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CMSDANSKIN ACOUSTICS

Saddle Flooring Systems

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Saddle System Principles

CMS Danskin Saddle Flooring Systems are dry floating floors which provide an easily levelled understructure for supporting chipboard, plywood and hardwood flooring. They can be used in domestic and commercial applications and can also contribute significantly to the acoustic performance of floors.

It is very common for cast insitu concrete floors and precast concrete planks to be uneven. Both have cambers and deflection characteristics which necessitate the packing of timber floating floors to achieve a level floor finish. CMS Danskin's patented range of Saddle Flooring Systems solve this problem by providing an easy and accurate method of levelling a timber floating floor over an uneven subfloor without the need for levelling screeds.

Compliance with the Building Regulations

The sound insulation of party floors is a necessary requirement of the Building Regulations. Methods of satisfying the Regulations are set out in Approved Document E in England and Wales, Section 5 of the Technical Handbook in Scotland and Technical Booklet G in Northern Ireland. In addition the construction of Robust Details can provide a method of compliance in England and Wales.

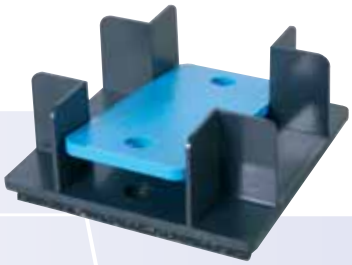
The CMS Danskin Acoustic Saddle System contributes significantly to the reduction of impact and airborne sound through party floors. When used with appropriate structural floor and ceiling constructions it has been independently demonstrated to meet the performance standards of the Building Regulations in Scotland, Northern Ireland, England and Wales. In addition it has been approved for use as an FFT2 floating floor in many Robust Detail constructions.

Performance

Performance Data Sheets are available on request showing sound test information for the Saddle System in conjunction with different structural floor and ceiling combinations. In FFT2 Robust Detail testing Saddle Systems achieved a minimum performance of $\triangle$Lw 22dB. CMS Danskin Acoustics also provide a Specification Questionnaire which can help ensure that, where available, appropriate test certification can be provided.

Advantages

of CMS Danskin Saddle Systems



- FFT2 compliant for many Robust Detail floors
- Quick and easy levelling of uneven floors
- GWP of resilient layer is 0
- Effective reduction of impact and airborne sound
- Eliminates wet trades
- Weight saving compared to screeds can reduce foundation costs
- PEFC or FSC chain of custody
- Provides void for services, insulation or underfloor heating

System Components

Systems are designed and constructed using the following components.

1. 'L' Shaped Flanking Strip

6mm thick preformed 'L' shaped acoustic foam supplied in strips 1.8m long packed in bags containing 100m. The innovative 'L' shape makes it easy to fit and one size fits all floors. It is lightly trapped between the bottom of the skirting and the top of the flooring board with the excess neatly trimmed off.

2. Flooring

18mm or 22mm Type P5 Moisture Resistant Grade, CE marked chipboard manufactured to BS EN 312 : Part 5. Alternatively WBP Spruce Plywood, CE marked and manufactured to BS 5268-2:2002. All panels are tongued and grooved on all four edges and supplied in sheet size 2400 x 600mm. Peel off layers and protective coatings for chipboard are available.

3. CMS Danskin Support Bearers

Softwood Support Bearers are placed within the Saddles to support flooring panels. They are 45mm wide and generally supplied in 2400mm lengths for ease of handling. They are available in 22mm, 37mm, 45mm, 52mm and 61mm heights as standard. In accordance with the recommendations of TRADA Support Bearers are cut from strength graded timber. They are PEFC Certified as standard.

4. Colour Coded Packers

Packing is provided by means of innovative, self-locating plastic packers which are made in 3,4,5 and 10mm thicknesses. The unique, patented packers interlock with each other and with the Saddle. They are colour coded for ease of identification and are placed within the Saddle to achieve the levelling of uneven subfloors. For poor subfloor surfaces the 10mm packers are particularly cost effective.

5. CMS Danskin Acoustic Saddles

Saddles are 97mm x 97mm square and have a tough, injection moulded plastic headcap adhered to a high performance foam resilient layer. The headcap holds the Support Bearers to which flooring panels are fixed. The saddles are available in three headcap heights (small, medium and large). The small saddle permits 14mm of packing, the medium - 29mm and the large - 40mm. The different headcap heights maximise the packing of the appropriate Support Bearer. Each headcap has two small holes in the surface to lock packing pieces in place. The ingenious design of the head cap means that it can also support cross noggins for access panels or perimeter bearers. The standard height of the Saddle with the resilient layer attached is 11mm.

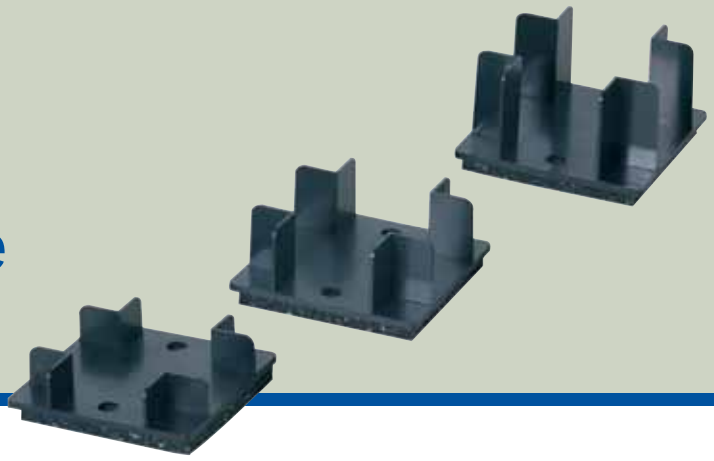
6. Elevating Blocks (Optional)

Elevating Blocks are made from injection moulded plastic and they can be placed in combination below saddles where floor variations are extreme up to a maximum height of 150mm. They interlock with the saddles and with each other and extend the height of systems to cope with major deviations in levels. The blocks come in 15 and 30mm thicknesses. As the resilient layer remains on the base of the Saddle in use, the overall acoustic performance is not impaired. Elevating blocks can also be used to raise the system to allow services to run in both directions under support bearers. Contact CMS Danskin for advice if more than 150mm of elevating is required.

7. Acoustic Quilt (Optional)

Where required to achieve a particular acoustic performance CMS Danskin supply acoustic quilt to be laid between the saddles. 25mm thick, the quilt has a density of 36kg/m^2 and is paper faced on one side.

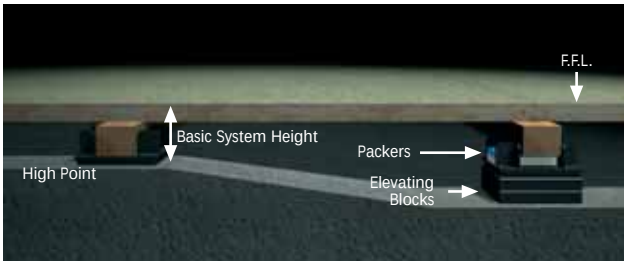
Selecting the appropriate system height



1. The **basic system height** without packing should be able to fit between the high point in the subfloor and the desired Finished Floor Level (FFL). Packers and, where necessary, elevating blocks are then used to level out areas below the high point.

2. To calculate the **basic system height** determine the size of the void needed beneath the floor boarding by considering the height of services which will run in the void. Remember that service pipes may need space to cross over each other and that in the worst case this could occur at the high point of the tolerance in the subfloor. Add the thickness of the preferred floor boarding to give the **basic system height**. (N.B. If the floor is to comply with Robust Details the void allowed must be at least 50mm.)

3. Double check that the **basic system height** at the high point will marry in with other fixed points in the building such as stairs, corridor screed levels or the thresholds of patio doors.



4. From the table below select the **basic system height** and floor boarding closest to (but not more than) your needs. Packing will make up any difference.

Basic System Height	Floor Boarding	Support Bearer Height (Nominal)	Saddle Type	Support Bearer Centres (mm)	Saddle Centres	RD - FFT2 Compliant?
51mm	18mm Chipboard	22mm	11mm Small	400mm	300mm	No : too low
55mm	22mm Chipboard	22mm	11mm Small	600mm	300mm	No : too low
65mm	18mm Chipboard	36mm	11mm Med.	400mm	450mm	No : too low
69mm	22mm Chipboard	36mm	11mm Med.	600mm	450mm	No : too low
74mm	18mm Chipboard	45mm	11mm Med.	400mm	450mm	Yes
78mm	22mm Chipboard	45mm	11mm Med.	600mm	450mm	Yes
81mm	18mm Chipboard	52mm	11mm Large	400mm	600mm	Yes
85mm	22mm Chipboard	52mm	11mm Large	600mm	600mm	Yes
90mm	18mm Chipboard	61mm	11mm Large	400mm	600mm	Yes
94mm	22mm Chipboard	61mm	11mm Large	600mm	600mm	Yes

The above table is based on a Uniformly distributed load of 1.5kN/m^2 and Concentrated load of 1.4kN as specified for self contained, single family dwelling units in BS6399-1:1996. Exceptional loads (such as storage heaters) may require support direct from the subfloor. It is also recommended that in high load areas such as kitchens and bathrooms support bearer centres are reduced to 300mm. Communal areas in blocks of flats such as corridors and vestibules will require special consideration. CMS Danskin can provide centres for other floor boarding and types of use.

Design Recommendations

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 8201:1987 (Code of practice for flooring of timber, timber products and wood based panel products) 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 cannot be guaranteed it is recommended that a damp proof membrane is installed (minimum 1000 guage).

Partitions

It is anticipated that in most cases partitions will be erected from the subfloor and not on top of the floating floor. If non loadbearing, lightweight metal stud partitions are to be erected on top of the floating floors contact CMS Danskin Acoustics for an appropriate detail.

Services

The provision of access to services is most successful if the location of services is detailed at an early stage. Services should be kept at least 150mm away from walls to allow space for perimeter Support Bearers.

Loadings

Component spacings are calculated in accordance with BS6399-1:1996. In kitchens and bathrooms Support Bearer centres should be reduced to 300mm. CMS Danskin Acoustics must be consulted for guidance if the design loadings exceed domestic loadings as specified in the above document or if extraordinary local loadings are anticipated. Storage heaters are considered to be an extraordinary loading and may require support direct from the subfloor, independent of the floating floor.

Ceramic Tiles

As 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 the Saddle System in numerous projects over many years. Contact the Sales Department for specialist advice.

Underflooring Heating

Danskin Saddle Systems can physically integrate with many underfloor heating systems. Please contact CMS Danskin Acoustics at an early stage if it is intended to use underfloor heating in conjunction with the Saddle System as it is important to avoid drying out of timber components.

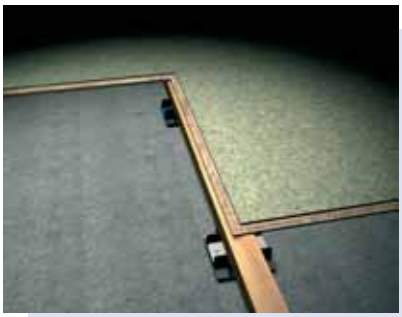
Communal Areas in Flats

BS6399-1:1996 imposes more onerous load bearing requirements for communal areas in certain designs of flatted developments. Concentrated load requirements over the long term can be as high as 4.5kN. The maximum capacity of 22mm chipboard at reduced centres is 2.7kN. If it is intended to lay the Saddle System in communal areas in flats such as common corridors, hallways, stairs and landings it is essential to contact the Technical Department for specific advice regarding the floor boarding and component centres.

Typical Details

Threshold Detail

Support of Perimeter Bearers



Support of short edges

General Information

NBS Specification Clauses

NBS Specification Clauses can be provided for any of the CMS Danskin Saddle Systems.

Installation

To ensure correct installation of the floor the detailed fixing instructions must be followed carefully. Copies of these instruction should be obtained from the manufacturer. The installation of the system is simple and can be undertaken by competent carpenters. Alternatively, experienced fixing contractors can be recommended who can undertake to supply and fix the system in most areas of the United Kingdom.

Storage

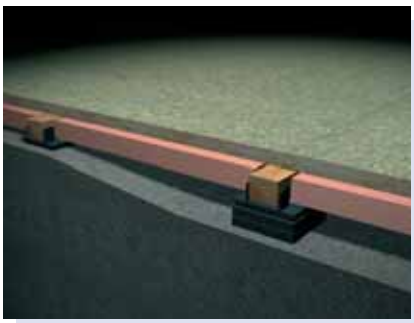
All components should be stored inside, under cover and in dry conditions.

Delivery

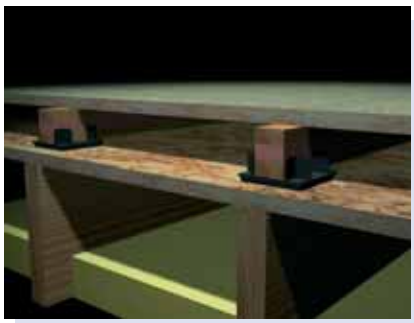
The system is generally supplied on curtainside vehices ready for forklift unloading by site.

Modified Systems

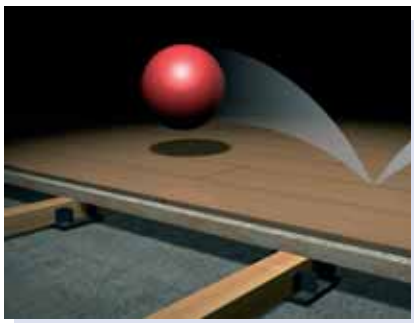
CMS Danskin Acoustics manufacture a range of modified systems incorporating the benefits of the Saddle System. For information on systems for insulated ground floors, underfloor heating or sports floors tested to BS 7044 please contact the Sales team.



Insulated Ground Floors



The Trisonic Support Bearer for uneven timber floors



Sports Systems

Every care has been taken to ensure that all descriptions and specifications are correct at date of publication. The policy of CMS Danskin Acoustics. is one of continuous improvement and product development, and the right is reserved to alter the product specifications and detailed fixing instructions without notice.

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