

# SIKA FLOOR EXPERT SIKA WOOD FLOOR INSTALLATION SYSTEMS

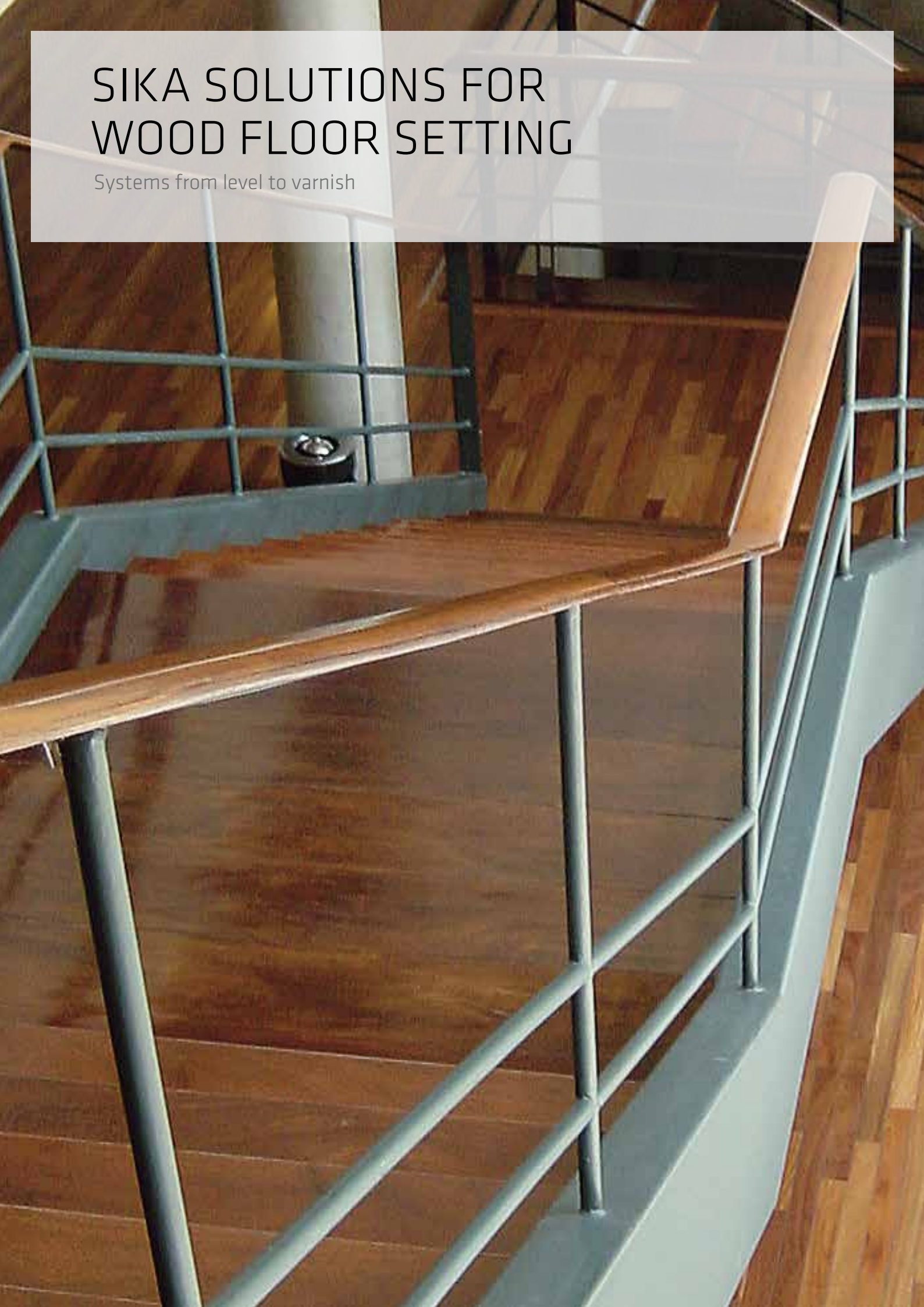
FROM LEVEL TO VARNISH

BUILDING TRUST



# SIKA SOLUTIONS FOR WOOD FLOOR SETTING

Systems from level to varnish







# STAY SAFE AND BOND YOUR WOOD FLOOR

We all need roots that we can rely on and especially wood that is grown as trees, with their roots holding them firmly in the ground. Give your wood flooring that natural grip back and bond it in position.

As in nature, good bond must have a certain flexibility to compensate for differential movement, such as between an inorganic subfloor and an organic wood floor. Sika was a pioneer in elastic wood floor bonding, which has substantially and sustainably changed the way wood flooring is laid all around the world. Sika's elastic adhesives have now proven themselves over many years, giving wood floors a durable, long-lasting, flexible but firm and resilient bond to the substrate. Our latest products continue the development of this expertise and follow the path of sustainable bonding with adaptable mechanical properties, and all to the latest and highest EHS standards. Sika's wood floor bonding adhesives are designed to meet the different requirements of your selected wood flooring, your new or existing substrate or screed, your flooring contractor and the well-being and aesthetic expectations of the owners and users.

Laying a wood floor starts with the analysis and preparation of the screed and ends with varnishing or oiling the wood floor. At Sika we have the products and expertise to help you achieve the best results in all situations. Our system solutions are designed to be balanced, giving your wood floor protection and firm adhesion below, with protection and shine from above. Choose Sika system solutions for the complete installation process from levelling to varnishing.

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# STANDARDS AND TECHNICAL GUIDELINES

## WOOD FLOOR LAYING IS A COMPLEX SUBJECT, WHERE SEVERAL PARAMETERS MUST BE ALIGNED TO ACHIEVE GOOD RESULTS.

Consequently there are also many regulations and technical guidelines often referring to local construction practices and climates.

Besides some European standards (EN), there are many national standards and regulations for floors and wood floor finishes that must be followed like DIN (Germany), Ö-Norm (Austria), SIA (Switzerland), NF (France), AS (Australian Standard), BS (UK), and ASTM/UL/ULC (in USA & Canada).

In addition to standards there are several national trade associations with technical guidelines for floor laying, where the state of the art is described. Such documentation with guidelines for successful wood flooring is available from:

- BEB: Bundesverband Estrich und Belag, Germany
- TKB/IVK: Technische Kommission Bauklebstoffe / Industrie Verband Klebstoffe, Germany
- ISP: Interessensgemeinschaft Schweizerische Parkett Industrie, Switzerland
- DTU: Document Technique Unifié, France
- BWFA: Wood Flooring Association, UK
- NWFA, National Wood Flooring Association, USA
- NFCA, National Floor Covering Association, Canada

Regarding the classification of wood floor adhesives there are two predominant standards EN 14293 and ISO 17178, which are generally referred to in Product Data Sheets and Declarations of Performance. Within these standards

the adhesives are primarily classified according to their shear strength also known as their Lap Shear value. Long term evaluation has shown that the shear strength best describes the performance of wood floor adhesives, in their applied and cured state, between the substrate (normally screed) and the wood, where any movement of the wood imposes shear stress in the adhesive.

However the manufacturers' instructions for the specific wood floor products are of overriding importance. These can sometimes also vary from general local standards and so this must be checked before confirming the most appropriate system and system build-up.





# SUBFLOOR AND SCREED CHARACTERIZATION

A PREREQUISITE FOR A SUSTAINABLE AND BEAUTIFUL WOOD FLOOR IS A STRONG AND DRY SCREED.

Therefore this screed has to be carefully accessed and the first source of information is obviously the architect or engineer, then the main contractor who between them will have all of the information about the build-up and nature of the floor.

The second source is the screed contractor who can provide the screed details and if appropriate, any subfloor heating protocols. If, as so often in refurbishment situations most of this information is not available, there are few simple methods that can be used to evaluate the screed.

## SCREED EVALUATION METHODS

Method	Description
Visual inspection and level survey	<b>Is the floor level and uniform/even, are there any cracks and why, where are the joints and how have they been formed and / or treated?</b>
Cross-hatch testing for surface strength	<b>Is the screed surface strong enough?</b> The surface strength can be tested by scratching a 3 mm cross-hatched grid using suitable metal nail. If the surface flakes or chips-off, then the screed strength is insufficient and needs to be strengthened or in extreme cases, removed and levelled again.
Surface Wiping test for dusting	<b>Is the screed surface free from loose and friable particles leading to dusting?</b> By simply wiping the surface by hand several times it is possible to assess if the surface tends to dusting or not. If it does then further investigation is required and the substrate surface probably needs to be consolidated with an impregnating primer.
Hammer-testing for screed soundness and bond to the subfloor	<b>Is the screed sound and firmly bonded to the subfloor?</b> Tapping the surface with a small hammer will reveal if areas of the screed are not bonded firmly to the subfloor with a hollow sound. If there are hollow areas these must be marked and the screed needs to be removed and replaced. The UK's BRE Drop Hammer and other similar equipment is also used for more formal testing of screed soundness
Tensile strength – the “pull-off” test	<b>Is the screed strong enough to install a wood floor?</b> With the tensile “pull-off” test according to EN 13892-8, the tensile strength of the screed is determined. To be able to accept a bonded wood floor the screed must have a tensile strength of $\geq 1 \text{ N/mm}^2$ and for wood block parquet flooring $\geq 1.2 \text{ N/mm}^2$ .
Moisture content testing	<b>Is the screed dry enough to install a wood floor?</b> A screed can be considered as dry if it is not emitting moisture to the environment and this is also dependent on the environment it is exposed to. In warm and humid regions the amount of water in the subfloor is higher than in cold and dry regions. Consequently there are several country specific standards defining the acceptable limits and how to measure the moisture content of a screed and interpret the results. The interpretation of moisture content measurement results has to be done with great care and understanding of the screed. The equilibrium moisture content of the cured screed is the only relevant dimension, but this can vary significantly, especially for premixed or accelerated screeds. Always follow the instructions of the screed producers. The free water content in the screed can be determined by destructive (direct) and non-destructive (indirect) methods. Destructive methods measure the water in the system; non-destructive methods measure physical properties of the system that change according to the water content.





The following are commonly used methods of moisture content testing:

Method	Description
<b>Destructive methods:</b>	<ul style="list-style-type: none"> <li> <span style="display: inline-block; width: 15px; height: 15px; background-color: black; margin-right: 5px;"></span> <b>Darr method (gravimetric moisture measuring method):</b> Samples of the screed are extracted and weighed before and after being heated to 105°C (cement based) and 40°C (calcium sulfate / gypsum based). The result is the amount of free water in the samples. This method is considered the most reliable and is often used in many 'Expert reports' etc.         </li> <li> <span style="display: inline-block; width: 15px; height: 15px; background-color: black; margin-right: 5px;"></span> <b>Calcium Carbide Method (CM):</b> In a closed test system the moisture (water) contained in the samples reacts with calcium carbide that is added to produce acetylene gas creating a constant pressure which is then measured. The results correlate well to the Darr humidity test done at 40°C instead of 105°C.         </li> <li> <span style="display: inline-block; width: 15px; height: 15px; background-color: black; margin-right: 5px;"></span> <b>Relative Humidity (RH):</b> Holes are drilled into the screed to a certain depth and permeable plastic sleeves inserted. After an equilibration time of 72 hours the air humidity within the sleeve is measured with a hygrometer and tables correlate this to the screed moisture content.         </li> </ul>
<b>Non-destructive methods:</b>	<ul style="list-style-type: none"> <li> <span style="display: inline-block; width: 15px; height: 15px; background-color: black; margin-right: 5px;"></span> <b>Capacitive method:</b> The electrodes of a measuring device are pushed to the screed and the dielectric constant is measured. In addition to the water, the mineral salts content and the density of the material will have an impact on the results and therefore it is necessary to take measurements in several different places. The results are then converted into a CM or RH value by tables. This method is now the one that is most commonly used worldwide, due to its reliable consistency and ease of use. e.g. Sika Tramex.         </li> <li> <span style="display: inline-block; width: 15px; height: 15px; background-color: black; margin-right: 5px;"></span>           There are also non-destructive methods where an impermeable sheet or hood is placed and sealed onto the surface and sealed for an extended period of time before it is removed and surface measurements taken. These methods are described in several standards including ASTM F2170 &amp; F2420 and BS 8201, 8203, 5325 Standard. Although very time consuming these methods are useful in the event of determining the relative importance for the floor finishes of continuous moisture transmission from below due to leaking water supply or drainage etc., which may have to be repaired before any wood floor can be installed.         </li> </ul>

A comparison between the different results of all of these different tests is difficult and is discussed very controversial. For support please refer to your local Sika offices.

# SCREED REPAIR AND PREPARATION

IF THE SCREED IS EVEN, STRONG AND DRY ENOUGH, THEN ONLY MECHANICAL SURFACE PREPARATION, SUCH AS GRINDING AND CLEANING IS REQUIRED, BEFORE WOOD FLOOR BONDING IS POSSIBLE.

However there are many situations where the existing or even new screeds are not suitable and additional treatment is necessary before wood flooring can be installed. Sika has developed complete balanced system solutions for all of the different possibilities that may be found in these situations.

## SCREED ISSUES

Scree issues	Solution	Sika products
Out of level and uneven	With local patching and levelling compounds the floor is brought to the required tolerances. Strong and durable adhesion between the substrate or screed and the patching or levelling materials is given by a primer where necessary.	The extensive and specially developed range of: <ul style="list-style-type: none"> <li>■ Sikafloor® Patch</li> <li>■ Sikafloor® Level</li> <li>■ Sika® Screed</li> </ul>
Cracks	Cracks in the surface must be filled and sealed appropriately. Therefore generally they need to be widened / opened at the surface to get sufficiently strong flanks for bonding the most suitable filling and sealing material, according to the dimensions and nature of the crack.	<ul style="list-style-type: none"> <li>■ Sika® Primer MB</li> <li>■ Sikadur®-31</li> <li>■ SikaBond®-850</li> <li>■ Anchorfix-3+ / 3001</li> </ul>
Insufficient surface strength	The screed surface must be sufficiently strong enough to give adequate results during the surface testing procedures, as previously referred to. Should the surface not meet these requirements, then surface strengthening is required.	<ul style="list-style-type: none"> <li>■ Sika® Primer MB</li> <li>■ Sika® Primer MR Fast</li> </ul>





Screed issues	Solution	Sika products
Moisture content	<p>Dependent on the moisture content of the floor, alternative different moisture barrier systems can be applied. Accurate measurement of the screed moisture content is essential before making the right system/product selection. Important Note: Calcium sulphate based gypsum and anhydrite or alpha - hemihydrate screeds will disintegrate if excess moisture is trapped in them by application of a moisture barrier.</p> <p>Floor slabs without a damp proof membrane and subject to rising moisture also need special treatment. As a global leader in structural waterproofing, Sika always has a suitable solution for every eventuality - Please contact your local Sika office.</p>	<ul style="list-style-type: none"> <li>■ Sika® Primer MB</li> <li>■ Sika® Primer MR Fast</li> </ul>
Existing floors, special situations and other complex requirements or circumstances	<p>Thorough evaluation and preparation is often needed before a new wood floor can be installed in order to avoid problems. Typical situations are:</p> <ul style="list-style-type: none"> <li>■ Existing floors with residual adhesive: <ul style="list-style-type: none"> <li>- Poor adhesion and incompatibility between the existing residues and the new adhesive</li> </ul> </li> <li>■ Wooden floor boards or other dry floor substructures: <ul style="list-style-type: none"> <li>- Inadequate fixing of the boards or elements</li> <li>- Uneven subfloors</li> </ul> </li> <li>■ Tiled or stone floors: <ul style="list-style-type: none"> <li>- Low bond strength of the existing tiles to the floor</li> <li>- Poor adhesion of the new wood floor adhesive due to residual cleaning agents or oils</li> </ul> </li> <li>■ Existing resin floors and mastic asphalt surfaces: <ul style="list-style-type: none"> <li>- Poor adhesion and incompatibility with the new</li> </ul> </li> </ul>	<p>Many different Sika advice or system solutions to overcome each specific problem</p>
Acoustic requirements	<p>Sound and noise limiting regulations within each room and for any adjacent rooms and areas, can require specific sound dampening systems in the build-up of a wood floor. The best solution has to be determined individually according to the type of subfloor, the screed and the wood floor that is required. There are country specific standards developed specifically for this requirement, such as NF DTU 51.2 article 4 in France for example.</p> <p>Sika has simple and efficient systems to allow your wood flooring to easily comply with all of these regulations.</p>	<p>Typically Sika® AcouBond®-System</p>

# SYSTEM SOLUTIONS FOR WOOD FLOORING

SIKA'S HAS EXTENSIVE EXPERIENCE AND EXPERTISE, PLUS THE RIGHT PRODUCT PORTFOLIO TO PROVIDE COMPLETE AND SUSTAINABLE SOLUTIONS FOR MOST WOOD FLOORING INSTALLATIONS.

Generally there are two main situations or project requirements:

- 1. The screed is even and flat enough for wood flooring e.g. in accordance with DIN 18202.**
- 2. The screed is not even and flat enough and therefore it needs to be levelled.**

**If the screed meets the requirements of DIN 18202** then the wood floor can be bonded directly to the floor. The following situations and systems are recommended:

- No pre-treatment is required on a clean, dry, level floor. Depending on the type of wood and the dimensions of the planks, all SikaBond® wood floor adhesives can be used.
- Pretreatment with Sika® Primer MB or Sika Primer MR Fast is required on:
  - Damp cementitious levelled floors (not concrete substrates with rising moisture)
  - Existing screeds with residual adhesive
  - Screeds with insufficient surface strength
  - Asphaltic screeds (the primer also needs to be broadcast with quartz sand)
- Grinding and thorough cleaning with Sika Activator 205 is required for installation on existing tiles
- In situations with rising moisture, a missing, inadequate or damaged damp proof membrane (DPM), please contact your local Sika offices, as Sika also specializes in waterproofing and will also be able to provide a solution for this problem.



**IF THE CEMENTITIOUS FLOOR IS UNEVEN AND NEEDS TO BE LEVELLED WE RECOMMEND THE FOLLOWING SYSTEMS:**

Base substrate	Primer	Mortar for patching, filling, repairing and levelling	Self-levelling compound
Concrete	Sikafloor®-01/-03 Primer  SikaScreed-10BB & SikaScreed-20EBB	Sikafloor®-050 Patch  SikaScreed HardTop-70	Sikafloor®-200 Level, Sikafloor®-300 Level, Sikafloor®-300 Rapid Level, Sikafloor®-400 Level
Things to bear in mind besides referring to the Product Data Sheet and substrate quality:			
<ul style="list-style-type: none"> <li>Refer to the Product Data Sheets of the primers regarding waiting times before applying a cementitious levelling or patching compound.</li> </ul>	<ul style="list-style-type: none"> <li>Remove weak areas of surface and any cement laitance mechanically.</li> <li>Use Sikafloor®-300 Rapid Level when the surface needs to be covered quickly.</li> </ul>	<ul style="list-style-type: none"> <li>Check that the surface is sound (&gt; 1 MPa) and that the residual moisture content is no higher than 95% RH or 4% CM.</li> </ul>	
Broadcast mastic asphalt IC10 & 15	Sikafloor®-02 Primer Only needed when the asphalt surface is not fully broadcast	Sikafloor®-050 Patch	Sikafloor®-200 Level, Sikafloor®-300 Level, Sikafloor®-300 Rapid Level, Sikafloor®-400 Level
Things to bear in mind besides referring to the Product Data Sheet and substrate quality:			
<ul style="list-style-type: none"> <li>Asphalt-based levelling compounds often feature good adhesion to the substrate, but are susceptible to shrinkage tension at the edges due to their elasticity. Cementitious based levelling compounds</li> </ul>	<ul style="list-style-type: none"> <li>also shrink in curing, so to avoid break-away problems, only apply cement based levelling compounds of minimum 1.5 mm and maximum of 3 mm.</li> </ul>	<ul style="list-style-type: none"> <li>Never use cement levelling compounds on road asphalt</li> </ul>	
Gypsum & anhydride screeds	Sikafloor®-01 Primer Wait for approx. 24 hours Sikafloor®-03 Primer Wait for approx. 60 minutes	Sikafloor®-050 Patch	Sikafloor®-200 Level, Sikafloor®-300 Level, Sikafloor®-300 Rapid Level, Sikafloor®-400 Level
Things to bear in mind besides referring to the Product Data Sheet and substrate quality:			
<ul style="list-style-type: none"> <li>If the layer thickness of the Sikafloor® Level or Patch exceeds 10 mm, prime the calcium sulphate substrate twice with Sikafloor®-155 WN. If Sikafloor®-155 WN is not fully broadcast with quartz sand</li> </ul>	<ul style="list-style-type: none"> <li>(0,2 – 0,8 mm), use Sikafloor®-02 Primer before applying the Sikafloor® Level.</li> <li>Check that the surface is sufficiently sound, thoroughly cleaned and free from dust and the like.</li> </ul>	<ul style="list-style-type: none"> <li>Normally the surface has to be ground to remove the laitance layer.</li> <li>Check that the primer adheres strongly to the substrate by performing a simple scrape test.</li> </ul>	
Ceramic tiles, natural stone & marble	Sikafloor®-02Primer ...for closed substrates Sikafloor®-01 Primer ...for porous substrates	Sikafloor®-050 Patch	Sikafloor®-200 Level, Sikafloor®-300 Level, Sikafloor®-300 Rapid Level, Sikafloor®-400 Level
Things to bear in mind besides referring to the Product Data Sheet and substrate quality:			
<ul style="list-style-type: none"> <li>Carefully check that the ceramic floor covering is sound and firmly bonded to the substrate. Remove any tiles that are fully or partially loose.</li> </ul>	<ul style="list-style-type: none"> <li>Always clean and sand the surface to remove any contaminants including residues of polish, wax, soap and the like. Use dry cleaning methods (vacuum cleaning, dry mopping wherever possible). Avoid</li> </ul>	<ul style="list-style-type: none"> <li>using powerful cleaning agents that may be absorbed by the substrate; as these could subsequently have a negative effect on adhesion of the wood floor adhesives.</li> </ul>	

# SYSTEM SOLUTIONS FOR WOOD FLOORING

Base substrate	Primer	Mortar for patching, filling, repairing and levelling	Self-levelling compound
Adhesive residues	Different depending on the type of adhesive residue	Sikafloor®-050 Patch	Sikafloor®-200 Level
<p>Things to bear in mind besides referring to the Product Data Sheet and substrate quality:</p> <ul style="list-style-type: none"> <li>■ Layers of water-soluble adhesives, e.g. lignin and sulphite waste adhesives are to be mechanically removed. Remaining areas of soundly adhering adhesive residues should be primed with Sikafloor®-155WN/-156/-160/-161 or Sika® Primer MB Rapid. If this primer is not fully broadcast with quartz sand (0.2 – 0.8 mm), Sikafloor®-02 Primer should be used before applying the Sikafloor® Level</li> <li>■ Existing water resistant adhesives are to be removed mechanically, as thoroughly as possible.</li> <li>■ Remove water resistant adhesive residues as far as possible before priming and levelling / filling. For levelling, we recommend Sikafloor®-200 Level, Sikafloor®-300 Level, Sikafloor®-300 Rapid Level,</li> <li>■ Sikafloor®-400 Level in layer thicknesses up to 5 mm, due to shrinkage tension, or the risk of breaking down any remaining adhesive residues. Mechanically remove these residues, e.g. by grinding or scarifying, is always the surest option.</li> <li>■ If adhesive residue dissolves during priming then it must be completely removed.</li> </ul>			
Painted surfaces (including epoxy coatings and compounds on concrete)	Sikafloor®-02 Primer if surface is not broadcast	Sikafloor®-050 Patch	Sikafloor®-200 Level, Sikafloor®-300 Level, Sikafloor®-300 Rapid Level, Sikafloor®-400 Level
<p>Things to bear in mind:</p> <ul style="list-style-type: none"> <li>■ Check that the floor paint /epoxy compound is adhering firmly to the substrate.</li> <li>■ Use Sikafloor®-200 Level for embedding underfloor heating tubes.</li> <li>■ Generally speaking, floor paint/ compounds are hard and impervious, so we always recommend priming with Sikafloor®-02 Primer.</li> </ul>			



Base substrate	Primer	Reinforcement net	Self-levelling compound
Wooden OSP and chipboard	Sikafloor®-01/-03 Primer	Multi-directional glass fiber reinforcement	Sikafloor®-200 Level
Things to bear in mind:			
	<ul style="list-style-type: none"> <li>■ The primer fulfils two important functions: It helps ensure adhesion, and it prevents the substrate absorbing water from the levelling compound.</li> <li>■ Leave the primer to dry for at least 12 hours for Sikafloor®-01 Primer</li> </ul>	<ul style="list-style-type: none"> <li>■ and 1 hour when Sikafloor®-03 Primer has been used before levelling/filling on wood-based substrates.</li> <li>■ Make sure to screw loose boards, panels and the like firmly in place.</li> <li>■ Make sure to seal all cracks, etc.</li> </ul>	<ul style="list-style-type: none"> <li>■ before levelling. Use suitable sealing profiles or joint fillers for this sealing work, as the Sikafloor®-200 Level premixed levelling compound is highly fluid.</li> </ul>

For lightweight concrete and aerated concrete please refer to your local Sika technical services for detailed advice on how to proceed with these less common material substrates.



# PRETREATMENT PRIMING SOLUTIONS FOR SUBSTRATES

## PRIMERS CAN HAVE SEVERAL ROLES IN PREPARING THE FLOOR SURFACE FOR LEVELLING, FILLING OR THE ACTUAL WOOD FLOOR INSTALLATION ITSELF.

Priming the substrate will generally:

- Improve adhesion
- Limit the absorption of the substrate
- Prevent air seeping out from the substrate, which can cause blistering

The different grades of Sikafloor® primers have been developed to meet the different requirements of different subfloors, substrates and applications. Sika® Primer MB and MR Fast also act as moisture barriers, chemical barriers and for subfloor strengthening, filling or fixings. For these latter applications they are often mixed with quartz sand.

**Sikafloor® primers** are very low emission acrylate dispersions for strong adhesion between subfloor and Sikafloor® Levelling and Patching compounds. Additionally these primers limit the adsorption and prevent air seeping out from the substrate, which can otherwise cause blistering at the surface.

### Sikafloor® primers

Primer	Porous substrates	Non porous substrates	Indoor	Outdoor
Sikafloor®-01 Primer	x	x	x	
Sikafloor®-02 Primer		x	x	
Sikafloor®-03 Primer	x		x	x

Sikafloor® Primers are spread evenly with a short pile roller on the substrate. Avoid applying an excess that leads to puddles. Sikafloor®-01 Primer and

Sikafloor®-03 Primer can also be spray applied. Depending on the substrate do not wait too long before overcoating, e.g. several days, because this may

result in the primer collecting dust and dirt on the surface that could reduce subsequent adhesion/bond.





**Sika Primer MB and MR Fast** are 2 component epoxy based pre-treatments to enable successful wood floor bonding direct to the substrate (usually concrete or cement screed).

Primer	Technology	Moisture barrier	Chemical barrier	Drying time [hr.]	Refurbishment of old floors
Sika® Primer MB	Reactive epoxy	≤ 6% CM	x	12	x
Sika® Primer MR Fast	Water-based epoxy	≤ 4% CM		4	

Sika® Primer MB is also frequently used to repair cracks with the addition of quartz sand for larger cracks. Alternatively Sikadur®-31 / SikaBond®-850, epoxy resin based mortars can be used.

In the following table the limitations for use of Sika® Primer MB and MR Fast as moisture barriers is given according to the underfloor, underfloor heating and their respective moisture levels.

## UNDERFLOORS

Underfloor	Underfloor heating	Recommended treatment	RH (%)	CM (%)	Darr (%)
Concrete based	None	No pre-treatment	≤ 75	≤ 2.3	≤ 4
		Sika Primer MR Fast	≤ 95	≤ 4	≤ 6.2
		Sika Primer MB	≤ 98	≤ 6	≤ 7.2
		Special solution	> 98	> 6	> 7.2
	Yes	No pre-treatment	≤ 60	≤ 1.5	≤ 3
		Sika Primer MR Fast	≤ 95	≤ 4	≤ 6.2
		Sika Primer MB	≤ 98	≤ 6	≤ 7.2
		Special solution	> 98	> 6	> 7.2
Calcium sulfate based	None	No pre-treatment	≤ 30	≤ 0.5	≤ 1.75
		Calcium sulfate based floors deteriorate if excess moisture is trapped, therefore no moisture barrier can be applied			
	Yes	No pre-treatment	≤ 20	≤ 0.3	≤ 1.25
		Calcium sulfate based floors deteriorate if excess moisture is trapped, therefore no moisture barrier can be applied			

The use and correct application of these Sika primers is the best way to ensure good adhesion and suitably dry substrate conditions for wood floor bonding. The additional time and costs required are more than saved by

avoiding any delays or future closures with costly repair work, not to mention lengthy and arduous discussions with claims and counter claims, which are all best avoided.

# PRODUCTS

## Sikafloor®-01 Primer

Low emissions, universal dispersion primer for porous and non-porous, dense and smooth substrates on walls and floors, suitable for indoor and outdoor applications.



### USES

- Concrete
- Cement and rapid cement screeds
- Calcium sulphate based screeds
- Gypsum plaster
- Cement plaster, lime-cement plaster
- Existing substrates with old water-resistant adhesive residues
- Gypsum board
- Dry screeds
- Wooden substrates
- Mastic asphalt screeds (completely broadcast / sanded)

### CHARACTERISTICS / ADVANTAGES

- Very low emissions
- Solvent free according to TRGS 610
- Low consumption / high coverage
- Short waiting time
- Can be applied to almost all substrates
- Suitable for application over subfloor heating systems
- Can be spray applied
- Easy to apply
- Can be diluted with water
- Ready for use
- Grip promoting
- Binds residual friable particles

### SUSTAINABILITY

- EMICODE EC 1<sup>Plus</sup>

## Sikafloor®-02 Primer

Very low emissions, acrylate dispersion based for non-porous and tight substrates on walls and floors, suitable for indoor applications only.



### USES

- Many different dense substrates
- Existing subfloors with water-resistant adhesives residues
- Existing sealed/coated substrates
- Fully-bonded existing elastic floor coverings

### CHARACTERISTICS / ADVANTAGES

- Very low emissions
- Solvent free according to TRGS 610
- Low odor
- One component
- Ready for use
- Easy to apply by roller
- Short waiting times
- Provides optimum adhesion
- Good skid resisting properties
- Low consumption / high coverage
- Suitable for application over subfloor heating systems

### SUSTAINABILITY

- EMICODE EC 1<sup>Plus</sup>

## Sikafloor®-03 Primer

Very low emissions, ready to use dispersion based primer, with high penetration capabilities for mineral substrates to provide protection against moisture from the substrate below. For indoor and outdoor use.



### USES

- Gypsum and cement based substrates.
- As an intermediate priming layer for multi-layer system build-ups

### CHARACTERISTICS / ADVANTAGES

- Very low emissions
- Ready for use
- Easy to apply
- Can be sprayed
- Grip promoting
- Binds residual friable particles (non-dusting)
- Good substrate penetration
- Resistant to saponification
- Short waiting times
- Quick drying times
- Suitable for application over subfloor heating systems

### SUSTAINABILITY

- EMICODE EC 1<sup>Plus</sup>
- Solvent free according to TRGS 610
- EPD according to ISO 14025 and EN 15804

## Sika® Primer MB

Primer and moisture regulator for wood floor bonding with SikaBond® adhesives on difficult substrates



### USES

- Moisture regulator:  
For cementitious substrates with a moisture content up to 4%
- Substrate consolidator:  
On concrete, cement & anhydrite screeds including existing substrates
- Adhesion promoter:  
For broadcast mastic asphalt and floors with residues from previous adhesives.

### CHARACTERISTICS / ADVANTAGES

- Solvent free
- Easy to apply
- Good penetration and stabilization of the substrate
- No broadcasting of the priming coat is required
- Suitable for use on existing substrates (prepared appropriately)
- Suitable for use over subfloor heating
- Low viscosity
- Compatible with SikaBond® Systems for installing wood floors

### SUSTAINABILITY

- LEED

# PRODUCTS

## Sika® Primer MR Fast

Water-based Primer and moisture control for wood floor bonding with SikaBond® adhesives.



### USES

- **Moisture control:**  
For cementitious substrates with moisture content up to 4% CM (~6% Tramex/Gravimetric weight percent).
- **Substrate consolidation:**  
On concrete, cement and anhydrite screeds, including refurbished substrates.
- **Adhesion promotion:**  
For broadcast mastic asphalt and over existing adhesive residues.

### CHARACTERISTICS / ADVANTAGES

- Very low emissions
- Water-based primer
- Suitable for refurbishing existing substrates
- Suitable for use over subfloor heating
- Compatible with SikaBond®-Systems for wood floors.
- Reduces adhesive consumption

### SUSTAINABILITY

- EMICODE EC 1<sup>Plus</sup>
- LEED





# FLOOR LEVELLING SOLUTIONS FOR WOOD FLOORING

A dry, even and strong base substrate/screed is the pre-requisite for any floor finishes. If the substrate needs to be repaired, patched or levelled, then there are several factors to be considered:

- **Base substrate strength:** A levelled or primed floor can never be stronger than its base subfloor. Surface strength should also be at least 1 MPa and any weaker areas must be removed and replaced.
- **Cleaning:** Remove all old floor coverings, adhesive residues and thoroughly clean the substrate by dry cleaning methods. Ambient temperature: Shut off underfloor heating for at least a day before you start work on levelling. Best temperature range for priming, levelling / filling and hardening is between +18°C and +22°C. The minimum temperature of the substrate, air and material is +5°C.
- **Dry base substrate:** Check the moisture content of the substrate. When levelling / filling with cement-based materials, the moisture content of the substrate must not exceed 95% RH or 4% CM.

- **Curing and drying times:** Reaction hardening products such as cement-based products are less affected by the air humidity than air-drying products such as gypsum-based levelling compounds. The hardening / drying times stated on the packaging apply at +20°C and 50% RH. Times are longer at lower temperatures or higher humidity levels
- **Weak and 'springy/flexing' subfloors:** In many cases, it is possible to reinforce an inadequate substrate, as well as a springy substrate or screeding materials with a weak surface layer by levelling with fibre reinforced levelling compounds or with the use of multi-directional glass fibre reinforcement. Before these special applications please refer to your local Sika technical services.

## LEVELS FOR PERFECTLY FLAT AND SMOOTH FLOORS

The Sikafloor® levelling and patching products are polymer modified cementitious compounds with very low emissions.

Level	Sikafloor®-050 Patch	Sikafloor®-200 Level	Sikafloor®-300 Level	Sikafloor®-300 Rapid Level	Sikafloor®-400 Level
Classification	C30-F7	C25-F6	C30-F7	C50-F10	C35-F7
Aspect	Ultrafine Stable Fast setting	Self-levelling	Self-levelling	Self-levelling High Strength Fast Setting	Self-Levelling Dust reducing
Thickness		3 - 40 mm	1 - 10 mm	1 - 10 mm	1 - 10 mm
Application	Indoor	Indoor & Outdoor	Indoor	Indoor	Indoor
Use	Patching Filling Repairing Levelling	Levelling. Suitable for chair castor rollers ac- cording to EN 12 529	Levelling. Suitable for chair castor rollers ac- cording to EN 12 529	Levelling & Strengthening Suitable for chair castor rollers ac- cording to EN 12 529	Levelling Suitable for chair castor rollers ac- cording to EN 12 529

# PRODUCTS

## Sikafloor® 050 Patch

Sikafloor®-050 Patch is a 1-component, high-performance, rapid-setting, polymer-modified and sturdy levelling mortar, based on special cements.



### USES

- Suitable for patching, filling, repairing and levelling for Indoor use.
- Can also be used as a filler to feather-edge unequal surfaces. Suitable substrates are e.g.:
  - Concrete
  - Cement and rapid cement screeds
  - Calcium sulphate based screeds
  - Magnesia screeds
  - Ceramic tiles
  - Natural stones
  - Terrazzo
  - Wood

### CHARACTERISTICS / ADVANTAGES

- With "liquid effect" application
- Easy to mix
- No bonding to the trowel
- For indoor use
- Superfine
- Great workability
- Quick drying time, non-dependent on the layer thickness
- Very smooth application
- Suitable for application over subfloor heating systems
- Layer-thickness "0" to 20 mm (without aggregates)
- Layer-thickness up to 50 mm (with aggregates)
- Low tension/stress

- Crack-free, even in thicker layers
- Suitable for castor wheel loading at layer thicknesses more than 1 mm according to EN 12529

### SUSTAINABILITY

- EC 1<sup>Plus</sup> R: very low emission.

### APPROVALS / STANDARDS

- Cementitious levelling compound CT-C30-F7 according to EN 13813
- Cementitious levelling compound according to EN13813, classified A1/A1fl according to EN 13501-1

## Sikafloor®-200 Level

Very low emissions, cement based, self-levelling compound suitable for indoor and outdoor areas. Sikafloor®-200 Level is a multipurpose, very low shrinkage levelling compound, for higher thicknesses with average loadings at 3 - 40 mm, C25-F6.



### USES

- Suitable for filling, smoothing and levelling of suitable substrates before applying parquet, other wood floors, ceramic tiles, seamless resin floors, textiles and elastic floor coverings
- For Indoor and outdoor residential and non-industrial areas

### CHARACTERISTICS / ADVANTAGES

- Self-levelling
- Suitable for application over subfloor heating systems
- Layer thicknesses up to 60 mm (with aggregates)
- Low tension
- Pumpable
- Outdoor use when covered
- Suitable for castor wheel loadings according to EN12529
- Suitable for bonded screeds under ceramic tiles on cementitious substrates

### SUSTAINABILITY

- EC 1<sup>Plus</sup> R: very low emission.

### APPROVALS / STANDARDS

- Cementitious levelling compound CT-C25-F6 according to EN 13813
- Cementitious levelling compound according to EN13813, classified A1/A1fl according to EN 13501-1

# PRODUCTS

## Sikafloor®-300 Level

Very low emissions, cement based, self-levelling compound for all kinds of substrates in preparation for laying a wide range of floor coverings. For indoor applications. Sikafloor®-300 Level has very low shrinkage and good self-levelling properties, which provides a smooth finish for medium duty loadings at 1 – 10 mm, C30-F7.



### USES

- Suitable for filling, smoothing and levelling of suitable substrates before applying parquet, other solid and engineered wood flooring, ceramic tiles, seamless resin floors, textiles and elastic floor coverings
- For residential and non-industrial indoor areas

### CHARACTERISTICS / ADVANTAGES

- Self-levelling
- Suitable for application over subfloor heating systems

- Layer thicknesses up to 20 mm (with aggregates)
- Suitable for castor wheel loadings at layer-thicknesses more than 1 mm according to EN 12 529
- High levels of hardness and strength
- Low surface porosity
- Very smooth application
- Sandable with good grindability
- Polymer modified
- Reaction hardening by hydration

- Good levelling capabilities to remove surface irregularities
- Low tension

### SUSTAINABILITY

EC 1<sup>Plus</sup> R: very low emissions.

### APPROVALS / STANDARDS

- Cementitious levelling compound CT-C30-F7 according to EN 13813
- Cementitious levelling compound according to EN13813, classified A1/A1f according to EN 13501-1

## Sikafloor®-300 Rapid Level

Very low emissions, cement based, self-levelling compound for almost all types of substrates suitable for the application of floor finishes. For indoor use. Sikafloor®-300 Rapid Level has very low shrinkage, very high strength, very rapid curing and produces a smooth finish at thicknesses of 1 – 10 mm, C50-F10.



### USES

- Suitable for filling, smoothing and levelling of suitable substrates before applying parquet, other wood flooring, ceramic tiles, textiles and elastic floor coverings, as well as coatings for seamless resin floors
- For residential and non-industrial indoor areas, including those subjected to fork lift traffic

### CHARACTERISTICS / ADVANTAGES

- Self-levelling
- Suitable for application over subfloor heating systems
- Layer thicknesses up to 25 mm (with aggregates)
- Suitable for castor wheel loadings at layer thicknesses more than 1 mm according to EN 12 529
- Pumpable
- High levels of hardness and strength
- Extendable with aggregates without loss of strength for higher layer thicknesses

- Suitable for forklift truck traffic at layer thicknesses of at least 3 mm

### SUSTAINABILITY

EC 1<sup>Plus</sup> R: very low emissions.

### APPROVALS / STANDARDS

- Cementitious levelling compound CT-C50-F10 according to EN 13813
- Cementitious levelling compound according to EN13813, classified A1/A1f according to EN 13501-1



## Sikafloor®-400 Level

High performance, non-dusting, cement based, self-levelling compound suitable for use all types of gypsum and cement based substrates in indoor areas. Sikafloor®-400 Level is noted for its super-friendly ease of application, with high workability and very low shrinkage, at layer thicknesses of 1 – 10 mm, C35-F7.



### USES

- Suitable for filling, smoothing and levelling of suitable substrates before applying parquet, other wood flooring, ceramic tiles, textiles, elastic floor coverings and seamless resin floors
- For residential and non-industrial indoor areas.

### CHARACTERISTICS / ADVANTAGES

- Dust reduction
- Self-levelling
- High levels of hardness and strength

- Very smooth in application
- Suitable for application over subfloor heating systems
- Layer thicknesses up to 25 mm (with added aggregates)
- Reaction hardening by hydration
- Pumpable
- Low tension
- Crack-free, even at thicker layers
- Extendable with aggregates without loss of strength for higher layer thicknesses
- Suitable for castor wheel loadings at layer thicknesses more than 1 mm according to EN 12 529

### SUSTAINABILITY

EC 1<sup>Plus</sup> R: very low emissions.

### APPROVALS / STANDARDS

- Cementitious levelling compound CT-C35-F7 according to EN 13813
- Cementitious levelling compound according to EN13813, classified A2fl – S1 according to EN 13501-1



# WOOD FLOOR ADHESIVES

## THE TASK OF WOOD FLOOR ADHESIVES IS TO FIRMLY BOND THE ORGANIC WOOD FLOOR ELEMENTS TO THE GENERALLY INORGANIC SCREED.

The adhesive must hold the wood in place, connect it to the underlying screed and transfer stress originating from the natural expansion and contraction of the wood to the generally rigid screed. The undesired but natural movement of the wood can become visible in cupping, joint formation, or in extreme situations failure of the adhesive or screed.

Wood floor adhesives are characterized by their performance under shear stress which closest corresponds to the situation when they are installed and connecting the wood to the screed. Lap shear values as described in European Standard EN 14293 are generally referred to classify this for the respective adhesive in Product Data Sheets. There are 3 classes of adhesives for wood floor bonding:

- **Hard** (defined as having lap shear  $\geq 3$  MPa) adhesives: Generally these can only partially accommodate movement of the wood, therefore the stress of this is transferred directly to the screed. If the screed is not sufficiently strong, it will fail and break within the screed. If the adhesion is not strong enough there will be adhesive failure at the interface.

- **Hard-elastic** (defined as having lap shear  $2 - < 3$  MPa) adhesives: These are a compromise with some of the advantages of both hard and elastic adhesives. Strong enough to limit movement of the wood and elastic enough to absorb and accommodate stress evenly to the screed. This type of hard-elastic adhesives are recommended for bonding large massive wood plank flooring.

- **Elastic** (defined as having lap shear  $1 - < 2$  MPa) adhesives: These elastic adhesives are now very commonly used to bond engineered wood floors, as well as smaller solid natural woods with limited movement. Elastic adhesives are the best solution to absorb and accommodate stress from the wood to the screed, whilst only partially restricting the natural movement of the wood.

The lap shear value is determined by bonding two overlapping wooden pieces that are then tensile strength tested in a standard test rig after curing.

From the chemistry side there are now several different adhesive polymer technology classes:

Technology	Adhesive classification [Lap Shear]	Advantages	Drawbacks
Solvent based	Hard adhesive	Rapid Economic	High VOC emissions in application and service Limited application range
Water based	Hard adhesive	Low EHS impact Low cost	Moisture sensitive (not suitable in higher RH%) Very limited applications
2 component PU	Hard-elastic Hard adhesive	Very wide application range Good cost performance ratio	Two component Rapid curing EHS issues during installation
2 component Epoxy-PU	Hard-elastic Hard adhesive	Long open time Good cost performance ratio	Two component EHS issues during installation
1 component PU	Elastic	High elongation at break Stable and robust	Limited application range Difficult to remove any residual adhesive from wood
1 component SMP (Silane Modified Polymer)	Elastic Hard-elastic Hard	The most recent technology platform now widely available With a wide range of adhesive products for a wide range of applications.	Big quality differences – you get what you pay for

The application range of the adhesives has to be given and confirmed by the manufacturer i.e. the types of substrates, screeds, woods, plank dimensions and environmental conditions, together with the limitations and necessary installation procedures.

Today in Europe one component SMP based adhesives dominate the wood floor bonding market due to their versatility, resulting in a wide assortment ranging from basic solutions for engineered wood to premium solutions for large solid wood planks. Additionally SMP based adhesives can be supplied in plastic pails and residual adhesives or stains are easy to clean-up and remove.

#### **NON-REACTIVE ADHESIVES**

Water based (also called dispersions), or solvent based adhesives cure to rigid thin films by losing their liquid carrier medium. Water is released into the screed and the wood, whereas solvents mostly evaporate into the air. Water and solvent based adhesives are older technologies and seldom used commercially to any extent today due to their limitations with wood and screeds, plus their EHS/VOC issues. However these types of adhesives were in widespread use before modern reactive adhesives became better known and well proven, but they are still available, though apart from their low cost there are no real benefits in using them today.



# WOOD FLOOR ADHESIVES



## REACTIVE WOOD FLOOR ADHESIVES

Wood floors are generally installed using reactive adhesives today because these technologies have several important advantages:

- Ease of use, characterized by optimum open times, pour- and spread-ability, trowel stability, odor, clean-ability and others
- Thick film application, making it possible to compensate unevenness like with a levelling mortar and thereby saving time
- Initial grab, needed to hold the wood in place until the adhesive is cured. Especially when laying larger wooden planks which are never perfectly plane this initial grab is essential.
- Wide application range with regard to overlaying different screeds and for laying different types of wood and different wood dimensions
- Curing time after which the wood floor can be walked on and further treated if required (e.g. sanding, polishing or varnishing etc.)
- Security, that the bond and the system build-up (screed-adhesive-wood) are stable. This means that the movement of the wood is restricted, preventing cupping and gap formation; additionally stress is accommodated and absorbed in the adhesive layer, protecting the screed from stress cracking and preventing adhesive and cohesive failures in the system.

Reactive adhesives cure after application into a stable polymer network. The initially viscous liquid becomes a solid with elastic to hard mechanical properties, depending on the density of the polymer network. There are one and two component reactive adhesives:

In one component adhesives the surrounding humidity drives the polymerisation of the adhesive. Therefore the setting times (skin time) and cure times depend on the humidity, the surrounding temperature and the adhesive thickness, as these adhesives cure from the outside to inside. Therefore at lower temperatures and correspondingly dryer air, the reaction is slower, whereas in hot and humid climates the reaction is faster and both skinning and cure times are therefore reduced/faster.

With two component adhesives the reaction starts when the two components are mixed together. The cure time is defined according to the type and nature of the hardener and the surrounding temperature. Once both components are thoroughly mixed together in the appropriate amounts, these systems are very robust and reliable.

There are many different qualities of adhesives on the market that are sold for wood floor bonding. Generally in Europe a key selection criteria is the cost per weight (kg) of the adhesive, therefore it is also always important to check the recommended adhesive weight per area, as the wood flooring overall is sold by the area (square metre), which means you cannot compare the cost per 10kg pail for example. It pays to check!

There are several ways to install a wood floor. The most common methods are traditional mechanical fixing, full surface bonding, cordon (strip) bonding, and the so-called floating installations. The Sika® AcouBond-System is another method combining advantages of floating installation with full surface bonding for more unique advantages detailed below.

Generally speaking today, the best way to install a wood floor is always going to be using full surface bonding of the wooden planks / elements to the screed or other substrate. The main advantages of this system are:

- **Comfort and safety:** We like to stand on solid and firm ground
- **Sound dampening:** Walking noises are not reflected into the room, but are absorbed by the mass of the floor
- **Thermal conductivity:** With subfloor heating wood floors must be bonded to allow efficient heat transfer.
- **Durable:** Bonding unites the wood, adhesive and screed as a composite unit, making it strong.
- **Hygienic:** Wood floors that are not bonded have many flexible joints and hollow spaces, ideal for dust accumulation and microbial growth
- **Sustainable:** Only firmly fully bonded wood floors can be evenly ground and varnished
- **Universal and versatile:** From a plain linear plank installation, to a parquet herringbone pattern and other wood floor art works are possible

Due to its apparent ease and simplicity, plus the extensive availability of engineered wood in retail there are a lot of do-it-yourself installations, but all of these have serious disadvantages and are probably more decorative than durable. This approach and these products are therefore not recommended for professionals, quality residential, public or commercial applications.

However the Sika Acoubond system is an interesting, cost effective and far higher performance alternative to floating installations, which uses some of this simplicity, combined with the advantages of full surface bonded solutions.

The Sika Acoubond System consists of a sound dampening and insulation mat with elongated perforations. This mat is spread on the floor and triangular beads of elastic wood floor adhesive are applied in the elongated perforations directly onto the prepared screed. Finally the engineered wood is placed in position over the mat and adhesive. The advantages of this system are:

- **Easy to install:**
  - Works on uneven, rough and weak screeds
  - Limited skill needed, adhesive application with the gun is easy
  - Failsafe, the perforated mat is a simple guide to ensure that sufficient adhesive is applied and that the space distance between the wood and the floor is maintained
- **Comfort and safety:** We need solid and firm ground that ideally is resilient to live and work on.
- **Sound dampening,** for significantly improved acoustics

Sika has a full range of modern, high quality reactive wood floor adhesives to cover all your flooring applications and the needs of all different types and dimensions of wood.

## PRODUCTS AND USES

	Uses & Characteristics	Classification & certification	Technology
SikaBond®-155	For all woods & varnishes High grab	<ul style="list-style-type: none"> <li>■ Hard-elastic</li> <li>■ EC1<sup>Plus</sup>, A+, M1, AgBB, DiBt</li> <li>■ Phthalate free</li> </ul>	1 comp. SMP
SikaBond®-154	For all woods & varnishes Easy to apply		
SikaBond®-153	For most woods Long open time	<ul style="list-style-type: none"> <li>■ Hard</li> <li>■ Low sensitization</li> </ul>	2 comp. Epoxy-PU
SikaBond®-152	For engineered & small woods High grab	<ul style="list-style-type: none"> <li>■ Elastic</li> <li>■ EC1<sup>Plus</sup>, A+, AgBB, DiBt</li> <li>■ Phthalate free</li> </ul>	1 comp. SMP
SikaBond®-151	For engineered & small woods High grab		
SikaBond®-54 Wood Floor	For all woods Easy to apply	<ul style="list-style-type: none"> <li>■ Elastic</li> <li>■ EC1<sup>Plus</sup>, A+, M1, AgBB, DiBt</li> </ul>	1 comp. PU
SikaBond®-52 Wood Floor	For all woods High grab		

# PRODUCTS

## SikaBond®-151

Elastic, 1-component, SMP-based wood floor adhesive with very good workability.



### USES

- Designed for full surface bonding of **wood floors** such as:
  - Engineered wood
  - Mosaic parquet
  - Lam parquet ( $\leq 55 \times 220$  mm, thickness  $\geq 10$  mm)
  - Suitable for solid planks with maximum width  $\leq 10 \times$  thickness
- Designed for use on sub-floors such as:
  - Concrete screeds
  - Cement screeds
  - Magnesite subfloors
  - Calcium sulfate subfloors

- Plywood
- Chipboard (V100)
- OSB

### CHARACTERISTICS / ADVANTAGES

- Easy to apply
- Very low emissions
- Elastic adhesive according to ISO 17178
- Suitable for use with under-floor heating

### SUSTAINABILITY / CERTIFICATION

- EMICODE EC1<sup>Plus</sup> R
- AgBB / DIBt
- M1 (Emission Class for Building Material)
- Émissions dans l'air intérieur A+
- LEED v4

Available in:

- 10 l pail
- 4 kg bag
- 600 ml foil pack

## SikaBond®-152

Elastic, 1-component, SMP-based wood floor adhesive for use in the SikaBond® dispenser and application gun. A thixotropic version of SikaBond®-151.



### USES

- Designed for full surface bonding with Sika Dispenser of:
  - Engineered wood
  - Mosaic parquet
  - Lam parquet ( $\leq 55 \times 220$  mm, thickness  $\geq 10$  mm)
  - Solid planks with maximum width  $\leq 10 \times$  thickness
- Designed for use with the Sika® AcouBond®-System:
  - Solid planks with maximum width  $\leq 10 \times$  thickness
  - 3-ply engineered wood
  - Chipboard floor systems and subfloors

- Designed for use on **sub-floors** such as:
  - Concrete screeds
  - Cement screeds
  - Magnesite subfloors
  - Calcium sulfate subfloors
  - Plywood
  - Chipboard (V100)
  - OSB

### CHARACTERISTICS / ADVANTAGES

- For use in the SikaBond® dispenser
- For application in the Sika Acoubond system
- Very low emissions
- Elastic adhesive according to ISO 17178

- Suitable for use with under-floor heating

### SUSTAINABILITY / CERTIFICATION

- EMICODE EC1<sup>Plus</sup> R
- AgBB / DIBt
- Émissions dans l'air intérieur A+
- LEED v4

Available in:

- 10 l pail
- 1.8 l foil pack
- 600 ml foil pack

## SikaBond®-154

Hard-elastic, 1-component, SMP-based wood floor adhesive with good workability and excellent varnish compatibility.



### USES

- Designed for full surface bonding of **wood floors** such as:
  - Engineered wood
  - Solid wood wood and planks
  - Wood paving
- Designed for use on **sub-floors** such as:
  - Concrete screeds
  - Cement screeds
  - Magnesite subfloors
  - Calcium sulfate subfloors
  - Plywood
  - Chipboard (V100)
  - OSB

### CHARACTERISTICS / ADVANTAGES

- Easy to apply
- Moisture barrier function
- Very low emissions
- Hard-elastic adhesive according to ISO 17178
- Excellent varnish compatibility
- Suitable for use with under-floor heating

### SUSTAINABILITY / CERTIFICATION

- EMICODE EC1<sup>Plus</sup> R
- AgBB / DIBt
- M1 (Emission Class for Building Material)
- Émissions dans l'air intérieur A+
- LEED v4

Available in:

- 10 l pail

## SikaBond®-155

Hard-elastic, 1-component SMP-based wood floor adhesive with excellent varnish compatibility for use with SikaBond® dispenser and application gun. A thixotropic version of SikaBond®-154.



### USES

- Designed for full surface bonding with Sika Dispenser of:
  - Engineered wood
- Designed for full surface bonding of **wood floors** such as:
  - Engineered wood
  - Solid wood wood and planks
  - Wood paving
- Designed for use with the Sika® AcouBond®-System:
  - Solid planks with maximum width ≤ 10 x thickness
  - 3-ply engineered wood

- Chipboard floor systems and subfloors
- Designed for use on sub-floors such as:
  - Concrete screeds
  - Cement screeds
  - Magnesite subfloors
  - Calcium sulfate subfloors
  - Plywood
  - Chipboard (V100)
  - OSB

### CHARACTERISTICS / ADVANTAGES

- For use in the SikaBond® dispenser
- For application in the Sika Acoubond system
- Very low emissions

- Elastic adhesive according to ISO 17178
- Suitable for use with under-floor heating

### SUSTAINABILITY

- EMICODE EC1<sup>Plus</sup> R
- AgBB / DIBt
- M1 (Emission Class for Building Material)
- Émissions dans l'air intérieur A+
- LEED v4

Available in:

- 1.8 l foil pack
- 600 ml foil pack

# PRODUCTS

## SikaBond®-153

Hard, 2-component and solvent-free, low sensitization wood floor adhesive with very good workability.



### USES

- Designed for full surface bonding of wood floors such as:
  - Solid planks
  - Engineered wood
  - Heat insulation panels (made of cork, expanded polyurethane, rock-wool)
  - Sound insulation panels (made of cork, expanded polyurethane, rock-wool)

### ■ For use on subfloors such as:

- Concrete screeds
- Cement screeds
- Magnesite subfloors
- Calcium sulfate subfloors
- Plywood
- Chipboard (V100)
- OSB

### CHARACTERISTICS / ADVANTAGES

- Long open time
- Easy to apply
- Easy to clean
- Low sensitization
- Solvent-free & odorless
- High traction resistance
- Hard adhesive according to ISO 17178
- Suitable for use with under-floor heating

Available in:

- 9 kg pail + 1 kg pail

## SikaBond®-54 Wood Floor

Elastic, 1-component, solvent-free wood flooring adhesive with very good workability.



### USES

- Designed for full surface bonding of:
  - Solid wood floors
  - Engineered wood floors
  - Mosaic parquet
  - Industrial parquet
  - Lam parquet
  - Residential wood floors and paving
  - Chipboard floor systems and subfloors
- Designed for use with:
  - Most common types of woods
  - Challenging woods

### CHARACTERISTICS / ADVANTAGES

- Economical, low consumption
- Adhesive can be sanded
- Floor can be sanded after 12 hours
- Elastic, footfall-sound dampening properties
- Suitable for bonding directly on old ceramic tiles
- Suitable for use with under-floor heating
- Very low emissions
- Reduces stress transfer between the wood floor and the substrate

### SUSTAINABILITY

- EMICODE EC1<sup>plus</sup> R
- LEED® EQc 4.1
- SCAQMD, Rule 1168
- BAAQMD, Reg. 8, Rule 51

Available in:

- 10 l pail



## SikaBond®-52 Wood Floor

Elastic, 1-component, solvent-free wood flooring adhesive with good initial tack and low sag flow.



### USES

- Designed for full surface bonding with SikaBond® Dispenser of:
  - Solid wood floors
  - Engineered wood floors
  - Mosaic parquet
  - Industrial parquet
  - Lam parquet
  - Chipboard floor systems and subfloors
- Designed for use with the Sika® AccouBond®-sSystem and beaded application:
  - Solid wood boards
  - 3-ply engineered wood

- Chipboard floor systems and subfloors
- Designed for use with:
  - Most common types of woods
  - Challenging woods

### CHARACTERISTICS / ADVANTAGES

- Adhesive can be sanded
- Floor can be sanded after 12 hours
- Elastic, footfall-sound dampening properties
- Suitable for bonding directly on old ceramic tiles

- Suitable for use with under-floor heating
- Very low emissions
- Reduces stress transfer between the wood floor and the substrate

### SUSTAINABILITY / CERTIFICATION

- EMICODE EC1<sup>plus</sup> R
- LEED® EQc 4.1
- SCAQMD, Rule 1168
- BAAQMD, Reg. 8, Rule 51

Available in:

- 1.8 l UP
- 600 ml UP

## Sika® AcouBond-System

Footfall sound dampening system for wood flooring.



### USES

- System is used as template to bond:
  - Solid wood boards
  - 3-ply engineered wood
  - Chipboard (tongue and groove)
- Used in new construction and refurbishment, especially for the renovation of residential-, commercial, and industrial buildings as well as for sales- and showroom areas.

### CHARACTERISTICS / ADVANTAGES

- Footfall sound reduction up to 18 dB (DIN 52 210)
- Reduced reflective walking sound
- Wood floor bonded directly to subfloor

- No wearing of the mat
- Can be walked on during installation.
- Quick and easy to lay (designated system).
- Low adhesive consumption.
- Suitable for common types of wood floors.
- Suitable for bonding wood floors directly onto old tiles.
- Reduces stress on the substrate.
- Compensation of limited substrate unevenness.
- Adhesive can be sanded.

### CERTIFICATION

- System with SikaLayer-03:
- Sound Transmission Class 60: RAL™-TL01-222 (USA).
  - Impact Insulation Class 59: RAL™-IN01-12 (USA).

- Reduction of Impact Sound  $\Delta L_w$  16 dB (NF EN ISO 717/2): Report 00A730e.
- Reduction of Impact Noise  $\Delta L_w$  -3 dB (NF EN ISO 717/2): Report 00A731e.

System with SikaLayer-05:

- Sound Transmission Class 60: RAL™-TL01-221 (USA).
- Impact Insulation Class 57: RAL™-IN01-11 (USA).
- Reduction of Impact Sound  $\Delta L_w$  18 dB (NF EN ISO 717/2): Report 01A829e.
- Reduction of Impact Noise  $\Delta L_w$  -3 dB (NF EN ISO 717/2): Report 01A828e.

# WOOD

**WOOD IS UNIQUE!** Wood is the only raw material that is renewable, biodegradable, recyclable, durable, versatile, energy efficient and extremely beautiful. Wood as a floor covering is a wonderful way of integrating something organic and warm into our buildings and homes.

In addition to the many technical advantages of wood floors, such as the surface temperature, acoustics, robustness, ease of cleaning etc., there are also many emotional aspects that are also important including its origin, design opportunities, options for laying, the smell of natural wood and others that frequently make wood floors the first choice for owners and their architects.

Woods and wood floors are as diverse and different as there are types of trees. Additionally for flooring the options range from low cost engineered woods with small dimension, to very exclusive and costly antique wooden planks with large dimensions, so there are practically no limits.

## AS A GUIDE THERE ARE GENERALLY TWO CLASSES OF WOOD FLOORS, THOSE PRODUCED WITH SOLID WOOD AND THOSE WITH ENGINEERED WOOD, THE DIFFERENCES ARE:

**Solid wood planks and parquet** are made of single pieces of wood. The most common types are the premium larger and longer planks, plus the smaller and lower cost LAM, mosaic and industrial parquet floors and wood paving. A general rule for the bonding of larger wood planks is: If the thickness to width ratio is 1:10 the risk of future distortion is low upon bonding. Exceeding this ratio (e.g. wood that is 1 cm thick and say 20 cm wide) requires careful screed preparation and adhesive system selection.

**Engineered wood** is made from several layers of wood: 2 ply engineered consist of a decorative top layer and backing layer and has to be bonded to the floor; 3 ply engineered wood is usually thicker and consists of a decorative top layer with 2 or more backing layers, which can also be laid in the so-called floating method. Usually engineered wood is completely finished e.g. sanded and varnished or oiled in the factory.

In the last decade or so, engineered woods have become the dominant type of wood flooring in most countries. The reason for this is not only cost, but engineered wood also has several other advantages:

- Limited ability to shrink and expand. Consequently engineered woods shows less cupping and gaps.
- Lower costs: By using cheaper backing woods and only a few mm of the expensive visible top layer. This together with the industrial scale factory finishing of engineered wood floors makes them accessible for most of us.
- Simplified installation: Much less knowledge and skill is needed to install engineered wood floors.

- Easy to lay with tongue and groove connections. Some 3 layered engineered wood can be installed without bonding or fixing (floating installation)
- Easy to bond: Elastic adhesives are ideal
- Factory finishing: Most engineered woods are already varnished or oiled in the factory, so no additional finishing is needed on site after laying.
- Available in many different qualities, sizes and finishes, with almost unlimited colours to texture and structures.

Engineered wood is mainly applied in residential buildings, but increasingly the higher performance products are also being used in commercial and public buildings, such as airports.

The wood floor producers provide all of the information required for a secure installation in their respective Technical Data Sheets for the wood floors. These guidelines include the environmental laying conditions, screed requirements and often they also include an adhesive recommendation.

For whatever wood you are using there is a SikaBond® wood floor adhesive that meets the requirements for a durable and sustainable bonded connection with the screed. From the hard and plasticizer free SikaBond®-158, the hard-elastic and robust SikaBond®-154, designed for larger and longer solid wood boards, to the elastic and easy-to-apply SikaBond®-151 for fully bonded engineered woods, at Sika we have them all!



# VARNISHES AND OILS

**SOLID WOOD FLOORS ARE GENERALLY** installed unfinished, in contrast to the engineered wood systems that are installed factory finished. Therefore after laying the solid wood floor and allowing time for the selected adhesive to cure, the wood is sanded and finished in a series of steps.





Finishing a wooden floor is not an easy job and requires expertise and experience. Each solid wood floor is unique when it comes to its appearance, condition, type of wood, etc. Each environment in which a floor is situated is also unique in respect of the future use and exposure, therefore its wear and also the effects of cleaning chemicals and polishes etc. Temperature and humidity are other important factors that can vary a great deal from one job to another. The selection and use of the most appropriate finishing products and their application techniques must be changed according to the individual situation.

Sika Synteko® wood floor finishing systems are designed for the finishing, oiling, cleaning and maintenance of solid wood floors. They were created for quality-minded wood floor contractors, who appreciate their features of easy application, extended durability, and the natural appearance of the finished wooden floor. The first Sika Synteko® floor finish was created in Stockholm in 1944, and since then the company has launched many high quality finishes and oils for finishing all types of large wood and parquet floors. It all started in a laboratory in Stockholm where chemists – who at the time were producing adhesives – dropped urea resin on the laboratory desks. What was first seen as a problem, as it was difficult to remove this hard and transparent substance, was realised to in fact have great possibilities for the protection of wooden surfaces.

All Sika Synteko® products have been developed to satisfy the requirements of owners, their architects and professional wood flooring contractors in the need for high-quality, high performance finishes. Our range of different wood floor finishing systems is built around the concept that they have to be easy to work with for contractors and at the same time give the best results for owners.

REFERENCE:

# PUBLIC SCHOOL LANDAMÄRESKOLAN



The plot is surrounded by several pine forests, which are reflected in the shape with facades of untreated or heat-treated Thermowood of pine.



**IN 2016 THE NEW LANDAMÄRESKOLAN** public school was built to accommodate 450 students aged from Pre-school to Grade 3. Göteborg City Council had high expectations for the school and also gave freedom to the architects in developing the design.



The long-term appearance and durability was also important for the architects, together with achieving sustainability in two ways, with an environmentally friendly building that can also withstand the everyday stresses and strains that a modern school building is exposed to. The innovative overall design was developed to meet the educational demands, including an internal layout with a largely open plan solution as required by the Principal and their team.

As a more environmentally friendly

alternative to traditional PVC flooring for schools the architects chose solid wood floors as they are from a sustainable source and particularly durable over time. In a school with so many people walking floors every day in all seasons, it is essential to be able to restore and rejuvenate the surfaces when and where they eventually become worn. In addition the use of the wood itself helps to create a calm, harmonious and aesthetically pleasing environment. It reduces the noise so that the building guarantees a quieter environment in

which to learn. Industrial parquet (vertically placed thin wood pieces) meets all of these requirements and it is also economic and competitive when compared with other types of solid wood floors.

These solid wood floors have to be firmly bonded to the substrate in order to allow easy finishing and in the longer term, refurbishment by sanding, in addition to withstanding the stresses it is exposed to daily in a public building like a school. A high quality, high performance, reliable and elastic, silane





modified polymer adhesive from the Sika range was used to achieve this this adhesive easily meets the latest strict health and safety requirements for such facilities, with low impact during installation and good long-term indoor air quality.

Stay safe and secure, bond your wood floors in the way to have the full satisfaction of the owners, their architect and contractors, plus the everyday users!

**1** Bonding wood floors reduces noise so that the building can provide a quiet atmosphere in which to learn.

**2** With at least 450 people walking frequently on the building's floors, the wooden floors were bonded to get especially durable.

AS A MORE ENVIRONMENTALLY FRIENDLY ALTERNATIVE TO TRADITIONAL PVC FLOORING FOR SCHOOLS THE ARCHITECTS CHOSE SOLID WOOD FLOORS AS THEY ARE FROM A SUSTAINABLE SOURCE AND PARTICULARLY DURABLE OVER TIME.

# FLEXIBLE FLOOR COVERING ADHESIVES

**SIKA HAS A BONDING SOLUTION** for all flexible coverings, from textile, linoleum coverings to synthetic rubber coverings. Together with our patches, levels and primers we can offer complete and proven system solutions. Our innovative systems offer perfect application properties, low environmental impact, durability and reliability. In the following table only a core assortment is presented, for special applications and needs please contact your local Sika contact.

## SUBHEADLINE

Application range	SikaBond®-100 Floor	SikaBond®-110 Multi Floor	SikaBond®-130 Design Floor	SikaBond®-150 Premium Floor
PVC & Cushioned vinyl (CV)	X	X	X	X
Carpets with PVC, PU or filler-free backing	X	X	X	X
Natural fibre covering with backing		X		X
Woven fabrics	X	X		X
Single or multilayer needle felting	X	X	X	X
Linoleum coverings	X	X		X
Corkment and cork linoleum				X
Rubber floor covering as tiles (3.5 mm)				X
Rubber floor covering in sheets				X
LVT			X	X
Impact sound insulation underlays	X	X	X	X



## SikaBond®-150 Premium Floor

1-component, solvent-free, universal pressure-sensitive dispersion adhesive.



Available in:  
■ 10 l pail

### USES

Full surface bonding of most flexible floor coverings on absorbent and non-absorbent substrates in interior areas.

### CHARACTERISTICS / ADVANTAGES

- High initial adhesion power
- Suitable for wet and semi wet bonding
- Suitable for difficult coverings

### SUSTAINABILITY/CERTIFICATION

- EC1<sup>Plus</sup>
- Marine Equipment Directive (MED "wheelmark")

## SikaBond®-130 Design Floor

1-component, solvent-free, fibre-reinforced dispersion adhesive.



Available in:  
■ 10 l pail

### USES

Full surface bonding of flexible floor coverings, especially luxury vinyl tiles (LVT) on absorbent substrates in interior areas.

### CHARACTERISTICS / ADVANTAGES

- High initial adhesion power
- High final bonding strength
- Resistant to plasticizers, ideal for LVT

### SUSTAINABILITY/CERTIFICATION

- EC1<sup>Plus</sup>

## SikaBond®-110 Multi Floor

1-component, solvent-free, general-purpose dispersion adhesive.



Available in:  
■ 10 l pail

### USES

Full surface bonding of many flexible floor coverings on absorbent substrates in interior areas.

### CHARACTERISTICS / ADVANTAGES

- Low consumption
- Suitable for shampooing

### SUSTAINABILITY/CERTIFICATION

- EC1<sup>Plus</sup>

## SikaBond®-100 Multi Floor

1-component, solvent-free dispersion adhesive.



Available in:  
■ 10 l pail

### USES

Full surface bonding of flexible floor coverings on absorbent substrates in interior areas.

### CHARACTERISTICS / ADVANTAGES

- Short open time
- Easy to spread

# SIKA FLOOR EXPERT – FOR EXPERTS FROM EXPERTS

**BESIDES ADHESIVES FOR WOOD FLOORS AND FLEXIBLE COVERINGS** Sika has tiles adhesives and grouts and complete systems for seamless resinous and cementitious floors for interior finishing, exterior protection and industrial flooring. Sika is an expert in floors and our systems are used by experts all over the world – Sika, for experts from experts.

All our floor related activities are bundled in the Sika Floor Expert microsite. Visit [www.sika.com/sika-floor-expert](http://www.sika.com/sika-floor-expert) and get information and inspiration from our solutions.

CAR PARK FLOORS AND COATINGS



ComfortFloor® SYSTEMS



INDUSTRIAL FLOORING



TILE ADHESIVE SYSTEMS





## SIKA TILE ADHESIVE SYSTEMS

Tiles are one of the most popular and durable floor coverings, found in residential and public buildings, inside and outside. From initially smaller white squares to large decorative pieces tiles have had an amazing development. For durable and beautiful solution a strong substrate and bond is precondition. Sika has all the products you need from waterproofing to mounting and grouting. Choose SikaCeram® tile systems for your tiles!



# SIKA FLOOR EXPERT – FOR EXPERTS FROM EXPERTS



## SIKA RESIN FLOORS

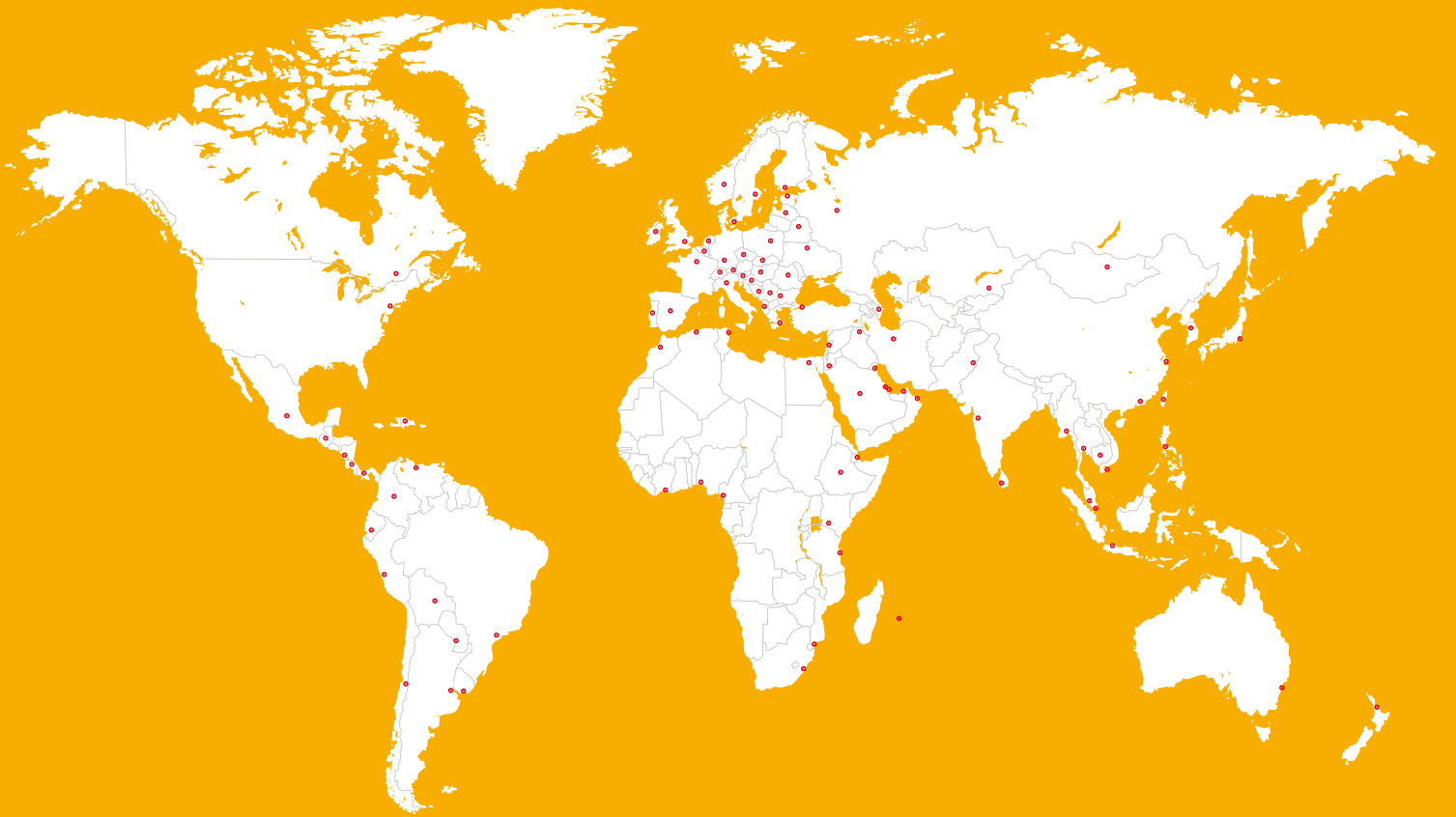
Other than the common floor coverings, wood, tiles or resilient floors that are bonded to the screed, resin floors are applied in the liquid state enabling a seamless and continuous floor with no gaps and transitions following even extreme topologies. Additionally these resinous systems offer endless possibilities in design and functionality. Our resin floors are widely used in: Public institutions like education, health care, sport facilities; private spaces like markets and stores, airports and industrial facilities, often related to food production and processing and pharmaceutical where hygiene and functionality are key. Our seamless flooring solutions in epoxy are Sikafloor® Decodur® and Multidur®, in PU are Sika® ComfortFloor® Sikafloor® Multiflex and as PU-Cement Hybrid are Sikafloor® PurCem®. From heavy duty industrial floors to decorative floors in residential and commercial building, choose Sika!



## SIKA CEMENTITIOUS FLOORS

Concrete is by far the most used construction material and huge areas of concrete floors are finished every day. The requirements to the concrete floor vary widely from park decks to heavy duty ware houses Sika has the products and know-how to ensure a flat, crack free and durable concrete floor. We offer admixtures to optimize the concrete, fibers to strengthen the slabs and surface finishes and coating to make your floor water proof, wear resistant and durable. Ask for SikaFiber® products to reinforce the slabs and screed, Sikafloor® Top, Sikafloor® CorCrete and Sikafloor® CureHard products to strengthen your surface and Sikaflex® products to seal your joints. Get best performance by choosing all from Sika.

# GLOBAL BUT LOCAL PARTNERSHIP



## FOR MORE WOOD FLOOR BONDING INFORMATION:



### WE ARE SIKA

Sika is a specialty chemicals company with a leading position in the development and production of systems and products for bonding, sealing, damping, reinforcing and protecting in the building sector and the motor vehicle industry. Sika's product lines feature concrete admixtures, mortars, sealants and adhesives, structural strengthening systems, industrial flooring as well as roofing and waterproofing systems.

Our most current General Sales Conditions shall apply. Please consult the most current local Product Data Sheet prior to any use.



**SIKA SERVICES AG**  
Tueffenwies 16  
CH-8048 Zurich  
Switzerland

**Contact**  
Phone +41 58 436 23 68  
[www.sika.com](http://www.sika.com)  
[ses.sika.com](http://ses.sika.com)

**BUILDING TRUST**

