

Information Sheet

Area Elastic Sprung Systems vs Point Elastic Flooring



Introduction

This document highlights the benefits of installing a DYNAMIK Athen or DYNAMIK Flexi-Beam Plus sprung area elastic system compared to a point elastic foam backed surface.

Typical Construction of Our Area Elastic Sprung Systems and Point Elastic Surfaces

An area elastic sprung system can be constructed in two ways using our Athen or Flexi-Beam systems: The DYNAMIK 'Athen' sprung system is designed to be installed onto a level SR1 screed (+/- 3mm over 2m straight edge) and has a low construction height of 28mm. It is constructed using a high density, comfort-based elastic layer over which a twin density module is installed to accommodate a range of solid synthetic playing surfaces. As every part of the system is equally supported by the elastic layer, consistent sports performance is guaranteed.

The DYNAMIK 'Flexi-Beam Plus' sprung system can be packed and levelled to take out variations in the sub floor or slab, thus removing the need for a levelling screed. It is based on factory assembled flexi-beams which support a counter floor and load distribution panel which accommodate a range of solid playing surfaces. The structure of the system also allows underfloor heating and insulation to be incorporated between the beams. The range of solid synthetic playing surfaces include vinyl, linoleum, polyurethane (PU) and rubber.

Point elastic surfaces are designed to be installed onto a level screed and latex combination. They are typically a factory produced vinyl or synthetic playing surface which combines a foam backing similar to a foam backed carpet. This foam backing achieves low levels of shock absorption compared to a sprung system, but despite this, feels soft, which can be ideal for facilities that do not require high sports performance such as pre-schools or facilities that intend not to use heavy equipment, tables and chairs or incorporate non-sporting activities such as exams or social events, due to the low indentation resistances of the foam backing.

Performance Characteristics of Sports Floor Systems

The table below confirms the performance characteristics that each type of sports floor must meet to comply with EN14904 which is the recognized standard for indoor sports flooring. A3 and A4 represent area elastic floors and P1, P2 and P3 point elastic floors.

	A3	A4	P1	P2	P3
Shock Absorption (%)	40 < 55	55 < 75	25 < 35	35 < 45	> 45
Vertical Deformation (mm)	1.8 < 3.5	2.3 < 5.0	< 2.0	< 3.0	< 3.5

With superior shock absorption and higher vertical deformation, A3 or A4 sprung sports systems not only offer high sports performance but also superior protection and comfort compared to any point elastic floor. The Athen and Flexi-Beam Plus systems can meet Class A3 or A4 performance criteria.

Principal Benefits of Sprung Area Elastic Systems Over Point Elastic Surfaces

Multi-sport – Multi-use - Sprung systems finished in a 'solid' playing surface, such as sport linoleum, can be used in both sport and non-sporting environments. This is important as a typical sports hall needs to combine sports usage as well as community use or social functions whereby the floor must cope with spillages, indentation caused by tables and chairs, stiletto heels or non-sporting footwear.

Surface Protection - It is essential if using our P3 foam-backed vinyl or timber surface that Giant Carpet Tile protection be used to avoid indentation, tearing or puncturing of the surface. There is no requirement for protection with a sprung system finished with a solid (non foam-backed) synthetic playing surface.

High Loadings - Sprung area elastic systems can accept high loadings that arise when maintenance equipment or seating systems are used. The twin load distribution panels and the lack of T&G joints within the Athen system distribute and accept the high loadings perfectly.

Wheelchair Use - A3/A4 Sprung systems finished with a solid synthetic surface provide an ideal surface for wheelchair use having low rolling resistance and ideal maneuverability as well as high indentation resistance and durability. P3 soft foam-backed floors are generally not recommended or liked by wheelchair users as they provide a surface with a high rolling resistance and poor maneuverability which in turn may cause muscular strains and fatigue issues if the small front wheels sink into the foam backing.

Floating Floor - Sprung systems are floating floors hence bridges any movement joints within the floor screed.

Low Life Cycle Costs - Sprung systems finished with solid playing surfaces will have a life in excess of 35 years compared to foam-backed floors which have a much shorter life expectancy due to indentation resistance.

Income Generation - If you intend to let out your facility as an income generator then the amount of revenue received is directly linked to the performance of the floor. Clubs are becoming more selective as to where they play and have a wider choice. It is therefore worth ensuring you choose a high performance sports floor.

Pricing Considerations

The high quality Athen or Flexi-Beam Plus sprung systems will provide more cost effective alternatives compared to certain point elastic floors.

Specific pricing implications are due to the differences in construction methodology which are compared below:

Point Elastic	Area Elastic
<ul style="list-style-type: none"> Requires a level slab or screed Typically requires a liquid DPM prior to installation May require a latex leveling compound between the DPM or final surface Underfloor heating has to be installed within the slab Involves more wet construction processes Requires a protection for non-sporting events 	<ul style="list-style-type: none"> Can be packed and levelled directly off a structural slab Typically uses a visqueen DPM A floating floor therefore not stuck down Provides saving in construction time Underfloor heating can be installed between the beams Solid synthetic playing surface requires no protection system during non-sporting activities.

Once the above factors are considered a point elastic system will typically cost more than an area elastic sprung system.

Feedback and Market Opinion

DYNAMIK regularly receive feedback from end-users, specifiers and consultants who have stated that in their opinion a Sprung Area Elastic System finished in a solid synthetic playing surface is much more suitable for use in school facilities when compared to a point elastic foam-backed surface or a timber finish. It is clear that sprung systems finished in a solid surface provides high indentation resistance and low maintenance/life cycle costs, ideal for school multi-purpose usage.

Conclusion

If you require a Multi-Sport, Multi-Use floor and have a level slab or screed; for longevity, durability and cost effectiveness the DYNAMIK sprung systems finished in a solid synthetic playing surface would be our recommendation.

Alternatively, if you do not have a level slab or screed we would recommend our DYNAMIK Flexi-Beam Plus system.

Product specifications may be subject to change without notice, please contact DYNAMIK for the latest product information