

PRODUCT DATA SHEET

SikaBond®-T21

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

PRODUCT DESCRIPTION

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

USES

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 which reduces moisture vapor transmission from the subfloor and sound reduction membrane.

CHARACTERISTICS / ADVANTAGES

- 270 % elongation
- Bonds up to 3/4" solid and engineered wood
- Extremely easy to trowel
- Unlimited subfloor moisture vapor protection
- No moisture testing required - a dry to touch substrate is the only requirement

- Crack bridging
- Low odor
- Excellent Green Grab
- Suitable for common types of wood flooring
- Creates sound reduction layer
- Especially good for problematic woods such as beech and bamboo
- Contains no water
- Eliminates sleepers and plywood over concrete and gypsum substrates
- Permanently elastic – allows planks to expand and contract without damage to the adhesive
- Tenacious bond

ENVIRONMENTAL INFORMATION

LEED® V4.1 CDPH Standard Method v1.2	SCAQMD, Rule 1168 (25 g/L limit)	BAAQMD, Reg. 8, Rule 51-226 (20 g/L limit)
passes	passes	passes

APPROVALS / STANDARDS

- Independently tested to -STC 62 (ASTM E-90) (6 in. (168 mm) concrete slab, 5/8 in. (19 mm) suspended gypsum ceiling)
- Independently tested to FIIC 52 (ASTM E-989) (8 in. (203 mm) concrete slab, without ceiling)
- Reduction of Impact Sound Δ IIC = 21 (ASTM E-2179)

PRODUCT INFORMATION

Chemical Base	1-component polyurethane, moisture curing
Packaging	4 gal. (15.14 L)

Color	Light Brown
Shelf Life	12 months from date of production
Storage Conditions	Store in undamaged original sealed containers, in dry conditions and protected from direct sunlight at temperatures between 50 °F and 77 °F (10–25 °C)
Density	Water Vapor Permeability < 4 g/m ² -24h-mmHg per ASTM E-96 (Standard Test Method for Water Vapor Transmission of Materials) Specific Gravity 9.85 lbs/gal (1.18 kg/L)

TECHNICAL INFORMATION

Testing	50	(28 days at 73 °F (23 °C) and 50 % R.H.)
Tensile Strength	150 psi	(28 days at 73 °F (23 °C) and 50 % R.H.)
Elongation at Break	~270 %	(28 days at 73 °F (23 °C) and 50 % R.H.)
Shear Strength	150 psi using 1 mm adhesive thickness	(28 days at 73 °F (23 °C) and 50 % R.H.)
Service Temperature	-40–158 °F (-40–70 °C)	

APPLICATION INFORMATION

Coverage

FOR ALL-IN-ONE MOISTURE AND SOUND CONTROL			
Flooring Type		Trowel	Coverage
Solid or Engineered	Solid: Max Thickness: 3/4" Max Width: 8"	1/4" x 1/4" V-Notch 	30-35 sq.ft. per gal.
	Eng: Max Thickness: 3/4" Max Width: Unlimited	SCMB: 1/8" x 5/32" x 3/16" 	30-35 sq.ft. per gal.
For All-In-One Coverage: 100% adhesive coverage to concrete and 100% adhesive transfer to back of board is required			
FOR USE AS ADHESIVE ONLY			
Flooring Type		Trowel	Coverage
Solid	Max Thickness: 3/4" Max Width: 8"	PS: 3/16" x 3/16" x 3/16" Flat V-notch 	45-50 sq.ft per gal.
Engineered	Thickness: 3/4" Max Width: Unlimited		
FOR USE WITH UNDERLAYMENT			
Flooring Type		Trowel	Coverage
Cork or rubber underlayment		1/8" x 1/8" Square notch* 	80 sq.ft. per gal.

*Recommended trowel size for 3.2mm material

- Coverage must be monitored to ensure accuracy of application. Trowel angle may prevent proper coverage.
- Applicator is responsible for periodic inspection of the trowel to check for excessive wear. Worn trowels must be replaced immediately.
- 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 in. (6.3 mm) x 1/4 in. (6.3 mm) V-notch at 45° angle to subfloor to get stated coverages. ▪ 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. ▪ The P5 and SC+MB trowel are available from Sika.
Sag Flow	Consistency: Spreads very easily
Ambient 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 manufacturers' acclimation and room temperature requirements.
Relative Air Humidity	Between 40 % and 70 % during installation is best for adhesive. See wood floor manufacturer for wood requirements.
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 radiant floor heating, less than 70 °F (20 °C). For substrate temperatures, the standard construction rules are relevant.
Substrate Moisture Content	For use as an adhesive and moisture 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. When properly applied in accordance with Sika® guidelines, SikaBond®-T21 provides unlimited moisture vapor protection. 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 Sika® MB. See Technical Data Sheet for proper instruction.
Curing Rate	Floor may accept light foot traffic after: ▪ at 45–50 SF/gal (P5 trowel): after 6–8 h ▪ at 30–35 SF/gal (SC+MB trowel): after 12 h (depending on climatic conditions and adhesive layer thickness) Floor can be sanded after 18 hours
Skin Time / Laying Time	~ 45–60 minutes (at 73 °F (23 °C) and 50 % R.H.)

BASIS OF PRODUCT 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.

LIMITATIONS

- Wood size limitations can be found in coverage section
- 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 in. (6.3 mm) x 1/4 in. (6.3 mm) 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 (10–32 °C) 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.

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BUILDING TRUST



- 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.
- This adhesive will not prevent all possible moisture related or installation 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 (15 °C) 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 (21 °C) 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 available at www.sikausa.com or contact our Technical Service at 1-800-933-SIKA. 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 to verify bond 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.**

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must

read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

APPLICATION INSTRUCTIONS

SUBSTRATE PREPARATION

- SikaBond®-T21 can be used on properly prepared, structurally sound concrete, cementitious patch/underlayments, chipboards, ceramic tiles, plywood.
- Concrete substrate must have a concrete surface profile of CSP 1-3.
- For on-grade subfloors Sika® recommends the use of Sika® MB, Sika® MB Redline, and Sika® MB EZ Rapid 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.
- A 3,000 psi compressive strength is the minimum requirement needed for SikaBond wood floor installations, including glue-down wood floors, or glued/mechanically anchored subfloors. Sika products such as SikaLevel®-01 Primer Plus, Sika® MB, Sika® MB Redline, and Sika® MB EZ Rapid can be used on substrates as consolidators to satisfy the minimum psi compressive strength requirements.
- 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. Thoroughly clean with an industrial vacuum. Remove laitance or weak areas mechanically and thoroughly.
- 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 non-water-soluble adhesive or adhesive residue use Sika® MB, Sika® MB Redline, or Sika® MB EZ Rapid – see appropriate product 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® MB, Sika® MB Redline, or Sika® MB EZ Rapid

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to help promote adhesion to the subfloor or use a Sika® Level patch/level product in conjunction with the correct primer.

- SikaBond®-T21 will adhere to most common patching/levelling compounds. Due to differences in asphalt-based adhesive types and performance capabilities, applicators must verify that preparation of the surface is sufficient prior to using Sika® MB or Sika® Level patch/level compound. For unknown substrates, please contact Sika® Technical Services for best practices at 1-800-933-SIKA.

APPLICATION METHOD / TOOLS

Read and understand data sheet completely before beginning installation. Follow all industry standards, as well as hardwood and bamboo flooring manufacturer's recommendations for floor flatness, acclimation, design, layout, application, etc. of wood flooring material. If jobsite conditions are outside of flooring manufacturer's recommendations, take necessary corrective actions as recommended by the floor manufacturer to address these issues. 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 trowel as described on this Product Data Sheet. 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. The wood flooring manufacturer's laying instructions, acclimation requirements, room humidity/environmental control requirements as well as standard construction rules must be observed.

Plywood over concrete

Use a minimum 3/4" (18.3 mm) subfloor panel cut to smaller 2' x 8' or 4' x 4' sections. Kerf the back of the panels 1/2 the thickness of the material (3/8") on a 12" x 12" grid. Lay sections in a staggered joint pattern in the adhesive, with 1/8" spacing between sheets, and 3/4" minimum expansion space at walls and all vertical obstructions. Flatness tolerances should be to within 3/16" in 6' or 1/4" in 10' for nail down over the wood subfloor. Do not use flooring fasteners longer than 3/4" to be certain not to puncture the moisture control membrane. Using a Sika P5 trowel, apply adhesive/membrane to substrate and then set plywood into the wet adhesive/membrane. For adhesion only, ensure at least 90% coverage and transfer. For moisture protection, ensure 100% coverage and transfer. Allow the adhesive/membrane to fully cure before nailing or using the SikaBond adhesive/ membrane to install flooring. Make sure that nails do not penetrate through the adhesive membrane.

Crack Preparation

All moving joints and moving cracks must be honored up through the floor preparation and floor covering installation, finishing with an appropriate Sika flexible sealing compound. Dormant hairline cracks can be covered with Sika MB or Sika MB Redline. Dormant joints and dormant cracks greater than a hairline that will not be honored must be pre-filled in strict accordance with the installation instructions provided by the Sika Technical Service Department.

Removal

All tools must be cleaned immediately after use with SikaBond® Remover or standard industry cleaning solvent. Any adhesive that is permitted to cure on the tool will need to be removed by mechanical means. SikaBond Remover can be used to remove uncured or cured adhesive and fingerprints from wood surface.

OTHER RESTRICTIONS

See Legal Disclaimer.

LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- FOR PROFESSIONAL USE ONLY

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com or by calling SIKA's Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

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