Construction

Product Data Sheet
Edition 5.17.2011
Sika AcouBond System

Sika®AcouBond®-System

Elastic Bonding and Acoustical Dampening for Wood Floors

Description	The **Sika AcouBond-System** incorporates Direct Bond Technology with acoustic performance. The Sika AcouBond System consists of Sika SilentLayer-03, a 1/8" (3 mm) proprietary specially slotted foam mat, and the SikaBond-T53, a unique permanently elastic, super strong, sound dampening adhesive that forms a tenacious bond to wood flooring, plywood subfloors, concrete and other common subfloor materials.
Uses	The **Sika AcouBond-System** is used to bond structurally sound solid and engineered hardwood in new construction and renovations in residential, office, and industrial buildings as well as sales and show rooms. It is commonly used over in-floor radiant heating and on grade cement and gypsum-based slabs. Field testing demonstrates unmatched sound reductions.
Advantages	■ Independently tested to – **IIC 59** and **STC 60** (see below) ■ Independently tested to – **FIIC 59** and **FSTC 59** (see below) ■ Extremely easy to install ■ Structurally bonds wood flooring to subfloor ■ Bonds solid wood flooring up to 8 in. (18 cm) wide and engineered planks up to 14 in. (36 cm) wide directly to concrete substrates. No limitations on maximum wood length. ■ Eliminates the extensive labor of installing cork underlayments ■ No need for sleepers and plywood over concrete- and gypsum-based subfloors ■ Innovative walk-on work method ■ Can reduce overall installation costs up to 30% ■ Suitable for bonding wood floors directly onto old ceramic tiles ■ Reduces stress on the substrate

Green Rating

LEED® EQc 4.1 (100 g/L limit)	SCAQMD, Rule 1168 (100 g/L limit)	BAAQMD, Reg. 8, Rule 51 (120 g/L limit)
passes	passes	passes

Tests

Approvals/Standards

Sika AcouBond-System with SikaLayer-03:

- Independently tested to - **IIC 59 (ASTM E 492)** and **STC 60 (ASTM E 90)** (6 " concrete slab, 5/8 " suspended gypsum ceiling)
- Independently field tested to - **FIIC 59 (ASTM E 1007)** and **FSTC 59 (ASTM E 336)** (8 " concrete slab, no suspended ceilings)
- Reduction of Impact Sound Δ **IIC = 24 (ASTM E 2179)**

Product Description - SikaLayer-03

Uses	Specially designed, proprietary Polyethylene foam mat with symmetrically placed cut-outs to insert adhesive to achieve a high sound dampening effect.
Advantages	▪Dimensionally stable and pressure resistant ▪Defined amount of adhesive consumption ▪Low weight for transport
Colors	Gray
Packaging	54.7 ft. x 4.92 ft. rolls = 269 ft² (25 m²). 12 rolls per pallet
Storage Conditions/ Shelf Life	Unlimited if kept in dry conditions and protected from direct sunlight at temperatures between +50°F and +77°F (+10°C and +25°C).

Technical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Chemical Base	Polyethylene foam
Density	1.87 lbs/ft³ (30 kg/m³)
Thickness	1/8 in. (3 mm)
Cut-Outs	5.6 cuts/ft² (60 cuts/m²)
Heat Conductivity	0.042 W/mK
Footfall Sound Reduction	up to 24 dB

Construction

Product Description - SikaBond-T53

Uses	Insert SikaBond-T53 to all cut-outs in the Sika SilentLayer-03 mat for a systematic installation of wood floors
Description	▪1-component, ready-to-use polyurethane adhesive ▪SikaBond -T53: Fast curing for early green strength and superior holding power
Color	Beige/Tan
Packaging	20 oz (600 ml) sausages. (20 sausages in a box)
Shelf-Life	12 months from date of production if stored in undamaged original sealed containers, in dry conditions and protected from direct sunlight at temperatures between +50°F and +77°F (+10°C and +25°C)

Technical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Specific Weight	10 lbs/gal (1.2 kg/l)
Tack-free Time	45-60 minutes at 73°F(23°C) and 50% RH
Curing Rate	1/8 inch (3.0 mm) in 24 hours at 73°F (23°C) and 50% RH. For proper curing of the sealant, sufficient ambient moisture is necessary (this can be from substrate or air). Floor may be sanded 24 hours after installation and light foot traffic only is acceptable after 6-8 hours (depending on climatic conditions and adhesive layer thickness).
Sag	No Sag – holds body after gunning
Service Temperature	-40°F to+158°F, suitable for in-floor radiant heating

Typical Mechanical Properties

Shear Strength	174 psi, 1 mm adhesive thickness at 73°F(23°C) and 50% RH
Tensile Strength	174 psi, cured at 73°F(23°C) and 50% RH
Shore "A" Hardness	40 after 28 days at 73°F(23°C) and 50% RH
Elongation at Break	500%, cured at 73°F(23°C) and 50% RH
VOC (g/l)	48.3

Application Details - SikaBond-T53

Consumption	Approximately 13.4 ft² per sausage (1 box of 20 sausages cover 269 ft²). All cut-outs must be filled. Use application tip with triangular cut out to a 0.32 x 0.4 inch (8 x 10 mm) opening. Tips are included in the shipping carton.
Substrate Quality	Clean and dry, homogeneous, even, free from grease, dust and loose particles. Paint, laitance and other poorly adhering particles must be removed.
Substrate Preparation	SikaBond can generally be used without priming on properly prepared, structurally sound substrates - concrete, cement floors, chipboards, ceramic tiles plywood and hardwood. For on-grade sub-floors Sika recommends the use of Sika Primer MB for best protection against sub-floor moisture – moisture testing is required by the wood flooring manufacturer for best results with the wood flooring products. Below grade applications are generally not recommended unless proper precautions are taken to protect the wood flooring from sub-floor and in-room humidity extremes. Sika recommends the use of Sika Primer MB over any dry, gypsum-based sub-flooring to enhance surface strength. Preparation is a critical step in the installation process and will ensure a successful long term tenacious bond. All concrete, cement screed and gypsum based subfloors must be structurally sound, clean, dry, smooth; free of voids, projections, loose materials, oil, grease, sealers and other surface contaminants then thoroughly cleaned with an industrial vacuum. Remove laitance or weak areas mechanically. For application over ceramic tiles it is necessary to grind tile surfaces and clean thoroughly with an industrial vacuum. For substrates with old well bonded adhesive or adhesive residue use Sika Primer MB see Primer MB data sheet for installation instructions and proper details. If surface contains asphalt (cutback) adhesive follow the Resilient Floor Covering Institute "Recommended Work Practices" for removal. When the asphalt (cutback) adhesive is sufficiently removed use the Sika Primer MB to help promote adhesion to the subfloor – or use an industry approved levelling compound over the cutback residue. SikaBond T53 will adhere to most common patching/levelling compounds. Due to differences in asphalt based adhesive types and performance capabilities, applicator must verify that preparation of the surface is sufficient prior to using Sika Primer MB or patch/level compound. For unknown substrates please contact Sika Technical Services for best practices at 800-933-SIKA.

Construction

Application Conditions/Limits

Substrate Temperature

During laying and until SikaBond-T53 has fully cured substrate temperature should be greater than 60°F (15°C) and in case of floor heating, less than 70°F (20°C).

Air Temperature

Room temperature between 60°F (15°C) and 90°F (35°C). For ambient temperatures the standard construction rules are relevant. Follow all wood floor manufacturer's acclimation and room temperature requirements.

Substrate Humidity

Moisture requirements are set forth to protect the wood flooring products that can expand and contract with different moisture levels. SikaBond-T53 is not affected by moisture or vapor transmission. The below guidelines are included to provide the best practices in moisture vapor testing that exists today. Permissible substrate moisture contents are listed on the below chart. For more information on the use of the CM method please contact Troy Corporation at 973-443-4200.

Application	Moisture level requirements using Tramex method (%)	Moisture level requirements using CM method (%)
3/4" solid or engineered over concrete	4%	2.5%
3/4" solid or engineered over concrete with Primer MB layer	6%	4.0%
3/4" solid or engineered over in-floor heating over concrete	3%	1.8%
3/4" solid or engineered over gypsum-based	Tramex should not be used to measure gypsum	0.5%
3/4" solid or engineered over in-floor heating over gypsum-based	Tramex should not be used to measure gypsum	0.3%

The National Wood Flooring Association recommends the use of moisture testing devices that identify actual moisture content in percentages (%). For best results in measuring the moisture levels in cement based subfloor use the Tramex measuring device to find the highest reading in the application area and then run the CM method at that highest point to determine the worst case. As a general guideline for floors with no in-floor heating if the Tramex is below 4% the Sika Primer MB will not be necessary and between 4% and 6% Sika Primer MB will be required - however, the CM method must be used to make final determination of concrete moisture levels - use chart above. For moisture content and quality of substrates the guidelines of wood floor manufacturer must be observed.

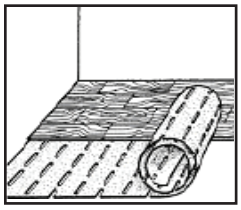
Relative Air Humidity

Between 40% and 70%

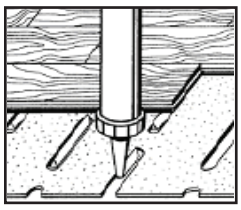
Application Instructions

Application Method/ Tools

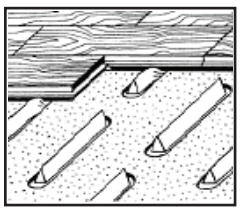
Roll out SikaLayer-03 mat on the properly prepared substrate, parallel to the laying direction of the wood floor. The mat does not get glued to the subfloor – unless adhesive is used to keep the mat from sliding. The foam mat should be placed approximately ¾" away from walls and approximately ¾" away to any adjacent mat. This will allow for placement of both a perimeter adhesive bead and an adhesive bead between any two adjacent mats. To apply the adhesive a sausage-gun is required.



Apply the adhesive with manual-or air-pressure-gun into all cut-outs with the supplied triangular nozzle. Also apply adhesive beads at room perimeters and between adjacent mat as mentioned above. Take care to place only enough adhesive to allow sufficient time to place wood into adhesive while the adhesive is still very wet. Filling of all cut-outs is a must. The nozzle must be held vertical to the substrate - 90 degree angle. Take care not to apply adhesive on top of the mat.



Position wood boards and firmly press into the adhesive until they lay tight on the SikaLayer mat. The wood boards can then be joined together using a rubber mallet or hammer and an impact block. Follow the required distance from the wall to the wood floor in the laying instruction from the wood floor manufacturer. Spacers should be used to ensure perimeter space is maintained. When working at or near room perimeters, door ways or tight areas additional slots may be needed in the SilentLayer-03 mat to accommodate short edge pieces and to ensure enough adhesive to securely hold wood down. Use razor knife to make cut outs in mat the same size as existing pre-cut openings.



Construction

Fresh, uncured adhesive remaining on the wood floor surface must be removed immediately with Sika Hand Cleaner wipes. Failure to do so could result in a dulled finish. The laying instructions of the wood floor manufacturer as well as standard construction rules must be observed throughout the installation process.

Note: For Solid and Wide Engineered Hardwood applications: Sika recommends the use of clamps to keep joints tight – for most projects a set of 5 will be adequate. If bowed boards are expected, Sika recommends placing several rows of straight boards across length of room and allow to cure overnight – these will form starter rows that will act as anchor for the clamps. For moderately bowed boards – clamp boards from the starter row. Clamp each individual row or several rows – if clamping several rows this must be done while adhesive is still wet. Clamps can then be loosened until successive rows are place and clamped accordingly. Be careful not to over-tighten. Best practice is to leave clamps in place when work is stopped for the day. For severely bowed boards – cut boards down to shorter pieces so that bow is removed. For situations where wood flooring does not rest flat - Sika recommends as a best practice the use of weights to ensure intimate contact between the wood-adhesive-substrate. Leave clamps and/or weights on critical areas for a minimum of 12 hours.

Clean Up

All tools should be cleaned immediately after use with Sika Equipment Cleaner or Sika Hand Cleaner Towels. Any adhesive that is permitted to cure on the tool will need to be removed by mechanical means. Use a dry towel and Sika Hand Cleaner Towels to removed adhesive from pre-finished wood surface before it cures. Finger prints or small amounts of adhesive residue can be removed from pre-finished wood using the Sika Hand Cleaner Towels. Sika Hand Cleaner Towels use a citrus based cleanser that will not harm the floor finish. Remove any adhesive residue from hands using the Sika Hand Cleaner Towels.

Limitations

- Sika AcouBond System should be used with 2 inch (5 cm) wide or larger structurally sound solid hard wood and structurally sound engineered hardwood that can be either floated or nailed or stapled.
- Maximum wood size: Solid wood < 8” wide and Engineered wood < 14” wide.
- Minimum wood lengths of 1’ (one foot) is required to ensure that wood spans 3 (three) adhesive strips for standard placement. No maximum wood length.
- Structurally sound sufficient tongue and groove stability is necessary for this system.
- Bonds solid wood flooring up to 8 in.(18 cm) wide and engineered planks up to 14 in. (36 cm) wide directly to concrete substrates.
- Room temperatures should be between 50F and 90F during installation unless otherwise specified limitations by wood flooring manufacturer.
- Do not use on wet, contaminated or friable substrates.
- Sika recommends the use of Portland Cement based patching and levelling compounds for best results.
- Gypsum-based sub-floors are very susceptible to excess moisture and will be degraded if exposed to excess moisture from below or above.
- Do not use in areas subject to hydrostatic head or in areas subject to secondary source of moisture.
- Do not use over concrete with curing compounds, sealers or other surface treatments that could impact the adhesion.
- This adhesive will not prevent moisture related damage to wood flooring installations.
- Sub-floor should be level - do not use adhesive as a leveling agent.
- Cutback or other asphalt based adhesives should be removed.
- Chemically treated woods (ammonia, wood stain, timber preservatives, etc.) and woods with high oil content must be tested for adhesion prior to application.
- Adhesive should be kept above 60F for best workability.
- Sufficient ambient moisture is necessary for proper curing.
- Solid wood applications are best performed by an experienced installer.
- When bonding solid wood Sika recommends the use of straps to fully connect tongue and groove - especially when wood pieces are not perfectly straight – a starter row may be appropriate to form a fixed location to tighten straps.
- Installations over radiant heat require that slab temperature be kept below 70F during installation and for 48 hours after installation – then raised slowly up to final desired temperature. Follow wood floor manufacturer’s temperature guidelines.

Wood floors in non-insulated areas or areas without a damp proof membrane, must only be installed after the application of Sika Primer MB to control the moisture, if within product limitations. For detailed instructions consult the Product Data Sheets or contact our Technical Service Department. In case of chemically pre-treated types of wood floors (e.g. ammonia, wood stain, timber preservative or woods that have been pre-sealed on the back side) and woods with high oil content SikaBond should only be used if adhesion tests are run by applicator prior to starting application. Do not use on PE, PP, TEFLON, and certain plasticized synthetic materials. (Carry out pre-trials). Some primers can negatively influence the adhesion of SikaBond (pretrials suggested). Do not expose SikaBond to alcohol; this will impact the curing of the SikaBond.

Construction

Health and Safety Information

Caution	**IRRITANT, SENSITIZER.** Contains Polyurethane Prepolymer (Trade Secret) and Xylene (CAS: 1330-20-7). Causes eye/skin/respiratory irritation. May cause skin and respiratory sensitization. Harmful if swallowed. Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain, liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal. This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.
First Aid	**Eyes –** Hold eyelids apart and flush thoroughly with water for 15 minutes. **Skin –** Remove contaminated clothing. Wash skin thoroughly for 15 minutes with soap and water. **Inhalation –** Remove to fresh air. **Ingestion** – Do not induce vomiting. Dilute with water. Contact physician. **In all cases contact a physician immediately if symptoms persist.**
Handling & Storage	Avoid direct contact. Wear personal protective equipment (chemical resistant goggles/gloves/clothing) to prevent direct contact with skin and eyes. Use only in well ventilated areas. Open doors and windows during use. Use a properly fitted NIOSH respirator if ventilation is poor. Wash thoroughly with soap and water after use. Remove contaminated clothing and launder before reuse.
Clean Up	Use personal protective equipment (chemical resistant goggles/gloves/clothing). Without direct contact, sweep up spilled or excess product and place in suitable sealed container. Dispose of excess product and container in accordance with applicable local, state, and federal regulations.

Visit our website at www.sikaconstruction.com **1-800-933-SIKA NATIONWIDE**

Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537