

Underlay

LEFT: Carpenter, which makes polyurethane underlays, has launched two new heavy density contract products
RIGHT: Duralay Kensington Deluxe new high performance crumb felt combination underlay from Interfloor



Down to basics

Underlays can be crucial to a flooring installation:

Carpenter, manufacturer of polyurethane underlays, recently launched two new heavy density contract products.

Extrastep is a 6mm thick underlay has a BS5808 heavy contract rating. It also has high flame retardancy properties that conform to IMO (International Maritime Organisation) standards. It can be used for stretch-fit or doublestick work and has been approved by the UK's leading adhesive manufacturers.

Ultrastep is 9mm thick and has been created for the top end of the luxury domestic and contract market. The alternative to crumb rubber, it gives the firmness and

support that many specifiers look for, but also offers comfort levels that hard, uncompromising crumb rubber cannot. It is suitable for both stretch-fit or doublestick installations.

www.carpenter.ltd.uk

Interfloor has launched a new recycled underlay for woven carpets. Duralay Kensington Deluxe is a new, high performance crumb felt combination underlay ideally suited to woven carpets.

The 11mm thick underlay comprises two layers: 6mm of recycled charcoal grey felt provides comfort and 'beds in' to the carpet backing, and a 5mm layer of high quality crumb rubber offers a durable and hard-wearing support for the carpet.

Duralay Kensington Deluxe is classified for Heavy Domestic and Heavy Contract Use (BS5808: 1991) and, as with all Interfloor

underlays, is guaranteed for the serviceable lifetime of the carpet. It is especially recommended for hall, stairs and landings where foot traffic is more intense.

This is a very environmentally friendly underlay – the crumb rubber is made from recycled car tyres, the felt is made from recycled automotive felt and even the packaging is fully recyclable.

A massive 80% of the product is manufactured from recycled material making it a highly appealing 'green' solution for the consumer.

Like all of the Duralay range of crumb rubber and crumb felt combination underlays Kensington Deluxe is positioned as a 'hard wearing underlay that's kind to the environment.' It also comes with attractive in store point of sale and distinctive burgundy packaging.

QA Products distributes

Carpenter underlays Super GreenStep, RichStep, FirmStep, PowerStep and MarineStep – all BS5808 Luxury Use or Heavy Contract Use rated, delivering lasting luxury and comfort and guaranteed for the lifetime of the carpet.

QA also supplies QuickTherm is a perforated underlay designed for use with underfloor heating below wood and laminate flooring. QuickTherm allows an exceptional level of heat transfer and boasts an outstandingly low 0.35 Tog value.



'Misleading claims on underlays: Here is the truth!'



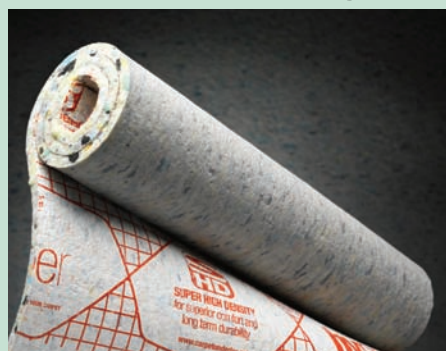
Richard Bailey, md of Floorwise, reveals his frustration over certain suppliers' claims about the performance of some underlays:

THERE is a proliferation of underlays on the market today, each one appearing to offer British Standard busting performance at an unbelievably low price. These advertisements are nothing short of misleading.

It is perhaps better to quantify the relevance of British Standards in today's marketplace. One in particular, BS 4790, seems to find its way on to more adverts and editorial contributions than any other. This relates to flammability, however there is also a British Standard for performance in BS 5808 and it is this that measures the durability and comfort of underlays. BS 4790 just tells us how the underlay will burn. It categorically does not have any relation to the performance and durability of underlay.

BS 4790, commonly known as the hot metal nut test, was defined some 22 years ago for the carpet industry to measure the flammability of textile floor coverings.

The age of the test itself throws up concern, with the materials and construction of modern underlays dramatically different from that of floor coverings produced over 20 years ago. The



Hyper Tread underlay from Floorwise

other, and certainly more revealing, issue is that is impossible to fail this test. The underlay will simply achieve a rating of low radius effects of ignition, medium radius effects of ignition or high radius effects of ignition.

All underlays will pass this test, what matters is to what extent. A low radius effects of ignition is the ultimate goal displaying that the underlay minimises its potential as a fire hazard, a high radius effects of ignition is simply not good enough.

Simply placing 'passes BS 4790' on the advert, or slipping it into some editorial copy is misleading. A piece of cardboard would pass this test. However for the un-informed reader it is as if the underlay has found the holy grail.

If flammability is a real concern and

particularly with PU based underlays, it would be better to establish if the supplier uses flame-retardant foam. At Floorwise, we do as a matter of course, but you'd be surprised how many underlay suppliers don't. After all, if they are quick enough to put BS 4790 on their advert, surely they would also be quick to jump on the positives of flame-retardant foam?

It is this approach to selling that I find troublesome. In the defence of less than squeaky-clean suppliers, we probably do need to address issues with British Standards as a unified body, clearing up exactly what these standards mean and the impact they have on the selection of underlay, but this does not excuse what is blatant misinformation.

There are certainly more pressing issues for underlay than whether it passes BS 4790 and it is these that should be considered at the point of purchase. Underlays should be tested to BS 5808 as this is the only true benchmark for durability and performance relating to underlays.

It helps us to achieve a level playing field so that you can quickly identify the underlay to meet your needs. Without it, be hesitant as to what is being claimed from an underlay supplier. After all, if they were quick enough to put BS 4790 on their advert, wouldn't they put the true measure of an underlay performance – BS 5808 – if the underlay had been tested and passed? **CFJ**

www.floorwise.co.uk

Underlay

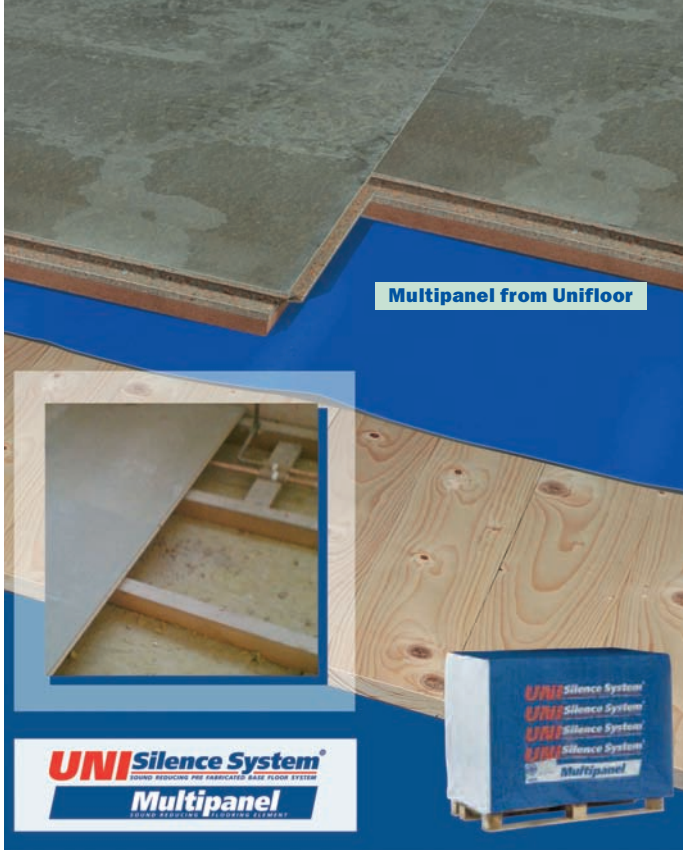
Sound Reduction Systems says its acoustic underlay product, Acoustilay, is now both 100% recyclable and manufactured entirely in the UK, maintaining all of the acoustic properties of the previous product, at the same cost.

The barrier mat material, used to give Acoustilay mass, can be manufactured from pre, mixed and post industrial waste sources and is 100% recyclable at the end of its life.

The PVC free material has a proprietary polymer structure which ensures it is one of the least polluting plastics, and does not emit any toxic compounds when it burns. www.soundreduction.co.uk

Texfelt expects to grow over the next 12 months, according to the md, James Taylor. He reports increasing demand, both domestically and commercially, for eco-friendly underlays. Texfelt's Envirolay range has recently undergone a major carbon emissions testing programme. www.texfelt.co.uk

Unifloor Underlay Systems BV from the Netherlands, supplies MultiPanel, a versatile acoustic floating floor. The product



comprises a soft resilient layer bonded to a high density cement particle board with a tongue and groove edge, making it suitable for a number of construction designs that meet the Building Regulations covering acoustics.

MultiPanel can be fitted as a floating floor on a substrate or direct to flooring joists.

If needed, to keep the structural

integrity of the building, it can be screwed to the joists.

According to Unifloor it offers an acoustic flooring solution to any floor finish, including vinyl, laminates, engineered wood, carpet, carpet tiles and ceramic tiles, performing to a high acoustic standard.

The product is available from all Sheffield Insulations Branches.

www.extonltd.co.uk
Numa (The Needlefelt Underlay Manufacturers Association) says recycled felt underlay is a more profitable and 'greener' alternative to most other underlay types, especially with the recycled felt product itself being recyclable at the end of its user life.

It is also good value for money product compared with higher cost PU and rubber types and can be produced in both domestic and contract versions. **CFJ** www.felt-underlay.com

BUYERS' GUIDE	
<i>For further information on any of the products mentioned, contact the suppliers directly. And please remember to tell them that you read about their companies in CFJ:</i>	
Carpenter	01457 861141
Floorwise	01509 673974
Interfloor	01706 238810
QA Sales	0151 427 6000
SR Systems	01204 380074
Texfelt	01422 376791
Unifloor	0031 570 855533

Everything you need to know about underlays

THE new Building Regulations Approved Document E for Resistance to the Passage of Sound, effective from July 1, 2004.

The mandatory requirements for England and Wales are set out in approved technical documents Part E (21). For Scotland the reference is part H of technical standard (22) and in Northern Ireland the technical booklet G and G1(23) applies.

These regulations only apply to new building projects.

■ **Sound:** This is measured in decibel units, expressed as a number followed by dB. Sound attenuation: is the process of measuring sound.

■ **Airborne sound:** Travels through the air. It is measured by ISO 140 Parts 3 and 4 using the rating procedure ISO 717 part 1 (1997). The higher the number the better the performance.

■ **Impact sound:** Results from dropping objects on the floor. It is measured by ISO 140 Parts 6 and 7 using rating procedure ISO 717 part 2 (1997). The lower the

Underlays can reduce room noise, specifically the tapping sound inherent in wood and laminate floors

number the better the performance.

■ **Flanking transmission:** Sound transported from one room to another through ducts, such as those used for air conditioning or fan heating, or through pipes that may or may not be connected to the flooring. Any part of the floor that provides a rigid path to the structure will enable noise to be transmitted.

■ **Mass law:** The degree of airborne sound transmitted through the floor, depends on the mass of the floor.

As a guide, doubling the mass of the floor can give a 5dB improvement in airborne sound performance.

Therefore the density of a timber species, the way the

flooring is constructed and the use of underlays will affect the dB readings.

Carpet has been proved to absorb over 10 times more airborne noise than any other flooring material.

Separately to the above, the European Producers of Laminate Flooring (EPLF), working in conjunction with representatives from the industry, has evolved the Drum Sound Standard for laminate flooring.

This incorporates uniform test procedures and measuring criteria.

■ **Norm (Nm):** This defines how the drum sound generated by walking on a laminate floor can be measured and evaluated.

■ **Sone:** This expresses the loudness of the drum sound.

Sone values are absolute and linear so that different values can be compared.

■ **Sound-Loudness (SL):** The classification system that applies to tested products.

The Drum Sound Standard classification system uses a specified laminate with a standard foam underlay as a base reference.

This must comply with the stipulated Norm requirements.

Tested products will be given an Nm loudness value that will determine the SL classification.

If the drum sound level of the tested product is below that of the reference floor (77 Sone), then the product classification will be higher than that of the reference product.

If the drum sound level is higher than the reference floor, the rating will be lower.

There are four classifications:

■ **SLO (-5 to +5)** - drum noise reduction to a maximum 5%;

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Everything you need to know about underlays

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- SL10 (+5 to +15) - drum noise reduction of 5-15%;
- SL20 (+15 to +25) - drum noise reduction of 15-25%;
- SL30 (+25 to +35) - drum noise reduction of 25-35%.

All EPLF members have agreed that their laminate floors will be evaluated according to the requirements of the Norm.

It is recommended that before installing sound insulation any problems that may cause materials to rub against each other, such as squeaky floorboards, warped or twisted joists, bowed subfloors or wood sheathing, should be resolved.

Underlays can:

- Reduce room in room noise specifically the tapping sound inherent in wood and laminate floors;
 - Save up to 15% in energy costs, according to some manufacturers; and
 - With special treatments can inhibit the growth of bacteria.
- Manufacturers make different grades of underlays for particular usage in both domestic and contract locations, and advise how these should be installed.
- Although usually produced in dull brown, green, grey or black, some of the latest products are made in bright colours.

Underlays for carpets:

- Extend the life of the carpet because the damage inflicted by feet and furniture is transferred to the underlay which acts as a shock absorber; and
 - Improve heat and sound insulation. Even thick pile carpets will not provide underfoot comfort if laid directly onto a hard surface such as concrete or floorboards.
- Carpets with an integral underlay are not perceived as providing benefits to the same level as carpet with a separate underlay.

Underlays for woods and laminates:

- Lessen the damage to the surface should any heavy object

Moisture, underfloor heating and sound issues must all be considered with wood and laminate flooring

be dropped onto it;

- Lessen the effect of a fall, especially beneficial for children and older adults; -
- Can give a warmer and softer walking experience, according to some manufacturers; and
- Can reduce sound within a room and in the floors below, an advantage in apartment buildings.

Installation: There are two main methods for installing carpet:

- **Double stick:** underlay is adhered to subfloor using release adhesive and the carpet is bonded to the underlay using permanent adhesive.
- This prevents rucking and is particularly necessary where wheelchairs, prams or trolleys are used. The two bonded materials can be easily pulled up when no longer required.

■ **Stretch and fit:** the carpet is stretched over the underlay, seams created using heat bond tape, and secured to plywood strips with pins, grippers.

This allows the underlay to be reused once the carpet is removed.

As wood and laminate floors are subject to changes in humidity and temperature systems have been developed to work with these variables to provide a stabilised installation.

Adhesives have been developed to suit specific purposes, and multi-purpose adhesives for cold conditions and fast track installations.

Underlay types:

- **Combination:** the most common is crumb rubber and felt.
- **Felt:** one of the first types of underlay available. As it is produced mainly from waste yarn, it is seen as an

environmentally friendly product.

It is still widely used in the contract sector due to its dimensional stability, and because in the event of fire it gives off a non-toxic white smoke as opposed to the toxic black when rubber burns.

■ **Rubber, crumb:** Crumb rubber is made from recycled tyres, often up to 90%. Some ranges are guaranteed for up to 25 years. At the top end of the market, rubber crumb is designed for heavy wear areas, particularly contract.

■ **Rubber, sponge:** This is made using chemical blowing agents to provide an open cell structure. Waffle (corrugated) is available in different thicknesses and colours.

Flat offers better wear protection than sponge. Known as sponge or sponge rubber, these underlays tend to be guaranteed for the life of the carpet.

Positioned at the bottom end of the market, this type of underlay is said to be Europe's best seller.

■ **Rubber, latex foam:** These underlays are created through a mechanical frothing process, making them lighter than sponge rubber. Again, available corrugated or flat.

■ **Stick down systems:** made in release and double stick versions, these underlays remove the need for nails, grippers or adhesives on the subfloor and the possibility of the carpet stretching and rucking under wheels.

Underlays for underfloor heating:

- **Rebond:** Lightweight for easy handling during installation, made from recycled material.
- One product used milled and ground prime polyurethane foam, a by-product of upholstery

manufacture, as its raw material. It is designed to provide comfort combined with durability. Often provided in cushion format.

Underlays for wood and laminate flooring:

The presence of moisture, underfloor heating and sound issues all need to be considered.

Although combination underlays that can resolve more than one problem are being developed, most of those currently available are designed to combat only one.

■ **Coconut fibre:** Developed for laminate click systems, 4mm thick;

■ **Fibreboard:** Produced in tile form as an underlayment for parquet and laminated panels, and to improve sound and thermal insulation;

■ **Polyolefin foam:** For impact sound insulation;

■ **Polythene film:** Polymer granules bonded between polythene films. Air flowing between the granules aims to reduce mould growth. Provides a vapour barrier while minimising sound;

■ **Polystyrene foam:** in panel format for use under chipboard, prefabricated cork parquet, laminate and wood floating floors. Offers thermal, impact and sound insulation;

■ **Polythene foam:** Usually 2, 2.5 and 3mm thick, the foam structure is formulated to provide thermal and sound insulating properties.

It becomes a vapour barrier when combined with a foil backing.

Can be made with an overlap and integral joint strip for use as a damp proof membrane combined with puncture resistance and impact sound insulation.

A kraft paper backing can add to the insulation properties.

■ **Rubber:** high density formula for noise reduction and to be used with underfloor heating.

Without a backing it is not suitable where moisture is present unless a barrier has previously been installed. Also made with vapour proof backings. **CFJ**