

WOOD FLOOR BONDING

A dive into Sika's World



WATERPROOFING

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How bonded wood floors make a perfect match with art

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How bonding compensates the movement of wood up to 600%

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ISSUE #1 2017

<http://www.sika.com/sika-floor-expert>

BUILDING TRUST



WHY BOND WOOD FLOORS?



As an organic material, a natural composite of cellulose fibers, wood is strong in tension and resists compression. Ever since humans began building shelters, houses and boats, wood has been an important construction material.

Nowadays, engineered wood products are used in both residential and commercial buildings as structural and aesthetic materials. And regardless whether pine, larch, cherry, oak or linden, wood is still extremely popular for interior finishing. Natural wood signifies quality, and its timeless appeal engages all the senses. Wooden floors give buildings a special atmosphere by effortlessly combining aesthetics and strength. When it comes to the installation of wooden floors, the question is whether to use a floating installation or if the wood floor should be bonded.

One of the disadvantages of floating installations is that they cannot be sanded and refinished, whereas bonded wooden floors can be refinished again without any problem. And there's more: Due to the elasticity of the adhesive, the forces are transferred softly into the subfloor. These strains cause less stress to the substrate and keep the boards in place. But it is not only pressure of all kinds which has an effect on the wood. Due to the flexibility of the adhesive a wooden floor is able to extend or shrink in the event of temperature or moisture fluctuations.

Moreover, the combination of wooden floors over subfloor heating is effective, as there is no reduction in energy transmission. The heat transfers well through the adhesive and the wood to the surface. Bonding is also beneficial for room acoustics and walking comfort, as no room noise is generated. In general it is possible to bond any kind of wooden floor to all substrates. We hope you enjoy this collection of projects in the magazine, where bonding wooden floors was the state-of-the-art choice and altogether beneficial.

Yours sincerely,

Uwe Bankwitz
Head of Corporate Target Market Sealing & Bonding
Sika Services AG

CONTRIBUTORS



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Wood is a natural material and it works well in a school as it creates a very nice learning environment. It provides a quiet floor, with high wear resistance and yet gives a natural, beautiful impression.



MICK HOOPER
Flooring Manager
Sealing & Bonding, Sika UK

Bonding wood flooring is fraught with danger for the designer as the natural beauty of timber constantly changes its dimensions with the seasons. SikaBond Elastic Wood Flooring adhesives accommodate this change in size with ease whilst at the same time lower the stress passed to the screed resulting in a long term permanent bond to any substrate.



MARTIN MAKOVEC
Sales Representative Wood Floor
Bonding, Sika Austria

With Sika wood floor adhesives, many types of wood floors can be glued without problems. Bonding wood floors is clean, time-saving and sustainable.



TONI SONDEREGGER
Key Account Manager Adhesion
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Bonding wood floor is beneficial, as humidity changes affect the wood and this can be absorbed by the adhesive. So a permanent and durable connection is guaranteed.

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For this school building the architects chose solid wood floors for their durability over time.

EXCITING FORM MEETS DURABILITY

Gothenburg is the second-largest city in Sweden and the fifth-largest in the Nordic countries. On the west coast of Sweden, the city has a population of approximately 580,000 in the urban area, and about 1 million inhabitants in the metropolitan area. The Biskopsgården neighborhood is part of Sweden's "Million Program", and is in Gothenburg.

TEXT: MARIA RAPPOCCIO, ASTRID SCHNEIDER
PHOTO: LINDMAN PHOTOGRAPHY

- > The Million Program is the common name for an ambitious public housing program implemented in Sweden between 1965 and 1974 by the governing Swedish Social Democratic Party to make sure everyone could have a home at a reasonable price. The aim was to construct a million new dwellings during the program's ten-year period. At the time, the Million Program was the most ambitious building program in the world - to build one million new homes in a nation with a population of eight million.

In 2016 the new Landamäreskolan public school was built for 450 students ranging from

pre-school to grade 3. Gothenburg City Local Government had high ambitions and gave the architect a great deal of freedom in the design. The long-term aspect was important for both the contractors and the architects. This means sustainability in two ways, an environmentally friendly building that can also withstand the stresses that a school is exposed to daily. The principal and teachers had an innovative educational focus that has been expressed in the internal structure of the building and open-plan solution. Despite the highly ambitious shape and materials, the school building was built within the agreed budget.

In planning the school, thoughts about using the school's public premises outside school hours were also incorporated. The media library, restaurant and sports hall are intended to serve as a meeting place for the residents' activities - the school "in the middle of the village" as a meeting place and cultural center. There are viewing benches in the sports hall, and the venue can also be used for film shows, performances, and lectures of various kinds.

The architects Wahlström & Steijner were inspired by the sloping plot and surrounding pine forest in the design of the new Landamäreskola school. The result is a unique school building that was completed by the 2016 fall term. The very beautiful and distinctive building was created for the site and purpose: an S-shaped wooden structure that, from one end to the other, holds all parts of the school from the gym and dining room to administrative areas, libraries and classrooms. The shape also contributes to the topography of the site.

>

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







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



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

> The client had requested an organic form and open-plan solution. The architect Jürgen Wahlström says that they tried a number of different forms that interrelate and make the building flow. So the plot is slightly sloping, and the building winds down with a 3 m fall from one end to the other.

The plot is surrounded by several pine forests, which are reflected in the shape with facades of untreated or heat-treated Thermowood of pine. Inside too, there is no shortage of wood. The walls are made of birch and the floors are made of industrial parquet in ash – beautiful materials that are also durable. Most of the walls have birch plywood.

Instead of a traditional classroom solution with a closed classroom for a teacher and 25 students, the public school has 10 flexible teaching rooms that can be used differently for both larger and smaller groups.

“It’s going to be more like two big floors where we create different rooms within the room. And in the schoolyard there are two amphitheater-style outdoor classrooms for teaching and performances,” says Jürgen Wahlström. The architects

were also appointed to design the interior, and developed solutions in dialog with the educators who will work at the school. The new Landamäreskolan school opened in the 2016 fall term.

As an environmentally friendly alternative to PVC flooring, the architects chose solid wood floors for their durability over time. In a school with at least 450 people walking frequently on the building’s floors, it must be possible to sand a wooden floor if it becomes worn. In addition, the material itself creates a calm, harmonious and aesthetically pleasing environment. It reduces noise so that the building can provide a quiet atmosphere in which to learn. Industrial parquet meets all these requirements and is economically competitive compared with other types of solid wood floors.

Lamella wooden floors have to be firmly bonded to the floor in order to stand the stress it is exposed to in a public area like a school. Parkett Elastic Plus from Sika’s Casco Floor Expert brand was specified and its use was also instructed by the wooden floor manufacturer Kasthall. Parkett Elastic Plus is a high-quality, reliable and elastic silane modified polymer adhesive listed

in the Swedish environmental assessment Byggsvarubedömningen, which was crucial for this project. 4.2 t (2,500 l) were used in this project with an average coverage of 1 l per square meter.

The floor has a conventional construction starting with a concrete slab, primer, screed, Parket Elastic Plus adhesive, wood and hard wax oil for varnishing. <

For more information pls. visit: <http://www.casco.eu/se/casco-floor-expert/?pc=581&p=4468>

NEW PRODUCTION OF SCHOOL F-3 IN LÄNSMANSGÅRDEN, GOTHENBURG

Builders: City of Gothenburg Local Government
Project Manager: Charlotte Odbratt, City of Gothenburg Local Government
Architect: Wahlström & Stejner Arkitekter AB
Responsible architect: Jürgen Wahlström Architect SAR / MSA
Contractor: Tuve Bygg AB
Floor contractor: Celanders
Construction period: November 2014 – May 2016.
Buildings: 5,000 m²

INDOOR SWIMMING POOL



In order to seal the joints in style, Sikaflex® was chosen in the color black. So now it feels a bit like being on a yacht in the ocean.



WOODEN FLOOR WITHSTANDS HUMIDITY

A swimming pool is a thing of beauty that everyone loves. A pool's appearance can be greatly enhanced with an attractive surrounding deck and has a positive aspect on the entire outdoor or indoor area.

> As the area that surrounds the pool and sets it apart from the rest of the garden, pool decks come in a wide range of materials including concrete, natural stone and wood. Most people who have experienced these different materials will know that wooden pool decks will create a pleasant atmosphere. The smooth-looking wooden deck turns the area into a real chill-out spa zone.

The wood can be laid in different patterns and directions to achieve a contemporary, traditional or completely unique look for your deck. It's also possible to install wooden pool decks which turn into walkways leading to your home or other areas. And what's more, wood can be used for virtually any construction project. So whether you need benches, flower boxes or an outdoor dining table, you can use

the same wood you used for your deck; making it both convenient and aesthetically pleasing.

The creative ideas of the owner of this residential pool are renowned far beyond the borders of Upper Austria. In the 140 m² wellness area of his family home, the flair of the high-quality 14 mm-thick oak wood is also outstanding. Bonding a wooden floor in these surroundings is an immense challenge because of the high humidity. Furthermore, the pool water contains chlorine, which is naturally more aggressive.

The objective was to obtain 100% watertightness of the deck, which was ensured by a professionally prepared substrate as well as full-surface bonding of the wood with SikaBond® wood floor adhesive.

Two layers of Sika® Primer-3 N and Primer MR Fast were applied on the screed in the whole room. The oak wood floor was bonded with SikaBond® Parquet-52, the adhesive was applied with the SikaBond® Dispenser-1800 Power. This innovative

>

The oak wood floor was bonded with SikaBond® Parquet-52. But to achieve real watertightness it was, of course, essential to seal the joints with Sikaflex®-290 DC PRO.







In the 140 m² wellness area of his family home, the flair of the high-quality 14 mm-thick oak wood is outstanding.



WATERPROOFNESS WAS CONFIRMED AFTER 20 CHILDREN PLAYED IN THE SWIMMING POOL



- > system lets the floor setter spread the adhesive in a comfortable, upright position.

After bonding and setting the wood the joints have to be sealed. This was done with Sikaflex-290 DC PRO, a product used for ship deck caulking. This sealant retains its original functionality throughout its whole lifecycle, and provides durable tightness. In order to give the deck that “teak ship deck” look, Sikaflex® was chosen in the color black. So now it feels a bit like being on a yacht in the ocean.

A real life waterproofing test was performed when the owner invited 20 children to play and have fun in the

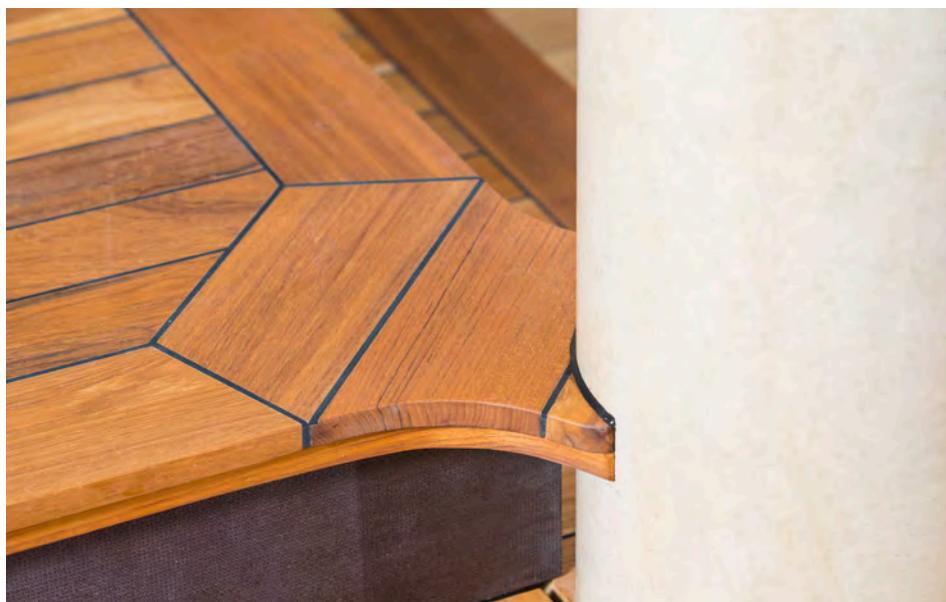




Photo to the left:

During set-up the system applicator SikaBond® Dispenser-1800 Power for fullsurface parquet bonding was a great support. Afterwards are no adhesive residues on the surrounding substrates and the adhesive can be spread evenly.

swimming pool. After that, the pool deck and wooden floors were really wet. But the owner confirmed that the floors and deck were watertight. Reality check passed and a satisfied owner! <



SOUND DAMPENING “MADE OF WOOD”

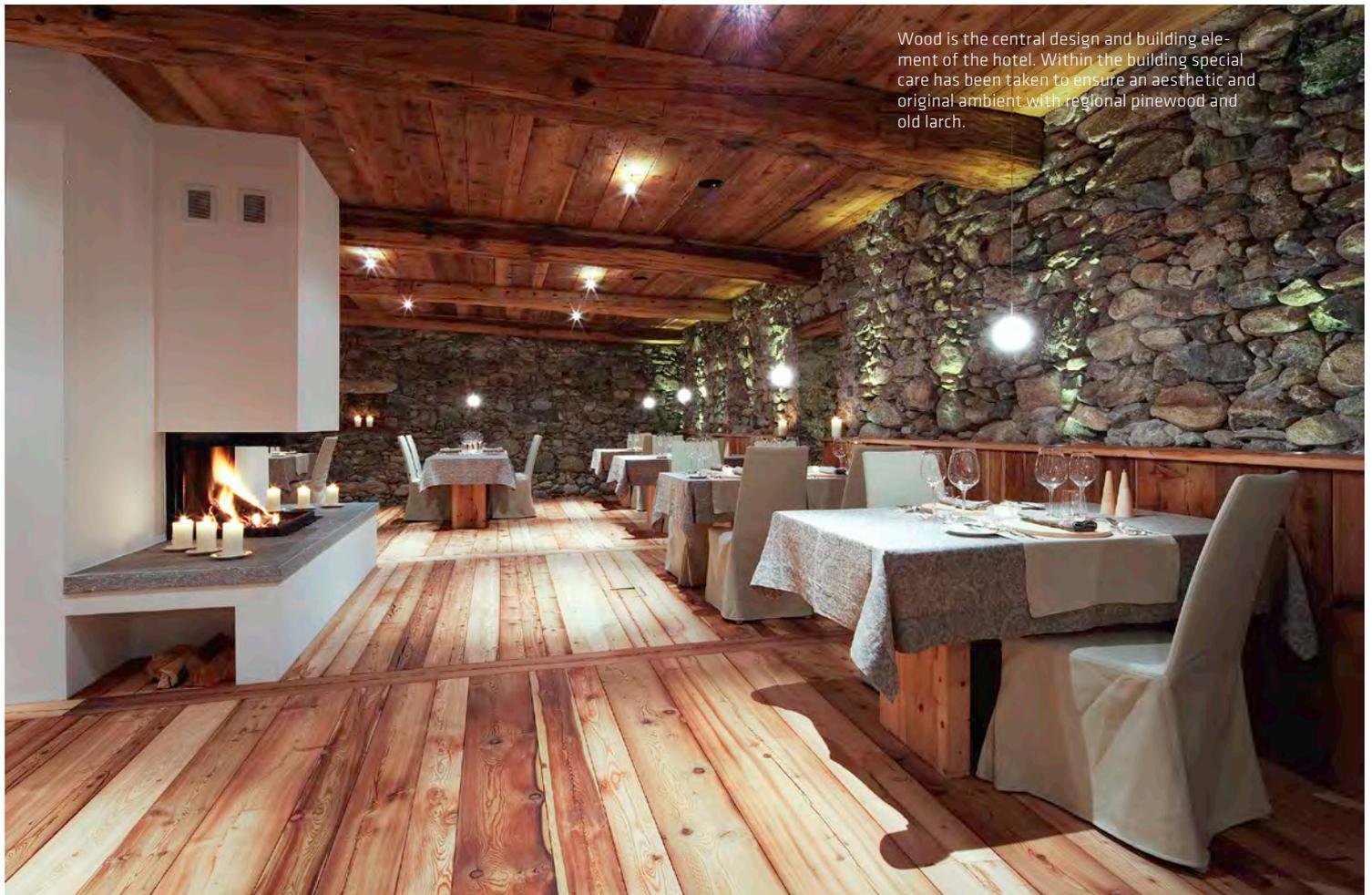
The Engadin is a stunning Alpine valley region in high altitude located in the eastern Swiss Alps and in the canton of Graubünden with about 25,000 inhabitants. The main valley follows the river Inn northeast wards from its headwaters at the Maloja Pass for 100 km downstream. The Engadine is surrounded by high mountain ranges on all sides and is famous for its sunny climate, beautiful landscapes and outdoor activities. All of this makes the Engadin one of the most popular holiday regions in Switzerland.

TEXT: JASMINKA KOCEV, ASTRID SCHNEIDER

PHOTO: SIKI SWITZERLAND

- > The In Lain Hotel Cadonau, which belongs to the Cadonau family and is located in Brail, is more than 400 years old and a part has been carefully renovated. This antique, beautiful and original Engadin house with its elaborate and stylish details has been gently and lovingly restored. It has become a real bijou. "In Lain" is Romansch and means "made of wood". When you have a closer look, it becomes apparent that the house was built with best quality wood from the region. The result of the renovation and expansion is astonishing and exceeds all expectations: Where the house used to be busy and hectic, you now dine in the exclusive Restaurant La Stüvetta, where you can enjoy regional and fresh food together with a splendid view of the National Park mountains. In addition the Gourmet Restaurant Vivanda has a

>



Wood is the central design and building element of the hotel. Within the building special care has been taken to ensure an aesthetic and original ambient with regional pinewood and old larch.



For the installation of this exclusive Arve wood floor, the Sika® AcouBond® system was chosen. This proven solution consists of a sound and impact insulation mat "Sika® Layer Silent" and the elastic adhesive Sika-Bond® AT-82.





- > Michelin star and 14 GaultMillau points. And in what was once home to cows and calves, guests can today enjoy a visit to a showcase cheese dairy.

The thick walls of the old vaulted cellars offer ideal conditions to store the exquisite wines and over 70 cheese varieties to be tasted. The hotel area surprises with a pronounced stylish ambience, and invites guests to simply relax. In addition to the standard rooms, you can also find dream suites from 40 to 90 m² in the new built part. The building is the first hotel in the Engadine to meet the MINERGIE standard.



Wood is the central design and building element of the hotel. Within the building special care has been taken to ensure not only an aesthetic and original ambient with regional pinewood and old larch, but also good sound insulation and room acoustics using wood floors. The Arve, or Swiss stone pine, belongs to the Pinaceae (pine) family, grows in high altitudes and very resistant to frost. It is found in the central European Alps and the Carpathians. The tree can grow up to 25 meters high and get as old as 1,200 years. Their slow grown fragrant wood

is used for furniture and for carvings. Thanks to many dark red-brown colored branches, the pinewood has a decorative structure and is very popular in interior design. Its essential oil has a special anti-septic effect. It has been used for centuries for making wardrobes (no moths), food boxes (no pests), bedroom furniture and wood floors. The hotel owners wanted a wood floor installation that dampens the sound of steps within and to the adjacent rooms, guaranteeing a silent, relaxing and

private atmosphere in the house. For the installation of this exclusive Arve wood floor, the Sika® AcouBond® system was chosen. This proven solution consists of a sound and impact insulation mat "Sika® Layer Silent" and the elastic adhesive Sika-Bond® AT-82. The system is installed together with the wood directly on the screed and is very effective. The "Sika® Layer Silent" mat is spread on the floor. In its perforations adhesive cordons are filled with an application gun. On these cordons then the wood planks

A good sound insulation and room acoustics were main reasons for installing bonded wood floors throughout the hotel.



Both building owners and hotel guests appreciate now the walking comfort and the good room acoustics.



are laid and firmly pressed to the underlying mat. Together this unique system reduces walking noises by up to 18 dB and is rapidly installed and is an ideal solution for refurbishment.

Both building owners and hotel guests appreciate the walking comfort and the good room acoustics at the In Lain Hotel and enjoy a high level of privacy thanks to the sound insulation.

In addition to relaxation and privacy, there is another very good reason to visit the hotel: after winning many awards over the years, the hotel's Dario Cadonau, one of the chefs, won the "Taste of Origin" Award in 2017 and was recognized for serving fresh, sustainably produced and ethically sourced ingredients, always striving to find the best local and seasonal products. <

ART GALLERY



Outstanding art experiences are highlighted by this simple and aesthetic bonded wood floor.

WOOD FLOORS HIGHLIGHT ART EXPERIENCE

Auckland's majestic Art Gallery was one of New Zealand's first civic buildings and was designed by Melbourne architects John H Grainger and Charles A D'Ebro in the style of a grand French Château and opened in 1888.

TEXT: Duncan Robertson, Astrid Schneider
PHOTO: Duncan Robertson

- > Originally the Art Gallery took up only a part of the building; the rest was Auckland City's Free Public Library and Municipal Offices. Today, the Gallery uses the entire building.

The collection of the gallery has significantly grown, especially after the integration of the Mackelvie Gallery, requiring additional exhibition spaces and a research library. Furthermore, the pressure of the ever-growing collection and the demands put on by the need to

represent many new forms of art meant still more space was needed.

Before the remodeling of the existing building, the people of Auckland were asked what kind of gallery they wanted. Their answers shaped the vision and led the design concept. People asked for an iconic building that would help create an outstanding art experiences. They wanted a world-class public art gallery that valued its architectural heritage, unique site and New Zealand's biculturalism.

To accomplish these challenging goals, the building went through significant changes. The design plan included earthquake-proofing and heritage restoration of the 1887 and 1916 premises of the main building. These, combined with contemporary extensions, increased display space by 50 percent.

The refurbishment was a great success and confirmed by to date 17 architectural and 6 design-related awards, including the World Architecture Festival's 2013 "World Building of the Year".



A key part of the remodeling was the addition of beautiful American White Oak wooden flooring throughout numerous old and new sections of the Gallery.

As the floors are in high traffic areas, they had to be especially durable. Additional requirements to the new floors were that, where necessary, the wood could be installed over existing timber and concrete surfaces, or over a supporting layer of structural grade plywood. The installed flooring also needed to fall within strict height limits.

But crucially for an Art Gallery, in order for visitors to fully enjoy the exhibitions

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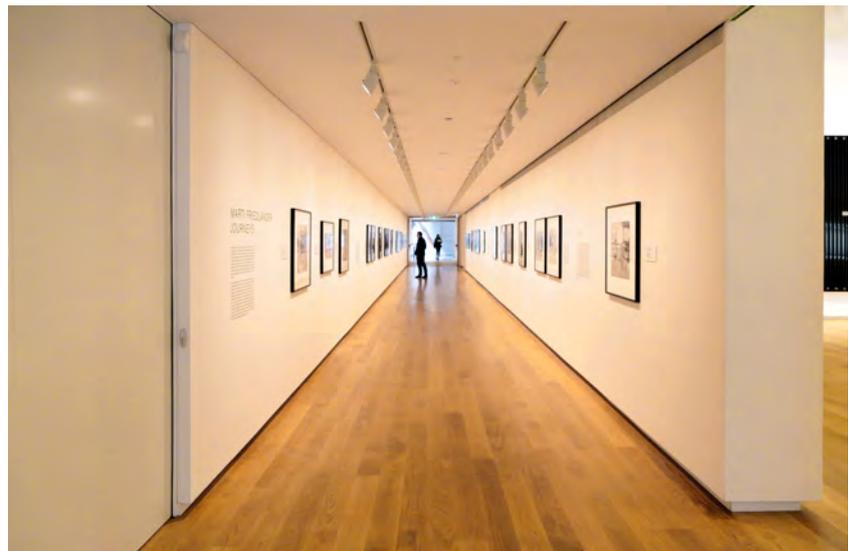


In order for visitors to fully enjoy the exhibitions without distraction, the noise levels from footsteps on the wooden flooring had to be minimal. A Sika acoustic rated wood floor bonding system proved to be the ideal solution.

- > without distraction, the noise levels from footsteps on the wooden flooring had to be minimal, both within the exhibition rooms and also, to the rooms below as well.

A Sika acoustic rated wood floor bonding system proved to be the ideal solution. The Sika® AcouBond® System, consisting of SikaBond® T55 adhesive and SikaLayer 05 acoustic foam sheet dampened the sound of foot traffic to a minimum. The pretreatment with the Primer MB ensured that there would be no migration from the post-installations.

After six years of construction the Gallery reopened in September 2011. Today the



Gallery floors look as unblemished as the day they were installed and the gallery experience, even on the busiest exhibition days, is world class. <

The Sika® AcouBond® System, consisting of SikaBond® T55 adhesive, SikaLayer 05 acoustic foam sheet and Sika Primer MB dampens the sound of foot traffic to a minimum.



RESIDENTIAL



It was important to use an adhesive that would complement the environmentally friendly product and being solvent free, odorless and possessing an E1⁺ emissions accreditation. SikaBond®-52 Wood Floors is exactly that.



WOOD BRINGS LIFE INTO CONCRETE HOUSE

When it comes to areas of London that combine understated cool, a hip edge and an old school charm, you'd be hard pushed to beat Kentish Town. Set in a tight space in the heart of this place in North London, the house, of which we are talking about, was built. The building also featured "Grand Designs", the popular home renovation show, which is one of the most popular and longest running property shows in the U.K.

AUTHOR: Jess Tanner, Mick Hopper, Astrid Schneider
PHOTO: Brian Gouth

> Hosted by Kevin McCloud, a former theater designer with a truly dazzling collection of outerwear and a taste for sustainable, minimalist architecture, it recently concluded its 17th season. And it was with the help of SikaBond®-52 Wood Floor elastic flooring adhesive with which the house has been brought to life with.

The 1,130 m² house, which includes a lower floor that has been sunk 5.8 m into the ground and a ground floor that is made almost completely of glass, brings

a touch of Hollywood glamour to a small suburb of London, creating a bright, open space.

One requisite of the project was the incorporation of environmentally friendly products. While many of the rooms kept simple, concrete flooring, for the bedrooms and staircase there was a need for a more comfortable, warm surface. Wooden flooring was chosen, specifically Burano grey oiled and brushed Oak flooring from Source Wood Floors, which

not only complemented the concrete flooring but also added to the stylish, contemporary look flowing throughout the house.

Of course, no choice of flooring would suffice unless used with a compatible fixing mechanism. SikaBond®-52 Wood Floor elastic flooring adhesive is a great choice as it can be used with any width board, is incredibly easy to apply and remains resilient. Peter Lazar, >

- > Managing Director of Source Wood Floors, commented on his choice to use SikaBond®-52 Wood Floor adhesive on this project: “The floors could have been floated, but as a specialist distributor of Sika flooring materials for many years now, we understand the merits of SikaBond® wood floor adhesives and always strongly recommend this installation option to all of our clients. We know it will achieve a strong, long lasting finish and is a trusted and reliable product that provides peace of mind to users with outstanding performance and bond strength.

With the floors being responsibly sourced through the sustainable management of forests, it was important to use an adhesive that would complement the environmentally friendly product and being solvent free, odourless and possessing an EC1plus emissions accreditation SikaBond®-52 Wood Floor is exactly that.”

As a one-component product it is ready for use and can be used for full-surface bonding on both solid and engineered wood floors – including strips, planks and mosaic or herringbone panels – from the most common types of wood to more problematic woods like beech and bamboo. Being solvent free, SikaBond®-52 Wood Floor is not only safer, but also has no odour, making it a much more pleasant experience for users.

Although buildings surrounded the house, being able to create a space that maintained a sense of privacy and softness was also of great importance to the client. One of the elements of SikaBond®-52 Wood Floor is that it reduces footfall noise, dampening sound especially when used in conjunction with Sika’s AcouBond noise reducing system. Applied by gun or dispenser, the adhesive has excellent workability and possesses fast curing properties, which is ideal for projects like this where time is a serious constraint. SikaBond®-52 Wood Floor has very high bond strength and can



Oiled and brushed oak flooring not only complemented the concrete flooring but also added to the stylish, contemporary look flowing throughout the house.

SikaBond®-52 Wood Floor has very high bond strength and can accommodate the natural movement of wood flooring of up to 600%.



Great when you have kids in the house: SikaBond®-52 Wood Floor reduces footfall noise and dampening sound.

accommodate the natural movement of wood flooring of up to 600%, which is particularly useful when considering changing climatic seasons and just how much wooden floors need to move and flex in tune with the house and those using it.

Find out more
www.sourcewoodfloors.co.uk



GLOBAL BUT LOCAL PARTNERSHIP



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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.

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