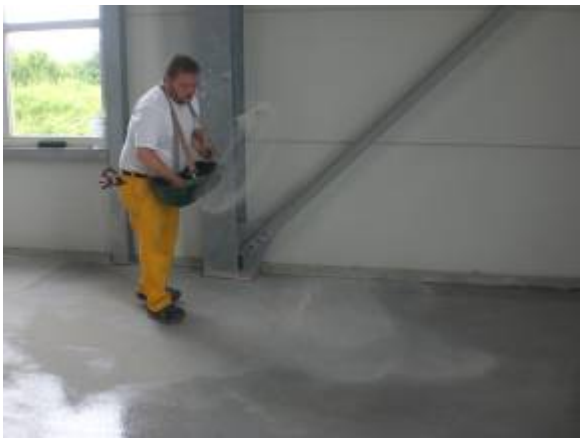
9.3 Application of the Sika CompactFloor

Make sure, that the application of the slurry, the broadcasting of the slurry and the power floating should be close succession.

Distribute the slurry evenly over the primed and slightly broadcasted surface riding on the top of the quartz sand with a steel trowel.

Kneeling down application like a scratch coat.

Construction



Broadcast the surface with Sika@-PU Quartz CF 0,3-1,2mm in color used for blinding the primer.

TO SATURATION, NOT EXCESS!!

After broadcasting the floor is ready for power floating

Note: Move slowly with the power floater line by line. The different gloss f inish is typical for this floor and will be gone after the sealing with Sikafloor®-169.

9.4 Mixing of Sikafloor®-169

See chapter 9.2: Mixing of Sikafloor®-169 and Sikafloor®-169 is completely the same. Prior to mixing, stir part A mechanically. When all of part B has been added to part A, mix continuously for 2 minutes until a uniform mix has been achieved.

To ensure thorough mixing pour materials into another container and mix again to achieve a consistent mix.

Over mixing must be avoided to minimise air entrainment.

Mixing of Sikafloor®-169

Note: Please refer to the pictures in section 6 with regards to the mixing procedure, which is analogue to that of Sikafloor®-161.

Construction

9.5 Application of Sikafloor®-169

Preparation before the application of the Sikafloor®-169

During the compaction sand grains may escape the surface and be distributed over an already comp acted area
These grains need to be taken away by using a steel trowel or a Floor Scraper and then the f loor has t o be vacuumed.

Distribute the material evenly over the compacted surface riding on the top of the quartz sand with a steel trowel.

Kneeling down application like a scratch coat.

For a glossy finish seal the surface a second time with Sikafloor®-169 after one day described like above.

9.6 Mixing of Sikafloor®-304 W

To achieve a matt surface Sikafloor®-304 W has to be used after the first Topcoat of Sikafloor®-169

Prior to mixing, stir part A mechanically. When all of part B has been added to part A, mix continuously for 3 minutes until a uniform mix has been achieved.

To achieve smoother surface **5 %** water can be added in the premixed **Sikafloor®-304 W**.

After adding the water, mix continuously for 1 minute. Wait one minute and then mix it up again for one minute.

The adding of water must be the same in every mix, if not it could slightly influence the matness and the texture.

Construction

Check the mixing result and the absence of lumps or agglomerates on a mixing blade.
To ensure thorough mixing pour materials into another container and mix again to achieve a consistent mix.

Mixing of Sikafloor®-304 W

Note: Please refer to the pictures in section 6 with regards to the mixing procedure, which is analogue to that of Sikafloor®-144 / -161.

9.7 Application of Sikafloor®-304 W

Divide the area to be coated into parts for the number of A + B units, to have consumption under control and to know how far to paint with each A + B mixture.
The rollers should be wetted in the first area, which should be taken into account by pouring out some more material. The roller will absorb approx 0.3-0.5 kg coating a. With a small quantity mixed product, pre-coat the edge areas with brush and small roller. But never go further ahead then 5 minutes to the regular rolling, to obtain minimal visibility. Within the pot-life (as soon as possible) depending on the temperature 20 min (30°C) – 40 min (10°C) the product is poured and spread out on the substrate under observation of the coverage rate (+/- 130 g/m2). Attention: the end of the pot-life is not noticeable!
SR-305 W changes viscosity suddenly when the pot life is over and the product is not useable any more.

After pouring out, the material has to be spread in the pouring direction with the roller and with the same roller cross to pouring direction, covering approx. 1.35 m wide not overlapping the former lane, and backwards covering approx 1.45 m with a overlap of less than 5 cm. Porous spots where the skin of sub layer is “opened” by sanding such as after repairs, have to be pre-coated a few minutes before arriving there with the regular roll-out to minimise visibility. Then change to a short piled roller and extend the overlap, in a calm way to approx 10-20 cm. See to it that no glittering shiny spots will be left in the finished paint layer caused by paint pick-up from the surface by the roller.

Construction

A seamless finish can be achieved if a “wet” edge is maintained during application.

	Pre-coat the edge areas with brush and small roller.
	Sikafloor®-304 W Pour out the material
	The product is spread on the substrate in the pouring direction with a short piled roller … and with the same roller cross to pouring direction.
	…and with the same roller cross to pouring direction.
	Back rolling of the surface
	Finished surface

Construction

10. Tools and Equipment

Professional equipment is required to achieve a functioning floor, such as: vacuum shot blaster, grinder, scabbler etc.

rubber wiper, squeegee for application of the primer

smoothing trowel / sword type

floor scraper

short piled roller (e.g. 14mm pile for distributing the material)

short piled roller (e.g. 8mm pile for back rolling the material)

Construction

battery driven power floater with flexible steel blades (STD)

Construction

11. Cleaning and Subsequent Maintenance

To ensure that your Sika flooring system stays in the best of shape and gives you years of satisfaction the correct cleaning and maintenance schedule should be used.

When first installed and fully cured your floor should be cleaned with an appropriate floor cleaner using the most suitable equipment for the area concerned.

Initial Clean:

Firstly, you should sweep the area to remove any loose debris.

An inspection of the area should then be undertaken to see, if there are any areas that require individual treatment such as oil spillages or scuff marks from shoes or fork lift tyres. Application of industrial cleaning detergents to these areas, either as supplied or diluted with water, then given some agitation and allowed to dwell for 5 to 10 minutes will help to remove these.

Construction

The floor area should then be cleaned using a mild alkaline cleaner or the heavier duty alkaline cleaner. Method of and equipment for the cleaning of the area will depend upon size and manpower available. On site surveys should be carried out by a professional specialist floor cleaning company. Their representatives have knowledge of resin products coupled with the correct chemicals and machinery to clean and maintain your **Sikafloor®** to the highest levels at all times.

Pre-use Inspection:

The floor should now be inspected to ensure that it has been cleaned to your required standard and that all soiling has been removed.

Precautions:

If you will now be placing equipment, storage racking, goods, furniture, filing cabinets etc. on the floor, then every effort should be taken to minimise surface scratching and marking. Dragging of heavy articles across the flooring may damage the surface. Fork lift trucks should be driven with care to avoid marking caused by wheel spin or slide.

Looking After Your Floor:

If the correct cleaning and maintenance schedule is used the appearance of your floor can be easily maintained.

For floors with a high gloss finish it is acceptable practice to lay a sacrificial layer of an acrylic polish, which will keep the high gloss finish, give a hard wearing surface, have the ability to allow for the removal of surface scratches or blemishes, whilst still incorporating anti-slip properties.

Once the above action or the decision to leave the floor as supplied has been taken, then the floor will require regular cleaning with either a neutral or mildly alkaline floor cleaner depending upon the type and level of soiling encountered.

If you have decided to use a sacrificial surface polish on your floor then any visible wear can be overlaid with a fresh coat. However, if continual additions of coats are made then it may be necessary to occasionally remove the polish and start-a-fresh.

Spillages:

Spillages of any liquid should be wiped up or absorbed and removed as soon as possible. Not only is this a responsible action as far as Health and Safety is concerned, it will also help you to keep your floor in good condition. Once the spillage is removed the area should be cleaned as usual with your standard floor cleaner. If a sacrificial coat has been previously applied the floor should be inspected to see if this remains. If not, it should be reapplied as soon as possible.

Construction

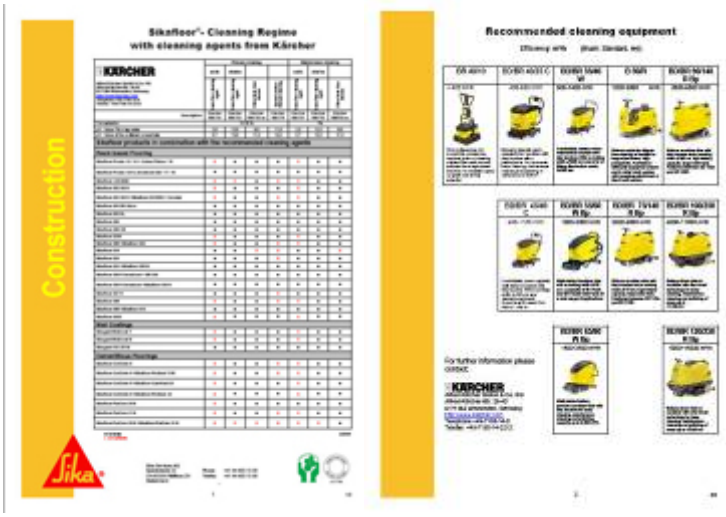
Remember:

Initial clean before use.

- Take care when installing equipment etc.
- Sacrificial polish if required.
- Regular cleaning with the right product and equipment where necessary.
- Clean up spillages.

And your **Sikafloor®** will give you years of hard wear and still look good.

Sikafloor-Cleaning Regime with cleaning agents f rom Kärcher (available on www.sika.com):



Construction

12. Additional Recommendation

Read the Product Data Sheet carefully, particularly the Notes on Applications / Limitations for further information on how to prevent application mistakes.

13. Health and Safety Recommendations

Ensure sufficient ventilation during application.

Wear proper safety equipment (gloves, eye goggles, safety boots and protective clothes) during application.

For more details, refer to Individual Safety Data Sheet (available upon request).