

# Installation Guidance Note: Allura Puzzle

## General key points

- Acclimatize in the area and install according installation sequence.
- Installations allowed up to 2000 sqm over existing rigid subfloors without the use expansion joints.
- In case of local areas that are potentially exposed to the use of excessive moisture it is advised to full adhere the tiles.
- Always prevent the use of excessive moisture on the floor.

In case of any doubt please contact your local Forbo flooring technician.

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## General Advice

The appearance, performance and durability of the installed floorcovering will be determined to a large extent by the quality of the prepared subfloor and the conditions in which they are laid. As with any resilient floor covering irregularities in the subfloor will be apparent in the finished flooring.

The installation of Allura Puzzle should be carried out in accordance the National Code of practice for the installation of resilient floor coverings. Areas to receive flooring should be clean, free from other trades, fully enclosed and weather tight. Subfloors should be clean and free of contaminants, smooth, sound, even and permanently dry.

Always conduct moisture tests on **all** substrates. All ground-based level floors should have an effective moisture barrier.

Areas to receive flooring shall be adequately lit to allow for proper inspection of the substrate, installation and for final inspection.

The maximum tolerance in terms of flatness and evenness of the substrate is an 5mm deviation under a 2m Straight edge (measured by moving the straight edge in all directions across the substrate) and 1mm under a 20cm straight edge.

Any nibs, abrupt ridges or changes of level in the subfloor should be removed by sanding or grinding, or by localised application of a levelling compound.

It is essential that the laying area is at a steady temperature of minimum 18°C for 48 hours prior to, during, and for 24 hours after installation. The material should be conditioned in the same environment for at least 24 hours prior to the installation. Where the floorcoverings have been stored or transported immediately prior to delivery in temperatures below 10°C the acclimatisation period should be extended to 48 hours. Puzzle tiles should be removed from their pallets and acclimatized in the laying are stacked no more than 20 tiles high.

Prior to installation tiles should be checked to ensure that the correct colour, batch number and quantity have been received and that the material is in good condition. No claim will be accepted for incorrect colour, pattern or obvious damage if the material has been fitted.

Use material from the same batch/dye lot. The use of different production batches will always result in visible shade differences. The batch number is clearly marked on the material packaging and must be checked before commencement of installation.

Store Allura Puzzle on their pallets in a clean dry area.

Allura Puzzle is occupier ready on completion of the installation. However, if the newly installed floor is going to be subjected to heavy site traffic, particularly high point load wheeled traffic, prior to occupation the floor should be protected during this phase (see "on completion" at the end of this guide).

## Installation methods

Allura Puzzle can be installed fully loose laid up to 2000 sqm. Areas over 2000 sqm please contact your local Forbo technician. Areas that are subject to heavy traffic or that could potentially be exposed to the ingress of water it is advised to glue down the Puzzle tiles with a hard-set glue or a plasticizer resistant tackifier.

## Acceptable substrates

Allura Puzzle may be installed on the following substrates (subject to the conditions in this guide):

- New or existing concrete or cement screed substrate
- New or existing wood panel or particle board substrates
- Existing ceramics tiles
- Old in-situ floor finishes (resin) at least 2 mm thick
- Old floor paint
- Old compact resilient floor coverings (semi-flexible tiles, vinyl asbestos tiles, sheet vinyl flooring and linoleum).
- Raised Access floors



**For any subfloor not listed above or if any doubt exists, contact Forbo Flooring Technical Services.**

**Concrete slabs or cementitious screeds:** New and existing ground floor slabs must be cast on a damp-proof membrane in accordance with the National Code of practice for the installation of resilient floor coverings. If an effective damp proof membrane is not present or any doubt exists, a surface damp proof membrane should be applied.

Allura Puzzle can be laid on substrates with cracks less than 3 mm wide on unheated subfloors, provided that there is no difference in level. For cracks that do not meet these criteria contact Forbo flooring for further guidance.

Where required, smoothing and levelling compounds rated for heavy traffic areas should be applied to screeds and slabs. Smoothing compounds are not required for clean, sound and smooth concrete surfaces, provided that they satisfy flatness tolerances stated above.

If a smoothing compound is not being applied to the surface of the slab/screed a suitable primer should be applied to keep the subfloor dust free.

**Wood panel substrates (tongue-and-groove boards)** - plywood or particle board floors should be prepared in accordance with the National Code of practice for the installation of resilient floor coverings. Differences in height between boards greater than 1mm should be sanded flush.

**Old ceramics tiles:** laid on a sound concrete or cement screed substrate, soundly adhered to the bedding screed (sealed ceramics tiles) or substrate (adhesive-bonded ceramics tiles) require no further treatment where the tiles are level and the grout joint width is less than 8 mm and no more than 3mm deep. Small localised differences in level between tiles may be repaired/ levelled with a suitable smoothing / levelling compound.

Where the above requirements are not met, a general heavy duty self-smoothing/levelling compound suitable for the room's intended purpose should be applied across the entire surface area.

**Existing in-situ resin floor finish:** the old finish must be sound and fully bonded and at least 2 mm thick. If flatness, cleanliness and bond requirements are not satisfied, the old in-situ floor finish must be removed, and the subfloor prepared in accordance with the national code of practice.

**Floor paint:** existing paint finishes should be clean and sound. Sanding is not necessary if the paint is sound.

**Old flexible floor coverings:** semi-flexible asbestos free compact vinyl sheet and tiles or compact linoleum should:

- a. Be sound and bonded tightly to the sub floor.
- b. Have loose or broken areas removed and replaced with sound material or levelled with a good quality smoothing compound.
- c. Are level within the requirements stipulated
- d. Be abraded to remove old wax, seals and dirt (where adhesive systems such as tapes are to be applied) and then thoroughly cleaned.

If any doubt exists, or where full adhesion is required, existing floor coverings should be removed.

**Note:** Acoustic floor coverings in general, including cushioned PVC and acoustic linoleum floor finishes must be removed, and the subfloor prepared in accordance the National Code of practice for the installation of resilient floor coverings.

**Note: Allura Puzzle** can only be laid on a substrate that has previously received only a single layer of resilient floor covering. The performance rating of the old floor covering must satisfy the new rating required, particularly if the room is to be used for a different purpose.

**Raised Access Floors** should be smooth, level, free of movement and clean. Degreasing may be necessary on steel faced panels (chemical cleaning agents should be thoroughly rinsed/neutralized after cleaning). All old adhesive residues must be removed.

Raised access flooring panels have a tendency to settle shortly after installation and this should be taken into account when considering the installation of the Allura Puzzle onto raised access flooring systems. Ridges between uneven raised floor panels may telegraph through to the finished tile installation over time and can cause lipping of tiles edges where they fall close to even joints between the panels below.



**Note:** Incidental low-level light will exaggerate any unevenness in the subfloor.

Where the above conditions cannot be met, or any doubt exists, Forbo recommend that raised access floor should be overlaid with plywood in accordance with the National Code of practice for installation of resilient floor coverings.

**Textile floor finishes:** textile floor finishes must be removed, and the subfloor prepared in accordance with national codes of practice where applicable.

### **Underfloor heating**

Forbo flooring products may be installed over underfloor heated floors providing the maximum surface temperature of the substrate does not exceed 27°C under any condition of use.

It is imperative that the underfloor heating systems have been previously commissioned and found to be functioning correctly prior to the floor finish being installed. Ensure that the underfloor heating system is switched off 48 hours prior to the floor covering installation commencing and remains off for at least 48 hours after the installation is complete.

During the period of decommissioning of the underfloor heating system, an alternative heating source should be provided, if required, to ensure that the area of installation is kept at a constant temperature of 18°C – 27°C.

The temperature of the substrate must not exceed 18 °C during the installation of the flooring material.

If necessary, an alternate heating source should be used to maintain the room temperature at a minimum of 18°C prior to, during, and for 72 hours after installation.

### **In Service Load Limits**

#### **Static Load Limits:**

- Maximum concentrated load per point < 750 kg
- Maximum load pressure <40 kg / cm<sup>2</sup>

#### **Dynamic Load resistance:**

- Lifting and handling machines, electrically or thermally powered, are likely to cause surface damage due to wheel skidding. It is necessary to ensure that equipment is suitable for the floor covering structure. (for example, vehicles should be equipped with an anti-skid system.)
- Paired wheels are counted as a single wheel when their distance (centre distance or track) is <20cm.
- Metal wheels are excluded.
- Tyre and wheel type: Polyurethane or equivalent hardness
- Total load per wheel: <750 kg
- Contact pressure: <100 kg / cm<sup>2</sup>
- Speed: ≤ 5 km/h
- Loading and handling: Hand operated trucks, manual or electric pallet trucks with on-board driver, with a load capacity of 1300 kg.



## Installation

### General

Allura Puzzle may be laid in individual areas up to 2000 sqm subject to a maximum length of 25m\* on the longest side of the area. Allura Puzzle can be installed over expansion joints in the subfloor, please be aware telegraphing of the joint could be visible overtime.

A continuous gap of 3 - 5 mm must be maintained at the perimeter and around all fixed objects in the room.

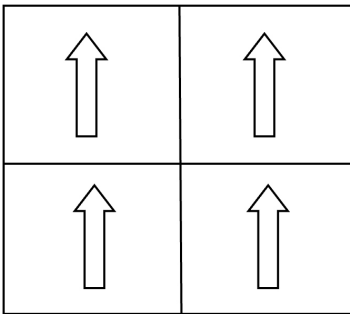
For larger installations, the floor area should be divided into areas not exceeding 2000 sqm allowing a 3 to 5mm expansion gap around the perimeter of each area.

The separation line in areas over 2000 sqm should be set out so as to prevent the position of the seam between each area being situated in the main aisles to avoid heavy traffic.

Finishing at doorways: at doorways or open walkways between large adjacent spaces the flooring should be finished at the door/ space threshold with a suitable proprietary edging profile or milling down the subfloor in order to get a smooth transition. At the open space it is advised to adhere half of the tile in order to prevent the ingress of water underneath the Puzzle tiles.

Where Allura Puzzle is continued into adjacent areas a joint should be formed in the same manner as described above for separating large areas.

Allura Puzzle tiles are installed Monolithic. In case the design has visionally no direction a marker on the back of the tiles indicates the direction during manufacturing. It is advised to install the Puzzle tiles with the marker in the same corner.

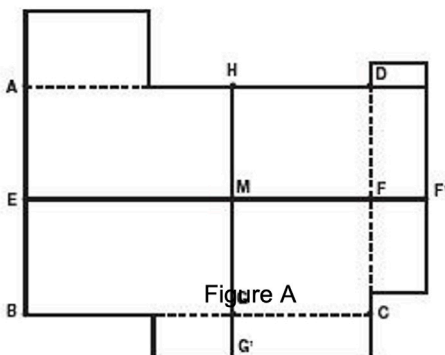


Like the natural material, some designs will vary in tone and colour. This is intentional and gives the floor a more authentic appearance.

### Setting out

Allura Puzzle is set out using conventional tile installation techniques.

The correct starting point for setting out a tiled floor is traditionally the centre of the area - although this may not be the final starting point when tile laying begins. Some adjustment of the starting point may be required, for example, to avoid small perimeter cuts. In some cases, it may be simpler to work lengthwise from one end, using the centre line as a guide.



The centre line is drawn as follows: a chalk line is snapped from centre of wall A-B (=E) to the centre of wall C-D (=F). The centre of line E-F is found (M). Draw a perpendicular line through M using the 3:4:5 method to establish G-H (Figure A).

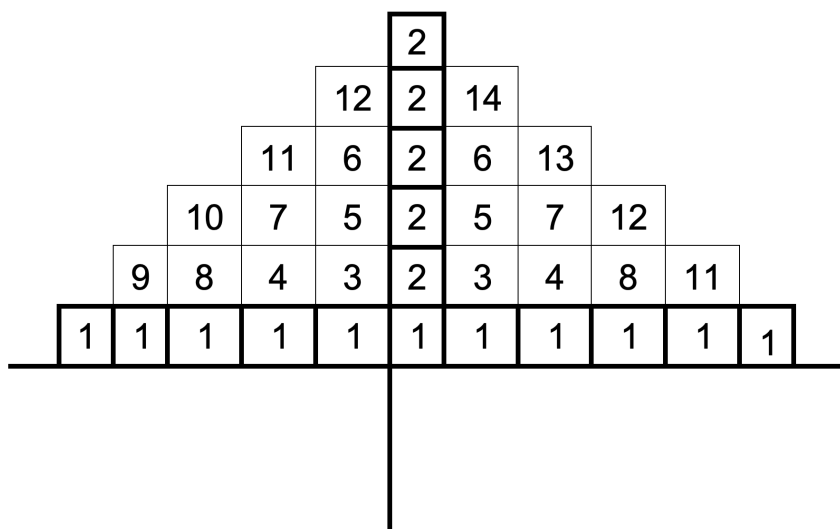
Starting at centre point M, measure out lengthwise and width wise to the walls. Wherever possible, cuts of less than 15cm or so should be avoided as these are more likely to come loose at some stage in the life of the installation. Adjust the position of lines E-F and G-H if necessary.

Loose laying a few rows of tiles in each direction will help to identify areas where adjustments have to be made to the starting point to avoid small cuts.

**Laying and Cutting tiles**

Begin laying tiles at the starting point, laying the first row. The connections between the tiles are secured using a dead blow (non-rebound) hammer along the line of the connectors.

**Note:** In Large areas, securing the first row of tiles with a suitable plasticizer resistant double side tape will help to prevent the first row of tiles or planks moving during installation.



Lay subsequent tiles outward from either side of the centre start line forming a pyramid as per the diagram above. Locate the corner connectors of each tile and secure the connectors using a dead blow (non-rebound) hammer. Finish by hammering the remaining connectors on each side of the tile.

The connectors should effectively lock the tiles with reasonable force. Excessive force could adversely affect the base onto which they are being installed, which in turn could affect the long-term integrity and performance of the installed floor.

Allura puzzle can be cut with normal installation tools such as utility knives. Warming the product will make cutting easier, when cutting and fitting around shapes and pillars, for example, but in good site conditions the product can be successfully cut by scoring several times from the top surface of the tile or plank with a utility knife and a straight blade. After scoring with a knife, bend the tile back long the cut line and complete the cut through the remaining thickness from the back of the tile.

In large areas cutting of perimter tiles with a power cutting tools is also suitable.

**Note:** In areas with fixed obstacles (like pillars) it is advised to use the puzzle tile from the pallet used in this area to prevent shading of tiles from different pallets.

## **On completion of the installation**

First impressions may have more impact on the client than hours of skilled fitting.

The completed installation should be cleared of scrap material and debris, the floor swept or vacuumed, and any traces of adhesive residues removed from the floor and skirtings.

If the floor covering is to be protected from other trades or site traffic prior to project completion, a protection product should be chosen that is appropriate for the type and level of traffic likely to be experienced and the potential for impact, scratching or indentation damage.

In many cases it is customary for the initial floor preparation to be left, or subcontracted, to a professional cleaning and maintenance contractor who will have the staff and equipment to do the job thoroughly.

If the optimum performance of any new floor covering is to be achieved, it is important that the correct cleaning and maintenance procedures are used from day one. Cleaning and maintenance guides for all Forbo Flooring products are available for download.

**Cleaning and maintenance guides should be passed onto the main contractor, client or end user as appropriate on completion of the installation, and before any hand over clean is started.**

### **Use Entrance Systems**

As much as 80% of dirt entering a building is brought in by foot traffic. Entrance flooring systems of an appropriate size (ideally more than 6lm) and quality should be used. Forbo Coral or Nuway entrance flooring systems, are independently proven to remove and retain up to 94% of all dirt and moisture entering a building by foot traffic; reducing maintenance costs and maximising appearance retention of adjacent flooring products as well as reducing slip risk. As with any dirt removal system all entrance flooring systems should be regularly cleaned to release the dirt which has been removed.

If in any doubt contact us:  
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