Movement joints in a tiling installation

The inclusion of movement joints in a tiling installation is something that should be incorporated at the design stage by the specifier or architect. However, it is beneficial to have a basic understanding of where, when and why movements joints should be used.

Background to movement joints

Regardless of the type of tile being used, they must all be considered as 'solid' materials with very little dimensional change despite conditions. Building movement may occur due to changes in conditions, physical movement due to size, settling or drying out of the building, weight loading, level of trafficking, thermal changes or simply due to the construction design itself. Floor construction in particular needs careful consideration as the functionality of a floor is such that its stability and integrity must be maintained to enable the building to be utilised.

Walls

All junctions between walls and floors should have a movement joint included. However, walls themselves are under continual stress and have the potential for movement, so consideration of movement joints should be move. Consider the use of a movement joint in all of the following areas:

They must be incorporated where there are any existing movement joints within the wall structure. They should be aligned directly over the existing structure joint and be at least as wide.

At internal corners between walls to relieve stress under thermal, vibration or any other movement. This includes where internal walls meet ceilings; a suitable silicone sealant may be used.

Where the wall tiling meets a different substrate – the tiles should be left short and a movement joint utilised. A suitable silicone sealant should be used.

Where tiling bridges are used across different substrates a movement joint should be created at the junction.

On large walls movement joints should be included both horizontally and vertically. Subject to the building design, the joints may need to be incorporated anywhere between 3m and 10m.

External wall joints (close to external angles) and all internal angels. The inclusion of a movement joint will prevent fracture and bulging of tiles with building, thermal and/or vibration movement.

Movement joints must be incorporated at more frequent positions, should the walls be subject to significant thermal or vibration movement.

Movement joints can be incorporated in to the design to minimise aesthetic concerns.

Floors

Including movement joints in floors enables the tile bed to move in unison with the individual substrates. Selection of movement joint type will depend on joint width requirement, finished floor use and movement capability. The range of materials available and their typical area of use include; aluminium for general commercial installation, brass and stainless steel for heavy commercial and factory use, and PVC for most other applications. Always consult with the manufacturer

as to the most suitable joint for your application. Consideration to the use of a tiling movement joint must be given in all of the following areas:

They must be incorporated and aligned with any movement joints within the floor's construction. The joints should be continued through the entire depth of the tiles and adhesive.

At specified distances across a floor to create individual tile beds (general consensus is that movement joints should be utilised at distances between 5m and 8m).

Floors with underfloor heating systems should incorporate movement joints with a limited bay size of a maximum of 25m^2.

At day joints or stress induced saw cuts in subfloors. The level of movement at these joints is often unknown and is usually dependant on the age of the building and whether the subfloor is fully dry. If in doubt, incorporate a movement joint.

All perimeters and any fixed features which interrupt the floor, such as pillars or aisles, should have an allowance for movement. Sometimes this can be a suitable silicone sealant, of if underneath skirting it may simply be a gap. In areas of high thermal change, such as conservatories this is extremely important.

Movement joints should be included between any underfloor heating zones to enable each to perform independently.

Movement joints should be placed directly above any supporting walls or structural beams as they will add rigidity to the floor. The remaining floor area may be prone to a degree of flex or vibration.

Junctions between floors and walls.

Movement joints can often be incorporated into the floor design to minimise aesthetic concerns whilst ensuring integrity of the tiled floor.