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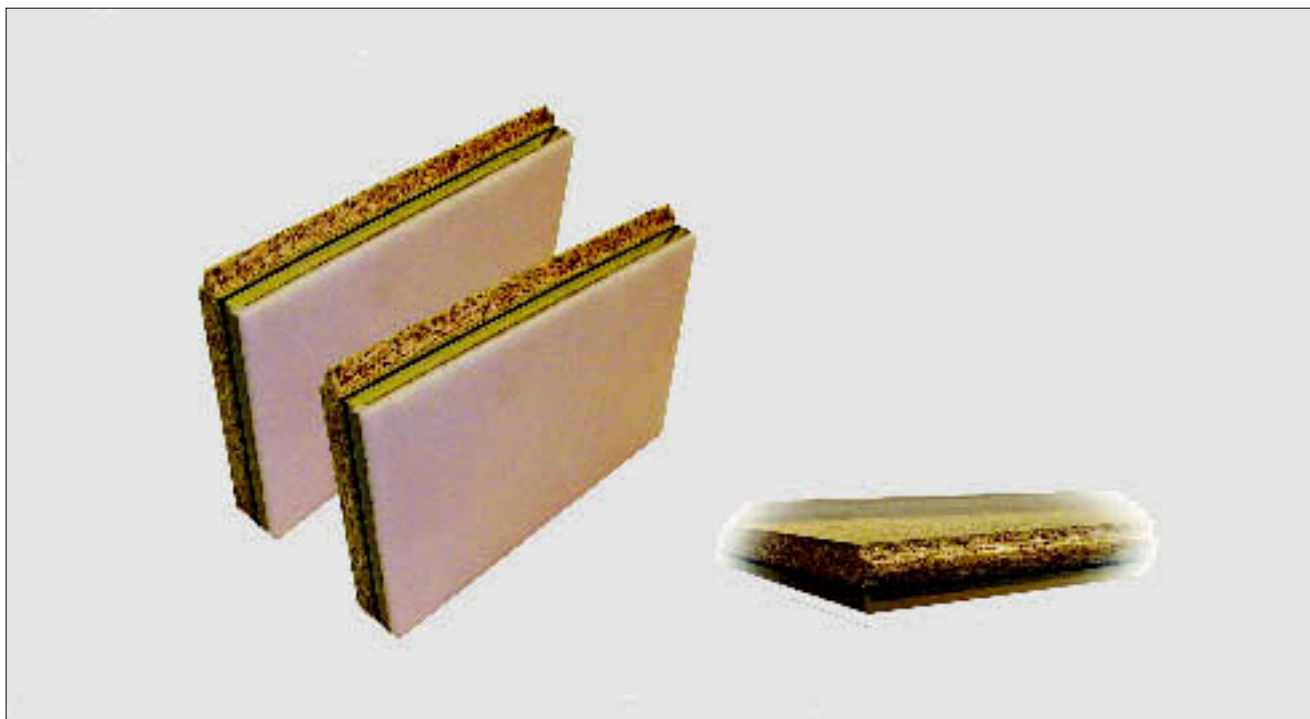
**Agrément
Certificate
No 04/4158**
Second issue*

Designated by Government
to issue
European Technical
Approvals

ELECOFLOOR 36 AND 40 AND ELECOFLOOR 23 AND 24 ACOUSTIC FLOATING FLOOR TREATMENT

Revêtement pour sols
Bodenaufilage

Product



• THIS CERTIFICATE RELATES TO ELECOFLOOR⁽¹⁾ 36 AND 40 AND ELECOFLOOR 23 AND 24, ACOUSTIC FLOATING FLOOR TREATMENT FOR REDUCING SOUND TRANSMISSION THROUGH SEPARATING FLOORS.


• The product is for use as a floating floor treatment on separating floors with solid timber and engineered joists (Elecofloor 36 and 40) and on separating floors of concrete slab construction (Elecofloor 23 and 24).

• It is used to reduce impact and airborne sound transmission through separating floors in dwellings and flats.

continued

Regulations


1 The Building Regulations 2000 (as amended) (England and Wales)

 The Secretary of State has agreed with the British Board of Agrément the aspects of performance to be used by the BBA in assessing the compliance of acoustic floor overlay with the Building Regulations. In the opinion of the BBA, ElecoFloor 36 and 40 and ElecoFloor 23 and 24 Acoustic Floating Floor Treatment, if used in accordance with the provisions of this Certificate, will meet or contribute towards meeting the relevant requirements.

Requirement: E1 Protection against sound from other parts of the building and adjoining buildings
Comment: When installed on a suitable floor, the product can contribute to meeting this Requirement. See sections 8.1 to 8.3 of this Certificate.

Requirement: Regulation 7 Materials and workmanship
Comment: The product is acceptable. See section 11 of this Certificate.

2 The Building (Scotland) Regulations 2004

 In the opinion of the BBA, ElecoFloor 36 and 40, and ElecoFloor 23 and 24, Acoustic Floating Floor Treatment, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Regulations and related Mandatory Standards as listed below.

Regulation: 8 Fitness and durability of materials and workmanship
Regulation: 8(1) Fitness and durability of materials and workmanship

Comment: The product can contribute to a construction meeting this Regulation. See section 11 and the *Installation* part of this Certificate.

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continued

• It is essential that the floors comply with the conditions set out in the Design Data and Installation parts of this Certificate.

(1) ElecoFloor is a registered trademark.

Regulation: 9
Standard: 5.1
Comment:

Building standards — construction
Resisting sound transmission to dwellings

Laboratory test data show that when the product is installed on a suitable floor, it will contribute to satisfying this Standard with reference to clauses 5.1.1⁽¹⁾ and 5.1.12⁽¹⁾. See sections 8.1 and 8.3 of this Certificate.

(1) Technical Handbook (Domestic).

3 The Building Regulations (Northern Ireland) 2000



In the opinion of the BBA, ElecoFloor 36 and 40 and ElecoFloor 23 and 24 Acoustic Floating Floor Treatment, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Building Regulations as listed below.

Regulation: B2
Comment:
Regulation: G2(2)
Regulation: G3(2)
Comment:

Fitness of materials and workmanship
The product is acceptable. See section 11 of this Certificate.
Separating walls and separating floors
Existing walls and floors which become separating walls and separating floors
Laboratory test data show that when the product is installed on a suitable floor, it will contribute to satisfying these Regulations. See sections 8.1 and 8.3 of this Certificate.

4 Construction (Design and Management) Regulations 1994 (as amended) Construction (Design and Management) Regulations (Northern Ireland) 1995 (as amended)

Information in this Certificate may assist the client, planning supervisor, designer and contractors to address their obligations under these Regulations.

See sections:

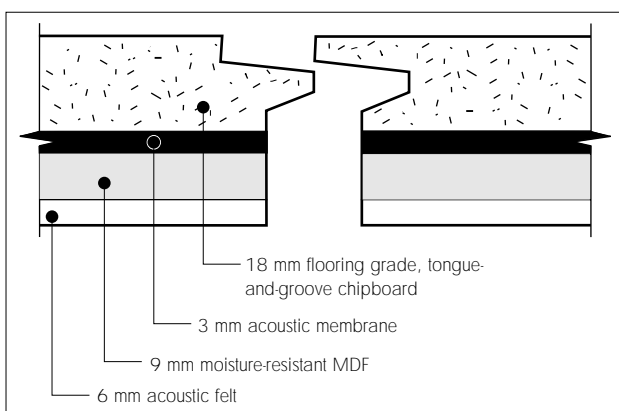
5 Description (5.3) and 6 Delivery and site handling (6.1).

Technical Specification

5 Description

5.1 ElecoFloor 36 and 40 Acoustic Floating Floor Treatment comprises a layer each of moisture-resistant, tongue-and-groove flooring grade chipboard, an acoustic membrane, moisture-resistant medium-density fibreboard (MDF) and an acoustic felt underlay. The layers are bonded together to form a composite panel. The standard panels (ElecoFloor 36) are 36 mm overall thickness (see Figure 1), but 40 mm thick panels (ElecoFloor 40, incorporating 22 mm thick chipboard) are available on request.

Figure 1 Typical cross-section — ElecoFloor 36



5.2 ElecoFloor 23 comprises a layer of moisture resistant, tongue-and-groove, flooring grade chipboard and a 5 mm thick open cell Rebond foam underlay. ElecoFloor 24 is made up of an identical chipboard and 6 mm thick acoustic felt underlay

5.3 The standard panels are normally supplied with a strippable protective membrane⁽¹⁾ and have a size and weight of:

installed cover size (mm)	2400 x 600
weight (kgm ⁻²)	
ElecoFloor 36	20.5
ElecoFloor 40	22.8
ElecoFloor 23	13.2
ElecoFloor 24	14.2

(1) The panels can be supplied without this membrane.

5.4 All chipboard and MDF satisfy the minimum requirements of BS EN 312 : 2003 and BS EN 622-1 : 2003 respectively.

5.5 The performance and quality control of Ecojoists and resilient bars (included in Figures 2 and 3) and the concrete floor construction (shown in Figure 4) are for illustrative purposes only and are outside the scope of this certificate (see also sections 8.4 and 9).

Figure 2 Timber-based separating floor — Timber joists (test arrangement)

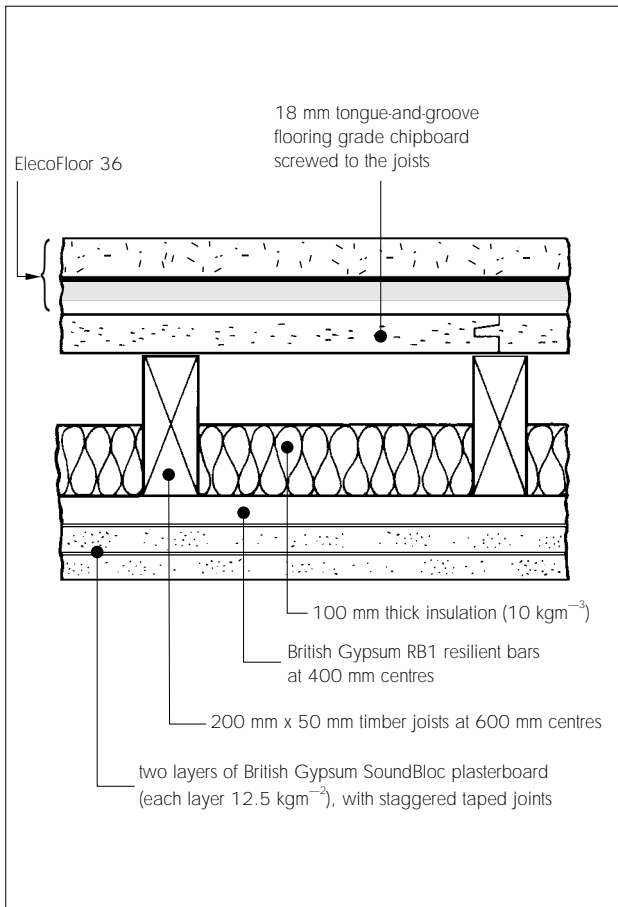


Figure 3 Timber-based separating floor — Ecojoists (test arrangement)

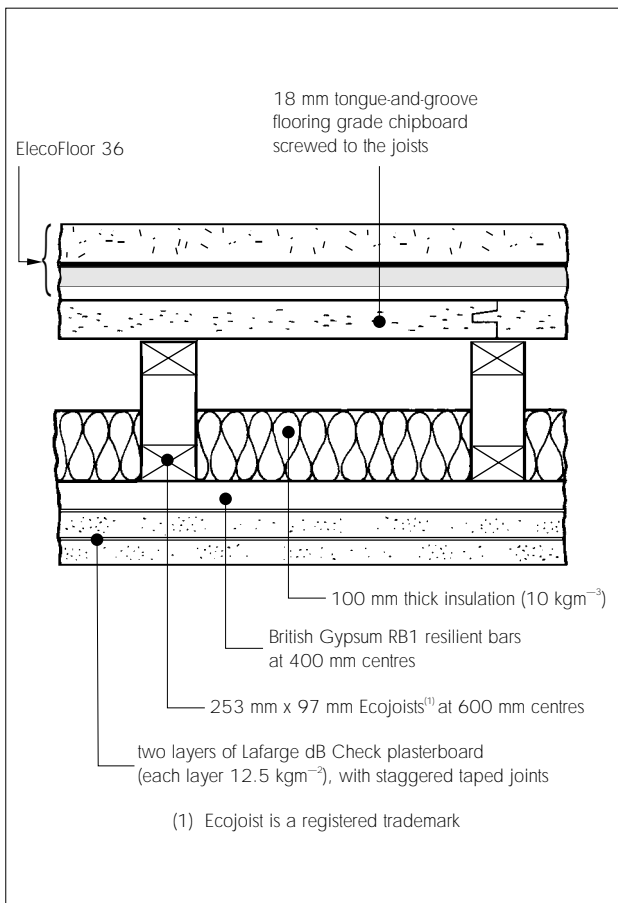
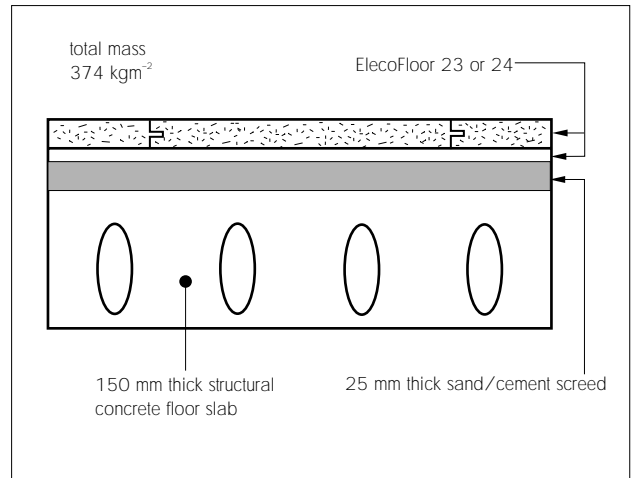


Figure 4 Suspended concrete separating floor (test arrangement)



6 Delivery and site handling

6.1 The panels are delivered to site on non-returnable timber pallets for mechanical handling from the delivery vehicle to the work area.

6.2 The panels, stretch-wrapped on the pallet, should be stored flat, under cover in well-ventilated conditions, preferably similar to those to be experienced in service.

6.3 Packs are protected at each end by a cardboard end-cap which may bear the manufacturer's trademark and logo, week number and contact details. Identification labels bear the manufacturer's trademark and logo, contact details, customer order details, size, quantity, board type and production week number. The BBA identification mark incorporating the number of this Certificate may appear on either the top boards or the end-caps.

Design Data

7 General

7.1 ElecoFloor 36 and 40 Acoustic Floating Floor Treatment is satisfactory for use on conventional timber boarded decks of separating floors in dwellings and flats. ElecoFloor 23 and 24 are for use on concrete separating floors.

7.2 The product reduces airborne and impact sound transmission through separating floors. The product has not been assessed for use on steel floors nor on exposed, semi-exposed or ground floors.

8 Sound insulation

8.1 Test data to BS EN ISO 140-3 : 1995 and BS EN ISO 140-6 : 1998 indicate that the separating floor constructions detailed in Figures 2, 3 and 4⁽¹⁾ can provide satisfactory resistance to airborne and impact sound transmission, when used in conjunction with

suitable flanking elements (see also Tables 1 to 3 and sections 8.3 and 12.5).

- (1) In England and Wales, the floor construction detailed in Figure 4 should, additionally, incorporate ceiling treatment B or C as described in clauses 3.21 and 3.22 of the Approved Document E of the Building Regulations.

Table 1 Sound insulation (dB) — Laboratory test results


Construction	Airborne $R_w(C_1, C_2)$	Impact $L_{n,w}(C_1)$
ElecoFloor 36 on timber joists (Figure 2)	57 (-2,-6)	58(1)
ElecoFloor 36 on Ecojoists (Figure 3)	61 (-1,-6)	55 (-0)
ElecoFloor 23 on concrete floor (Figure 4)	53 (-3,-7)	61(2)
ElecoFloor 24 on concrete floor (Figure 4)	53 (-2,-6)	58(1)


Table 2 Sound insulation (dB). Deemed to satisfy — England and Wales

Construction	Airborne $D_{nT,w}+C_{tr}$	Impact $L'_{nT,w}$
Purpose built dwelling-houses and flats	≥45	≤62
Dwelling-houses and flats formed by material change of use	≥43	≤64

Table 3 Sound insulation (dB). Deemed to satisfy — Scotland and Northern Ireland

	Airborne $D_{nT,w}$	Impact $L'_{nT,w}$
<i>Scotland and Northern Ireland (new constructions)</i>		
Mean value	≥52	≤61
Individual value	≥48	≤65
<i>Northern Ireland (conversions)</i>		
Individual value	≥48	≤65

 8.2 In England and Wales, separating floors incorporating the product are subject to pre-completion testing in accordance with Section 1 of Approved Document E.

 8.3 The measures to be taken in design and during installation to avoid direct paths for airborne sound and to minimise flanking sound transmission are given in section 12.1 and the national Building Regulations:

England and Wales

Approved Document E

Scotland

Mandatory Standard 5.1

Northern Ireland

Technical Booklets G and G2.

8.4 The details shown in Figures 2, 3 and 4 are typical examples of assembled systems and are included for the purposes of expressing sound insulation performance.

8.5 Test results for other constructions are available from the Certificate holder but are outside the scope of this Certificate.

9 Properties in relation to fire

Although the fire performance of Ecojoists and resilient bars is outside the scope of this Certificate, the constructions detailed in Figures 2, 3 and 4 should have a fire resistance of one hour.

10 Floor loading

10.1 The design loadings for self-contained dwelling units as defined in BS 6399-1 : 1996 are:

intensity of distributed load (kPa)	1.5
concentrated load (kN)	1.4

10.2 The boards can support these design loadings without undue deflection.

10.3 A BRE survey of imposed floor loadings in domestic buildings (see BRE Current Paper No 2/77 *Floor loadings in domestic buildings — the results of a survey*) indicates that loadings in flats are commonly in the region of 0.6 kPa and loadings of 1.5 kPa are normally associated with fixed items.

10.4 Before installation, the existing floor structure should be checked for the additional loading to be applied as a consequence of using the product.

11 Durability



The product will perform satisfactorily and provide impact and airborne sound insulation for the life of the building.

Installation

12 General

12.1 It is essential that the design and installation of the floor is strictly in accordance with good building practice and the requirements of this Certificate.

12.2 Installation of the ElecoFloor 36 and 40 and ElecoFloor 23 and 24 Acoustic Floating Floor Treatment should not commence until the building is weatherproof and all wet trades have been completed and dried out.

12.3 The panels should be acclimatised to the in service conditions for a minimum of 24 hours before installation.

12.4 To minimise wastage, careful planning of the floor area is essential.

12.5 To minimise sound transmission paths through the floor assembly, and the flanking elements, the following points should be observed:

For all installations

- junctions between the flanking elements and the sub-floor deck are suitably sealed
- junctions in cavity walls flanking the floor should be stopped

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- junctions with internal non-loadbearing walls should be sealed
- ElecoFloor panel joints should be staggered and glued
- junctions between ceiling and wall linings should be filled and taped
- service risers penetrating the floor should be fire collared, wrapped with quilt and boxed with two layers of suitable gypsum-based board.

For installations on timber floors

- the floor construction is as shown in Figure 2 or 3
- the floor incorporates a minimum of 100 mm thick mineral fibre quilt in the cavity
- the ceiling comprises two 15 mm thick layers of Type 5 plasterboard with joints staggered between layers and filled/taped
- fixings or services must not bridge the resilient layers of the ElecoFloor panels
- resilient strips should be located at all perimeter junctions between ElecoFloor panels and flanking elements, to isolate them
- resilient ceiling bars should be mounted at right angles to the joist direction
- down-lighters should not be used.

For installation on concrete floors

- the floor construction is as shown in Figure 4
- installation should commence only after all wet trades have been completed and the building completely dried out
- the concrete floor over which the product is laid should be clean, dry and free from debris and other contaminants. Recommendations of BS 8203 : 2001 should be followed
- the floor surface should be smooth and flat to within 5 mm when measured with a 2 metre straight-edge as recommended in BS 8204-1 : 2003. Any irregularities greater than this must be removed
- any expansion joint material applied should be flush with the floor surface.

13 Procedure

13.1 The following procedure is typical. Variation may be required depending on the site.

13.2 Perimeter isolation tape should be applied to the base of perimeter walls, after removing the self-adhesive protective backing.

13.3 Boards are cut to size as necessary and laid felt downwards. The groove on one long side and one short side of the first board should be cut square and laid next to the wall. Subsequent

boards in the first row should be cut square on one long edge only.

13.4 Where there are long, uninterrupted lengths of floor, for example, corridors, proprietary expansion joints should be installed at intervals on the basis of a 2 mm gap per metre run of board.

13.5 A gap of 2 mm to 3 mm should be allowed around pipes and other obstructions. The gap should later be sealed using a flexible acoustic sealant.

13.6 When fitting skirting over the product, a gap of 1 mm to 2 mm between skirting and the product should be allowed.

13.7 Before the boards are interlocked, a PVA wood adhesive is applied to the joints. The joints of successive rows of boards should be staggered.

13.8 To protect the floor during installation, the joints should be sealed by the correct grade of sealing tape, applied over the removable protective membrane.

13.9 Where there is a likelihood of regular water spillage, in rooms such as kitchens, bathrooms, shower and utility rooms, protection should be considered, for example, the use of flexible vinyl sheet flooring with welded joints and cove skirtings.

Technical Investigations

The following is a summary of the technical investigations carried out on ElecoFloor 36 and 40 and ElecoFloor 23 and 24 Acoustic Floating Floor Treatment.

14 Tests

The product, when tested on a timber-floor construction as shown in Figures 2 and 3, and concrete floor construction as shown in Figure 4, achieved the ratings given in Table 1 and exceeded the performance standards given in the England and Wales Building Regulations, Approved Document E, Section O, Tables 1a and 1b.

15 Investigations

15.1 The acoustic performance of the product was assessed from test reports.

15.2 A user survey was conducted to evaluate performance in use.

15.3 An assessment was made of properties in relation to fire.

15.4 An assessment was made of the product's durability in relation to the life of the building.

15.5 An assessment was made of data relating to practicability of installation.

Bibliography

BS 6399-1 : 1996 *Loading for buildings — Code of practice for dead and imposed loads*

BS 8203 : 2001 *Code of practice for installation of resilient floor coverings*

BS 8204-1 : 2003 *Screeds, bases and in-situ floorings — Concrete bases and cement sand levelling screeds to receive floorings — Code of practice*

BS EN 312 : 2003 *Particleboards — Specifications*

BS EN 622-1 : 2003 *Fibreboards — Specifications — General requirements*

BS EN ISO 140-3 : 1995 *Acoustics — Measurement of sound insulation in buildings and of building elements — Laboratory measurement of airborne sound insulation of building elements*

BS EN ISO 140-6 : 1998 *Acoustics — Measurement of sound insulation in buildings and of building elements — Laboratory measurements of impact sound insulation of floors*

Conditions of Certification

16 Conditions

16.1 This Certificate:

- (a) relates only to the product that is named, described, installed, used and maintained as set out in this Certificate;
- (b) is granted only to the company, firm or person identified on the front cover — no other company, firm or person may hold or claim any entitlement to this Certificate;
- (c) is valid only within the UK;
- (d) has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective;
- (e) is copyright of the BBA;
- (f) is subject to English law.

16.2 References in this Certificate to any Act of Parliament, Regulation made thereunder, Directive or Regulation of the European Union, Statutory Instrument, Code of Practice, British Standard, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

16.3 This Certificate will remain valid for an unlimited period provided that the product and the manufacture and/or fabrication including all related and relevant processes thereof:

- (a) are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA;

(b) continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine; and

(c) are reviewed by the BBA as and when it considers appropriate.

16.4 In granting this Certificate, the BBA is not responsible for:

- (a) the presence or absence of any patent, intellectual property or similar rights subsisting in the product or any other product;
- (b) the right of the Certificate holder to market, supply, install or maintain the product; and
- (c) the actual works in which the product is installed, used and maintained, including the nature, design, methods and workmanship of such works.

16.5 Any recommendations relating to the use or installation of this product which are contained or referred to in this Certificate are the minimum standards required to be met when the product is used. They do not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date of this Certificate or in the future; nor is conformity with such recommendations to be taken as satisfying the requirements of the 1974 Act or of any present or future statutory, common law or other duty of care. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the installation and use of this product.



In the opinion of the British Board of Agrément, ElecoFloor 36 and 40 and ElecoFloor 23 and 24 Acoustic Floating Floor Treatment is fit for its intended use provided it is installed, used and maintained as set out in this Certificate. Certificate No 04/4158 is accordingly awarded to Stramit Industries Limited.

On behalf of the British Board of Agrément

Date of Second issue: 17th February 2006

A handwritten signature in black ink, appearing to read 'G. A. Cooper'.

Chief Executive

**Original Certificate issued 8th October 2004. This amended version includes reference to the revised Building Regulations, addition of product range and relevant information, revised construction detail and new Conditions of Certification.*

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For technical or additional information, contact the Certificate holder (see front page).
For information about the Agrément Certificate, including validity and scope, tel: Hotline 01923 665400, or check the BBA website.