

Installation and maintenance instructions

Altro adhesive-free flooring

Altro Stronghold™ 30 / K30 adhesive-free

November 2024

General

Altro Stronghold 30 / K30 adhesive-free flooring has the combined benefit of Altro's highest rating for slip resistance, minimising the risk in wet and greasy areas, with an adhesive free floor system for maximum impact with minimum downtime.

Altro adhesive-free flooring can be laid over a variety of surfaces without the need to fully adhere the material to the subfloor. This overcomes many of the problems encountered in laying sheet flooring over new or old subfloors.

Typical key benefits of Altro Stronghold 30 / K30 adhesive-free flooring include;

- Create temporary or semi-permanent areas where the substrate, underlayment or existing floorcovering may need to be used again later.
- Can be used over most existing hard finishes including but not limited to, asbestos tiles, resin, paint, vinyl and linoleum sheet or tile, and terrazzo.
- Installation can happen earlier in the construction process.
- Disruption and downtime can be reduced, and the area can be trafficked immediately.
- Cost saving and environmentally friendly, whilst being fully recyclable and sustainable.
- Can be laid on new cementitious and gypsum-based screeds or slabs where the moisture level is less than 97% RH (Relative Humidity) / 7 CM% (Carbide Method).
- Can be laid over existing concrete subfloors above ground floor level.
- Can be laid over internally heated subfloors providing they are dry, i.e. 75% RH / 2 CM% or less.

Altro Stronghold 30 / K30 adhesive-free can be installed in areas up to 400 m² in size. For areas larger than this please contact your local technical services representative for advice.

In areas subject to positive or negative pressure caused by drafts, smoke etc. or air extraction systems within a building, Altro adhesive-free floor coverings may lift slightly from the subfloor. Due to the complexity of air pressure in various environments, if any doubt persists, it is recommended that a fully bonded Altro floor covering is used instead.

In areas subjected to high solar gain, such as south facing floor to ceiling windows, Altro recommend a fully bonded product and in such instances, the addition of UV protection film should be used on the glass.

If installing Altro Stronghold 30 / K30 adhesive-free flooring into minus temperatures such as walk in freezers; it should always be fully adhered to the subfloor to avoid product failure.

Contamination on the existing substrate, underlayment or product such as engine oil, bituminous material, marker pens, and impregnation agents can cause discoloration and should be treated as such.

Any preparation, product layout, design finishes or subcontracting works including mastic application should be discussed and agreed upon at an early stage, to ensure clarity.

Please contact Altro Technical Services for further advice.

Subfloor

Correct subfloor preparation is key in achieving a successful installation. Any irregularities in the subfloor will be seen in the finished installation. The below information is not exhaustive and is provided as informational guidance only. If doubt persists, further advice should be sought via the relevant sub floor preparation manufacturer, British Standards for the installation of resilient floorcoverings or Altro Technical Services.

Any failure directly related to inadequate subfloor conditions or subfloor preparation is the responsibility of the installer and/or flooring contractor once the installation has started. Consideration should be taken at an early stage regarding the age of the building or substrate, which will help ascertain if an integral sheet membrane is present. It should not be presumed where existing membranes are present, that they are effective and functioning. The subfloor must conform to the requirements of BS 8204-1:2003+A1:2009 and/or BS 8203:2017 and meet a minimum requirement of SR2.

Timber subfloors overview

Suspended timber floors should be adequately ventilated in accordance with BS 8203:2017. Structural timber substrates should be of a grade and thickness of timber appropriate for the construction of the floor, nature of the building, expected design loading and have a moisture content of max 8% MC (equivalent to 40% RH at +20°C). Signs of cupping or crowning should be noted and investigated prior to commencing.

For best possible results all softwood and hardwood substrates including floorboards, wood based panel boards (chipboard), particle boards including orientated strand board (OSB), hardwood floors that are fully bonded or mechanically fixed, should be surely fixed, free from deflection and differential movement, with all compromised tongue and groove joints removed or made good. In all instances, these should be overlaid with a minimum 5.5 mm thickness plywood to provide a smooth and even surface. Flooring grade plywood such as Hanson SP101 or similar should be used conforming to EN 636-2, BS EN 13986, and EN 314-2 Class 3. Refer to BS 8203:2017 Annex A and the Contract Flooring Association for guidance and advice for a suitable plywood specification. All perimeters, including board edges, should be fixed every 4" (100mm) and include 6" (150mm) centres using annular ring shank nails, screws or divergent staples, which should be 2x the length of the overall thickness of the underlayment. Consideration should be taken to the thickness of the substrate before choosing fixing lengths. All screw and nail head fixings must be flush or below the surface of the overlaid plywood and must not protrude above the surface. An application of feather finish or skim coat should be applied to the plyboard joints and fixings as a minimum requirement. Where floors are uneven, sanding can be undertaken to smooth out lips or ridges,

alternatively a thicker gauge plyboard and/or a further application of a suitable primer and smoothing compound may be used.

Structural, good faced plyboard may be used as a substrate or underlayment and can be directly overlaid following the guidance previously mentioned, however the joints must be tongue and groove bonded with an appropriate, water-resistant adhesive.

In all instances, both structural timber bases including plyboard underlayments must be acclimatised and conditioned to allow for equilibrium prior to the installation.

Hardwood floors

Altro adhesive-free flooring can be installed on existing hardwood floors **EXCEPT** at ground floor level.

Hardwood floors above ground level can be directly overlaid with adhesive-free flooring, however due to the hygroscopic nature and instability of the hardwood, which could cause grin through, we recommend that they are overlaid with flooring grade plywood first, as set out in the overview. Waxes, oils and other surface treatments may impair tape adhesion.

On all other levels where there is no chance of moisture ingress and remain well ventilated, all hardwood floors should be smooth and sound and either mechanically fixed or fully and securely bonded to the base. All compromised tongues must be replaced or made good. Any unevenness, lips or ridges should be sanded smooth, prior to continuing. Hardwood floors should be tested, measured and checked for equilibrium moisture content, cupping or crowning prior to commencement. All results or findings should be recorded and documented. In all instances, a maximum of 8% MC should be observed.

It is common for some hardwood floors to creak under load at particular times of the year.

In all instances, the existing expansion gap must follow through the preparatory material and final finish, and be covered with a suitable trim, without restricting the hardwood. Where the skirting board covers the expansion gap, adequate gap should be left at the perimeter and continue through all preparatory material and product, which should be covered with a suitable trim.

Floating floors including hardwood are not deemed suitable to be overlaid.

Additional consideration should be taken to the thickness of hardwood which is to be covered, as these are often sanded and in some instances, will not accept the recommended length of fixings.

If any doubt exists, contact Altro Technical Services for further advice.

Concrete or screed subfloors

All ground level floors should have a suitable moisture barrier. If any doubt exists a surface applied damp proof membrane (DPM) or other appropriate moisture protection system should be used in accordance with BS 8203:2017.

When installing Altro adhesive-free flooring at ground level where no integral and / or structural damp proof membrane is present, Altro adhesive-free flooring can be overlaid directly providing that a moisture test is carried out prior to installation, adequate ventilation is achieved, and the moisture level remains less than 97% R.H. / 7 CM%.

When installing Altro adhesive-free flooring on ground floors, new or existing concrete or a screed subfloor, which has an integral and effective damp-proof membrane, the relative humidity of the subfloor can be up to 97% RH / 7 CM%.

Please note: Prior to commencing, invasive moisture testing should be undertaken using a hygrometer probe or box and be allowed to reach equilibrium for 72 hours. All test results should be recorded and documented.

This initial curing process of the subfloor must be observed to allow for shrinkage of the slab before proceeding.

Once satisfied, surfaces should be clean, sound, smooth and free from contaminants that may impair tape adhesion or grin through which could affect the final appearance or performance of the floor. Surfaces can be directly overlaid providing they are mechanically prepared, and laitance removed. If necessary, further preparatory methods may be required by application of a moisture tolerant smoothing compound. Pin holing should be avoided. Where dampening or priming of the substrate is required prior to the application of compounds, further guidance should be sought from the relevant manufacturer.

In all instances, consideration should be taken towards the end use, especially where rolling or heavy loads are expected. Ensure the compressive strength of smoothing compounds meet the anticipated requirements.

In instances where power floated concrete is used we recommend additional tape is applied, this can be achieved by increasing the tape width to 150mm.

In areas subject to rising damp it is recommended that an integral or effective damp-proof membrane should always be used. **Note:** Achieving correct and proper ventilation is also key when installing adhesive-free products. Consider using products such as ventilated skirting boards when moisture levels are above 75% RH / 2 CM%.

Altro adhesive-free flooring can be laid directly over anhydrite, calcium sulphate or gypsum based screeds up to 97% RH / 7 CM%, following the removal of surface laitance. Further preparatory products such as surface impregnators and primers will be necessary where the tape fails. Contact Altro Technical services for further information, specification or guidance.

Unsuitable substrates, underlayments or floor coverings.

Altro adhesive-free products are not suitable to be laid over the following but not limited to; ground floor timber bases not adequately ventilated, hardwood on ground floor levels including finger parquet, granwood, magnesite, floating timber floors such as laminate or engineered hardwood, carpets or tiles, underlays or other soft flooring such as cushion, acoustic vinyl or cork, heavily contaminated floors, areas subjected to extreme temperature, subfloors exceeding 97% RH / 7% CM or over internal under floor heating systems exceeding 75% RH / 2% CM.

Altro adhesive-free flooring is not suitable to be laid in conjunction with bleacher seating.

Altro adhesive-free flooring should always be fully bonded on staircases, steps and nosing's using an appropriate adhesive.

Please contact Altro Technical Services for more advice.

Existing Finishes

Altro adhesive-free flooring can be overlaid over existing finishes. Examples such as paint, resin, vinyl, linoleum, rubber, terrazzo or ceramics. In all instances, the overlaid floor finish should meet the previous requirements on subfloors. Ensure that any existing or further preparatory materials, including adhesives, are compatible and moisture tolerant, as if incorrect could lead to failure once covered.

Surfaces should be checked and any loose, broken, hollow spots, cracks or curling and should be removed, infilled or smoothed using an appropriate compound. Any grout lines, lips, cracks or ridges should be made good. Resins must be smooth and any texture mechanically prepared smooth. De-greasing and rinsing of surfaces should be undertaken and silicone, trims and finishes that may affect the perimeter finishes should be removed prior to commencing.

If in any doubt, please contact Altro Technical Services for more advice.

The uses given in this datasheet are examples only. If in doubt, please contact Altro Technical Services for further information.

Raised Access Floors

Extra consideration should be given when installing on raised access floors. To avoid grin through of joints and other related issues, correct and proper preparation is essential, including the use of plywood as an overlay. For further information please speak to the Altro Technical Services.

Expansion Joints

Altro adhesive-free flooring should never bridge an expansion joint. The joints need to be brought through the preparatory materials to the final floor finish, and the floor coverings should finish either side of the joint. Where required, a suitable expansion joint cover strip can be used - please contact Altro Technical Services for more advice.

Approved installation tape

Altro adhesive-free flooring is a loose laid floor covering and is laid with the aid of the Altro double sided adhesive tape. This tape is supplied with each roll of Altro adhesive-free flooring.

Please note that the surface area to receive the tape must be clean and contaminant free.

Before commencing, the bond strength of the tape to the applied surface should be checked. Apply the tape in situ whilst applying pressure, release the film and continue to place a small scrap of product onto the tape. Pull the flooring up, if the tape debonds from the surface, further preparation is required. It is critical that the bond strength to the substrate, underlayment or existing surface is not compromised, and remains well bonded. Absorbent or non-receptive surfaces may need priming using a suitable primer in accordance with manufacturer's instructions, spray adhesives used as primers should be avoided. Where the subfloor measures above 75% RH / 2 CM%, a moisture tolerant primer must be used. Contact the relevant sub floor preparation manufacturer for further guidance.

The Altro approved installation tape is designed with low peel, and high shear characteristics, to allow for the product to be released, repositioned or be removed, and will not permanently bond. The primed surface must be completely dry before installation starts. Prior to installation, all material including tapes and primer if using, should be allowed to reach room temperature.

In order to provide the optimum installed system and to conform to the conditions of the guarantee please ensure that only this tape is used in connection with Altro adhesive-free flooring.

Additional rolls of tape are available from Altro.

Please contact the Altro Customer Care Centre for further information.

Site conditions for storage and installation

Altro adhesive-free flooring should be laid in accordance with the Code of Practice BS 8203:2017. It is essential the flooring is checked for any possible faults prior to installation. Claims against guarantee for colour, batch or obvious material defects will only be considered if the flooring has not yet been installed. The area should be at a steady temperature of between 18°C and 27°C with a relative air humidity of between 35% and 65% RH for at least 48 hours prior to, during and for at least 48 hours after completion. The material should be stored for at least 24 hours at a room temperature of not below 18°C. If the floor covering has been stored or transported immediately prior to delivery at a temperature of less than 10°C, then the acclimatisation period should be extended to 48 hours.

Where conventional and commissioned in situ heating sources are unavailable, alternative heating methods should be used such as portable electric heaters. Fossil fuelled heating should be avoided. In open areas or large sites without internal doors, temporary sheeting can be used to section off to allow for adequate temperature control. In all instances, the building must be watertight, and include the installation of all external doors and windows.

Areas containing glass such as wall to ceiling windows should be shaded to prevent heating of the substrate or underlayment for this period.

Ensure that the material used in any one area is from the same manufacturing batch, and on large projects where multiple rolls are used, lay areas consisting of sequential roll numbers. Due to the differences and designs within the Altro adhesive-free floor covering ranges, products vary in the requirements of the direction of lay. Lengths of Altro Stronghold 30 / K30.

Altro Stronghold 30 / K30 adhesive-free should be laid in the same direction..

Roll the product out face upwards and cut the flooring the flooring into required lengths and lay freely for a minimum of 2 hours for conditioning before fitting.

Altro adhesive-free flooring **MUST** be back rolled after being cut into required lengths to take out any tension in the product.

Any liquid or contaminant ingress from above including damage / incorrect and / or poor installation techniques will invalidate the product guarantee.

Installation

The surface temperature of the subfloor must not be below +10°C, and for installations over underfloor heating must be between +18°C and +22°C. Prior to installation, all materials including floor covering, primers, tapes, weldrod and accessories should be allowed to reach room temperature.

Before commencing, consideration should be taken towards joint layout and product positioning. These should be kept to a minimum. Where possible, refrain from laying joints in doorways, high traffic areas and when laying against glazed windows, place the joints facing the windows to minimise the appearance of the joint.

Altro adhesive-free flooring can be laid using all traditional installation finish types such as flat fit and self-coved and should be rolled out face up. Once laid out to relax, back rolled and conditioned, all joints should be overlapped by an optimum of 20mm and cut in to form a tight joint. It is prerequisite with all Altro resilient floorcoverings that all factory edges are trimmed and removed. Selvages must be removed for pattern alignment. Joints can be cut in at any stage during the process by using traditional methods.

Application of the tape can be completed before or during the installation and should be placed approximately 1mm from all edges. When self-coving, the tape should be applied at the foot of the cove former, and a suitable approved contact adhesive used on the cove former and vertical surface, including the rear of the product where this is to be coved.

Installation can take place using traditional methods. Once satisfied that the flooring is laying flat turn back the sheet, clean off the back of the sheet and remove the film from the tape. When placing the sheet, use a cork board or similar, to disperse air ensuring the sheet in position is free from rucks or distortion. Thoroughly roll the taped sections using a hand roller. Once satisfied, repeat on the adjacent side. A micro gap should be left between the flooring and perimeter edge to be sealed later with AltroMastic 100.

Altro approved installation tape should be used under all joints, with the joint laying in the middle of the tape and the perimeter of the room / installation, including all protrusions and doorways, and should be set 1mm away from the edges. On longer lengths or areas subjected to heavy rolling loads, it can be beneficial to add extra tape. This should be placed at increments every 5 meters.

Additional tape should be applied diagonally at intervals of 500mm in areas that are subjected to turning heavy rolling loads such as doorways, high traffic areas, castor chairs, or where heavy loads are left in situ for long periods of time.

Once fully installed, all joints and mitres within the installation should be hot welded with the matching colour Altro Weldrod™. In areas subjected to extreme temperature fluctuations, a fully bonded product should be considered.

Heat Welding

Before starting to weld, a test weld should be undertaken on a scrap piece of material to ensure all parameters are met.

Grooving should be carried out using a P-Type, U-shaped grooving tool, approximately 2/3 the depth of the product, in an even manner where the product is grooved either side of the joint. Care should also be taken not to expose the substrate, underlayment or existing product as this can lead to failure. All internal coved mitres should be grooved to remove any surface coatings that may impair fusion.

Welding should continue using an appropriate heat, at a steady and continuous speed.

Trimming of the weldrod should be undertaken in two passes. Firstly, trim the weldrod using suitable trimming tool including guide or sledge and allow to cool for a minimum of 10 minutes. Once cooled, final trim the weldrod flush to the surface of the flooring.

Cold or chemical weld including AltroMastic 100 is not a suitable welding method when using Altro adhesive-free flooring.

Please note: contrary to traditional, fully bonded products, Altro adhesive-free products can be hot welded and trafficked immediately.

All flat laid areas of Altro adhesive-free floor covering must be sealed around perimeters and exposed edges with AltroMastic 100. This also applies to door frames and around fixtures and fittings and for sealing of pipes, toilet pans, door frames etc. Appropriate sealing methods should be used between the junction of the Altro adhesive-free flooring and the wall covering or other floor surfaces. Refer to the Altro detail diagram sheet of the appropriate finishes. The complete installation must be sealed i.e. the use of conventional clamping or welding type drain gullies and access covers where a 150 mm wide band of AltroFix MP600 (approximately a trowel width) should be applied around all exposed edges (including gully edges and access covers) and any adjacent areas prone to thermal shock, e.g. drains / drainage systems. Avoid placing joints that will need hot welding, where the band of AltroFix MP600 is used, such as around drains.

Underfloor heating

Underfloor heating must be fully commissioned and taken through two complete cycles of heating up and cooling down prior to the floor covering being installed. The temperature at the underside of the floor covering, i.e. the subfloor / tape bond line, should never exceed 27°C. The relative humidity of the subfloor must be 75% RH / 2 CM% or less. In instances where this exceeds 75% RH / 2% CM, further applications of surface applied damp proof membranes will be required.

The floor covering can be installed whilst the underfloor heating is switched on between 18°C and 22°C, only if the floor covering has been acclimatised and laid out in the room for at least 2 hours before installation. Issues will arise if the underfloor heating system is not commissioned and / or the floor covering is not acclimatised beforehand, and the temperature of the underfloor heating is increased from cold quickly instead of incrementally.

If installing the floor covering over the underfloor heating while switched off, an alternative heating source should be used. Refrain from using fossil fuelled heating. It should be switched off 48 hours prior to the floor covering installation and should remain off for the duration of the installation and at least 48 hours after completion. After the 48 hours have elapsed the temperature of the heating system should be turned on at the lowest setting and increased gradually over several days, by a 2-3°C per day, to prevent thermal shock until the desired temperature is reached.

Please contact Altro Technical Services for more advice on installing adhesive-free flooring over underfloor heating.

Protection

Altro flooring should be covered and protected from all other trades with a suitable non-staining protective covering.

Self adhesive protection should never be used directly on the floor surface. The use of temporary protection is particularly pertinent when relocating heavy furniture or equipment.

Please ensure that the wheels of any rolling loads are in good condition and are freewheeling. Castor chairs should have Type-H or W wheels and additional installation tape should be used.

Rubber tyres or wheels can cause oxidation when in prolonged contact with PVC. In instances such as these, protective mats or pads should be used.

Adequate protection should be used on table legs, chairs and furniture such as cups, caps or pads.

Cleaning and maintenance

Basics

The main or building contractor must provide an initial 'builders clean' and all cleaning products used must be suitable or applicable to the level and type of soil. In all instances, preventative methods should be followed.

The contractor must provide the customer with cleaning and maintenance instructions. These can be downloaded from www.altro.com. Correct cleaning and maintenance have a decisive influence on the service life and preservation of the value of the installed flooring. Applications such as dressings or maintainers should be avoided on safety flooring, as this may impair slip resistance.

Further information or advice on cleaning should be sought from Altro.

Preventive measures

Soiling can be greatly reduced by providing suitably dimensioned "walk-off areas" with appropriate entrance matting at the entrances to buildings. These should have a length of at least 4–6 strides, and must be a minimum of 3 meters deep, with an optimum of 6 meters preferable.

Please note: A distinction should always be made between adhesive and non-adhesive dirt. Non-adhesive dirt should be removed using a dry method of cleaning. Loose dust, for example, can be removed simply by brushing or using a vacuum cleaner with a hard floor brush.

Further information or advice on cleaning should be sought from Altro.

For further information or technical advice

tel: 01462 707600

email: enquiries@altro.com or www.altro.com