

## DESIGN CONSIDERATIONS FOR DANSKIN PARK BEARERS

### Introduction

The CMS Danskin Park Flooring System is designed for installation on generally even sub-floors. The surfaces of screeds, concrete sub-floors or units must be sufficiently level to meet the relevant BS Codes of Practice and Building Regulations. If they are not the use of the CMS Danskin Saddle System is recommended for levelling the floor while providing acoustic insulation. Park Bearers are designed to deflect vertically to absorb impact sound ; therefore increased loading of the acoustic floor may result in some localised additional deflection.

### Storage

All components should be kept inside, under cover and in dry conditions at all times. Materials should be located into the environment in which they are to be fixed at least 24 hours prior to fixing. Do not place large quantities of material such as chipboard or plasterboard on top of laid flooring as this extreme loading can damage the resilient layers.

### Preparation

Concrete ground level supported floors must have a damp proof membrane and screed complying with the appropriate Codes of Practice and Building Regulations. The building must be weather-proofed and wet trades completely dried out before commencing installation of flooring components. Isolated high points, mortar spillages and other debris should be removed from the area. All joints and air paths between concrete units and at perimeter walls must be grouted. Components exposed to wet conditions such as ingress of rain or plumbing leaks should be discarded and replaced.

### Fire

It is presupposed that the structural floor on which Park Bearers are laid achieves all necessary fire protection.

### Dryness of Concrete

Excessive moisture from cast in situ slabs and screeds which have not dried out can have adverse effects on flooring materials and timber components. BS 8201 states that " it is reasonable to recommend that the concrete be considered dry when the relative humidity falls to 75% or less" (when tested by use of a hygrometer). Where the dryness of concrete can not be guaranteed it is recommended that a vapour barrier is installed (minimum 1000 gauge).

### Services

Services can be accommodated in the void and should be planned at an early stage. Services should be kept at least 150mm away from walls to allow space for perimeter support bearers. It is recommended to allow at least 10mm clearance above the height of services to prevent acoustic bridging.

## DESIGN RECOMMENDATIONS

### (a) Partitions

Partitions should normally be erected from the sub-floor and not on top of the floating floor. Where lightweight timber or metal stud non loadbearing partitions are built from the top of the floating floor a double row of Park Bearers should be placed beneath the partitions. Ensure sole plate fixings do not pierce the resilient layer of the Park Bearers.

### (b) Areas of Heavy Loading

It is generally accepted as permissible to install kitchen units and appliances along with bathroom sanitary fittings directly onto the sub floor construction ( see Appendix A, Robust Details manual – third edition ) Alternatively ,where the kitchen and bathroom fittings are to be installed off the floating floor the bearer centres should be reduced to 300mm to provide additional support. Items of extraordinary loading, for example storage heaters, certain granite or marble worktops, kitchen island units and large home entertainment systems may require support direct from the subfloor independent of the flooring system. CMS Danskin Acoustics sales department are available to provide advice where required.

### (c) Intermediate Expansion Gaps in Flooring

The need for intermediate expansion gaps between sheets of chipboard must be considered where there are uninterrupted runs of flooring more than 5 metres in length. Expansion provision should be calculated at a rate of 2mm per metre run.

### (d) Communal Areas in Flats

BS6399-1: 1996 imposes more onerous load bearing requirements for communal areas in certain designs of flatted developments CMS Danskin Park Bearers area designed to operate under normal domestic loading conditions. Specifiers should also be aware that the maximum concentrated load capacity of 22mm chipboard at reduced span centres is limited to 2.7kN.

### (e) Ceramic Tiles/ Laminate / Wood Flooring

In accordance with BS5268 base floors require to be stiff to carry ceramic tiles. However, acoustic floors are designed to deflect vertically in order to reduce impact sound there are inherent risks in laying ceramic tiles on top of floating floors. However the risks can be significantly reduced by good detailing and the use of modern flexible adhesives. Ceramic tiles have been successfully laid on floors incorporating Park Bearers in numerous projects over many years. Contact the sales department for specialist advice.

Laminate or wood flooring can be installed on the completed floating floor but should include a resilient underlay with sufficient impact sound reduction that the acoustic performance of the Danskin floating floor is not compromised. At perimeters, ensure that the laminate or wood flooring is isolated from the wall and skirting.

# DETAILED FIXING INSTRUCTIONS

## 1) Acoustic Quilt

Where specified the acoustic quilt should be laid paper face down either under the bearers or between the bearers according to the specification. The edges of the quilt should be turned up at the perimeter walls.

## 2) Lay Perimeter Bearers

Lay CMS Danskin Park Bearers around the perimeter of the room foam side down – approximately 50mm from the wall.

## 3) Lay Remaining Bearers

Mark the desired location of any non – loadbearing partitions and any areas where increased loadings are expected before starting to lay Park Bearers. Park Bearers should be laid at 400mm centres for 18mm chipboard, or 600mm centres for 22mm chipboard under normal domestic loading (maximum UDL 1.5kN/m<sup>2</sup>, maximum Concentrated load 1.4kN), unless otherwise recommended by the specifier or manufacturer. Reduce centres to 300mm below isolated heavy loads such as bathroom and kitchen fittings and appliances. On pre-stressed concrete planks the Park Bearers should be laid at right angles to the curvature of the floor.

Having laid perimeter bearers infill the remaining area with Park Bearers. When laying alternate rows of Park Bearers, commence with a half-length so that the ends of bearers are staggered. Leave a small gap between bearer ends. Where services run across bearers – do not notch. Cut the Park Bearer and place approximately 25mm either side of the pipe.

Where minor sub-floor irregularities are encountered, the following levelling techniques may be used:-

- a) Continuous packing should be inserted below the bearers at low spots to give suitable support.
- b) Isolated nodules can be overcome by placing a bearer on either side.
- c) On pre-stressed concrete floors where there is a camber, furring pieces should be nailed on top of the bearers to provide continuous support and to level the floors. Care should be taken that nails do not pierce the foam. If sub-floor irregularities or cambers are excessive and outwith the Code of Practice the Danskin Saddle System should be used.

## 4) Thresholds and Partitions

A Park Bearer should be placed across each doorway to provide extra support. Ensure a gap is left between the bottom of doorframes and the top of flooring. Place a double row of Park Bearers below the line of all non load bearing partitions constructed off the floating floor.

## 5) Fixing Chipboard Flooring

Select the correct thickness of chipboard flooring to suit the specified bearer centres: 18mm thick for maximum 400mm centres or 22mm for maximum 600mm centres. –Do not exceed. Chipboard flooring should be installed in accordance with the manufacturer`s instructions. Stagger joints between layers. Ensure that a 10mm expansion gap is left at the perimeter. Where mechanical fixings are used care should be taken to ensure that the resilient layer on the bottom of the bearer is not pierced. All tongue and grooved joints must be glued continuously with a suitable adhesive to prevent movement that may lead to squeaking. Spot gluing is not sufficient to prevent squeaking. All joints must be tightly butted and excess glue removed with a damp cloth. Ensure that gaps where services come through the flooring are sealed with acoustic sealant to prevent airborne sound leakage.

## 6) CMS Danskin Flanking Strip

Position the flanking strip in the perimeter gap adjacent to the perimeter wall. The preformed `L` shape will prevent it from falling down the gap. Fix the skirting board, lightly trapping the strip between the bottom of the skirting board and the flooring. Remove any excess flanking strip with a sharp knife. It is essential to isolate the skirting from the floor to prevent impact sound flanking transmission.

**ERRORS AND OMISSIONS EXCEPTED:** Every care has been taken to ensure that all descriptions and specifications are correct at the date of publication. The policy of CMS Danskin Acoustics is one of continuous improvement and product development and the right is reserved to alter product specifications and installation procedures without notice.