LVT GUIDE

TIP

This is the only place you will find flooring installation expertise in a condensed format that can fit in your pocket. The UZIN Guide is the perfect starting point for great installation.

UZIN | A brand of Uzin Utz Group

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INTRODUCTION

Luxury vinyl tiles have become a popular type of floor covering over the last decade due to the variety of decorative designs and many new possibilities. However, these innovations and new developments present us with the daily challenge of harmonising design and installation technology to achieve what drives us: a perfect result and a thoroughly satisfied customer.

This short guide has everything you need to know about installing LVT. From the basics to the tips and tricks acquired from decades of experience that makes your daily work easier, giving you confidence and enthusiasm with each new project.

Have fun and happy installing!

The UZIN Team

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LVT

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Low sound absorption

SELECTING THE RIGHT FLOOR COVERING

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The customer's requirements and the environment are decisive when selecting the floor covering and the type of adhesive. When deciding on the type of floor covering and adhesive, the following factors should be considered in particular:

- Area of application (residential, commercial or industrial)
- How and how often the floor covering is cleaned
- Available installation height
- Windows at floor level (high solar gain and fluctuating temperatures)
- What are the customer's requirements (e.g. environmental and sustainable accreditation, renovation cycle for rental properties and shops, etc.)

1.1 Classifying LVTs

LVTs are classified into different types depending on where they will be installed and level of use. These requirements are generally defined in DIN EN ISO 10874 for resilient, textile and laminate floor coverings. This standard divides floor coverings into the three areas of residential, commercial and industrial use. The residential area covers classes 21 (light) – 23 (heavy), the commercial area covers classes 31 (moderate) – 34 (very heavy) and the industrial area covers 41 (moderate) – 43 (heavy). This classification helps when selecting the right floor covering for the level of wear and traffic. The thickness of the wear layer is an important quality characteristic in this classification.

At present, there are no LVT floor coverings assigned to Classes 41-43.

Classes according to DIN EN ISO 10874:

USAGECLASS	LEVEL OF USE	DESCRIPTIONS & EXAMPLES	PICTOGRAM
Domestic use (re	sidential)		
21	light	Areas with low or intermittent use, e.g. bedrooms	
22	moderate	Areas with medium use, e.g. studies, living rooms	
23	heavy	Areas with intense use, e.g. kitchens, corridors, entrance areas	
Commercial use			
31	moderate	Areas with low or intermittent use, e.g. recreation rooms	
32	general	Areas with medium traffic, e.g. small offices and utility rooms	
33	heavy	Areas with heavy traffic, e.g. shop buildings and hotels	
34	very heavy	Areas with intense use, e.g. multi-purpose halls, department stores, concert halls, airports	
Light industrial u	se*		
41	moderate	Areas where work is mainly sedentary with occasional use of light vehicles, e.g. precision engineering	
42	general	Areas where work is mainly standing and/or with vehicular traffic, e.g. storage rooms and electronic assembly	
	 		

Other areas, e.g. warehouses, productions areas

heavy

43

1.2 Structure of LVTs

As a rule, an LVT floor covering consists of four different layers. These layers define the haptic characteristics, not just the technical characteristics. The layers from top to bottom are:

- Transparent PVC wear layer of different thicknesses with PU sealer
- Decorative layer
- PVC support layer
- PVC backing layer

The wear layer of an LVT is usually 0.3mm to 0.7mm thick. The thicker the wear layer, the more durable and wear–resistant the floor covering is. If you want to install an LVT in a commercial building, you should choose a floor covering with a wear layer of at least 0.5mm. As the wear layer thickness increases, the possible ways in which LVT producers can incorporate additional design options such as wood grains, bevelled joints, "sawn finish" and embossing, which provide a unique and realistic appearance, increase.

As the decorative layer is digitally printed, there are many possible designs, e.g. a stone, tile, wood or metal.

The PVC support layer and the PVC backing layer are designed to stabilise the LVT.



LVT structure:

- 5. High-quality PU-coated surface
- 4. Transparent wear layer
- 3. Decorative layer
- 2. PVC support layer
- 1. PVC backing layer

^{*}At present we do not know of any LVT that is suitable for this usage class.

1.3 | Types of LVTs Types of LVTs

1.3 Types of LVTs

1.3.1 LVTs for bonding (dry-back LVTs)

This group includes the thinnest LVTs (approx. 2-3mm thick) and is therefore suitable for buildings with a very low installation height. According to the manufacturer's recommendations, this type of LVT (without a lock or click system) requires installing with an adhesive.

They can be installed in most areas. In combination with the right adhesive, they are ideal for heavy-duty applications, e.g. exposure to high solar gain or commercial areas subject to higher wear.

PVC and chlorine free floor coverings are a special type of dry-back LVT. To protect the environment and for sustainability, the binding agent in this case is replaced by chlorine free raw materials. When using this special type of dry-back LVT, particular attention must be paid to choosing the right adhesive, as they require the use of a special adhesive with a formula based on the composition of the LVT.

1.3.2 Self-adhesive LVTs

Self-adhesive LVTs are multi-layer, thin (up to approx. 4mm thick) LVTs without a locking system, which are pre-applied with a pressure-sensitive adhesive by the manufacturer.

These LVTs are only suitable for light wear and traffic (e.g. residential areas without strong variations in temperature or underfloor heating). We do not recommend installing them in commercial areas (offices etc.). The load-bearing capacity cannot be increased on installation by using another adhesive. The correct subfloor preparation or evenness is essential for this type of LVT for the best installation results.

1.3.3 Click LVTs for floating installation

Click LVTs are multi-layer and thicker (approx. 4mm and above) LVTs with a locking system, intended for floating installation according to the manufacturer's recommendations. The difference compared to loose-lay LVTs is that the individual planks are permanently connected to each other. Click LVTs are normally installed without an adhesive (floating). This means that the floor covering can move horizontally during daily use, which is normal for this type of installation. For this reason, care must be

taken not to place any heavy pieces of furniture or kitchen units on the installed floor, which could prevent such movement. An edge distance of 10mm from all vertical abutments must also be maintained. If not, this can lead to warping. Although, according to the manufacturer's recommendations, click LVTs are intended for floating installation, they can also be installed using a special adhesive in some cases, after approval from the floor covering manufacturer.

1.3.4 Loose-lay LVTs

This group includes thick (approx. 4mm and above), multi-layer LVTs without a locking system, intended for loose-lay installation according to the manufacturer's recommendations.

Floor coverings of this type are suitable for light wear and traffic (e.g. residential areas without strong variations in temperature, direct exposure to sun light or high solar gain). To install loose-lay LVTs, professional subfloor preparation is essential, so the surface is flat and smooth so that unevenness from the substrate is not reflected in the floor covering. Using a slip-resistant tackifier can reduce the possibility of horizontal movements of the LVT in some instances (see section 3.1.2 for more information).





TIP

Go to <u>www.uzin.co.uk</u> for the recommended adhesives for various LVT manufacturers.

1.4 Notes	Notes 1

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	Screed Other substrates Subfloor inspection & preparation Contamination Cracks in the surface Insufficient strength Priming Moist substrates Unevenness of the surface Low sound absorption Heating protocol/heating to accelerate readiness for covering Machinery & special tools

LVTs can be installed on a wide range of different substrates. Every substrate has a number of particular characteristics that must be taken into account. The materials that are used must be specifically matched to the substrate, as this will eliminate problems such as high moisture, cracks and unevenness in the substrate.

2.1 Substrates

2.1.1 Concrete

Concrete floors and concrete floor slabs are among the most common substrates on which floor coverings are installed. The difference is easy to explain: A concrete floor slab is the lowest layer of a building, often referred to as a ground-bearing concrete floor slab. Concrete floors, on the other hand, are always located between the individual floors of a building and are not in contact with the ground. For ground-bearing slabs, care must be taken to ensure that there is a structural damp proof membrane. There are several ways to install them, which vary according to geographical location, design and building regulations. They are normally permanently attached to the outer sides of the building. If the property was built before 1970, it is unlikely to have a structural DPM installed, and thus no protection from moisture entering the slab.

Care must be taken when accessing moisture levels in such slabs, readings can both fall and rise depending on conditions, location and time of year. Two component epoxy moisture barriers must be applied on all slabs where a structural DPM is not present.

Concrete typically consists of sand, aggregate, cement, admixtures and water. Given the high density and layer thickness, the drving time until the residual moisture reaches the permitted level is relatively long. The drying time is strongly dependent on the thickness of the concrete. A rough-and-ready rule of thumb for drying concrete is as follows:

$t = s \times d^2$

where t = time in days

d = thickness of the concrete floor in cm

s = building material parameter (for concrete: 1.6)

Moisture of concrete substrates are usually measured by a drill and plug or surface box hygrometer test. The British Standards states that for solid substrates, a level of 75% rh (relative humidity) or below does not need to be protected against moisture before installing the floor covering (apart from wooden floors which must be 65% rh or below). Above these levels a residual moisture suppressant or damp proof membrane can be applied on the

concrete floor as construction schedules do not normally allow for long waiting times before floor covering installation. Generally speaking allowing the concrete to cure for 28 days allows it to achieve 80-90% of its curing, this does not mean its dry (below the recommended 75% rh) to install LVT floor coverings. However, with UZIN PE480 DPM this can be reduced to just 3 days.

The surface quality of concrete substrates can sometimes vary significantly. Nowadays, the surfaces are often power-floated and are therefore very dense and smooth. Drying agents and accelerators are used, for example, which, in combination with the smooth and dense surface, impair the bonding of primers, smoothing compounds and adhesives with the substrate. At the start of the work, the substrate must therefore be abraded, e.g. by shot-blasting or grinding, to remove any adhesion-reducing layers. If the surface is not power-floated, existing drying agents and laitance or similar layers must be removed from the substrate.

Expansion joints (building separation joints) are incorporated into concrete substrates as a basic principle of construction. These joints must not be worked over and must be continued through the entire system structure up to and including the LVT floor covering. If they are not, the joints will be visible in the LVT. Other cracks or joints can be repaired using special resins or reinforcing fleece.

For some years now, concrete core activation systems have been increasingly used in new buildings. These systems can heat a building in winter and cool it in summer. For substrate designs of this kind, we always recommend using a special PU or epoxy resin DPM to avoid moisture damage from the expected high vapour pressure.

2.1.2 Screed

Most screeds contain cement or calcium sulphate as the binding agent. In some cases, mastic asphalt, magnesia and synthetic resin screeds are also used. The requirements for screed depend primarily on the planned use and the associated wear and traffic, as well as on the intended surface covering. Screeds are differentiated by the binding agent that is used and by the type of installation. The next page provides an overview of the different binding agents and their properties.

As already noted, screeds can also differ according to the type of installation that is selected.

An example:

Based on a concrete thickness of 20 cm. $t = 1.6 \times 20 \times 20 = 640 \text{ days}.$

Screed types by binding agent:

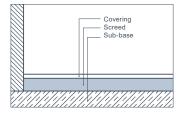
NAME	CONSTITUENTS	PROPERTIES
Cementitious screeds	Standard cement, aggregate, water and, if necessary, additives	+ Absorbent and not sensitive to moisture + Suitable for indoor and outdoor use + Faster drying than calcium sulphate screeds
		- Shrinkage behaviour during the setting and drying phase, which can lead to deformation and cracks - Surface area limits to max. 40 m² (depending on the geometric shape of the room)
Calcium sulphate screed	Calcium sulphate-based binding agent (e.g. anhydride or hemihydrate), aggregate, water and, if necessary, additives	+ Low-tension and low-shrinkage setting process, therefore allows larger jointless areas to be installed + Absorbent - Sensitive to moisture (only suitable for indoor use) - Calcium sulphate screeds must always be abraded - Longer drying time compared to cementitious screeds
Precast screeds	Cement, gypsum or wood- bound chipboards	+ Easy to install + No waiting time from drying phases after installation - Depending on the type of construction, possible low sound insulation - Not suitable for greater wear and traffic (risk of sinking or collapsing) - Sensitive to moisture
Magnesia screeds	Magnesium chloride/ magnesium hydroxide solution, aggregates (sand, wood chips, wood fibres) and, if necessary, with additives (pigments)	+ Low installation height + Finished floor - Highly sensitive to moisture (For magnesia screeds, we recommend contacting the UZIN Technical department)
Mastic asphalts (screed)	Bitumen, aggregates and additives	+ Quickly ready for covering (immediately after cooling) + Water vapour-proof - Non-absorbent - Thermoplastic - Layer thickness limitation for subsequent levelling

Types of screed installation

Screeds can be installed in three methods, bonded, on a separating membrane or on an insulating layer. The applicable design depends on the requirements for the finished floor construction or on the tender.

1. Bonded screeds

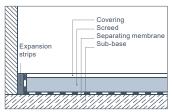
Bonded screeds are directly bonded to the substrate. There is no sound or heat-insulating separating layer between the subfloor and the screed in this structure. For a bonded screed, it is possible that moisture may rise through from the substrate.



Area of application: Industrial.

2. Screeds on a separating membrane

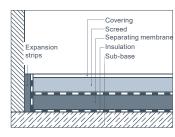
Screeds can be installed on a separating membrane, normally a thin waterproof sheet which acts as a structural DPM between the substrate and screed, blocking rising moisture. The minimum layer thickness of a screed on a separating membrane depends on the required strengths. It should generally not be less than 40mm. This type of screed is used when there are no requirements for thermal or sound absorption, such as in basements and garages.



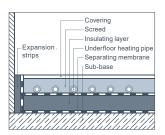
Area of application: Industrial; renovation of surfaces with low strength.

3. Screeds on a insulating layer

These types of screed, also known as "floating screeds", meet additional requirements for sound and thermal insulation by installing an insulating layer. This type of screed can be protected against moisture from the substrate using a structural damp proof membrane. To provide sound insulation, the selfsupporting screed slab must be separated from all adjacent building components using expansion strips. This separation is also applied to any subsequent smoothing and levelling work.



Area of application: New residential and commercial buildings.



4. Heated screeds

Screeds on an insulating layer may also contain hot water or electrical underfloor heating elements. What is suitable for installation on heated screeds should normally be checked with the floor covering manufacturers, unless otherwise stated. The following points must be taken into account before floor installation is carried out:

- Underfloor heating should be commissioned in accordance with the guidelines from the underfloor heating manufacture or the British Standards BS 8203: 2017.
- Floors that contain under floor heating should not exceed 90% rh
- Without a functional moisture barrier/separating membrane. moisture is likely to rise through from the substrate
- Professionally installed expansion strips are required
- Heating protocol for heat drying and any necessary heating to accelerate readiness for covering
- Measuring points for measuring moisture are in place
- The total heat resistance of the surface covering structure (floor coverings and underlays) must not exceed 0.15 m²K/W

As a screed has a binding agent that accumulates on the surface during the setting process, it must be abraded to remove layers that reduce adhesion. Before starting to install LVT, check that the screed is sufficiently dry (see section 2.2.5 on subfloor preparation for moist substrates).

Screed boards

The screed boards are usually joined together by gluing tongue and groove, screw fixing and, if necessary, gluing a rebate edge or staggered gluing of two or more slab layers. These boards can often be used and the covering applied immediately after they are installed. Mineral-bound materials and wood-based materials are generally used for this type of screed.

Screed boards by material:

MINERAL-BASED	WOOD-BASED
Cement-bonded particleboard	Chipboard (V100)
Gypsum panel – gypsum boards	OSB panels (OSB 2-OSB 4)
Cement fibre boards	

Particular attention should be paid to the board joints in this case, because even the slightest overlap will mirror through to the surface without proper preparation (e.g. grinding). Before installation, it is also necessary to check whether the boards have been installed correctly, in particular any excessive movement in the system or any joints moving independently from each other are sign of insufficient fixings or support in the substrate.

2.1.3 Other substrates

- Wood flooring, board flooring & other wooden substructures
- Stone and ceramic tiles
- Older floor coverings such as linoleum, PVC etc.

The applicable subfloor preparations are described in sections 2 and 3.

2.2 Subfloor inspection & preparation

Before starting work, subfloor checks should be carried out as a matter of urgency. In general, the substrate must be checked in accordance with the British Standards and following test criteria:

- Is the substrate contaminated, e.g. by oil, wax, varnish or paint residues?
- Are there cracks in the substrate?
- Is the surface firm enough?
- Is the surface of the substrate porous or rough?
- Is the substrate dry enough?
- Is there any major unevenness?
- Are the heights of the substrate in relation to adjoining structural elements correct?
- Does acoustic insulation have to be taken into account?
- Is a heating protocol available? Or has heating been applied to accelerate readiness for covering?
- Are the room climatic conditions and the floor temperature correct?

If defects are discovered during the substrate checks, the client should be informed in writing.



WOLFF substrate test kit: Substrate kit with moisture testers.

UZIN SOLUTION: WOLFF Neo and WOLFF Vacuclean 2.





2.2.1 Contamination

Contamination (e.g. oil, wax, old adhesive or filler residues, compound residues, etc.) must be removed from the substrate, as they impair bonding of the materials to be applied, such as primers and smoothing compounds. The substrate must also be cleaned with an industrial vacuum cleaner before priming.

Floor Grinding Machine

WOLFF NEO 230

The NEO 230 grinding machine is ideal for small or medium sized areas and is suitable for grinding a variety of coatings and old substrates. The grinding head also pivots to allow close operation to walls.

WOLFF NEO 230 offers:

- + guard with pivoting segments for working close to walls
- + efficient and aggressive removal
- + dust-extraction for low dust operation

WOLFF NEO 230

Powerful Industrial Vacuum Cleaner **WOLFF Vacuclean 2**

The powerful industrial vacuum cleaner impresses with its performance and flexibility. It is ideal for coarse dirt and dust with a large filter. Dirt can be removed quickly, safely and hygienically using the lever emptying function on the mobile collection container. The rugged large wheels ensures easy transportation.

WOLFF Vacuclean 2 offers:

- + large filter
- + display to detect possible clogging of the filter
- + a HEPA filter is available as an optional accessory

WOLFF VACUCLEAN 2

2.2.2 Cracks in the surface

Any cracks or artificial joints in the subfloor must be repaired before the floor covering is installed. While artificial joints have been deliberately made in the surface, cracks and damage may have different causes. In both cases, the edges of the slabs must be stitched in order to avoid individual movement of the slabs and the subsequent marks in the surface of the floor covering. UZIN KR 516, which is a 2-component resin, capable of building high internal strength in a short time, is suitable for chemical bonding.

If there are artificial joints and cracks in the substrate and the screed sections do not move vertically in this area, they can also be repaired with UZIN RR 203 crack bridge in combination with UZIN NC 182 low-slump mortar. Resin cannot be used for expansion joints, as this would interfere with the structural design. They therefore have to be applied throughout the floor with a suitable profile.

UZIN SOLUTION:

UZIN KR 516 Sealer or UZIN RR 203 Crack Bridge + UZIN NC 182 Rapid Repair.

Options for repairing cracks:

METHOD **CRACK REPAIR PRODUCTS**

Repair cracks quickly	UZIN KR 516 resin + UZIN fine sand 0.8
Repair extreme cracks	UZIN RR 203 crack bridge + UZIN NC 182 repair mortar





Bridging and reinforcement of cracks and joints in the substrate.

UZIN offers expert knowledge and support with the UZIN Best Solutions. Visit www.uzin.co.uk for photos, videos and application instructions.

Rapid Crack Repair **UZIN KR 516**

2-Component Silicate Resin

UZIN KR 516 is a versatile 2-component silicate resin for sealing screed cracks and joints as well as for filling, bonding and repairing mineral based substrates. For interior and exterior use.

UZIN KR 516 is easy to apply and is odourless during and after application. Depending on the setting time, the consistency can be adjusted. Therefore UZIN KR 516 can be used for a variety of purposes.



- + low odour
- + extremely fast curing
- + mixing part quantities is possible
- + no need for stirring
- + adjustable consistency

2 × 300 ml plastic bottles



UZIN RR 203 bridges and reinforces cracks, joints and slight movement through the enormous tensile strength of the alkaline-resistant fibreglass strands. This crack reinforcement compensates for slight vibrations and movement from the substrate thus avoiding more elaborate remedial work. For interior use

UZIN RR 203 offers:

- + extremely high tensile strength
- + bridges and reinforces cracks, day joints and transitions
- + easy to apply
- + avoids the use of repair resins
- + very high strength
- + no hazard material

50 panels $(0.80 \times 0.60 \text{ m}) = 24 \text{ m}^2$

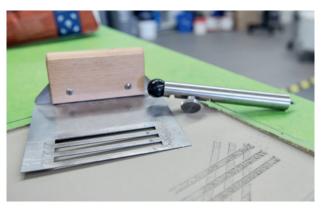
 $1 \text{ roll } (0.80 \times 30 \text{ m}) = 24 \text{ m}^2$



Sufficient surface strength is a particularly important requirement for the long-term installation of LVT. The surface of the substrate must form a solid structure together with the other parts. This is tested using the scratch test or by measuring the pull-off strength. If the measured pull-off strength is less than 1 N/mm, surface reinforcement must be installed. The limit value of 1.0 N/mm is required in the UK. You are welcome to contact UZIN's Technical Department for assistance with any necessary pull-off strength measurements. One reason for insufficient surface strength, for a new screed, may be that too little binding agent (cement or gypsum) has been used in proportion to the aggregate.



If you do not have these tools available, you can scratch the surface with a wire brush. This method will show you quickly whether the surface strength is sufficient.



If the surface is not strong enough, it can be reinforced with UZIN PE 425 2-component epoxy penetrating primer. This primer penetrates deeply into the substrate to reinforce. After UZIN PE 425 has dried, the substrate must be primed with UZIN PE 280 and then a low stress smoothing compound can be applied such as UZIN NC 151.

Scratch test using a scratcher (left); pull-off strength measurement using a pull-off tester (right)

UZIN SOLUTION: UZIN PE 425 **Epoxy Penetrating Primer.**





Reinforcing Brittle and Unstable Screeds **UZIN PE 425**

2-Component Epoxy Penetrating Primer

UZIN PE 425 penetrates deeply into the screed and has an excellent hardening effect. The water-based epoxy primer is perfect for repairing porous and weak concrete as well as old or new screeds.

UZIN PE 425 offers:

- + excellent penetration
- + good hardening effect
- + low consumption
- + can be diluted with water

6 kg + 3 kg canisters

System structure:

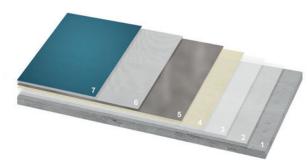
7. LVT

- 6. UZIN KE 66 Adhesive
- 5. UZIN NC 151 **Smoothing Compound**
- 4. UZIN PE 280 Primer
- 3. Coat 2: UZIN PE 425
- 2. Coat 1: UZIN PE 425
- 1. Brittle, porous substrate

TIP

Most UZIN primers are best applied with a nylon roller (14mm pile length).

2.2.4 Priming



To apply a smoothing compound before installing the LVT, the substrate must be sufficiently and uniformly absorbent. The absorbency should be checked with a water drop test. Pinholes and 'orange peel' are avoided by using a primer system that matches the absorbency of the substrate. A primer closes a porous surface and prevents the water in the smoothing compounds being absorbed into the subfloor, it increases the flow, level affect and bond between the substrate and smoothing compound. Traditional "bag & bottle products" such as UZIN L3 Gold can be used to avoid priming in some circumstances, but priming ensures a more homogeneous and uniform finish.

Concrete/screed substrate

Defect-free concrete and screed substrates can be primed using UZIN PE 360+ NEW dispersion primer. A second application may be necessary on highly-absorbent surfaces. Before priming, the substrate must be abraded and then vacuumed to remove all contamination and adhesion-reducing layers.



UZIN SOLUTION: UZIN PE 360+ NEW Primer Absorbent Substrates.

Screed boards

Before primming screed boards, remove any contamination that would impair the adhesion of products. As described in section 2.1.2, there are two types of screed board: mineral-bound and wood-based materials. UZIN PE 260 is suitable for priming absorbent, mineral-bound screed boards with water at a mixing ratio of 1:2. On non-absorbent wood-based materials, UZIN PE 260 must be applied undiluted.

UZIN SOLUTION:

UZIN PE 260 Multi-purpose Primer.

Mixing ratio by substrate:

SUBSTRATE MIXING RATIO Priming mineral-bound screed boards UZIN PE 260 (at a mixing ratio of 1:2) Priming wood-based screed boards UZIN PE 260 (undiluted)

TIP:

For these flooring constructions, the substructures must be ventilated to protect them from mould, which means that rear-ventilated skirting boards must be installed.

UZIN SOLUTION:

UZIN PE 630 Primer and Filler

System structure:

- 3. UZIN NC 196 Fibre Reinforced Smoothing Compound
- 2. UZIN PE 630 Primer and Filler
- 1. Floor boards/tiles

TIP:

Loose and unsupported tiles must be removed first.

Timber substrates and floor boards

Timber substrates must be checked particularly carefully in terms of the quality of the substructure, so that creaking is avoided when walking on them. When mechanically fixing to a timber joist, the joist must not exceed 600mm. Floating wood or floor boards must be fixed with screws or nails. Loose wood flooring planks must be fixed with screws or adhesive. Using special primers and fillers allows substrates of this kind to be prepared to support LVT floor coverings.

Old coats of paint or oil must be removed before applying UZIN PE 630 filler and primer. UZIN PE 630 can be used to fill joints between the floor boards, preventing the smoothing compound from sagging and flowing away during application. UZIN NC 196 fibre reinforced smoothing compound should then be used.



Stone and ceramic substrates

When installing LVT on ceramic tiles, there are two ways to prepare the substrate. The more complex and expensive method involves completely removing the tiles and rebuilding the substrate. This method should be considered if there is no or only very little additional installation height or if a number of tiles are loose. The second, less time-consuming option is to install on top of the tiles using UZIN PE 630 primer and filler.

In this case, the tiles must first be thoroughly cleaned to remove all residues of cleaning agents that reduce adhesion The tiles can then be primed with UZIN PE 630 filler and primer, followed by a coat of UZIN NC 196 fibre reinforced smoothing compound.

UZIN SOLUTION: UZIN PE 630 Primer and Filler.

UZIN primer systems (by substrate):

NEW SUBSTRATES	SUBFLOOR PREPARATION
Screed (dry)	UZIN PE 360+ NEW + UZIN NC 151
Concrete (dry)	UZIN PE 360+ NEW + UZIN NC 151
Precast screed	UZIN PE 260 + UZIN NC 110
OLD SUBSTRATES	
Floor boards/wood	UZIN PE 630 + UZIN NC 196
Installation materials: Tiles Coatings Precast screed slabs	UZIN PE 630 + UZIN NC 196 UZIN PE 280 + UZIN NC 151 UZIN PE 260 + UZIN NC 151

Priming of Absorbent Substrates

UZIN PE 360+ NEW

Dispersion Primer

UZIN PE 360+ NEW is a rapid drying primer which is used prior to the installation of smoothing compounds on absorbent substrates. The primer provides great penetration into the substrate, but also has film-forming properties. For interior use.

UZIN PE 360+ NEW offers:

- + excellent penetration
- + ready-mixed
- + quick drying













Priming for Absorbent or Non-absorbent Substrates **UZIN PE 260**

Multi-Purpose Primer

UZIN PE 260 is dispersion-based primer which can be diluted. For use on dense and absorbent substrates, prior to the application of smoothing compounds. For interior use.



- + film-forming

Priming of Dense and Non-absorbent Substrates **UZIN PE 280**

Super-Fast Primer

UZIN PE 280 is a film forming, superfast, dispersion-based primer for non-absorbent substrates. Its special carbon fibre technology creates a gritted surface ideal prior to the application of smoothing compounds.



- + film-forming
- + ideal for dense substrates
- + also suitable for wall applications
- + for fast construction



- + dilutable with water
- + excellent bonding on dense and non-absorbent substrates
- + great barrier

10 kg CUBE it simple 5 kg CUBE it simple Priming Absorbent and Non-Absorbent Substrates **UZIN PE 630**

Primer & Filler

UZIN PE 630 is a very rapid drying, cement-based trowel-applied primer for existing substrates requiring refurbishment. Due to its "semi-flexible" properties the primer can accommodate movement in the substrate. For interior use.

UZIN PE 630 offers:

- + primes and fills in one application
- + application thickness up to 1 mm
- + flexible when set
- + trowel application

16 kg bucket















12 kg tub 5 kg tub



Priming tiles and timber substrates in need of renovation quickly and securely.

UZIN offers expert knowledges and support with the UZIN Best Solutions. Visit www.uzin.co.uk for photos, videos and application instructions.



TIP:

To determine where to place a

humidity sleeve or hygrometer

box the substrate can be

measured before, using

a GM200 to highlight the

highest readings.

2.2.5 Moist substrates

Before installing the floor covering, check that the substrate is sufficiently dry. Excessive moisture within the substrate is a frequent cause of failure. There are various methods to test moisture but the British Standards recommends drilling and inserting a humidity sleeve or surface box hygrometer test.

The time between completion of the subfloor (concrete or screed) and start of the floor covering work is important. The longer the time between the completion of the concrete or screed and the start of the floor covering work, the greater the probability that residual moisture has fallen below 75% RH. Depending on the composition, atmospheric conditions and type of substrate, the setting times may be different.

To determine the moisture content of substrates, UZIN recommends the hygrometer method. This method involves drilling a hole with a hammer drill to a depth of 40% of the concrete thickness. This drilled hole must be cleaned of all drilled dust e.g. using an industrial vacuum cleaner, for example. A plastic plug is then inserted into the drilled hole, which must be sealed airtight. After 72 hours, a humidity sensor is inserted into the plug. The relative humidity of the concrete can then be read after a minimum of 30 minutes. The time until moisture is at equilibrium depends on many factors, e.g. temperature differences, moisture of the concrete and density of the concrete. After a further minimum of 24 hour period, repeat the procedure at a minimum of 24 hour intervals until two consecutive readings are identical to each other. At this point the trapped air is in equilibrium.

The test must be carried out according to the specifications of the test equipment manufacturers. When installing LVT the moisture reading must be less than 75% relative humidity, above this and a moisture suppressing system from the UZIN range will be needed. It is also important to ascertain if a structural damp proof membrane is present and whether the moisture is from rising moisture or residual moisture within the screed. UZIN PE 480 DPM provides the highest protection for both situations and can be used up to 99.9% RH.

Around the world, there are other test methods such the carbide bomb method. If anything is unclear, please contact the UZIN Technical Department. The CM measuring method involves removing a section of the screed with a hammer and chisel.

Where there is underfloor heating caution must be paid not to damage the heating pipes. The screed layer typically marks the measuring point of a heated screed with a flag. The test material is taken from the lower half of the screed, crushed in a bowl and placed in the test bottle. For cementitious screeds, a test material quantity of 50 g is sufficient; for calcium sulphate screeds 100 g is needed. Steel balls and the carbide phials are then added and the bottle is closed with the pressure gauge. The CM bottle must then be used as follows: Shake for 2 minutes, leave to stand for 3 minutes, shake for 1 minute, leave to stand for 4 minutes, shake for 10 seconds and then read the result. The limit values for a dry screed are provided in the following table (the values may differ in other countries):



WOLFF Classic CCM instrument

UZIN SOLUTION: UZIN PE 480 DPM or UZIN PE 404 Residual Moisture Suppressant.

Limit values for CM measurement by test quantity:

TYPE OF SCREED	TEST QUANTITY	UNHEATED	HEATED
Calcium sulphate screed	100 g	≤ 0.5 CM-%	≤ 0.3 CM-%
Cementitious screeds	50 g	≤ 2.0 CM-%	≤ 1.8 CM-%





Damage due to residual moisture

Calcium sulphate screeds

The industry has seen a growth in the use of anhydrite screeds (also known as gypsum or calcium sulphate) but has failed to find an answer for adequate protection against residual moisture for such screeds, which are above the permitted 75% RH for resilient coverings. UZIN have developed a solution to protect calcium sulphate screeds against residual moisture up to 95% RH*. The system consisting of UZIN PE 425 penetrating primer and either UZIN PE 404 or UZIN PE 480 allowing projects to be completed much quicker and avoids delays.

UZIN SOLUTION: UZIN PE 425

It is important to ensure that prior to the application of the UZIN PE 425 the surface of the calcium sulphate has been full ground to remove all materials that may be deleterious to the performance of the UZIN PE Epoxy Penetrating Primer. 425. This always entails grinding down to where the coarse aggregate of the calcium sulphate screed is fully exposed. This will allow the UZIN PE 425 to penetrate into the calcium sulphate developing a full "matrix" of sealed and supported material. If there is any doubt or confusion, please contact the UZIN Technical Department prior to the application of any UZIN materials.

UZIN moisture barrier systems:

TYPE OF SUBSTRATE	TEST METHOD	BARRIER UP TO	PRODUCT
Concrete & cementitious	Drill and plug or surface box hygrometer	Up to 99.9% RH on unheated and up to 90% RH on heated screeds*	UZIN PE 480**
screeds		Up to 98% RH on unheated and up to 90% RH on heated screeds*	UZIN PE 404**
Cementitious screeds	CM method	5 CM-% on unheated and 3 CM-% on heated structures.	UZIN PE 460**
		4 CM-% on unheated and 2.5 CM-% on heated structures.	UZIN PE 404**
Calcium sulphate screeds	Surface box hygrometer	Up to 85% RH on unheated screeds	UZIN PE 404**
		Up to 95% RH on unheated and up to 90% RH on heated screeds*	UZIN PE 425 & UZIN PE 404 or UZIN PE 480**

^{*}Please consult the product data sheet

UZIN epoxy resin DPMs

To protect floors from very high residual moisture and rising moisture damp proof membranes provide the best method and can also be used to reinforce substrates. They are ideal for use when subject to heavy wear and traffic. When applied the entire second coat is blinded with quartz sand or left to dry and applied with UZIN PE 280 primer.

Reliable Moisture Barrier **UZIN PE 480**

2-Component Epoxy DPM

UZIN PE 480 is an epoxy DPM with low odour, for use up to 99.9% RH on cements screeds or concrete. When using UZIN PE 480 as a mortar or smoothing compound in combination with UZIN sand, it dries quickly and is highly resilient. For interior and exterior use.

UZIN PE 480 offers:

- + moisture barrier up to 5 CM-% / 99.9% RH
- + very good surface penetration
- + resistant against water, frost and chemicals
- + system component in PAH renovation

10 kg metal drum







Epoxy resin applied with UZIN PE 280 primer



UZIN PE 480 fully blinded with quartz sand

^{**}For information on the application, quantity and number of individual coats, see the UZIN product data sheets for each product.

UZIN 1-component residual moisture suppressants

For fast protection against residual moisture then a suppressant primer can be used on almost all substrates. These types of products are typically much faster drying than epoxy based DPMs. After curing a coat of UZIN PE 280 primer is then applied in most instances, prior to the application of smoothing compounds.



Fast and Reliable Priming

UZIN PE 404

1-Component Residual Moisture Suppressant

UZIN PE 404 is a rapid drying, ready mixed polyurethane primer which offers a wide field of application. For interior use.



- + moisture barrier up to 98% RH
- + easy to use
- + easy application by roller or trowel
- + excellent penetration
- + fast drying

10 kg canister





2.2.6 Unevenness of the surface

Before installing LVT, the substrate must always be flat and smooth with no visible undulations or surface abnormalities. This prevents unevenness such as visible undulations on the surface of the LVT. The British Standards specify a "surface regularity" (SR1, 2, 3) which is a measurement of smoothness, but not level. Applying a smoothing compound can help achieved the desired result, as well as good working practice and trowel skills. UZIN would recommend a minimum of 3 mm thickness is applied to ensure sufficient absorbency for wet bonding.

A smoothing compound should therefore combine the best possible flow characteristics with the highest possible absorbency. Using a screed rake and then a spike roller once the smoothing compound has been applied will aerate the compound, help reduce the incidence of pinholes and improve the aesthetics. Making sure the surface is level can be aided through the use of level pins to ensure that uneven depths are clearly identified.

TIP:

Mix UZIN smoothing compounds for at least 60 seconds at approx. 600 rpm e. g. the WOLFF Power X 18V Cordless Mixer, for best results.

UZIN SOLUTION:

UZIN cement and gypsum smoothing compounds (see table)

UZIN smoothing compounds by use:

GYPSUM CEMENT UZIN NC 151 or UZIN L3 Gold UZIN NC 110 Levelling substrates UZIN NC 151 or UZIN L3 Gold UZIN NC 111 BiColor Levelling substrates quickly Repairing substrates UZIN NC 182 UZIN NC 118 Patching substrates UZIN NC 888 S





The best result is achieved by using a sreed rake and spike roller.









Heavy Duty Smoothing Compound

UZIN NC 151 is a heavy duty smoothing compound which allows quick, reliable and consistent drying. It is ready to receive most floor coverings after only 6 hours whether applied on an absorbent or non-absorbent surface. It also has excellent flow properties which produces a exceptional finish. For interior use.

UZIN NC 151 offers:

- + excellent flow characteristics
- + ready to accept floor coverings after 6 hours*
- + high strength
- + very smooth surface

20 kg bag

UZIN NC 110











Low Stress

UZIN NC 110

Gypsum-Based Smoothing Compound

UZIN NC 110 is a high-performance gypsum based smoothing compound. Especially suitable for weak, old and mixed substrates in renovation areas. With superior flow characteristics, uniform and homogeneous appearance producing a smooth surface it provides flooring installers the best base for floor coverings or wooden flooring. For interior use.

UZIN NC 110 offers:

- + superior flow characteristics
- + very smooth surface
- + very low stress

25 kg bag

Quick Drying Bag & Bottle Smoothing Compound **UZIN L3 Gold**

Rapid Drying Smoothing Compound

UZIN L3 Gold is a quick drying smoothing compound with excellent flow and good compressive strength. It can be used without a primer in some instances and is ideal for use over most sound and well bonded, waterproof adhesive residues, such as bitumen. For interior use.

UZIN L3 Gold offers:

- + ready to accept most floor coverings after 2 hours*
- + recyclable packaging makes it better for the environment
- + high compressive strength
- + can be used without priming*

20 kg bag & 4.6 kg Cube it simple



Quick Drying Gypsum-Based Smoothing Compound

UZIN NC 111 BiColor is a quick drying gypsum based smoothing compound which changes colour when the floor covering is ready to install. Floor coverings can be installed after 8 to 10 hours but the colour changes from green (when wet) to salmon (when dry) to indicate when exactly to install. This saves moisture checks and problems related to premature installation, such as unpleasant bubbles or odours.

UZIN NC 111 BiColor offers:

- + changes colour to indicate when dry
- + superior flow characteristics
- + quick drying, ready to accept floor coverings after 8 10 hours*
- + very low stress yet very high strength

25 kg bag

















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^{*}Please consult the product data sheet













UZIN NC 182 NEW

Re-mixable Low Slump Repair Mortar

UZIN NC 182 is an easy to use and quick drying repair mortar with ideal working properties. As the mortar is re-mixable during the working time, the application time can be extended. The short drying time enables subsequent work to be carried out quickly. Can be used for patching and as a "feather edge". For interior use.

UZIN NC 182 NEW offers:

- + ready to accept floor coverings after 60 minutes
- + re-mixable, longer working time
- + resistant against alkaline moisture
- + fine grain, no visible patching marks

20 kg bag 12.5 kg bag



UZIN NC 118

Low Slump Gypsum Repair Mortar

UZIN NC 118 is a gypsum based repair mortar with ideal working properties. Can be used for most repair work and as a "feather edge". The quick drying time enables work to continue after a short time.

UZIN NC 118 offers:

- + excellent mixing properties
- + adjustable consistency
- + very low stress

20 kg bag





Examples of repair work

Repairing Substrates **UZIN NC 888 S** Feather Coat

UZIN NC 888 S has very fine aggregates and can therefore be applied by trowel from a true feather edge up to 4 mm in a single application. It can be used on a variety of substrates to repair substrate imperfections. Floor coverings can be installed within 15 minutes on absorbent substrates. For interior use.

UZIN NC 888 S offers:

- + no primer required
- + extremely rapid drying
- + excellent surface finish
- + good adhesion and very smooth finish
- + good absorbency







4.5 kg bag











2.2.7 Low sound absorption

In new buildings, the requirements for acoustic floor insulation is constantly increasing. The values specified by the specifier often cannot be achieved. What is sufficient sound insulation should therefore be clarified with the client in advance. To achieve a reduction in decibels UZIN RR 620 acoustic grade insulating underlay can be used.

If the new LVT replaces an old PVC floor covering or carpet for renovation, the impact sound absorption can deteriorate due to the nature of the material. Acoustic insulation can be improved by using the UZIN RR 620. Before applying UZIN RR 620, the substrate should have a smoothing compound applied and, after drving, the smoothing compound should be primed with UZIN PE 360+ NEW. This ensures optimum adhesion of the self-adhesive UZIN RR 620.

Thin Acoustic Insulation

UZIN RR 620

LVT Underlay

UZIN RR 620 is a self-adhesive underlay for LVT floor coverings. It helps improve the acoustic insulation and underfoot comfort. The fibreglass, load-distributing support layer of fleece increases the compressive strength.



- + self-adhesive
- + low height
- + immediately ready for covering
- + improves compressive strength
- + acoustic insulation

1 roll $(1 \times 7.5 \text{ m}) = 7.5 \text{ m}^2$



UZIN SOLUTION:

UZIN PE 360+ NEW

Primer Absorbent Substrates + UZIN RR 620 LVT Underlay.







Installing LVT over thin acoustic insulation.

UZIN offers expert knowledge and support with the UZIN Best Solutions. Visit www.uzin.co.uk to find photos, videos and application instructions.

2.2.8 Heating protocol

For underfloor heating a heating protocol should always be handed out before starting work. It is necessary to clarify whether the under floor heating has been commissioned. If the work is started without clarifying these points, the risk of consequential damage is very high: e.g. water damage from leaks, debonding of the floor covering (due to insufficiently drying) or softening of the adhesive. The damage often only becomes visible after a long time and can only be repaired with significant time and money.

The underfloor heating must be fully commissioned and tested as per the British Standards or in accordance to the manufactures guidelines. Prior to the installation of the LVT the underfloor heating should be switched off for 2 days. Once installed the heating should not be put back on for at least 2 days and peak temperature should be avoided for another 7 days. It is also important to ensure that the surface temperature does not exceed 27 °C and that the temperature is slowly increased.

2.3 Machinery & special tools

A wide range of machines, tools and equipment is required to prepare the substrate according to the British standards. For example, when renovating, strippers are used to remove old coverings.

Testing and measurement equipment

The WOLFF measuring instruments define precision and accuracy. Just what you really need on site!

Universal hygrometer

WOLFF V1-D4 Professional

Designed for moisture measurement of subfloors. Enables accurate non-invasive moisture testing.

- + easy to use
- + real-time display of measurements on easy to read display
- + suitable for preliminary checks to determine the dryness of materials for CM and RH measurements

WOLFF V1-D4 Professional

WOLFF CCM Device Classic

Complete set with all instruments required to measure the moisture content. Contained within a metal carrying case.

WOLFF CCM Device Classic

Removing flooring

When removing existing flooring, tools are needed that provide rapid progress.

WOLFF Duro-Stripper

Ideal for use on small to medium-sized areas.

- + ergonomic oval handle with foam grip
- + can be operated as a handheld machine with the removal of the handle
- + robust wheels

WOLFF Duro-Stripper

WOLFF Turbo Stripper

Extremely powerful stripping machine for removing most types of floor coverings

- + new clutch system for smoother operation
- + self-propelled with hand-operated clutch for more convenient operation
- + emergency stop button for safety
- + detachable weight and handle for easy transportation

WOLFF Turbo Stripper

Subfloor preparation

Every new floor covering requires a flat, clean and dry substrate as a foundation.

WOLFF Samba

Single disc grinding machine for grinding, cleaning and polishing

- + multi-purpose machine
- + suitable for wet cleaning
- + ideal for small to medium-sized areas
- + metal wheels as standard

WOLFF Samba

WOLFF Antistatic Pre-separator, 50L

The antistatic pre-separator can filter large amounts of coarse dirt and fine dust even before vacuuming.

- + constant suction power
- + protects the vacuum cleaner and filter
- + separates up to 99% of all particles
- + suitable for most electrical machines

WOLFF Antistatic Pre-separator, 50L

WOLFF NEO 230 GRINDING MACHINE WOLFF VACUCLEAN 2 VACUUM CLEANER See page 20 for more information on the two products.













2.4 Notes	Notes 2.4



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Originally, LVTs were always installed with an adhesive. However, for some years now, click LVTs which can be floated and loose lay LVT have been introduced to the market. LVTs which need to be adhered continue to dominate the market, because the various design possibilities can only be installed effectively with an appropriate adhesive. It is only with adhesive that they really live up to their name. Click and loose-lay LVT significantly limit the design possibilities.

Depending on the requirements of the floor covering and preference of the installer, different methods have become established for installing LVTs, e.g. wet bonding and pressure-sensitive bonding. To create an absorbent and level subfloor. the substrate must prepared correctly in accordance with the British Standards.

Installation conditions

The LVTs must be acclimatised according to the manufacturer's specifications before installation. This is the first important step for successful installation, particularly when there are extreme variations in temperature, such as in summer and winter.

During installation, the relative humidity should ideally be in the range of 40-65%, but should not be greater than 75%. The air temperature and the temperature of the materials that are used. e.g. floor covering and adhesive, must be at least 18°C during application. The floor temperature must be at least 15°C. Given the setting, drying and reaction times of the installation materials, the specified conditions for the climate in the room must be maintained before, during and up to 7 days after completion.

If rising temperatures occur during the setting phase for the adhesive, e.g. due to exposure to sun light, changes in the dimensions of the coverings will occur. Before, during and after installation, therefore, the floor covering and installation materials must be protected from direct sun light and heat until the adhesive has set completely. Only once the adhesive has completely set should any loads, such as furniture, be placed onto the LVT. The installation instructions provided by LVT manufacturers must also be observed in this case.

3.1 Installation method and types of adhesive

In recent years, there have been many new developments around LVTs. In addition to newly developed installation systems (e.g. loose-lay and click LVT) and binding agents (e.g. chlorine-free floor coverings), new areas of application such as bonding to the wall have become more popular. In line with these developments, various different installation methods and types of adhesive have become established on the market.

3.1.1 Full-surface bonding of LVTs

Permanent bonding of LVTs is the most commonly used installation method. It provides a particularly high degree of reliability in terms of load-bearing capacity and stability of the floor. Permanent bonding prevents movement of the LVT to the greatest possible extent. It also delivers a better acoustic insulation, e.g. in comparison to click systems. In areas with underfloor heating, an LVT should be bonded to achieve the best possible thermal conductivity.

Notched Blade Selection:

	ABSORBENT SUBSTRATE	NON-ABSORBENT SUBSTRATE
Coarse backing	A2	A5
Smooth backing	A1	A5

Wet set, pressure-sensitive, reaction-resin and adhesive tapes Different types of adhesives are used to install LVTs, depending on the requirements.

1. Wet set adhesives and wet set installation methods:

The fibre-reinforced UZIN KE 66 adhesive is the best choice for dimensionally stable installation.

Wet set adhesives such as UZIN KE 66, are designed for universal use with most LVTs (with the exception of chlorine-free variants) and provide a secure bond. A hard adhesive ridge combined with high shear strength effectively restricts any joint movement, which is particularly advantageous where underfloor heating is present or the LVTs are in direct exposure to sun light. When combined with an appropriate smoothing compound, pure wet set adhesives set very quickly and can reach more than 50% of their final strength within the first hour. This ensures a high degree of reliability, quick application and guarantees the best installation results.

UZIN SOLUTION: UZIN KE 66 Wet Set Adhesive

TIP:

Pressure-sensitive adhesives and pressure-sensitive installation methods:

Given the user-friendly, long open time, this type of adhesive has a lot of fans around the world. The high degree of initial adhesion certainly also plays an important role in this case. However, using pressure sensitive adhesives in areas with direct exposure to sun light or heavy point loads is high risk (joint movement and/ or residual indentations). Many pressure sensitive adhesives can also be used to install LVT using the wet set application method. For this application, we recommend using our UZIN KE 2000 S universal pressure sensitive adhesive. It is used successfully around the world to install LVTs with different bonding methods.

Even when installing chlorine-free floor coverings, special attention must be paid to choosing the right adhesive. For this particular type of LVT, the binding agent is replaced with chlorine-free raw materials to protect the environment and for sustainability. In our experience, not all LVT adhesives work in combination with these coverings. We recommend UZIN KE 60, which is the first special adhesive for chlorine-free coverings.

3. Reaction resin adhesives:

In areas subject to heavy loads, we recommend installing LVTs with a reaction resin adhesive. This includes areas with high solar gain, fluctuations in temperature, very heavy wear and traffic in commercial and industrial buildings or areas subject to heavy cleaning. These adhesives are ideally suited for use in tough conditions and guarantee a very secure bond as they have high shear and peel strengths as well as high resistance to temperature, chemicals and moisture.

As these adhesives set reactively, they do not necessarily require an absorbent substrate. They can therefore also be used on non-absorbent substrates, e.g. underlays, epoxy resin DPMs, PU primers and on metal.

TIP:

As the pressure-sensitive adhesive process has an increased risk of residual indentations and changes of dimension, this bonding method should not be used in areas subject to heavy wear and traffic or areas subject to solar gain.

UZIN SOLUTION:

UZIN KE 60 for chlorine-free LVTs

UZIN SOLUTION:

UZIN KR 430 2-Component PU Adhesive or UZIN KE 68 1-Component Heavy Duty Adhesive.

4. Adhesive tapes:

Adhesive tapes are popular in mainland Europe. These double sided adhesive tapes are applied on the substrate, instead of a "traditional" adhesive. One great advantage of these products is the LVTs can be removed from the substrate without leaving any residue. Using tapes is the quickest installation method, as there is no drying or setting time at all. With an unlimited open time LVTs can be removed and relaid during installation, so are ideal for difficult installations and complicated designs.

UZIN adhesive tapes also contain a metallic barrier to help stop plasticiser migration from the LVT which helps prevent problems such as joint movement. Adhesive tapes can therefore be used in a similar way to traditional adhesives.

Different products are used depending on the type of substrate.

UZIN SOLUTION:

Sigan Elements Plus Adhesive Tape + Planus Primer.

REFERENCE:

See section 4.1.2 on page 65 for instructions on basic cleaning.

UZIN SOLUTION:

Sigan Elements Adhesive Tape.

Mineral-based substrate:

If installing LVT onto mineral based substrates such as a smoothing compound, Sigan Elements Plus must be used in combination with Planus primer.

Lightly abrade the substrate, before priming with Planus. Sigan Elements Plus is then applied to the substrate and rubbed over using a cork board to remove any bubbles. The protective film can be removed and the LVT can be installed.

Old floor coverings as substrate:

From time to time LVT has to be installed on to old floor coverings (e.g. linoleum, vinyl and rubber floor coverings, etc.). Sigan Elements can be used in these circumstances. It is essential to ensure that the old floor covering is firmly connected to the actual substrate. The old floor must be thoroughly cleaned before work begins. After successfully checking adhesion, you can install the LVT with Sigan Elements.

Installing on to old floor coverings avoids renovation work and the associated disturbance caused by dust and noise. It also means that installation work can be done while the building is being used, so is ideal for use in hotels and shops.

Overview of UZIN adhesives (by requirement):

REQUIREMENT	UZIN ADHESIVE
Dimensional stability	UZIN KE 66
Universal application	UZIN KE 2000 S
High solar gain or heavy traffic	UZIN KE 68 UZIN KR 430
Chlorine-free LVTs	UZIN KE 60
Adhesive tape for new substrates	Sigan Elements Plus
Adhesive tape for use over old floor coverings	Sigan Elements

Wet Set Adhesive

UZIN KE 66

Fibre-Reinforced High Temperature Adhesive

UZIN KE 66 is a wet-set, dispersion-based adhesive with a short open time and excellent adhesion. It is fibre reinforced to help with the dimensional stability of the LVT and reduce residual impression. For interior use.

UZIN KE 66 offers:

- + highly shear resistant
- + short waiting time
- + excellent working properties
- + can be used as a high temperature adhesive in most areas

14 kg bucket 6 kg bucket















UZIN offers expert knowledges and support with the UZIN Best Solutions. Visit www.uzin.co.uk to find photos, videos and application instructions.

For all Resilient Floor Coverings

UZIN KE 2000 S

Installation method and types of adhesive

Pressure Sensitive Adhesive

UZIN KE 2000 S is a strong dispersion adhesive with short waiting time and long working time. It can be used as a pressure sensitive or wet-set adhesive and can also be used via the double drop method. For use on floors and walls. For interior use.

UZIN KE 2000 S offers:

- + short waiting time
- + excellent application properties
- + good grab with stringing
- + for LVT, vinyl, lino & rubber

14 kg bucket 6 kg bucket



Dispersion Adhesive for PVC-Free Floor Coverings

UZIN KE 60 is the specialist for resilient "bio" floor coverings. The adhesive offers excellent application properties, a long working time and a very high dimensional stability. For interior use.

UZIN KE 60 offers:

- + easy to apply
- + short waiting and long working time
- + excellent dimensional stability

14 ka bucket









UZIN KE 68

1-Component Heavy Duty Adhesive

UZIN KE 68 is a user friendly, single component heavy duty adhesive. The adhesive has very low emissions and is the ideal problem solver for demanding areas, e.g. in areas with high solar gain or subject to water from above which may penetrate the joints. Furthermore, UZIN KE 68 is suitable in areas with higher mechanical loads, e.g. in front of lifts or in areas loaded with pallet trucks. For interior use.

UZIN KE 68 offers:

- + single component
- + for installers with PU or epoxy allergies
- + for areas with high temperatures

8.5 kg bucket





















For Areas with Extreme Conditions **UZIN KR 430**

2-Component Heavy Duty Adhesive

UZIN KR 430 is a 2-component polyurethane adhesive for resilient floor coverings. The adhesive is especially suitable for areas subject to heavy use or subject to extreme climate conditions. For interior and exterior use.



Installation method and types of adhesive

UZIN KR 430 offers:

- + no shrinkage
- + flexible yet hard
- + high resistance to heat and cold



8 kg bucket 3 kg bucket

Adhesive Tape for New Substrates **SIGAN ELEMENTS PLUS**

High-Performance Adhesive Tape

Sigan Elements Plus allows for the quick, easy and dimensionally stable installation of LVTs onto smoothing compounds. If the LVTs needs to be removed in the future, the floor can be replaced with minimum effort. The LVTs can be removed without any machinery and no residues are left on the substrate.







- + no waiting time
- + quick and easy installation
- + the floor is immediately ready for foot traffic and loading
- + later removal leaves no residues

1 roll (75 cm x 25 m) & 1 roll (5 cm x 25 m) = 20 m²





UZIN offers expert knowledges and support with the UZIN Best Solutions. Visit www.uzin.co.uk for photos, videos and application instructions.



Installing LVTs onto old, existing floors using Sigan Elements.



High-Performance Adhesive Tape

With the patented adhesive tape Sigan Elements, new LVTs can be installed directly onto existing floor coverings. After installation the LVTs can be removed without leaving any residues, saving time and effort. It also doesn't cause any dirt or noise.

SIGAN ELEMENTS offers:

- + no waiting time
- + on existing floor coverings (e.g. vinyl or linoleum)
- + the floor immediately ready for foot traffic and loading
- + later removal leaves no residues

1 roll (75 cm x 25 m) & 1 roll (5 cm x 25 m) = 20 m²







3.1.2 Installing loose-lay LVTs

In recent years, more and more loose-lay LVTs have become available. This type of LVT is installed onto the substrate without any adhesive according to the manufacturer's recommendations. To provide extra security it is sometimes possible to use a tackifier to help prevent any potential movement of the loose lay luxury vinyl tiles. However, some loose lay LVTs and tackifiers are not compatible which can cause plasticiser migration. Therefore it is important to establish that the LVT and tackifier have been tested prior to installation. If in any doubt please contact the UZIN Technical Department regarding appropriate test results.

Loose lay LVT have a number of limitations and cannot be used in areas with direct exposure to light or subject to heavy wear and traffic.

For Loose-lay LVTs

UZIN U 2100

Tackifier

Installation method and types of adhesive

UZIN U 2100 is a very low emission tackifier for carpet tiles and most LVTs which have been tested for compatibility. Helps to prevent loose-laid floors from moving. For interior use.

UZIN U 2100 offers:

- + very fast application
- + great coverage, up to 200 m²
- + very strong pressure sensitive

10 kg canister

UZIN SOLUTION:

Check with UZIN Technical if UZIN U 2100 Tackifier is compatible with the LVT.





3.1.3 Installing LVTs on walls

Another trend is to install LVTs to the wall. It is important to ensure that the chosen LVTs are suitable for walls. For fire protection purposes, the LVTs must be tested in combination with the adhesive.

When installing LVTs to walls, you must use a thixotropic adhesive with very good adhesion to minimise the LVTs slipping. UZIN KE 68 T has these properties. It can be used to bond an LVT to a wall on a wide variety of absorbent and non-absorbent surfaces, e.g. tiles, gypsum plaster board, sealant, render, etc. Thanks to a special formulation, UZIN KE 68 T is ideal for use in damp areas with high exposure to water.

Wall Installations

UZIN KE 68 T

1-Component Hybrid Adhesive

UZIN KE 68 T is a user friendly, single component hybrid adhesive with very low emissions. The consistency is ideal for wall applications. The adhesive is very resistant against heavy loads, high temperatures or humidity. For interior use.

UZIN KE 68 T offers:

- + ideal consistency for walls
- + for installers with PU or epoxy allergies
- + for areas with high solar gain

11 kg bucket 12 × 600 ml tubes

UZIN SOLUTION:

UZIN KE 68 T Hybrid Adhesive.







3.2 Installing skirting boards

Skirting boards are usually installed as the perfect finish for LVTs. A wide variety of different materials such as PVC, wood, plastic or metal can be used for skirting boards. LVTs can also be cut and used. There are various methods for installing skirting boards, such as screwing, nailing or using an adhesive. Using screws and nails is time-consuming, depending on the substrate, and often produces dust and dirt on the newly installed LVT. In contrast, installation using a special adhesive tape is extremely clean, fast and reliable.

For Skirting, Capping & Coving **UZIN U-TACK** Double-Sided Adhesive Tape for Skirting

UZIN U-Tack is a multi-purpose adhesive tape for securely installing different types of skirting and floor covering strips.

UZIN U-TACK offers:

- + multi-purpose
- + quick installations











UZIN U-Tack 25 (25 mm × 50 m) UZIN U-Tack 40 (40 mm × 50 m) UZIN U-Tack 50 (50 mm × 50 m) UZIN U-Tack 85 (85 mm × 50 m)



UZIN U-Tack can be used for a variety of skirting boards and all types of floor coverings.



3.3 Tools for installing LVTs

Various tools are required to install LVT floor coverings successfully. In addition to standard tools, installation requires the use of pressure rollers, strip cutters and design cutters. WOLFF, our sister brand, supplies a large range of special tools for LVT installation.



The WOLFF Design Collection includes several tools for perfect installation of LVT. All of the tools have a very robust construction and allow work to be carried out comfortably and safely, making them tailor-made for LVT installation.

Linocut seam cutter:

For quick installation of borders and creates perfect seams for luxury vinyl tiles as well as all resilient and needle punch floor coverings. Different base plates for a range of applications.

FasTrimmer:

To create a chamfered edge of 25° to the surface of LVT after they have been cut.

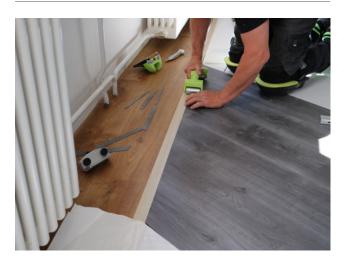
Duo pressure roller:

To roll over the seams for perfect adhesion.

Mitre-box scissors for luxury floor covering:

For a precise and clean cut of LVT feature strips. Double action, with stop.

WOLFF Design Collection



WOLFF Design Cutter WO 630

Cutting device for effortless and right-angled cutting of LVT, carpet, rubber or vinyl tiles.

- + fast and precise
- + quiet and dust-free
- + portable and light weight

WOLFF Design Cutter WO 630

WOLFF Pressure Roller, 50 kg

The WOLFF pressure roller consists of 4 rollers that adjust perfectly to the floor.

WOLFF Pressure Roller, 50 kg

WOLFF Battery Strip Cutter LS 35/LS 65

The battery powered strip cutters are ideal for LVT, linoleum and vinyl and are perfect for cutting skirting, stairs, borders and factory cut edges.

+ ideal for cutting heavy or thick material

WOLFF Electric Strip Cutter LS 35/LS 65

WOLFF Railcut

The WOLFF Railcut is ideal for cutting seams. The cut is made using a rail at a 90° angle to the floor covering.

- + for LVT, vinyl, lino, rubber and soft textile coverings
- + for cutting borders and design work
- + can be used as a strip cutter
- + height adjustable blade (0 15 mm)
- + practical and ergonomic shape for comfort
- + rail can be extended
- + suitable for right and left handed users

WOLFF Railcut

For more tools, go to www.wolff-tools.co.uk









3.4 Notes		Notes 3
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SEALING & MAINTENANCE

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For a number of years, LVTs have been one of the most widely used types of floor covering as they have great design potential and practicality. They are robust and durable but like any other floor covering, they must be cleaned and maintained to ensure longevity.

In general, there are three different types of cleaning. A distinction is made between initial cleaning after installation, routine maintenance cleaning and irregular intensive cleaning.

Initial cleaning, which involves cleaning the floor from the building work dirt and dust, is usually done after the LVT has been installed. This may be the responsibility of the flooring contractor. Routine maintenance cleaning can be done by vacuuming and sweeping or with a special maintenance cleaner. Intensive cleaning normally happens at irregular intervals depending on the severity of dirt. The life of the floor can be extended by sealing the LVT floor before first use. Such treatment is predominantly within the commercial sector.

Chemical cleaning agents are used depending on the type of cleaning, the frequency of floor use and the amount of dirt. Floor covering manufacturers recommend various different cleaning agents for dirt. For maintenance cleaning, the LVT is usually wiped with a mop that has been washed in a cleaning solution and wrung out. More intensive cleaning is usually carried with a machine (for more information, see section 4.1.2).

4.1.1 Maintenance cleaning

Maintenance cleaning is carried out in commercial facilities on a regular schedule, e.g. weekly or daily, and in domestic buildings as required. This involves removing accumulated dirt to improve the appearance of the surface. The cleaning solution, such as UZIN Resilient Care, diluted with water at a ratio of 1:200 is applied using a flat mop and immediately wiped off again. The mop has to be rinsed in the bucket regularly (preferably using the two bucket method). In commercial buildings cleaning machines may be used. After wet cleaning, simply leave the surface to dry and it is then ready for foot traffic again. The special pH-neutral formulation of UZIN Resilient Care means that it is reliable for all LVTs.

All-in-One Cleaning and Maintenance

UZIN Resilient Care

Resilient floor cleaner

UZIN Resilient Care is a premium, streak-free cleaner for everyday use in residential and commercial areas.

The perfect dilution of UZIN Resilient Care with water is 1:200 (50 ml : 10 litre).

UZIN Resilient Care offers:

- + multi-purpose
- + pH neutral safe for all floors
- + great for daily cleaning
- + leaves no residue

0.75 litre bottle 5 litre canister



UZIN Resilient Care

4.1.2 Intensive cleaning

Intensive cleaning involves removing all dirt and old coatings, then treatment with a suitable sealer. Depending on the severity of dirt and number of coats, UZIN Basic Cleaner is diluted with water at a ratio of 1:10 to 1:1 and applied using a flat floor mop (section by section on larger areas). The cleaning solution should be allowed to react for about 15 minutes, while making sure that it does not dry up. A single-disc machine, such as the WOLFF Samba, fitted with a cleaning pad should be used crosswise over the floor, until all the contamination is removed. The dirty water is then removed with a wet vacuum cleaner. The LVT must then be cleaned twice with clear water and vacuumed again to remove all residues of cleaning agent. After drying completely for at least four hours with good ventilation (preferably overnight), the new sealer can then be applied.

TIP:

For subsequent application of UZIN Resilient Sealer, use the green WOLFF cleaning pad (Item no. 12691); for subsequent application of UZIN Turbo Protect Plus, use the grey WOLFF cleaning pad (Item no. 80718).

Prior to Resealing

UZIN Basic Cleaner

Premium Cleaner

UZIN Basic Cleaner is a heavy duty cleaner for removing dirt, grease, wax, and most contaminates prior to the application of UZIN Resilient Sealer or UZIN Turbo Protect Plus. Can also be used for removing adhesive residues as well as cleaning and to degrease floor coverings.

Depending on amount of dirt, the dilution of UZIN Resilient Care with water is a ratio of 1:1 to 1:10.

UZIN Basic Cleaner offers:

- + effective cleaning
- + reduces labour costs
- + low pH value, therefore suitable for LVT, linoleum, vinyl, wood and cork

5 litre canister



4.2 Surface sealer/coatings

4.2.1 Sealing

UZIN Resilient Sealer provides quick and cost effective protection for thoroughly cleaned floors and in some cases new floor coverings. UZIN Resilient Sealer can be used in areas with light and heavy loads. Depending on the level of wear and traffic, it will last within domestic settings for approximately two to three years. In high traffic areas such as in schools and hospitals the sealer may show signs of wear and tear earlier than this. The 1-component material is easy to apply with a white fine-fibre mop or applicator. UZIN Resilient Sealer should be applied in two coats. After the first coat is left to dry for approx. 1 hour the second coat should be applied crosswise. The floor is then ready for foot traffic and use after 12 hours.



For Protecting LVTs

UZIN Resilient Sealer

Premium Sealer

UZIN Resilient Sealer is a single component polyurethane sealer for the care and protection of resilient floor coverings as well as natural and artificial stone. It helps improve and extend the wear life of the floor. For interior use.

UZIN Resilient Sealer is applied undiluted with a white micro-fibre mop.

UZIN Resilient Sealer offers:

- + great protection
- + slip-resistant
- + abrasion-resistant
- + extends the life of the floor
- + resistant against surface disinfectants
- + fast drying

5 litre canister



4.2 | Surface sealer/coatings Repair | 4.3



4.2.2 Coatings

UZIN Turbo Protect Plus provides exceptionally high-quality and permanent protection of thoroughly cleaned LVTs. If a new floor requires additional defence then UZIN Turbo Protect Plus can also be used.

UZIN Turbo Protect Plus guards against all types of wear, subject to special preparatory work. It can also be used for all resilient floor coverings. In areas subject to light wear and traffic, the coating will last between three and ten years without resealing depending on the amount of wear. In areas with heavy wear and traffic such as schools or hospitals, it may start to show signs of wear after approximately three to four years. The 2-component material should be applied once or twice with a special microfibre roller by a trained and skilled installer. The coating is applied crosswise, in one to two metre sections. It is ready for foot traffic after approximately 16 hours and loads after 36 hours. It has full chemical resistance after 7 days.



UZIN Turbo Protect Plus is a 2-component water based polyurethane resilient floor coating with outstanding durability and excellent resistance to clean agents and disinfectants. It has been formulated for residential and commercial applications. For interior use.

UZIN Turbo Protect Plus is applied undiluted with a micro-fibre roller.



- + protection from materials penetrating into the floor
- + reduces labour costs because of 1-coat application
- + reduces maintenance costs
- + fast drying and curing
- + extremely durable
- + easy to apply, will not flake, fade or yellow over time

4 litre canister & 1 litre bottle



With UZIN Turbo Protect Plus:

The coating protects the floor covering for a long time and makes it easy to maintain.



Without UZIN Turbo Protect Plus:

Permanent damage to the floor covering surface due to heavy wear and particles of dirt.



When in use on a daily basis, scratches often occur in the LVT covering, e.g. from small stones in the sole of a shoe. These scratches can be easily repaired with the 2-component UZIN Refresher Set, in combination with a red pad, so that they are no longer visible in the LVT. Scratches can be concealed instead of expensive, complete renovations and the gloss level of the surface does not change. Before use, the area around the scratch must be cleaned with UZIN Basic Cleaner.



Premium 2-Component Scratch Concealer

UZIN Refresher is a 2-component scratch concealer that is easy to apply. It provides an exceptional finish on most resilient floors manufactured with a polyurethane wear layer. It is formulated for residential and commercial applications. For interior use.

For small scratches, UZIN Refresher is applied by hand. On larger areas UZIN Refresher can be applied by machine.

UZIN Refresher Set offers:

- + extremely durable
- + scratch concealing
- + immediate problem solver when time constraints are an issue
- + excellent finish

80 ml metal can & 20 ml plastic bottle











4.4 Notes	Notes 4.4

5.0 | UZIN systems for LVT | 5.0



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The best solution for every application

What makes our LVT range so special? In order to achieve perfect installation results, we have extremely reliable systems and provide a range of different adhesives, adhesive tapes, primers and smoothing compounds. We also have a growing range of machines and special tools from WOLFF. The cleaning and maintenance products from UZIN Care round off our product portfolio for perfect LVT installations.

This makes UZIN the only supplier in the world to offer a complete product range from installation to maintenance of LVTs. At the same time, it is important to us that, along with perfect products, we also supply systems which offer the best solutions for every scenario.

5.1 | System overview | 5.1

5.1 UZIN systems at a glance:

3		Commercial	Residential
CLEANING &	Repairing	UZIN Refresher Set	UZIN Refresher Set
MAINTENANCE	Maintenance cleaning	UZIN Resilient Care	UZIN Resilient Care UZIN Parilient Scales
	Sealer	UZIN Turbo Protect Plus	UZIN Resilient Sealer
	Basic cleaning of old resilient floor covering	UZIN Basic Cleaner	UZIN Basic Cleaner
	Initial cleaning of new floor covering	UZIN Basic Cleaner diluted	UZIN Basic Cleaner diluted

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Covering	LVT	LVT	LVT	LVT	Chlorine-free LVT	LVT	LVT	Loose-lay LVT	Loose-lay LVT
Method	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent to walls	Permanent with adhesive tape	Loose-lay with tackifier	Loose-lay
Adhesive	UZIN KE 66 Wet Set Adhesive	UZIN KE 2000 S Pressure Sensitive Adhesive	UZIN KE 68 1-Component Heavy Duty Adhesive	UZIN KR 430 2-Component Heavy Duty Adhesive	UZIN KE 60 Adhesive for PVC-Free Floors	UZIN KE 68 T 1-Component Hybrid Adhesive	Sigan Elements/Sigan Elements PLUS Tapes	UZIN U 2100 Tackifier*	
Requirement	Dimensionally stable For heavy wear and traffic in residential, commercial and industrial areas	Multi-purpose For heavy wear and traffic in residential, commercial and industrial areas	High solar gain and traffic For residential, commercial and public buildings	For very high traffic and extreme solar gain For residential, commercial and industrial areas	Installing chlorine-free LVT For heavy wear and traffic in residential, commercial and industrial areas	Reliable installation onto walls For heavy wear and traffic in residential, commercial and industrial areas	Quick, clean installation and can be removed without leaving residues Ideal for shops	Slip resistant Ideal for light wear and traffic in residential and commercial areas	Can be removed without leaving residues For light wear and traffic in residential areas

SUBFLOOR PREPARATION

Underlay ***)	Acoustic insulation: UZIN RR 620 LVT Underlay					
Smoothing compound	UZIN NC 151 Heavy Duty Smoothing Compound	UZIN NC 110 Gypsum Smoothing Compound	UZIN NC 151 Heavy Duty Smoothing Compound	UZIN NC 196 Fibre Reinforced Smoothing Compound	UZIN NC 196 Fibre Reinforced Smoothing Compound	UZIN UZIN L3 Gold Bag & Bottle**
Primer			UZIN PE 280 Fast Primer			
Primer / DPM	UZIN PE 360+ NEW Primer	UZIN PE 360+ NEW Primer	UZIN PE 480 DPM	UZIN PE 630 Primer & Filler	UZIN PE 630 Primer & Filler	
Substrate	New concrete/cementitious screed, dry	New calcium sulphate screed, dry	Concrete/cementitious screed with rising or residual moisture	Wooden Floorboards	Fixed tiles	Old floor with adhesive residues, dry

^{*}The LVT must be tested with UZIN U 2100. Please consult UZIN Technical Department if in any doubt.

^{**}Can be used without a primer in most cases, please consult the product data sheet for more information.

5.2 UZIN Best Solutions UZIN Best Solutions

UZIN BEST SOLUTIONS. Help and advice.

NO UNANSWERED QUESTIONS.

TIP:

You can discover all our

systems online.

The UZIN Best Solutions provide help for any problems you may encounter when installing floors with expert advice and support for specific situations. Depending on the scenario, our unique systems can be employed to streamline work, expedite projects and minimise downtime. Our systems can also help improve performance, allowing secure and reliable installations. Visit our website for valuable tips and tricks as well as numerous pictures, videos and instructions.

For help and tips to overcome common problems visit www.uzin.co.uk to discover photos, videos and instructions.

Marc Lawrence, Head of Technical & Product Management

5.2 UZIN Best Solutions for LVT Installations.

Subfloor Preparation:

Save time when priming over tiles and wooden floorboards. With UZIN PE 630 Filler and Primer.



LVT Installation:

Quickly improve acoustic insulation and underfoot comfort. With UZIN RR 620 LVT Underlay and UZIN KE 68 Heavy Duty Adhesive.



Extremely quick LVT installation onto old substrates.

With UZIN NC 172 BiTurbo Rapid Drying Smoothing
Compound and UZIN KE 66 Wet Set Adhesive.



Quickly install new LVTs onto existing floor coverings. With Sigan Elements Adhesive Tape.



Quickly install LVTs onto damp and contaminated substrates.

With UZIN RR 185 Damp Proof Underlay and

Sigan Elements Plus Adhesive Tape.



Always, keep up to date.

Just scan the QR code to find all our UZIN Best Solutions including videos.

If you have any questions or queries please contact our Technical Department.



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5.3 KNOWLEDGE

A floor is worth more than just its surface. The whole flooring construction should be considered in its entirety, where each individual layer is perfectly compatible. A successful flooring construction not only consists of first-class products, but also a good amount of expertise.

Our Technical Department is always there to offer advice for all challenges and questions.

Technical hotline

Do you have questions about our products and how to use them? Our technicians are happy to help and support you.

Telephone: +44 (0)1788 530080 E-mail: uzin.uk@uzin-utz.com

Business support

UZIN are proud members of the Contract Flooring Association. The CFA are able to provide free business support and assistance to members on a variety of topics such as contractual, legal and employment law, tax, adjudication as well health and safety advice. Please visit www.cfa.org.uk for information.







5.4 Notes	Notes 5.4