CAVALIO

EXCEPTIONALLY STYLISH FLOORS

TECHNICAL GUIDE 2014

WOOD AND STONE EFFECT FLOORING COLLECTIONS

CONCEPTLINE | DOMESTIC | PROJECTLINE | COMMERCIAL

Introduction

Cavalio luxury vinyl tiles and planks create superb looking floors, combining the latest print film technology with the benefits of a vinyl wear layer.

By using standard borders and corners or complementary feature strips or design strips, both traditional and contemporary designs can be produced to suit the end use location.

The aim of this guide is to take you through all the aspects of installation to ensure your work meets the highest standards. Success is based on good preparation, communication between parties, attention to detail and by following instructions.

Each stage of the installation is explained starting with the subfloor, progressing through to the hand over to the customer and post installation maintenance.

Selecting the right product for the end use location is critical. The main classification feature is the thickness of the wear layer. The thicker the wear layer, the higher the use area classification and the more traffic it can withstand. If in doubt, select the thicker wear layer product which, if over specified means that the product will last longer.

At Cavalio all we ask is that if you are having problems with your installation you stop work and contact our Customer Technical Support staff who will advise you on how to solve your problem and maybe give you some practical hints and tips to make your job easier.

Contents

CAVALIO

Preparation of Subfloors

The quality of a finished installation is usually dependent upon the preparation of the subfloor. The attention paid to the recommendations made in various codes of practice and by the manufacturers of the adhesives and smoothing compounds.

The information below is given as guidance based on many years of experience and knowing when things go right and when things go wrong. More importantly, how to avoid them.

It is important to avoid problems at the outset, therefore if you are unsure of any of the information below, we recommend that you contact the Cavalio Customer Support Team. Alternatively, discuss your requirements with your preferred supplier of smoothing compounds and adhesives.

1 Concrete and screed bases

The most common cause of failure in these types of substrate is moisture either as construction moisture, or the lack of an effective moisture barrier on direct to earth subfloors.

2 Damp proof membranes (DPMs)

All concrete bases, which are direct to earth, must have an effective damp proof membrane incorporated within them. It should only be considered as effective if the perimeter edges are continuous with the DPM in the walls.

3 Construction moisture

Prior to laying any vinyl flooring, it is essential that all free water, which can affect adhesion, be allowed to dry out. The rate of drying is influenced by many factors and it is difficult to give exact drying out times but, as a guide, allow one month per 25mm (1") for the first 50mm (2") and an increasing time for each millimetre above this thickness.

Vinyl flooring should only be laid on subfloors which do not suffer from rising damp or hydrostatic pressure, and where the moisture level does not exceed 75% RH, when tested with a hygrometer, in accordance with BS 8203: 2001. Appendix A. Subfloors with a relative humidity in excess of 75% will invariably cause failure of the bond between the substrate and floor covering. To remedy such situations the whole floor covering will have to be removed, the subfloor treated to resolve the moisture problem and a new floor covering laid. In an occupied building this can cause severe disruption to the work routine.

To prevent these situations arising, Cavalio Floors does not condone the practice of laying vinyl floorcoverings on subfloors with moisture content readings above 75% RH and accepts no responsibility for non-performance of Cavalio products in such instances.

If time is of the essence and the base is too wet to lay on, then the use of a surface applied damp proof membrane should be considered.

4 Existing concrete and screed bases

Existing concrete and sand/cement bases as described in BS 8204: Part 1: 1999, if laid directly to ground, must contain an effective DPM. If one is not present or is suspect, consult Cavalio Floors for advice on suitable surface applied DPMs. Existing bases must also be free of all contamination, which would impair adhesion of a floor smoothing underlayment or floor covering. All contamination must be removed before further work proceeds.

In most instances a smoothing compound of at least 3mm thickness must be applied prior to the installation of the vinyl floor covering. The smoothing underlayment supplier will provide details on which product within their range must be used to suit the end use application and subfloor construction and details of which primer should be used.

5 Mastic asphalt

Mastic asphalt is impervious to moisture and as such should have a primer cost and a 3mm thick surface underlayment applied. It is important to ensure that the smoothing underlayment is of a type recommended for use on asphalt floors and that a suitable primer key coat is applied if so directed.

Never apply luxury vinyl tiles and planks direct to a mastic asphalt subfloor.

6 Quarry tiles/ceramic tiles

Heavily glazed surfaces are quite common with these types of flooring and tiles must be sound and firmly fixed with all loose and powdery grout removed from the joints. Generally the tiles will require mechanical abrasion of the surface in order to provide a key for the application of a smoothing underlayment. The surface should be thoroughly washed/degreased to remove any surface contaminants and then a smoothing compound of at least 3mm thickness must then be applied prior to the installation of the vinyl floor covering.

The smoothing underlayment supplier will provide details on which product within their range must be used to suit the end use application and subfloor construction, including of which primer should be used.

7 Timber substrates

New timber suspended floors should be constructed of either plywood or chipboard specifically manufactured for flooring. Spacing of the supportive joists should be in accordance with the manufacturer's recommendations in relation to the board's thickness.

7.1 Chipboard

Chipboard should have a minimum thickness of 18mm and should be tongued and grooved or slotted loose tongue fitting.
All joints should be glued for accurate location and finished level. All chipboard should comply with BSEN:312:2003 and should be free of sealants or coatings which are liable to adversely affect adhesion of the floor covering, if applied directly to it. Boards with a moisture content of less than 7% and greater than 18%, using an electrical resistance moisture meter, should not be laid onto.

7.2 Wood blocks

Although many woodblock floors appear sound, even when overlaid with plywood, the application of an impervious floorcovering on a direct earth subfloor can cause expansion and lifting of the base. Cavalio Floors recommend that in all cases the woodblock floor be removed and the subfloor brought up to the required standard to accept Cavalio vinyl flooring.

7.3 General

All nail and screw heads must be below the surface of the board and any indentation filled with a suitable flexible underlayment, as should the joints between any boards that have been used to overlay the existing floor.

The surface should be primed using a primer compatible with the adhesive, as recommended by the adhesive manufacturer. The primer will minimise adhesive usage and maintain the open time of the adhesive and prevent preferential absorption. Existing wooden floors should be firmly nailed to the joists and any worn or broken boards replaced. The floor should be sanded to remove high spots and any hollows or cracks filled with a suitable flexible underlayment.

The existing wooden floors should then be overlaid with exterior grade plywood of 4mm or 6mm thickness. The boards should be laid with staggered joints with a 1mm gap all round to allow for expansion. The plywood should be fixed to the existing boards using 18mm long divergent stapled or 14 gauge GKN screw nails of 25mm length. Both types of fixing should be at 100mm centres along the edge of each sheet, with a fixing line 12mm from the edge and thereafter at 150mm centres throughout the entire area of the sheet. Perimeter fixings must not be more than 18mm from the board edges.

Note: with suspended timber at ground level it is of vital importance to obtain good ventilation below the floor through the existence of airbricks. Without good ventilation, the application of an impervious floor covering could lead to dry rot in the structure beneath. Most smoothing compounds are unsuitable to applying to timber bases due to the movement of the base. Seek advice from the smoothing underlayment manufacturer for the correct grade of product for your specific application. Smoothing compounds should only be used to patch fill hollows on timber substrates. Once level, they should be overlaid with flooring grade plywood, as described previously.

8 Existing floorcoverings

Vinyl flooring should never be laid over existing floorcoverings and in such instances where this is carried out, Cavalio floors accepts no responsibility for non-performance of its products.

All existing floorcoverings must be uplifted and as much as possible of the old adhesive removed from the subfloor.

Special care must be taken on very old floors, as some products contain asbestos. In these instances, contact Cavalio Floors for further information.

The removed floorcoverings should be deposited in skips and disposed of by controlled incineration, landfill or through a recognised reclamation scheme. They should never be incinerated with other building waste. A suitable 3mm thick floor smoothing underlayment should then be applied to the whole floor. Failure to remove sufficient adhesive can lead to premature failure of the underlayment.

After uplifting existing floorcoverings laid on plywood and hardboard, used as fabricated underlays, it is almost always necessary to replace the plywood or hardboard. After uplifting existing floorcoverings laid on suspended chipboard or plywood subfloors, 4mm thick plywood should be applied to the subfloor as described previously.

Tools and Equipment

As in all trades, a skilled floor layer should have at his disposal a basic set of tools that should be clean and in good condition. The specific choice of tools is dependent upon the individual floor layer's preferences, the size of installation and the amount of preparation required. The following tools should be considered as part of the basic kit for the operations indicated.

Marking out & fitting

- Rule
- Chalk line and chalk
- Pencil
- Trammel

Installation

- Adhesive trowels
- Triangular file
- 68kg articulated roller
- Hand roller
- Bar of long scriber
- Recess scriber (unders & overs)
- Straight edge
- Various trimming knives

Preparation

- Long handled broom
- Hand brush
- Dust pan
- Hygrometer
- Screeding trowel
- Electric drill (slow speed) & rotary paddle
- Bucket

Miscellaneous

- Claw hammer
- Screwdriver
- Hacksaw
- Handsaw
- Electric drill
- Various twist drills
- Mastic gun

Safety equipment

- Knee pads
- Safety goggles
- Face mask
- Circuit breaker

Optional equipment

- Bevelling tool
- Mitre shears
- Spiked roller
- Guillotine tile cutter
- Spotnailer
- Profile template

Estimating

Tiles should be laid according to the Cavalio guidelines, or where necessary, to the end users requirements. All details should be agreed prior to installation taking place.

In order to calculate the amount of tiles required it is necessary to define the total area plus wastage based on a percentage. The waste factor is based on the shape of the room and the pattern required. This is greater if the tiles are laid diagonally or a complex pattern is specified and if the area contains obstructions of any kind.

As a guide, a rectangular room with minimal obstructions would require approximately 5% waste allowance for tiles with no pattern and 10% waste allowance for complex patterns. Of course each room must be calculated according to its shape and the number of obstructions present.

To estimate your requirements find the length on the horizontal line and the width on the vertical, this will give the total square metres of the room. Use the maximum area in the list to calculate your requirements.

All figures are approximate and should be used purely as a guide.

e.g. Room length 4.3m, width 5.2m: along vertical line drawn to 4.3, down horizontal to 5.2 = 22.4m² area:

Underlayment = 21 – 25:
5 units are required

Adhesive = 21 – 25:
5 litres of adhesive are required

Tiles = 21 – 25: 8 boxes are required

Area (m²)	Underlayment (3mm thick)	Plywood (2400 x 2400)	Primer (Litres)	Adhesive Using a 1.5 x 5mm Notched trowel	Boxes of tiles at 5% waste (3.34m 2/box)
10-15	3 units	6	1	1 x 5 ltr	5
16-20	4 units	7	1	1 x 5 ltr	7
21-25	5 units	9	2	1 x 5 ltr	8
26-30	6 units	11	2	2 x 5 ltr	10
31-35	7 units	13	2	2 x 5 ltr	12
36-40	8 units	14	2	2 x 5 ltr	13
41-45	9 units	16	3	2 x 5 ltr	15
46-50	10 units	18	3	3 x 5 ltr	16

Feature Strip Calculation

The following information will enable you to calculate how much feature strip is required for the application described. As an approximate guide, the number of strips per full box of tiles is given as well as the approximate length of strip for each tile.

305mm Tiles –
Feature strip on all four sides

24 strips per box of 36 tiles – multiply number of boxes by 24 for the number of strips or 0.62m per tile – multiply number of tiles by 0.62 for number of strips.

457mm Tiles –
Feature strip on all four sides

16 strips per box of 16 tiles – multiply number of boxes by 16 for number of strips or 0.92m per tile – multiply number of tiles by 0.92 for number of strips.

305mm x 610mm Tiles –
Feature strip on all four sides

18 strips ber box of 18 tiles – multiply number of boxes by 18 for the number of strips or 0.92m per tile – multiply number of tiles by 0.92 for number of strips.

914**mm x** 102**mm Planks** – Feature strips along the length only

36 strips per box of 36 planks – multiply number of boxes by 36 for number of strips or 0.92m per plank – multiply number of planks by 0.92 for number of strips.

914mm **x** 152mm Planks – Feature strips along the length only

24 strips per box of 24 planks – multiply number of boxes by 24 for number of strips or 0.92 per plank – multiply number of planks by 0.92 for number of strips.

Product Conditioning

The majority of installation failures are not caused by poor fitting but by the failure to condition vinyl tiles and planks prior to installation.

The tiles and planks plus any other products such as borders, feature strips, design strips, and adhesives should be conditioned for at least 24 hours prior to installation. Boxes of tiles/planks must be stacked less than 5 boxes high and tiles removed 30 minutes before use.

The room temperature should ideally be between 18 and 26°C but more importantly should be constant and not varying by more than 2°C.

As extremes of temperatures can occur between the day and the night times, it is essential that these be avoided. South facing windows and all conservatory windows should be shaded to minimise daytime fluctuations. Heating systems, which are thermostatically controlled should, when necessary, be left on during the night to achieve a constant temperature similar to that of the daytime.

The temperatures need to be maintained prior to, during and for at least 24 hours after the installation is completed.

Complaints arising from the failure to correctly condition tiles and planks, which result in shrinkage or lipping, will not be accepted by Cavalio Floors.

Setting Out

In order to produce the optimum appearance it is necessary to carefully plan and set out tiles. It is advantageous to dry tile a section of the floor so that it can be determined whether the appearance of the pattern is acceptable and also to ensure any graining/texture within individual tiles is correct.

Traditionally the starting point for tiling is the centre of the room. Before fixing it should be confirmed that the overall appearance of the flooring is acceptable.

If the room is irregular in shape it may be necessary to square up the tiles off the most important wall or a specific feature.

1. TO SET OUT FOR STRAIGHT TILING

A. Measure the room to be laid in both directions, including any alcoves etc.

B. Mark a centre line A to B ensuring it is central to the room dimensions.

C. Loose lay tiles to ensure there are no small cuts at the perimeter. If small strips are evident move the centre line across half a tile in either direction to create an acceptable sized cut.

D. Find the centre of line A to B and mark centre point (CP).

E. Mark arcs C/D at equal distances from CP on centre line.

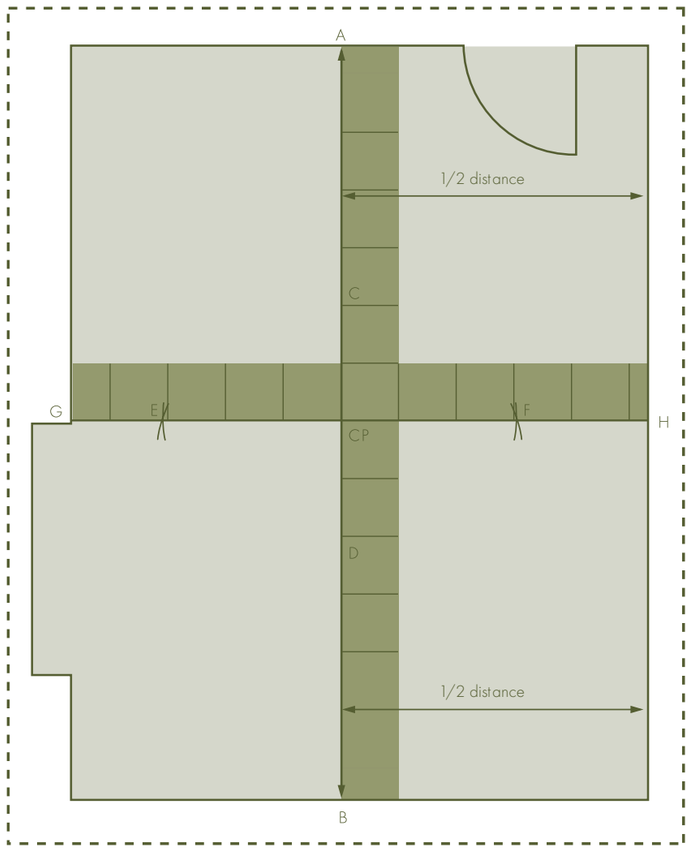
F. With points C and D as centres and a measurement greater than the distance from CP draw further arcs intersecting at E and F.

G. Strike a chalk line from point E to F passing through CP.

H. Line GH is now 90 degrees to line AB.

I. Check using 3/4/5 method. ▶

Figure 1 Setting out with loose lay tiles



Setting Out

2. TO SET OUT FOR DIAGONAL TILING

A Set out as shown for straight tiling. Ensure both lines are at 90 degrees to each other.

B With CP as centre point, use a convenient radius to draw and mark arcs at CDE & F.

C With points C and D as centres and a radius equal or greater than C – CP draw further arcs to cut each other at G.

D With points E and F as centres, and the same radius as C – CP, draw arcs to cut each other at H.

E Strike a chalk line from wall to wall through points G and H; if no error has been made this line will pass through CP..

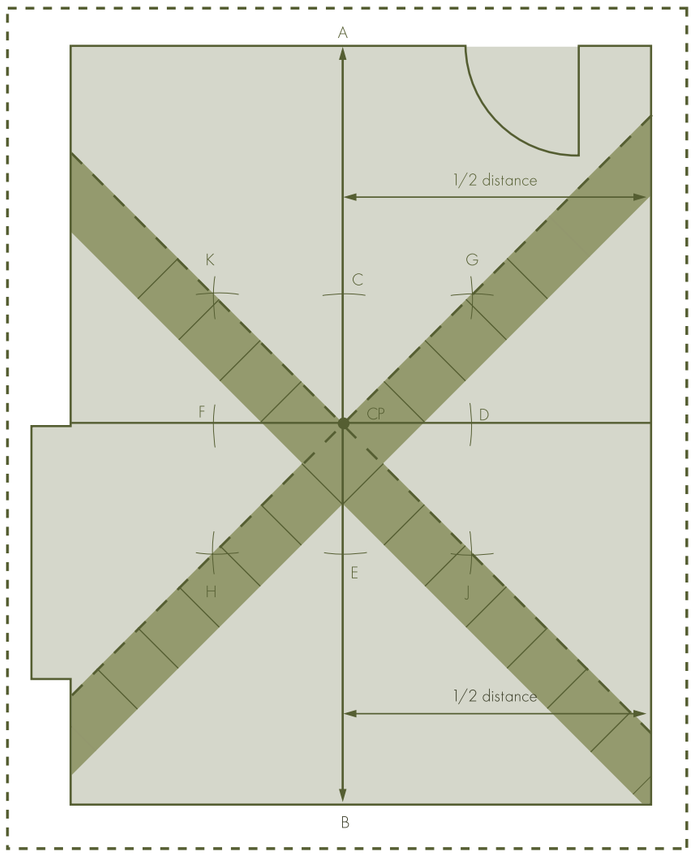
F With points D and E as centres and the same radius as C – CP draw cutting arcs to find point J.

G With points D and E as centres and the same radius as C – CP draw cutting arcs to find point J.

H Strike a line from wall to wall through points J and K; as a check this line should pass through CP.

I Loose lay tiles to ensure there are no small cuts at the perimeter. If small strips are evident move the centre line across half a tile in either direction to create an acceptable sized cut.

Figure 2 Diagonal setting out with loose lay tiles



Borders

The inclusion of borders or design strips is a simple way of enhancing the appearance of an installation. Borders and design strips come in various widths and styles but the installation technique is similar in all cases. Borders fit around the field tiles but it should not be attempted to abut pre-made borders to a wall.

The normal method of setting out for borders is described, however, it must be noted it maybe required to set out off a prominent wall or unit etc. If there is any doubt it should be discussed with the end user prior to installation. Most designs will have a contrasting yet complimentary border. It is preferred, where possible, that full tiles are fitted up to the borders, in the case of diagonal, exactly half the tiles should be used.

This gives a more geometric appearance to the installation. It does, however, mean that, in almost all cases the border will have to be adjusted on adjacent walls. In the case of diagonal tiles and for the sake of appearance, the colour of the cut half field tile should contrast with the border.

- **A** Mark a centre line as described earlier.
- **B** At the centre point form a 90 degree and mark across the area.
- **C** Determine width of borders.
- **D** Dry tile to ensure cuts are acceptable and of the correct colour and adjust where necessary.
- **E** Using centre lines as guides measure to the position of the border and mark with chalk lines.
- **F** Spread adhesive up to the border lines and fit field tiles. (Remember only spread adhesive to areas that can be laid within the open time).
- **G** Dry fit perimeter cuts before adhering, as described earlier.

Adhesives

The following information is provided for guidance. The recommendations and instructions of the adhesive manufacturer must, in all cases, be followed. Cavalio does not make any warranties regarding the approved adhesives, or assume that other manufacturers' adhesives would not prove satisfactory. Correct handling of adhesives is recommended at all times.

Correct handling of adhesives is recommended at all times.The Health And Safety At Work Act 1974 should be observed and, if applicable, The Highly Flammable Liquid And Liquefied Petroleum Gases Regulations. Any hazards indicated by the adhesive manufacturer should be assessed and precautions taken as directed in the Control Of Substances Hazardous To Health legislation.

1 Initial Preparation

Prior to the application of the floorcovering,it should be ensured that the substrate is sound, dry and free from dust. The relative humidity of solid, cementicious subfloors should be at a maximum of 75% relative humidity when measured over at least a 72 hour period, as described in BS 8203.

Smooth, dense surfaces such as power floated concrete should be mechanically treated to provide sufficient porosity.
Existing floorcoverings should be completely removed, together with the majority of the adhesive, and the resulting surface should be free from dust, grease, paint, plaster or any other contamination that may hinder adhesion. In most instances, it is beneficial to apply a smoothing underlayment, at least 3mm thick, to smooth out any local irregularities, nullify the effects of any adhesive residue and provide a surface of known porosity.

To achieve a sound bond between the floorcovering material and the substrate, it is essential that these recommendations are followed.

1.2 Priming the subfloor

On porous sand/cement, concrete and all timber subfloors, it is essential that a primer be used. The use of a primer ensures an even porosity, minimises the amount of adhesive used and provides a longer open time of the adhesive. The primer used should be compatible with the subfloor and the adhesive, and be as recommended by the adhesive manufacturer.

1.3 Application of adhesive

It is strongly recommended that all adhesives are conditioned at a minimum temperature of 18°C for at least 24 hours prior to, and then during, the laying period. The adhesive must be applied using a notched trowel of the correct size notch, which must be maintained during the adhesive application stage.
The adhesive manufacturer provides details of the notch size to suit the adhesive and the application.

Acrylic pressure-sensitive adhesives should be rolled with a previously wetted, short pile adhesive roller immediately after spreading. This will remove any adhesive ridges prior to the adhesive setting, whilst maintaining the correct adhesive spread rate on the substrate.

Cavalio does not recommend any method of adhesive application, such as spraying, which cannot guarantee the spread rate.

1.4 Open Time of Adhesives

Open times, as recommended by the relevant manufacturer must be observed at all times. Do not spread more adhesive than can be laid into during the open time of the adhesive. Unlike wet set adhesives, pressure-sensitive adhesives must have all the moisture evaporated from them prior to the application of the floorcovering. The colour changes from opaque to translucent, which provides a positive indication of when the adhesive is ready to be laid into. Good ventilation and air flow will help speed up the drying time on these adhesives. It may be necessary to use an electric fan(s) to speed up the drying time.

1.5 Removing Excess Adhesive

As good working practice, excess adhesive should be removed as work progresses. Wet, water-based adhesives are easily removed with a clean, damp cloth. Dried water-based adhesives and solvent-based adhesives should be removed with a minimum amount of solvent cleanser, as recommended by the adhesive manufacturer. Excessive use of these cleansers can cause discolouration and softening of the vinyl surface.

1.6 Rolling the Floor

Once the floorcovering has been laid, the material should be rolled immediately with a 68kg articulated floor roller, working initially in the widthways direction, if it is sheet material. This rolling ensures good contact between the substrate, adhesive and floorcovering, expels any trapped air, and flattens the adhesive ridges to prevent shadow through once the floor becomes trafficked.

The floorcovering should be rolled again, one to four hours later, to ensure the contact between the materials is maintained.

1.7 Approved Adhesives

There are many different types of adhesive available in the marketplace, and the suitability for use with the range of Cavalio products depends upon a number of factors. The formulation of the adhesive, the formulation of the floorcovering, the site conditions and the in-use conditions all affect the selection.

The Technical Department of Cavalio checks the compatibility between the adhesive and the floorcoverings.

Installation of Tiles

On receipt of tiles, check that colours correspond to those ordered, that quantities are correct and there is no damage. In particular, check that tiles are from one batch, if this was requested on the order.

To achieve the best results, site conditions should be prepared as described in BS8203. A working temperature of between 18 – 26 °C should be maintained 24 hours prior to, during and for a least 24 hours after the installation is completed. Conditioning areas should be of similar temperature, to prevent thermally induced dimensional changes.

In installations where underfloor heating is used, this should be switched off from 48 hours prior to installation until 48 hours afterwards. It should be brought slowly back up to working temperature; a maximum of 27°C. Peak temperatures should be avoided for a further 7 days.

The decoration of tiles is randomly distributed and can be heavier on some tiles then others. To prevent "heavy" and "light" areas, the tiles should be unboxed and, if required, "shuffled". Alternating the direction of tiles may be required to avoid repeat patterns.

When installing tiles, the centre line must be determined and checked to ensure good size cuts will be fitted at the perimeter.

1. INSTALLING TILES TO BORDERS 1.1 STRAIGHT FITTING

A Dry tile to ensure cuts are acceptable and of the correct colour and adjust where necessary.

B Apply adhesive as described earlier.

C Starting on the start line, carefully lay the tiles working your way outwards to the border lines.

D Tiles should finish at the borderline. If they overlap the borderline, transfer the chalk line over the tiles and carefully cut off the excess.

E Fix borders to finished tiles.

F Fit perimeter tiles as covered on pages 24-27.

1.2 Diagonal fitting

A Set out for diagonal tiles as described earlier.

B Dry tile to check for suitable cuts at edges.

C Apply adhesive to the border lines.

D Allow tiles to overlap border line by approximately 50mm.

E At the ends transfer the chalk line over the tiles and carefully cut off excess.

F Fit borders to finished tiles.

G Fit perimeter tiles as described on pages 24-27

Once the start point has been established, depending on the size of the area and the type of adhesive to be used, it may be necessary to section off the area so that the adhesive can be applied to areas that can be laid within the open time. When sectioning off for adhesive application, parallel lines should be marked and adhesive spread within them. This will ensure that only the amount of adhesive is applied that can be laid within the open time.

When a section has been laid, except for the perimeter, it should be thoroughly rolled in both directions with a 68kg articulated floor roller. Repeat for each section until the main field of tiles has been laid. It is advantageous to leave the last full plank and the cut at the perimeter without adhesive until all planks have been cut to size.

Spread the adhesive to the manufacturers recommendations. Trowels should be checked regularly to ensure the correct notch size is maintained throughout the installation. If the notch shows signs of wear it should be renewed immediately.

Installation of Planks

Pre-installation checks and conditioning as for tiles. (see previous section), also installation with underfloor heating as for tiles. When installing planks, the centre line must be determined and checked to ensure good size cuts will be fitted at the perimeter. Because it is not required that the planks are laid “in bond” in the length, it is possible to begin tiling from an end wall, ensuring, prior to laying the first plank, that all cuts are of an acceptable length (Min 150mm). Planks must be staggered to obtain a random finish, but it is advisable to ensure that plank ends are not within 15cm of adjacent planks.

1. INSTALLING PLANKS TO BORDERS 1.1 STRAIGHT FITTING

A Dry tile to ensure cuts are acceptable and of the correct colour and adjust where necessary.

B Apply adhesive as described earlier.

C Starting on the start line, carefully lay the planks working your way outwards to the border lines.

D Planks should finish at the borderline in the width. In the length, planks should be allowed to overlap the borderline by approximately 50mm.

E At the ends, transfer the chalk line over the planks and carefully cut off excess.

F Fix borders to finished planks.

G Fit perimeter planks as described on pages 24-27.

1.2 DIAGONAL FITTING

A Set out for diagonal planks as described earlier.

B Dry tile to check for suitable cuts at edges.

C Apply adhesive to the border lines.

D Allow planks to overlap border line by approximately 50mm.

E At the ends transfer the chalk line over the planks and carefully cut off excess.

F Fit borders to finished planks.

G Fit perimeter planks as normal.

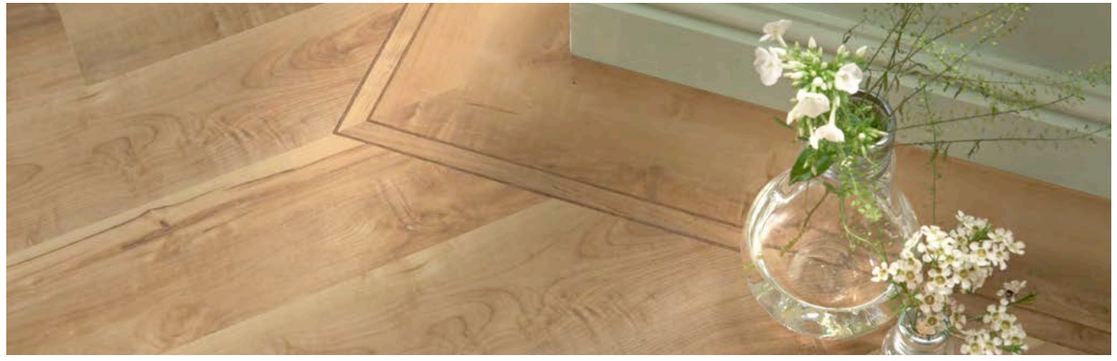
Once the start point has been established, depending on the size of the area and the type of adhesive to be used, it may be necessary to section off the area so that the adhesive can be applied to areas that can be laid within the open time.

When sectioning off for adhesive application, parallel lines should be marked and adhesive spread within them. This will ensure that only the amount of adhesive is applied that can be laid within the open time.

When a section has been laid, except for the perimeter, it should be thoroughly rolled in both directions with a 68kg articulated floor roller. Repeat for each section until the main field of tiles has been laid.

It is advantageous to leave the last full plank and the cut at the perimeter without adhesive until all planks have been cut to size.

Spread the adhesive to the manufacturers recommendations. Trowels should be checked regularly to ensure the correct notch size is maintained throughout the installation. If the notch shows signs of wear it should be renewed immediately.



Installation of Perimeter Tiles/Planks

1 Installing planks to borders

To avoid run out of the bond, cutting of perimeter tiles should start at the centre of the wall and work out towards corners. The choice of technique used for cutting perimeter tiles is largely dependant upon the straightness of the wall.

1.1 Overlapping method

Used when there is little or no run out of the abutting wall.

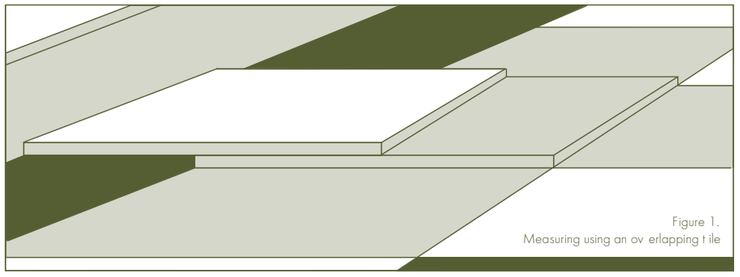


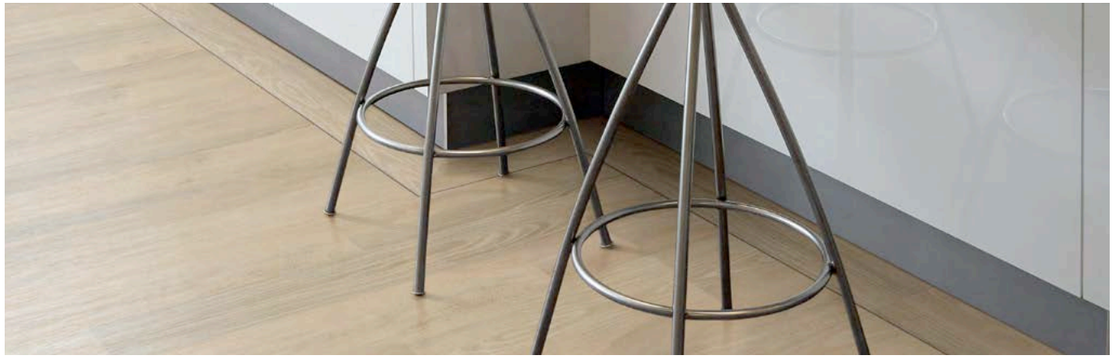
Figure 1.
Measuring using an ov erlapping t ile

A Place tile to be cut exactly over the last tile laid, ensuring the colour is correct and the decoration runs the correct way.

B Place another full tile on top of the tile to be cut with its “top edge” against the wall or set-in coved skirting (figure 1).

C Scribe a line onto the tile to be cut, using the “bottom edge” of the top tile as a guide.

D Cut the tile to the scribed line, loose lay into position and check the fit. Repeat along the whole wall.



A Place the tile to be cut exactly over the last tile ensuring the colour is correct and the decoration runs the correct way.

B Set the bar to the size of tile being laid.

C Trace the profile of the wall onto the tile to be cut, ensuring the bar scriber is kept flat to the floor and square to the edge of the tile (figure 2).

D Cut the tile to the scribed line, loose lay into position and check the fit. Repeat along the whole wall.

1.2 Scriber method

Used when the wall run out is quite severe or when the wall profile cannot be picked up using a straight edge.

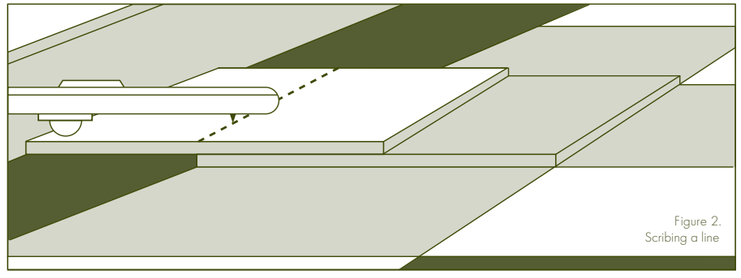


Figure 2.
Scribing a line

A Cut a template exactly to the size between the diagonal points, (eg, 428mm for 305mm tiles).

B Place the tile to be cut exactly over the last tile laid, ensuring the colour is correct and the decoration runs the correct way.

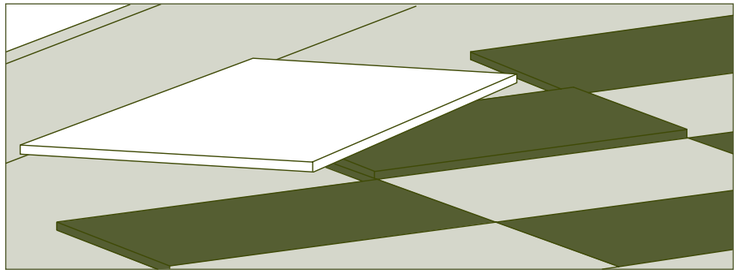
C Place the template tile on top of the tile to be cut with its "top edge" against the wall or set-in coved skirting (figure 3).

D Scribe a line onto the tile to be cut, using the "bottom edge" of the top tile as a guide.

E Cut the tile to the scribed line, loose lay into position and check the fit. Repeat along the whole wall.

2. CUTTING THE PERIMETER TILES (DIAGONAL CUT)

2.1 OVERLAPPING METHOD



3. MEASURING USING AN OVERLAPPING TEMPLATE ON DIAGONAL LAID TILES

2.2 Scriber method

Used when the wall run out is quite severe or when the wall profile cannot be picked up using a straight edge.

A Place the tile to be cut exactly over the last tile laid, ensuring the colour is correct and the decoration runs the correct way.

B Set the bar scriber to the size between the diagonal points of tile being laid.

C Trace the profile of the wall onto the tile to be cut, ensuring the bar scriber is kept flat to the floor and square to the edge of the tile.

D Cut the tile to the scribed line, loose lay into position and check the fit. Repeat along the whole wall.

3 Adhering the perimeter tiles

A Once a wall edge has been fitted and loose laid, turn all the tiles inward so as not to lose their position.

B Spread the adhesive right up to the edges. When the adhesive is ready, lay the perimeter tiles.

C Wipe up excess adhesive as work progresses.

D Roll well with 68kg articulated roller. Use a small hand roller in areas that are inaccessible.

E Repeat the process for all four walls.

F Finally, the whole floor should be given a second rolling, approximately one to four hours later.

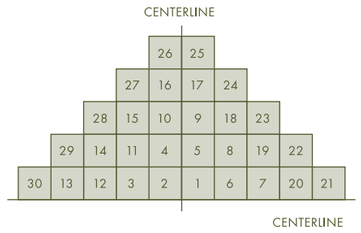
Installation of Tiles/Planks

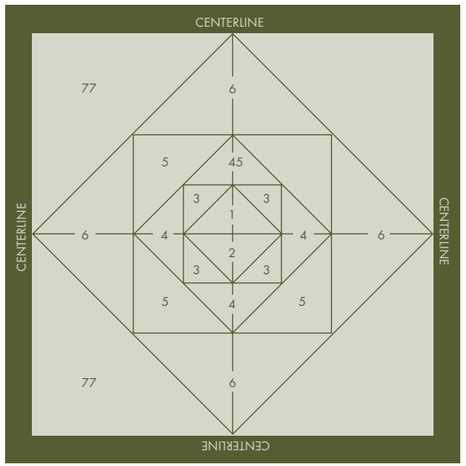
- A Lay the first pyramid of tiles from the centre lines, using the sequence shown. Ensure a close bond is maintained at all times.
- B Repeat this sequence on the opposite side of the centre line.
- C Starting on the start line, carefully lay the tiles working your way outwards to the border lines.
- D Continue working in larger and larger pyramids until only the perimeter tiles require fitting.
- E Fit perimeter tiles as described earlier.

To a large area

Maintaining a clearly defined straight line over long distances can be difficult and often leads to inaccuracies. To eliminate this problem, an alternative technique is used when laying tiles in large areas. Establish the central starting point as described previously.

Figure 1.
Pyramid layout





Construction of a pyramid should always start at the centre of the baseline, working in the same sequence as shown above (figure 1).

Additional Information

1 Feature/design strips

Feature and design strips must be stored flat and conditioned as for tiles and planks. All must be stored in the area to be fitted for at least 24 hours prior to installation. The temperature must be constant and should be between 18 – 26°C for 24 hours before, during and after laying.

Care should be taken when installing feature strips and design strips so as to prevent them being stretched which can result in shrinkage at a later date. The strips should be laid into the adhesive as fitting progresses.

2 Borders

Cavalio inlaid motifs and borders are manufactured under strictly controlled conditions to produce the close-fitting pieces that make up the design. To duplicate the close fitting on site, it is important to ensure the design is correctly conditioned prior to laying.

The Cavalio design should be removed from its packaging and laid on a flat surface and conditioned, together with the tiles and adhesive, at a temperature of at least 18°C for a minimum of 24 hours prior to and during and at least 24 hours afterwards.

The preferred method of installation is as follows:

- A Fix the border to the floor in the required position.
- B Fix tiles/planks and cut, overlapping the border by approximately 25mm.
- C Turn back the clear adhesive film approximately 25mm away from the outside edge of the border and carefully scribe to the motif using a recess scriber (Unders and overs) so that a tight fit is achieved.
- D Allow the adhesive to fully cure before removing the protective film from the border.

3 Complicated cuts

Perimeter cuts to complicated shapes such as architraves, door jambs etc., can be achieved by using either traditional methods or by use of a Profile Template to mark the tile prior to cutting.

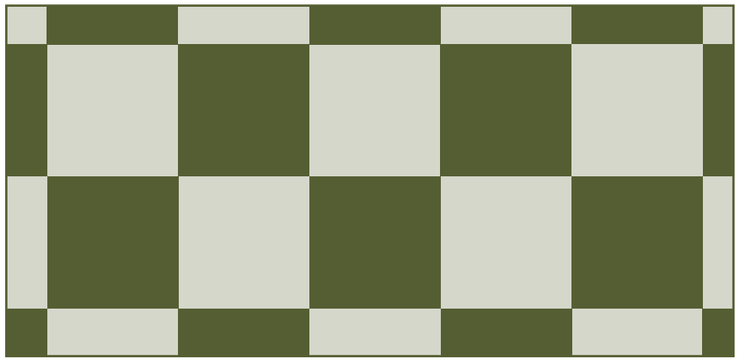
Additional Information

4 Terminology

There are a variety of bonds used in the laid designs of planks and tiles and below are a few which are widely used.

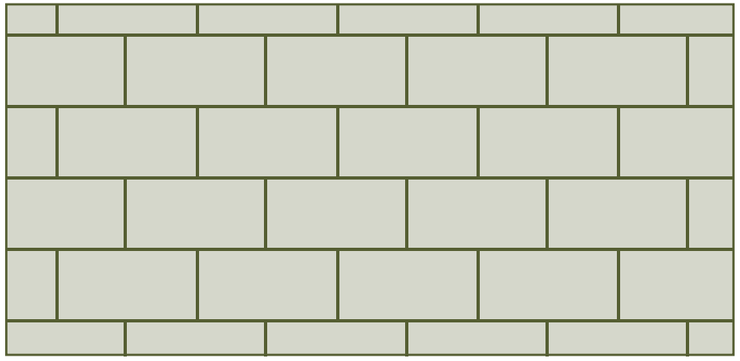
NORMAL

Where tiles are laid in straight lines and usually tessellated. Tiles can be laid in two colours to give a chequer board pattern, if desired.



BRICK

Brick – tiles are laid in rows with the side joints off set by half tiles, similar to brickwork.



Additional Information

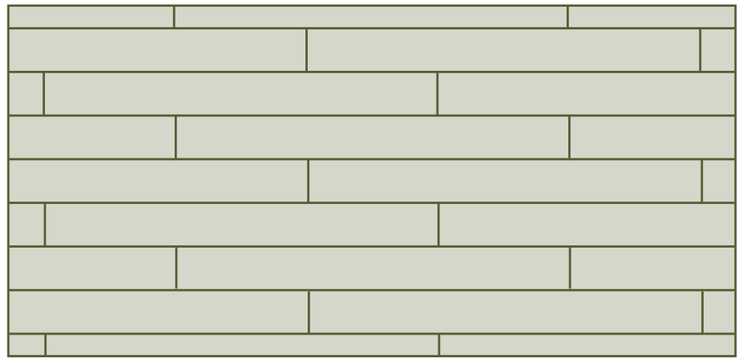
5 Acoustic properties

Vinyl tiles and planks provide no airborne sound improvement benefits and give between 3 and 4 dB impact sound improvements. If due to national or local building regulations a bigger improvement is required.

Contact the Cavalio support staff for the current recommended products.

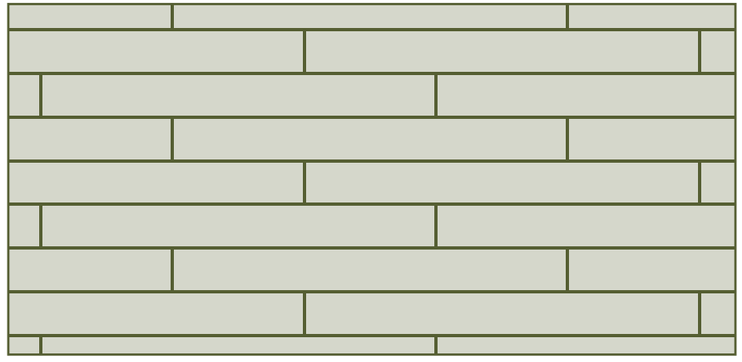
RANDOM STRIPS

Usually used for installation of planks, which are laid so that the ends of adjacent planks are off set. The normal off set is approximately a third of a plank but can also be laid randomly. For the best appearance end joints should not be within 150mm of adjacent planks.



SHIPS DECKING

Planks laid as normal but along the length of each plank is laid a feature strip or design strip of suitable colour. There are no feature or design strips used across the ends of the planks.



Resistance to Chemicals

Cavalio vinyl floorcoverings show an above average resistance to mild and dilute acids, alkalis, soaps and detergents. Petrol and strong acids are not harmful, provided any spillage is cleaned off immediately. Ketones, chlorinated solvents, acetone and similar solvents should not be allowed to come into contact with Cavalio vinyl flooring. However, if this should happen, the effect can be minimised by removing the spillage immediately and leaving any solvent residue to evaporate, prior to allowing any foot traffic.

Cavalio vinyl floorcoverings are suitable for use in all areas where most chemicals are used and there is only risk of accidental spillage. However, some chemicals contain very strong dyes, which even after a short period of contact, will stain the vinyl used, it is suggested that an appropriate dark colour be selected to minimise the staining effect.

The following tables summarise the general chemical resistance of Cavalio vinyl flooring (see footnote for brief description of test procedure).

Note: Cavalio floors test for resistance to chemicals is evaluated over a 24 hour contact period at a room temperature of 21 degrees celsius, followed by rinsing with cold water. Cavalio Floors believe this stimulates the worst situation where spillages are not removed immediately and are only cleaned by normal maintenance. Some stains can be removed by abrading with a nylon pad during maintenance.

ORGANIC LIQUIDS

Type of chemical	Effect	Action
Aldehydes Esters Halogenated hydrocarbons Ketones	Floor attack occurs after several minutes	Wipe up immediately
Alcohols, Ethers, Glycols, Hydrocarbons (aromatic and aliphatic), Petroleum spirit, Vegetable oil	After several days, plasticiser extraction occurs, with associated problems of shrinkage and embrittlement	Wipe up immediately

AQUEOUS SOLUTIONS

Type of chemical	Effect	Action
Mild acids and alkalis NO EFFECT	No effect	
Strong alkalis	Will strip polish and may cause discolouration in some shades.	Dilute and remove.
Strong acids	Prolonged contact can cause discolouration.	Dilute and remove immediately
Dyes (indicators)	Contact can cause discolouration	Dilute and remove immediately

HINTS AND TIPS

1 Installation

Prior to the application of the floor covering, it should be ensured that the substrate is sound, dry and free from dust and debris and all other contaminates likely to impair to the surface.

The relative humidity of solid, cementitious sub floors should be at a maximum of 75% when measured over at least a 72 hour period, as described in BS 8203 (Annex A).

In most instances, it is beneficial to apply a smoothing underlayment to solid subfloors, at least 3mm thick, to smooth out any local irregularities, nullify the effects of any adhesive residue and provide a surface of known porosity. The use of a spiked roller with some smoothing underlayments after it has been applied will help minimise air bubbles and also improve surface finish.

Smooth, dense surfaces such as power floated concrete can be difficult to bond to. Check for porosity by flicking some drops of water onto the surface. If they stay in globules for any length of time, the surface should be mechanically treated to provide sufficient porosity.

When rolling pressure sensitive adhesive, to prevent rollers from drying out, it should be wrapped in a polythene bag and hung up. It also prevents “flats” being formed and avoids regular washing and pre-wetting. Always double check the position of the centre line to verify position. Check by measuring both ways from centre line, both dimensions should be exactly the same. When trimming off planks to a border always strike a chalk line over the planks to provide a guideline when cutting off.

Always clean trowels immediately after use. Submerge in a bucket of water and clean with a brush. This not only speeds up the cleaning process but also keeps tools in pristine condition.

2 Maintenance

Specifically manufactured for Cavalio Luxury Vinyl Tiles, Cavalio maintenance products are available from your retailer. To get the best results and a uniform finish when applying floor dressing: Always keep the equipment clean. Use the recommended quantities of floor dressing and the recommended number of coats.

Always allow adequate drying time between the application of each coat of dressing and apply at right angles to previous coat. Use only recommended products and follow manufacturers instructions on application. Spillages should be cleaned up immediately by first wiping with absorbent paper, and then thoroughly mopped or wiped with Cavalio Maintainer. The floor should then be rinsed and allowed to dry. Spills should be dealt with immediately as wet floors can be slippery.

Black scuff marks can be removed by using a moistened cloth with the correctly diluted Cavalio Maintainer. A non-abrasive nylon scrubbing pad may be used for more persistent marks.

Furniture can cause scratches to a vinyl floor, therefore felt pads should be attached to the feet of tables and chair legs. Keeping dogs nails well clipped will reduce scratching from pets. If surface scratches do appear, these can be minimised by the use of Cavalio maintenance products.

Some rubber backed mats are treated with an anti-oxidant, which can stain a vinyl floor. PVC backed mats can cause plasticiser migration with prolonged contact and should therefore be avoided.

WOOD AND STONE EFFECT FLOORING COLLECTIONS

CAV015
03/14

CAVALIO

www.cavaliofloors.com
CAVALIO FLOORS PO BOX 3 RADCLIFFE NEW ROAD WHITEFIELD MANCHESTER M45 7NR UNITED KINGDOM
TEL: 0845 345 5404 FAX: 0845 345 5406 SAMPLES: 0845 345 5405 EMAIL: INFO@CAVALIOFLOORS.COM