

**MUREXIN**

# Bonding in the modern way

Substrate preparation with silane-based products  
& bonding with MSP technology

**Parquet & flooring technology**



**It lasts.**



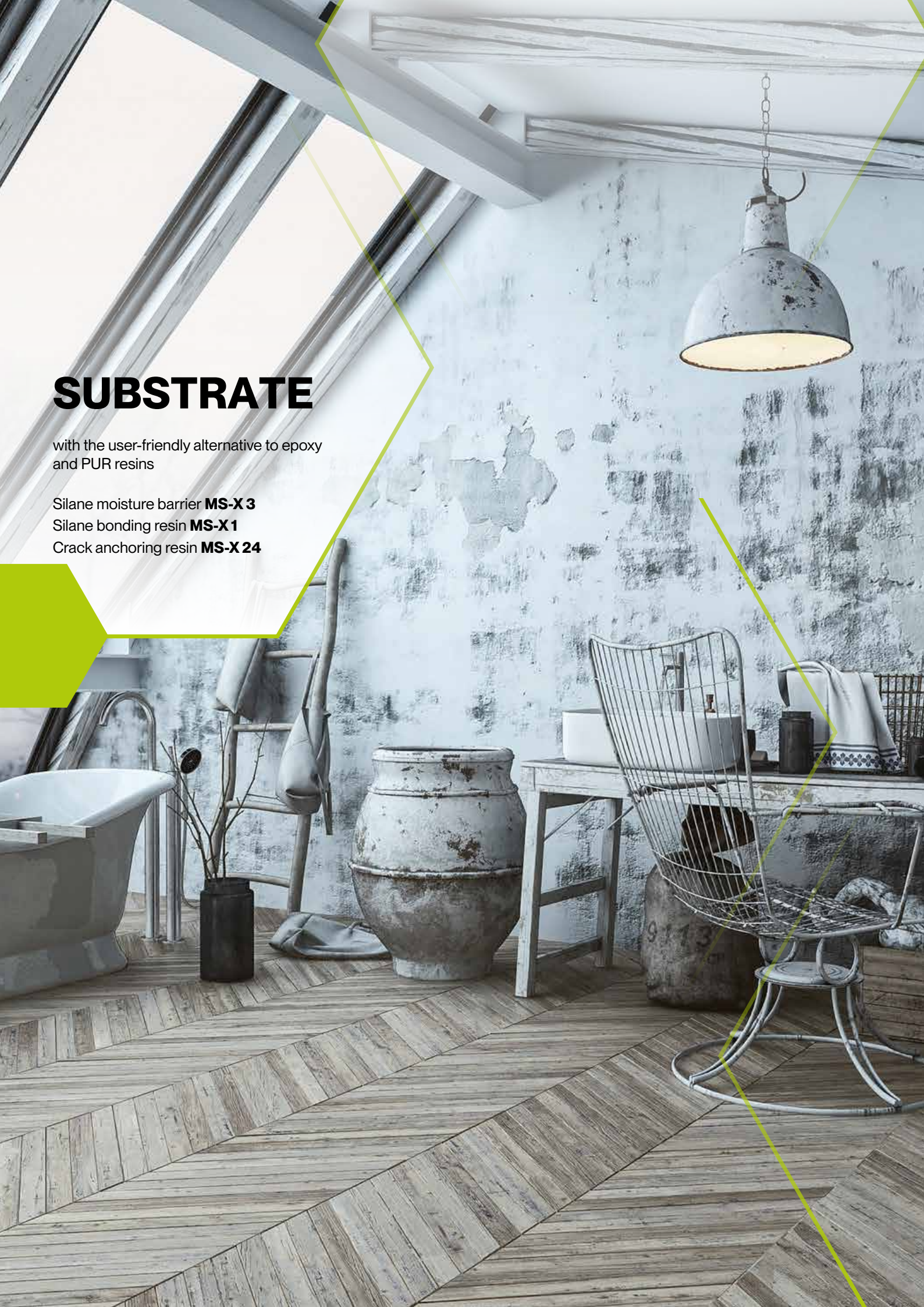
# SUBSTRATE

with the user-friendly alternative to epoxy  
and PUR resins

Silane moisture barrier **MS-X 3**

Silane bonding resin **MS-X 1**

Crack anchoring resin **MS-X 24**





## MUREXIN BEST4YOU

A processor-friendly, ecological and physiologically harmless alternative

Residual moisture affecting the readiness for the covering is a recurring issue when processing cement-based screeds. Construction progress is often so rapid that the permissible residual moisture in accordance with ÖNORM B 2218, ÖNORM B 2236 and DIN 18356 cannot be adhered to. To compound this issue, unfavourable climatic conditions extend the drying time many times over. The current solutions usually provide chemical moisture barriers, such as epoxy resin systems or polyurethane systems.

**MUREXIN** proves that construction progress and ecology do not have to be mutually exclusive with its silane-based products for substrate preparation: silane moisture barrier **MS-X 3**, silane strengthening resin **MS-X 1** and crack anchoring resin **MS-X 24**.

Modern bonding includes silane-based adhesives that are very low in emissions, physiologically harmless, and free of migrating components.

**MUREXIN X-Bond** products are high quality and convenient to use: easy to spread with optimal groove formation. They cover a wide range of possibilities, and enable solutions for the most demanding areas of application.



# Testing the substrate

## Definition of equilibrium moisture, readiness for covering, practical moisture content

In recent years, there has been a trend in construction that the residual moisture required for the covering maturity of cement screeds is increasingly (or already predominantly) achieved with the aid of chemical moisture barriers, often employing two-component epoxy resin systems. Moisture barriers under wooden floors and floor coverings are only an issue for cement-based screeds and concrete substrates.

There are a number of reasons for chemical moisture barriers having recently become routine in cementitious screeds:

- Planning errors, time pressure and delays in the construction process (lack of drying time between screed production and covering laying).
- Unfavourable climatic conditions that significantly extend drying times and make drying for longer periods completely impossible.
- Failure to implement a vapour barrier between the screed and the unfinished floor in accordance with standards. (This is often omitted for cost reasons, because the subsequent moisture sealing is already a prerequisite at the time the screed is produced.)
- CEM II (especially CEM IIB) screeds, which have a significantly higher residual moisture after hydration is complete than CEM I screeds (and therefore even the equalization moisture is above the residual moisture required by the standard, in this case a standard-compliant residual moisture cannot be produced without chemical aids!), are increasingly being used
- (CEM II(B) screeds are increasingly being used because they are significantly cheaper than CEM I screeds. However, their use is also a consequence of (sensible) climate policy requirements, as their production results in significantly fewer CO2 emission and pollution certificates having to be purchased.)

The drying of screed is a rather complex and difficult matter: In the initial phase (7 days), the screed must be prevented from drying out, a relatively high ambient humidity and not too high (but at least above 5 °C) ambient temperature should be ensured, but draughts (which cause the screed to “bow”) and direct sunlight (which can cause cracking) should definitely be avoided. The relative humidity should not fall below 5% during the first 14 days.

### Equilibrium moisture content

The equilibrium moisture content is the moisture content that occurs in a porous building material in a certain climate, characterized by temperature and relative humidity, after laying until the weight remains constant. The correlation between the screed water content

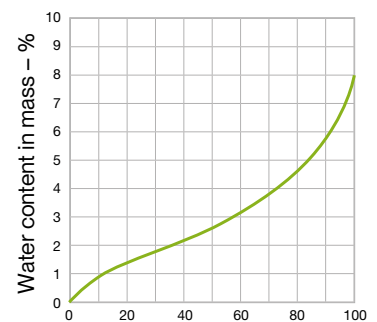
and the relative air humidity can be found in the sorption isotherms for a specific temperature.

Examples of a cement screed are shown in the diagram. Strictly speaking, an equilibrium moisture content only applies to a specific screed of a certain composition and compaction in a specific climate. However, it has been shown that, for the usual composition of screeds in residential and commercial buildings, a distinction on the basis of the binders is usually sufficient. What is important for the practitioner, however, is that the equilibrium moisture content for a construction site climate of, for example, 12 °C and 80% relative humidity differs significantly from the equilibrium humidity in a living space climate of, for example, 22 °C and 50% relative humidity, and that the equilibrium humidity of the living space climate cannot be achieved even through long drying periods under the specified construction site climate.

The term “household moisture”, which is still sometimes used today by screed practitioners, is misleading because it suggests that such moisture content occurs in every climate.

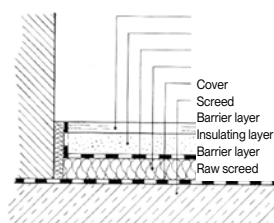
### Sorption isotherm of cement screed

(Water content determined by drying at 105 °C until constant weight)



Relative air humidity in %

### Floating screed



Free-moving screed that is completely separated from the substrate by an insulating layer at least 10 mm thick and from all other components and installations by a joint at least 4 mm thick.

# Moisture barriers beneath coverings

Particularly in the case of an underfloor heating system, before a vapour barrier (brake) is applied, a heating log that can be viewed at any time (temperature curve according to the manufacturer's specifications) must be kept. After a heating process, another "functional heating" (heating to a flow temperature of 50 °C to drive out any remaining moisture) should be carried out. The flow temperature is kept at 25 °C for 3 days, at the earliest 21 days after screed creation, then it is increased to the maximum flow temperature, which is maintained for 4 days.

After complying with the waiting periods specified by the manufacturer, the flow temperature is increased by 5 °C each day, until the maximum flow temperature is reached. The screed must then be cooled down by 10 °C daily. The drying time is determined by temperature, humidity, air turnover and screed thickness. It can therefore be reduced through regular blast ventilation (exchanging humid air for dry air, especially in cold, humid weather), alternated with heating phases if necessary. Drying works very well in heated rooms in winter, but in summer the outside air can reach relative humidities of up to 90%, and therefore moisture is practically always transported into the screed system by

new air flowing in instead of being removed. In these cases, drying must be supplemented by air dehumidification. Measurements are carried out on the construction site using the CM device. Electrical measurement methods that provide qualitative information can be used to find the most moist point, which can then be measured using the CM device.



CM device



Substrate milled, shot blasted or ground according to ÖNORM B 2236, DIN 18356.

## Residual moisture in screeds ready for covering

Table 1 (Table A.3 of ÖNORM B 2218, identical to Table A.1 of ÖNORM B 2236-1 shows, in accordance with the standard, the maximum residual moisture of substrates when laying wooden floors (ÖNORM B 2218) and floor coverings (ÖNORM B 2236-1) in Austria

Tab. 1: Maximum permissible residual moisture according to ÖNORM B 2218 and ÖNORM B 2236-1

Substrate types	Maximum permissible moisture content in %
<b>Cement-based</b>	
general	2.0 <sup>a</sup>
modified with synthetic resin	according to the manufacturer's specifications <sup>a</sup>
Flowing screed	according to the manufacturer's specifications <sup>a</sup>
Heated screed	1.8 <sup>a</sup>
<b>Gypsum- and calcium sulphate-based</b>	
general	0.3 <sup>a</sup>
modified with synthetic resin	according to the manufacturer's specifications <sup>a</sup>
Flowing screed	according to the manufacturer's specifications <sup>a</sup>
Heated screed	0.3 <sup>a</sup>
<b>Filling materials</b>	
e. g. low-fine sand, granules, pumice, grit, blast furnace slag	Apparently dry down to the bottom layer <sup>b</sup>
Wood	max. 12 <sup>c</sup>
Wooden materials	max. 11 <sup>d</sup>

<sup>a</sup> %, measured according to the calcium carbide method

<sup>b</sup> a dark colouration can be seen as an indication of any residual moisture present.

<sup>c</sup> measured with an electrical resistance meter.

<sup>d</sup> % of the mass, measured using the Darr method



Barrier created with MUREXIN Silane Moisture Barrier **MS-X 3** or Silane Bonding Resin **MS-X 1**



# THE BEST FOR PROFESSIONALS

## Substrate preparation has become ecological

With the new **BEST4YOU** products, the complete preparation of the subsurface before laying the floor, including anchoring of cracks, consolidation, and blocking of excessive residual moisture, is included within an ecological system. For the flooring professional, the MSP-based product range includes the silane solidification resin **MS-X1**, the crack anchoring resin **MS-X24** and the silane moisture barrier **MS-X3**.

The new system is the environmentally- and worker-friendly alternative to previously used products based on reaction resins. It is silane-based, and is therefore free of migratory substances, very low in emissions and physiologically harmless.

- Premium quality
- Maximum performance
- Intentionally pro-environment
- High work facilitation



## Silane Bonding Resin MS-X1

The rollable silane bonding resin **MS-X1** is suitable for the bonding and renovation of unstable, or low-strength or sandy, mineral substrates such as cement or calcium sulphate screeds, as well as concrete. Due to its low viscosity, it has a high penetration capacity and reaches deep into the pores of the substrate. The big plus of the silane bonding resin **MS-X1** is its rapid drying: it can be painted over after only about 90 minutes and thus outperforms the two-component impregnating resins based on EP that have been used to date by many hours! **MS-X1** is safe and easy to use, as it is delivered as single-component substance. Its formulation is silane-based and therefore it is free of migrating components and physiologically harmless.

- solidifying
- low viscosity
- high penetration capability
- paint-over ability after 90 minutes
- single component
- physiologically harmless





## Silane moisture barrier MS-X 3

The single-component silane moisture barrier **MS-X 3** is a silane-based, rollable and trowelable primer that acts as a primer and vapour barrier, saving valuable time and also protecting the health of the processor. Its innovative formulation is based on modern MSP technology: it is solvent-free, free of components that can migrate and very low in emissions according to EC 1<sup>PLUS</sup>. For priming of non-absorbent, as well as normal to strongly absorbent substrates, as well as sanded screeds before adhesion with PU and MS-P adhesives.

- quick-drying
- physiologically harmless
- blocks residual moisture
- for surface hardening for sandy screeds
- > for absorbent and non-absorbent substrates
- free from migrating components
- rollable



## Crack anchoring resin MS-X 24

Crack Anchoring Resin **MS-X 24** is supplied in two-component bottles and can be used universally: indoors and outdoors for force-fit sealing of construction and shrinkage joints, as well as narrow and wide screed cracks. As a rapid filler and adhesive for wood, stone, concrete and metal, or as a rapid filler or adhesive.

- odourless
- physiologically harmless
- eco-friendly alternative
- two-component
- easy to apply
- quick hardening



# ADHESION

with our MSP adhesives of the  
**X-Bond line:**

Special design flooring adhesive

**X-Bond MS-K 499**

Parquet adhesive **X-Bond MS-K 511**

Special adhesive **X-Bond MS-K 88**

Special adhesive **X-Bond MS-K 88 Express**

Parquet adhesive **X-Bond MS-K 530**

Parquet adhesive **X-Bond MS-K 539**





## This is bonding in the modern way

Environmentally friendly & universally applicable

Thanks to their MSP technology, you can bond almost any material and adhere to even the most difficult surfaces. MSP adhesives consist of silane-modified polymers. The adhesives and sealants are single-component, and harden through a chemical reaction. The result is sealants and adhesives with outstanding properties: excellent adhesion to a wide variety of substrates, very low emissions, and water- and solvent-free.

X-Bond products are suitable for bonding the same material, and are also ideal for combination bonding of stone, brick, concrete, wood, parquet, insulation material, glass, metal, plastic and much more.

Products awarded with the EMICODE® labelling system represent modern, solvent-free and low-emission materials. When it comes to indoor air quality, they are the ecological path of contemporary installation technology.

### Benefits

- Excellent adhesion to almost all surfaces, even without priming
- Water- & solvent-free and odourless
- Very low emissions according to EC1<sup>PLUS</sup>
- Ecologically and physiologically harmless
- Quick-drying
- Processor-friendly
- Easy-to-clean
- Reduces impact noise
- Weather-resistant
- Sealant and adhesive
- Moisture-curing
- High adhesive force



# MUREXIN X-Bond products

## Parquet adhesive

X-Bond products do not contain water, which makes them ideal for bonding parquet: With the parquet adhesives **X-Bond MS-K511**, **MS-K530** and **X-Bond MS-K539**, Murexin offers excellent parquet adhesives with a wide range of applications.

Easy to spread and with optimal grooving, the adhesives adhere to many absorbent and non-absorbent surfaces. Prime and pre-coat as required. Unevenness in the substrate is levelled out in thick layers before the parquet is glued. After the first layer has dried, you can start on the second layer without priming or undercoating, saving time and money.

Unlike conventional PU or EP adhesives, the special X-Bond adhesives do not contain any solvents. X-Bond products are environmentally friendly and have very low emissions according to EC 1<sup>PLUS</sup>. The parquet adhesives also excel thanks to their easy-to-clean properties: up to two hours after application, adhesive residue can be removed by gently rubbing with **R 500** cleaning cloths.

Parquet adhesive **X-Bond MS-K 511**, **X-Bond MS-K 530** and **X-Bond MS-K 539** form a permanent adhesive layer, and do not become brittle on underfloor heating. X-Bond products therefore remain elastic for many years, reduce shear forces, have a vibration-inhibiting effect and prevent the transfer of adverse forces to the substrate.



### Parquet adhesive X-Bond MS-K 539

- universally applicable
- hard elastic adhesive ridging
- for almost all types of parquet
- free from migrating components
- water- and solvent-free



### Parquet adhesive X-Bond MS-K 511

- hard-elastic
- water- and solvent-free
- noise-absorbing
- odourless



### Parquet adhesive X-Bond MS-K 530

- shear-resistant adhesive
- suitable for all common types of wood and parquet
- water- and solvent-free
- extremely low emissions





## Special adhesive

The special adhesives **X-Bond MS-K 88** and **MS-K 88 Express** stand out from conventional adhesives due to their many excellent properties.

Thanks to their 100% adhesive layer, the special adhesives do not become brittle or saponify, but remain permanently elastic for many years. As a result, they inhibit vibrations and prevent the transfer of adverse forces to the bonded materials - particularly important for substrates with low inherent strength, such as drywall elements. (Note: Can only be used with Primer PU 5.)



### Special adhesive X-Bond MS-K 88 & MS-K 88 Express

- Bonding of different materials
- for virtually all substrates
- suitable for indoors & outdoors
- reduces impact noise
- permanently elastic, with extremely high adhesive force



### Special design flooring adhesive X-Bond MS-K 499

- single-component & ready to use
- free of migratory components
- highly thermal load capacity
- water-resistant
- hard-elastic adhesive joint



### Special adhesive MS-K 55



- Cavity filling under parquet
- No post-swelling
- ready-to-use
- extremely low emissions
- non-labelled



## Work quickly, easily and ergonomically: Tubular applicator X-Bond 200

The tubular applicator **X-Bond 200** is used to process adhesive for laying parquet. The innovative nozzle technology allows a very clean and precise application of adhesive in the width of the board to be laid. During installation, the adhesive is covered by the parquet elements. No glue blemishes the factory-applied profiling, no glue protrudes beyond the parquet surface. The laying tool stays clean. No oozing glue, clean hands, clean work.



### Tubular applicator X-Bond 200

- Interchangeable nozzle that no longer needs to be cleaned
- Precise adhesive application to the plank width (variable by nozzle head)
- Customizable application quantity
- Nozzle change instead of cleaning: 2 screws one time at the start of the work
- Battery operation for large tubular bags
- Hands, tools and parquet stay clean



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Subject to typesetting and printing errors. **Edition: 01/2024.** We would like to point out that the photos used are only symbolic photos and that these objects do not require our products but only demonstrate areas of application, unless they are explicitly mentioned as reference objects.

## It lasts.