Construction

SikaBond®-T21

All-in-One Wood Flooring Urethane Adhesive and Moisture Vapor Reduction Membrane

Description

SikaBond-T21 is a one-component, low VOC, permanently elastic, super strong, very low permeability moisture-cure polyurethane adhesive and vapor retarding membrane all-in-one for full surface wood floor bonding.

Where to Use

SikaBond-T21 may be used for solid and engineered wood floors (strips, longstrips, planks, panels, boards), mosaic parquet, industrial parquet, wood paving (residential) as well as chip boards and plywood.

Once cured Sikabond-T21 will generate a super strong bond to a variety of substrates for glue down installations and at the same time form a membrane to reduce moisture vapor transmission from the subfloor.

Advantages

- 270% elongation
- Extremely easy to trowel
- Low odor
- Excellent Green Grab
- Suitable for common types of wood flooring
- Especially good for problematic woods such as beech and bamboo
- Contains no water
- Bonds solid wood flooring up to ¾" thick and 8" wide, and engineered planks up to 14" wide directly to concrete without length limitations.
- Eliminates sleepers and plywood over concrete and gypsum substrates
- Permanently elastic – allows planks to expand and contract without damage to the adhesive
- Tenacious bond

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

Technical Data

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 - 25°C)
Color	Light Brown
Packaging	4 gal. (15.14 l)
Water Vapor Permeability	**< 0.4 g/m²-24hour-mmHG** per ASTM E-96 Standard Test Method for Water Vapor Transmission of Materials.
Chemical Base	1-component polyurethane, moisture curing
Specific Gravity	9.85 lbs/gal (1.18 kg/l)
Skinning/Laying Time	~ 45 – 60 minutes at 73°F (23°C) and 50% RH
Curing Rate	4.0 mm/24 hrs. at 73°F (23°C) and 50% RH Floor may accept light foot traffic after at 45-50 SF/gal (P5 trowel): after 6-8 hrs. at 30-35 SF/gal (SC+MB trowel): after 12 hrs. (depending on climatic conditions and adhesive layer thickness)
Sag Flow	Consistency: Spreads very easily
Service Temperature	- 40°F to + 158°F (- 40°C - + 70°C)
Mechanical Properties	
Shear Strength	150 psi using 1 mm adhesive thickness at 73°F (23°C) and 50% RH
Tensile Strength	150 psi at 73°F (23°C)
Shore A Hardness	50 (after 28 days)
Elongation at Break	~ 270 % cured at 73°F (23°C) and 50% RH
VOC (g/l)	57

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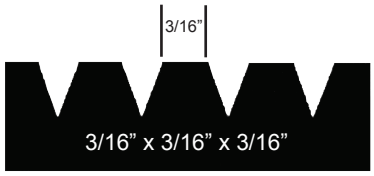
Application Details

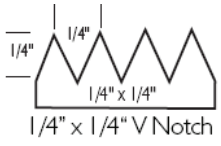
Consumption

- **For use as an adhesive only:**
  SikaBond-T21 can be used as an adhesive only. For proper coverage use the P5 trowel.
- **P5 Trowel:** approx. 45-50 SF/gal
- Coverage must be monitored to ensure accuracy of application.
  Trowel angle may prevent proper coverage.
- **For use as an adhesive and membrane:**
  Refer to All-in-One SC+MB Trowel or 1/4” x 1/4” V-notch recommendations (for moisture vapor membrane and bonding)
- **SC+MB Trowel or 1/4” x 1/4” V-notch:** approx. 30-35 SF/gal required for vapor retarding membrane
  Applicator is responsible for periodic inspection of the trowel to check for excessive wear. If found to be a defective trowel, it should be replaced immediately to assure recommended coverage.
- In case of uneven substrates, it may be necessary to use a notched trowel with bigger notches (avert hollow sections).
- Coverage must be monitored to ensure accuracy of application. Trowel angle may prevent proper coverage.
- Trowel size is recommended to obtain proper coverage larger sizes are acceptable. Excessive amounts of adhesive may cause wood flooring to slide while placing check coverage during installation.
- P5 trowels should be used at 90° angle, SC+MB trowel or 1/4” x 1/4” V-notch at 45° angle to subfloor to get stated coverages.

Recommended Trowel Size
P5


Coverage of approximately: 45-50 sq. ft./gal

Substrate Quality
Structurally sound, clean, dry, homogeneous, even, free from grease, dust and loose particles, paint, laitance, and other poorly adhering particles must be removed.

Recommended Trowel Sizes for All-in-One	
SC+MB	V-notch
	

Coverage of approximately: 30-35 sq. ft./gal

The P5 and SC+MB trowel are available from Sika, the 1/4” x 1/4” V-notch trowel is available from leading tool manufacturers such as Marshalltown (www.marshalltown.com).

Substrate Preparation

SikaBond-T21 can generally be used without priming on properly prepared, structurally sound concrete, cement floors, chipboards, ceramic tiles, plywood and hardwood. Sika recommends the use of SikaPrimer MB over any dry, gypsum based subflooring to enhance surface strength. Maximum acceptable floor variation is 3/16“ in 10 feet. 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. 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 SikaPrimer MB – see SikaPrimer 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 SikaPrimer MB to help promote adhesion to the subfloor – or use and industry approved leveling compound over the cutback residue. SikaBond-T21 will adhere to most common patching/leveling 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 SikaPrimer MB or patch/level compound. For unknown substrates please contact Sika Technical Services for best practices at 1-800-933-SIKA.

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Application Conditions/Limits

Substrate Temperature	During laying and until SikaBond-T21 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). For substrate temperatures, the standard construction rules are relevant.
Air Temperature	Room temperature between 60°F (15°C) 90°F (35°C). For ambient temperatures the standard construction rules are relevant. Follow all wood floor manufacturers' acclimation and room temperature requirements.
Substrate Humidity	**For use as an adhesive only:** SikaBond-T21 is not affected by moisture or vapor transmission. For protection of the wood, follow the wood floor manufacturer's requirements for subfloor moisture. If substrate is not acceptable, use SikaBond-T21 at recommended coverage rate as All-in-One or SikaPrimer MB. See Technical Data Sheet for proper instruction. **For use as an adhesive and membrane:** Concrete must be visibly dry. Inspect for any wetness at base of drywall or visible signs of moisture on concrete. Concrete and cement-based underlayments must be fully cured and free of any hydrostatic and/or moisture problems.
Relative Air Humidity	Between 40% and 70% during installation is best for adhesive. See wood floor manufacturer for wood requirements.
Application	Read and understand data sheet completely before beginning installation. Follow industry standards, as well as hardwood and bamboo flooring manufacturer's recommendations for acclimation, design, layout and application of wood flooring material. If jobsite conditions are outside of flooring manufacturer's recommendations take necessary corrective actions. Whether the moisture content of substrate exceeds or is within the manufacturer's recommendations, to address current or possible future subfloor moisture, apply SikaBond-T21 as directed. SikaBond-T21 is applied to the properly prepared substrate directly from the pail and uniformly distributed by notched trowel. Press the wood floor elements firmly into the adhesive so that the wood floor underside is sufficiently wetted. The elements can then be joined together using a rubber hammer and an impact block and/ or rubber mallet. Many types of wood floors have to be tapped from the top. Leave gaps at room perimeters and at any floor wall partition to allow wood flooring to move naturally – follow recommended guidelines from wood floor manufacturer. Spacers should be used to ensure perimeter space is maintained. Fresh, uncured adhesive or fingerprints remaining on the wood floor surface must be removed immediately using a clean cloth and mineral spirits (be careful not to harm finish). The laying instructions of the wood floor manufacturer as well as standard construction rules must be observed. **Note:** Wood floor manufacturer's requirements for room humidity levels and environmental control along with wood flooring acclimation requirements must be strictly followed.
Area Clean Up	All tools must be cleaned immediately after use with Sika Equipment Cleaner, mineral spirits, or standard industry cleaning solvent. Any adhesive that is permitted to cure on the tool will need to be removed by mechanical means. Use a dry towel and mineral spirits to remove adhesive from wood surface before it cures. Fingerprints or small amounts of adhesive residue can be removed from prefinished wood using a clean cloth with mineral spirits.
Limitations	▪ Maximum warrantied wood size: Solid wood < 8" wide, engineered wood < 14" wide ▪ P5 trowel or larger must be used with all solid woods and when applying over gypsum based sub floor (for use as an adhesive only) ▪ SC+MB or 1/4" x 1/4" trowel must be used for use as an adhesive and vapor retarder membrane. Follow the wood floor manufacturer's installation instructions. ▪ Periodically check coverage of adhesive during installation: 100% substrate coverage and adhesive transfer is required to protect against damages from subfloor moisture. ▪ Minimum age of concrete before application is 21-28 days, depending on curing and drying conditions. ▪ Room temperatures should be between 50°F and 90°F during installation unless otherwise specified limitations by wood flooring manufacturer. ▪ Do not use on wet, contaminated or friable substrates. ▪ When needed 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. ▪ Solid wood and bamboo flooring can not be used below grade due to their lack of dimensional stability. ▪ Do not use in areas subject to hydrostatic head or in areas subject to secondary source of moisture. ▪ On-or below-grade substrates must have appropriate vapor barrier (≤ 6 mil) properly installed below slab. ▪ Do not use over concrete with curing compounds, sealers or other surface treatments that could impact the adhesion.

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- This adhesive will not prevent all possible moisture related or install related issues such as improper acclimation of flooring, jobsite temperature and relative humidity, etc.
- Sub-floor should be level – do not use adhesive as a levelling agent.
- Cutback or other asphaltic based residue must 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 60°F for best workability.
- Sufficient ambient moisture is necessary for proper curing.
- This membrane reduces moisture vapor emissions that originate from below the membrane only.
- This membrane does NOT reduce issues originating from the ends, sides or top of flooring, i.e. puddles, water leaks, etc.
- This membrane does NOT eliminate all possible moisture related or install related issues, i.e. improper acclimation of jobsite temperature, flooring, relative humidity, etc.
- When bonding solid wood Sika recommends the use of straps to fully connect tongue and groove – especially when wood pieces are not perfectly straight – ensure starter rows are set and properly cured to handle tension from straps.
- Installations over radiant heat require that slab temperature be kept below 70°F during installation and for 48 hours after installation – then raised slowly up to final desired temperature. Follow wood floor manufacturer's temperature guidelines.

For detailed instructions consult the Product Data Sheets or contact our Technical Service. 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 (pre-trials suggested). Do not expose SikaBond to alcohol; this will impact the curing of the SikaBond-T21.

Health and Safety Information

Caution	**WARNING: IRRITANT, SENSITIZER.** Contains Polyisocyanate Prepolymer (Mixture) and Isoparafinic Hydrocarbon (CAS: 64742-48-9). May cause respiratory sensitization. Causes eye/skin/respiratory irritation. 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. **WARNING:** 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 gloves/goggles/clothing). Without direct contact, remove spilled or excess product and placed in suitable sealed container. Dispose of excess product and container in accordance with applicable environmental 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