Bord Agrément na hÉireann
Irish Agrément Board

CERTIFICATE NO. 04/0205

Klober Ltd., Unit 6F, East Midlands Distribution Centre,
Short Lane, Castle Donington, Derbyshire, DE74 2HA.

Tel: 0044 1332 813050
Fax: 0044 1332 814033

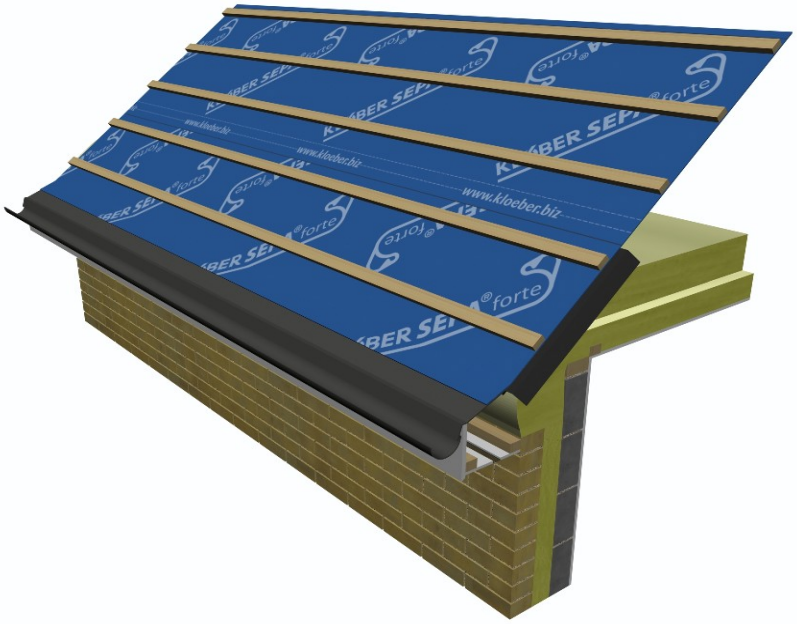
Sepa forte & Sepa light Roof Tile Underlays

Sous-toiture
Dachlattung

The **Irish Agrément Board** is designated by Government to issue European Technical Approvals.

Irish Agrément Board Certificates establish proof that the certified products are **'proper materials'** suitable for their intended use under Irish site conditions, and in accordance with the **Building Regulations 1997 to 2007**.

The **Irish Agrément Board** operates in association with the **National Standards Authority of Ireland (NSAI)** as the National Member of UEAtc.



PRODUCT DESCRIPTION:
This Certificate relates to Sepa forte and Sepa light Roof Tile Underlays for tiled or slated roofs. Sepa forte and Sepa light Roof Tile Underlays are spunbonded polypropylene fabrics designed for use as unsupported or fully supported underlays for tiled or slated roofs. This Certificate certifies compliance with the requirements of the Building Regulations 1997 to 2007.

USE:
Sepa forte and Sepa light Roof Tile Underlays are manufactured for use under slates or tiles on unsupported (open rafter) or fully supported ventilated pitched roofs. Sepa forte and Sepa light Roof Tile Underlays provide a barrier which:

- Prevents the ingress of wind-blown rain, dust and snow.
- Minimises the wind load generated under wind gusts acting on slates and tiles when installed in accordance with this Certificate.
- Remains flexible at low temperatures.

MANUFACTURE:
The products are manufactured by:
Spunchem Africa Pty Ltd.,
22 Burnside Drive,
Mount Edgecombe,
Kwazulu Natal 4300,
South Africa.

MARKETING:
The products are marketed by:
Klober Ltd., Unit 6F, East Midlands Distribution Centre,
Short Lane, Castle Donington, Derbyshire, DE74 2HA.
Tel: 00 44 (0)1332 813050
Fax: 00 44 (0)1332 814033

and
Capco Roofing Centre,
Unit 47/48 Broomhill Close, Tallaght, Dublin 24.
Tel: 00 353 (0)1 4620740
Fax: 00 353 (0)1 4620741

1.1 ASSESSMENT

In the opinion of the Irish Agrément Board (IAB), Sepa forte and Sepa light Roof Tile Underlays are satisfactory for the purpose defined above, and meets the requirements of the Building Regulations 1997 to 2007 as indicated in Section 1.2 of this Certificate.

1.2 BUILDING REGULATIONS 1997 to 2007

REQUIREMENT:

Part D – Materials and Workmanship
D3 – Sepa forte and Sepa light Roof Tile Underlays, as certified in this Irish Agrément Board (IAB) Certificate, are proper materials, fit for their intended use (see Part 4 of this certificate).

D1 – Sepa forte and Sepa light Roof Tile Underlays, used in accordance with this Certificate, meet the requirements of the building regulations for workmanship.

Part A – Structure
A1 – Loading
Tests indicate that a roof incorporating Sepa forte or Sepa light Roof Tile Underlay meets the requirements provided the installation complies with the conditions set out in Section 2.4 and Part 3 of this Certificate.

Part B – Fire Safety
B4 – External Fire Spread
Sepa forte and Sepa light Roof Tile Underlays will not prejudice the external fire resistance of the roof, as indicated in Section 4.1 of this Certificate.

Part C – Site Preparation and Resistance to Moisture
C4 – Resistance to Weather and Ground Moisture
Sepa forte and Sepa light Roof Tile Underlays meet the requirements when installed as indicated in Section 2.4 of this Certificate.

Part F – Ventilation
F2 – Condensation in Roofs
Sepa forte and Sepa light Roof Tile Underlays will provide water vapour permeability less than that quoted as a minimum for classification as vapour permeable roof tile underlays in accordance with BS 5534-1:2003 '*Code of Practice for slating and tiling/design*'.

The design guidelines contained in Section 2 of the Technical Guidance Document to Part F of the Building Regulations 1997 to 2007 and in Section 8.4 of BS 5250:2002 '*Code of Practice for control of condensation in buildings*' must be met when installing these products.

Sepa forte and Sepa light Roof Tile Underlays should be treated as impermeable underlays when considering the ventilation requirements of the roof.

Part L – Conservation of Fuel and Energy
L1 - Conservation of fuel and energy
Based on the measured vapour resistance of roofs incorporating Sepa forte or Sepa light Roof Tile Underlays, roofs incorporating insulation can meet the requirements of Part L of the Building Regulations 1997 to 2007.

Where the ceiling has to be fixed to the soffit of the rafters, as in dormer roof construction, ventilation should be arranged for as shown in diagram 6D of Technical Guidance Document to Part F of the Building Regulations 1997 to 2007. In these circumstances it will be necessary to install a vapour control layer at the warm side of the insulation.

2.1 PRODUCT DESCRIPTION

Sepa forte and Sepa light Roof Tile Underlays are spunbonded polypropylene fabrics designed for use as unsupported or fully supported underlays for tiled or slated roofs.

2.2 MANUFACTURE

Sepa forte and Sepa light Roof Tile Underlays consist of polypropylene homopolymer extruded into a fibre laid down and passed through heated rollers to form a non-woven spunbond. Two layers of this spunbond are laminated together with polypropylene curtain coating to form the finished product.

The physical characteristics of Sepa forte and Sepa light Roof Tile Underlays are given in Table 1.

Sepa forte	
Colour	Blue/Anthracite
Roll Width (m)	1, 1.5
Roll Length (m)	50
Thickness (mm)	0.6
Dimensional Stability	MD +0.2% CD +0.01%
Water Vapour Permeability ($g/m^2/day$)	0.21
Hydrostatic Head (mm of H_2O)	>2000
Resistance to Wind Load (kPa)	2.5 with 300mm batten spacing and 600mm rafter centres
Tensile Strength (N/50mm)	MD 333 CD 289
Tensile Elongation (%)	MD 71 CD 80
Tear Resistance (N)	MD 225 CD 265
Sepa light	
Colour	Grey/Dark Grey
Roll Width (m)	1
Roll Length (m)	45
Thickness (mm)	0.4
Dimensional Stability	+/- 0.5%
Water Vapour Permeability ($g/m^2/day$)	1.59
Hydrostatic Head (mm of H_2O)	>2000
Resistance to Wind Load (kPa)	2.5 with 300mm batten spacing and 600mm rafter centres
Tensile Strength (N/50mm)	MD 240 CD 120
Tensile Elongation (%)	MD 55 CD 60
Tear Resistance (N)	MD 120 CD 120

Table 1: Physical characteristics

2.2.1 Quality Control

Quality control checks are carried out on the incoming raw materials, during production and on the finished product. Quality control checks include visual inspection and checks on dimensions, tensile strength, elongation test, tear strength and water penetration resistance (hydrostatic head).

2.3 DELIVERY, STORAGE AND MARKING

Sepa forte and Sepa light Roof Tile Underlays are supplied in rolls, shrink-wrapped in polythene with a label bearing the company name and the product name, and with fitting instructions on the reverse.

Rolls should be stored on end and should be kept under cover to protect from long-term exposure to UV light. Care must be taken to avoid contact with solvents and with materials containing volatile organic components such as coal tar and timbers with newly treated creosote. Reasonable precautions must be taken in handling the rolls to prevent damage, such as tears or perforations, occurring before and during installation, and prior to the application of the roof covering.

The rolls must not be exposed to a naked flame or other ignition sources.

2.4 INSTALLATION

2.4.1 General

Sepa forte and Sepa light Roof Tile Underlays must be installed and fixed in accordance with this certificate, the manufacturer's/distributor's instructions (a copy of which should accompany each roll), and the recommendations of ICP 2:2002 '*Code of practice for slating and tiling*' and BS 5534-1:2003.

2.4.2 Installation Procedure

- Installation commences by unrolling the underlay horizontally across the rafters, starting at the eaves and working towards the ridges of the roof. The upper (as installed) surface is marked with the product name, and the unmarked surface should face the rafters on unrolling. Each horizontal run must be installed with a drape of 10mm between rafters at 600mm centres. The underlay is tack-nailed in position, and secured by through-nailed horizontal battens.

- The minimum width of horizontal laps must be as recommended in BS 5534-1:2003 and as reproduced in Table 2. Horizontal laps should preferably be under a batten, but where a lap occurs between battens, it should be held down with an extra batten. Vertical joints must overlap by at least 150mm and must be secured on a rafter. Corrosion resistant staples or clout nails must be used and should comply with the requirements of BS 5534-1:2003.

- At the eaves the underlay must be used in conjunction with an underlay support tray so that run off water is directed into the gutter.

- Sepa forte and Sepa light Roof Tile Underlays have adequate resistance to tearing but are not designed to withstand the weight of operatives or tiles being loaded out. Battens must therefore be installed as work progresses from eaves to ridge for achieving purchase for feet and avoiding damage to the underlay surface. No materials or implements should be rested on the underlay. Where pressure on the underlay over a rafter is unavoidable, it should be noted that the membrane does not offer substantial grip, particularly at overlaps.

- It must be ensured that the roof design and construction allows for adequate ventilation of the roof space by providing sufficient eaves openings or tile/ridge ventilators with an equivalent opening area. Due care must be taken that the underlay does not obstruct the flow of air at any ventilation opening.

- Courses of underlay over a hip should be overlapped by at least 150mm. Each course should overlap the underlay course(s) on the adjacent elevation of the roof.

- At ridges and hips, a double layer of underlay should be applied by dressing over the apex. Where the overlap is insufficient, a 600mm wide strip of underlay must be overlaid centrally above the underlay to the main roof. In valleys, a strip of underlay at least 600mm wide must be laid over the gutter bed, but under the main roof underlay, and be held down by valley battens where used. The main roof underlay must be dressed over the valley battens in this case.

- Standard methods of workmanship should be used to apply the underlay at penetrations and abutments. It must be ensured that the underlay is turned up at least 50mm at all abutments to be overlapped by the flashings, and that it overlaps the lining tray by at least 100mm at the back face of any abutment.

- Penetrations by soil and vent pipes etc. must be dealt with as follows. The underlay must be star-cut carefully to prevent tears, closely fitted over the pipe, ensuring that all the tabs project upwards along the pipe, and then the tabs taped around the circumference. A proprietary collar must be fitted over the pipe to protect the tape.

- Repairs can be carried out by overlaying the damaged area with a layer of additional material ensuring a 150mm overlap all round, but ensuring that the up-slope side is overlapped by the next higher horizontal run of underlay, and secured under a batten.

Roof Pitch	Horizontal lap		Vertical lap
	Partially Supported	Fully Supported	
Pitch<22.5^{o}	225 mm	100 mm	100 mm
22.5^{o}<Pitch<35^{o}	150 mm	100 mm	100 mm
Pitch>35^{o}	100 mm	75 mm	100 mm

Table 2: Minimum Overlaps

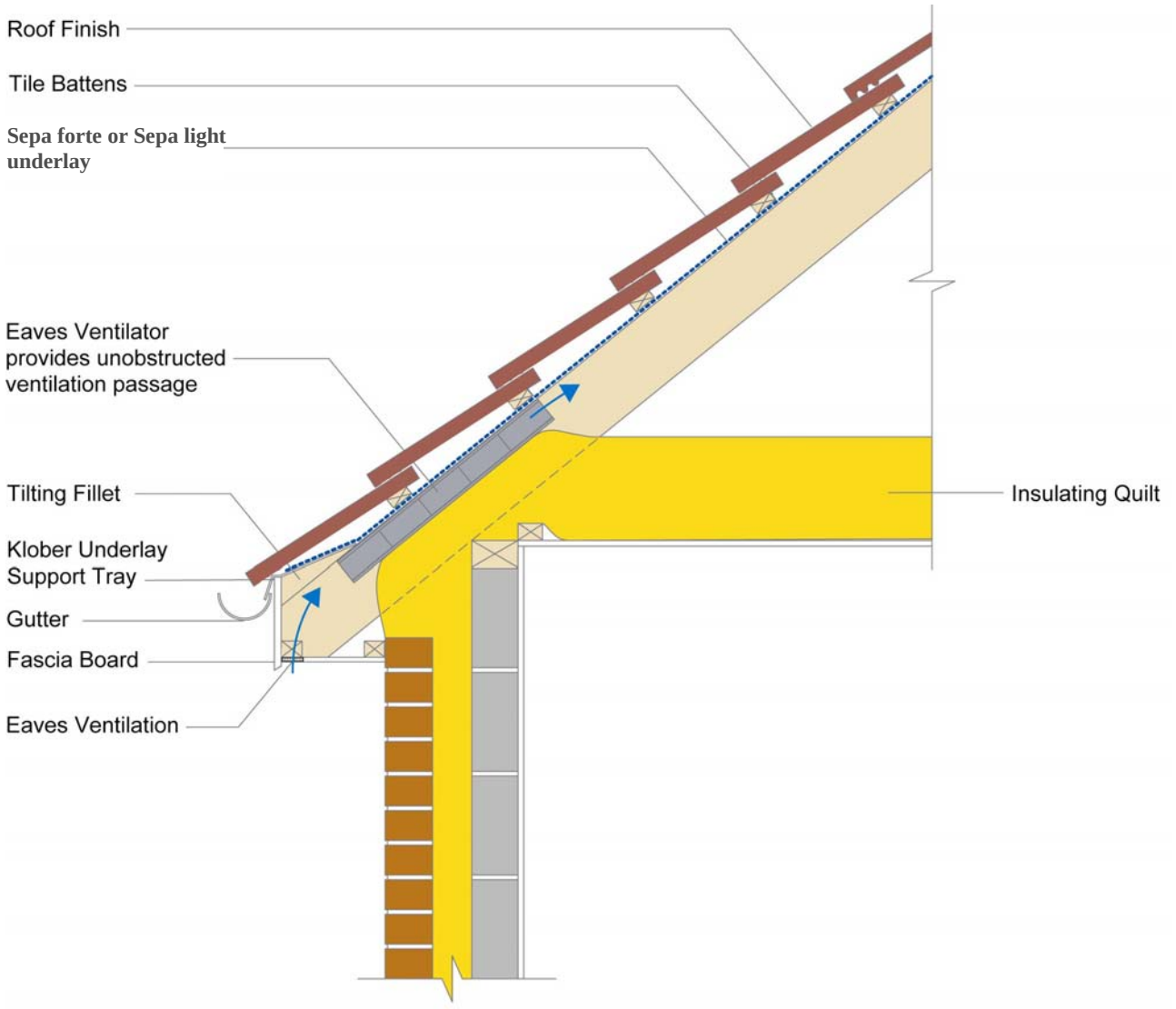


Figure 1. Ventilated Cold Roof Detail

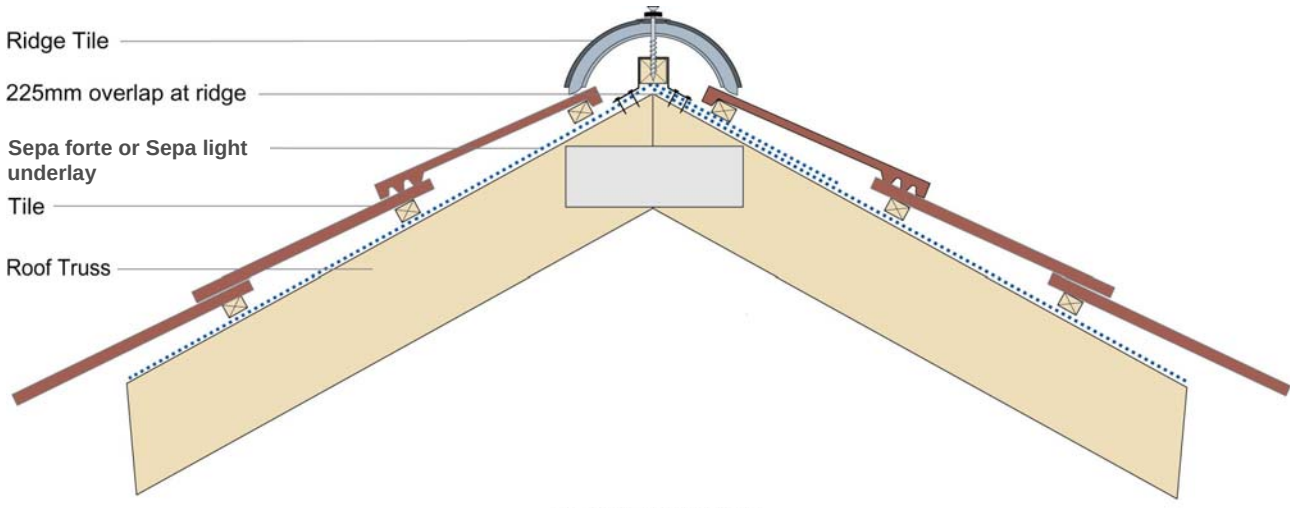


Figure 2. Ridge Detail

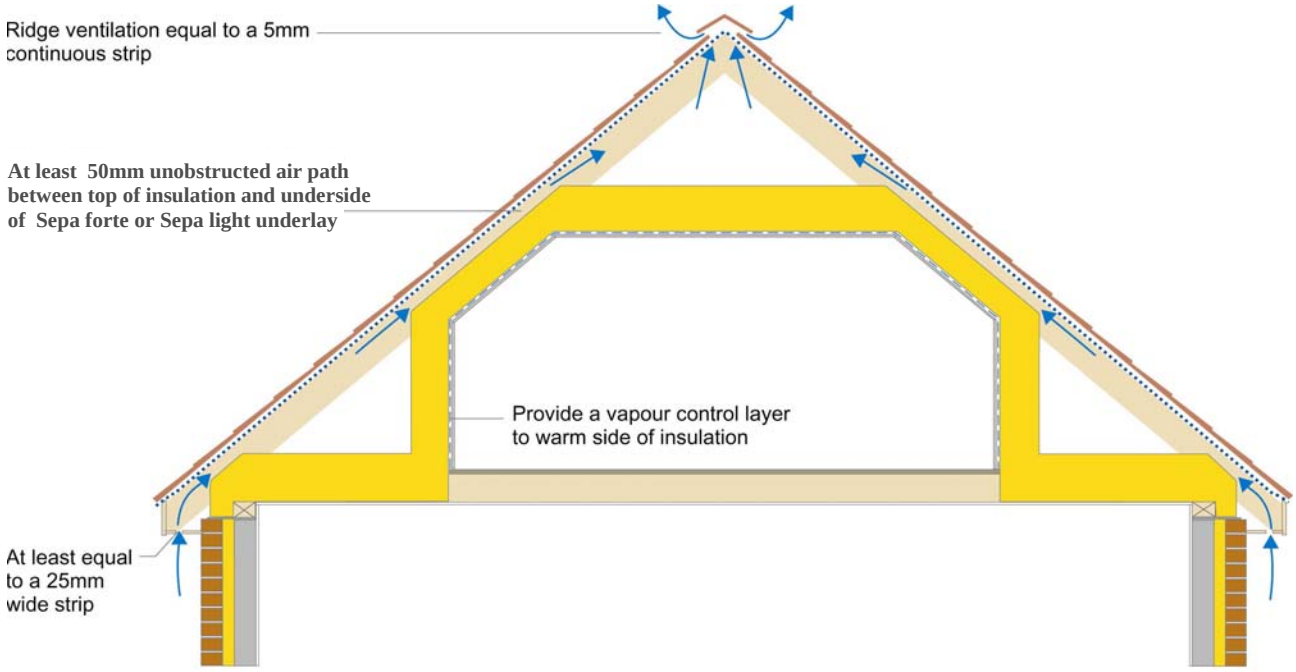


Figure 3. Ventilated Warm Roof detail

3.1 GENERAL

Sepa forte and Sepa light Roof Tile Underlays provide a satisfactory underlay in slated and tiled, ventilated pitched roofs constructed in accordance with ICP 2:2002, BS 5534-1:2003, and BS 8000-6:1990 '*Code of practice for slating and tiling of roofs and claddings*'.

3.2 STRENGTH

Sepa forte and Sepa light Roof Tile Underlays will resist the loads associated with the installation phase of the roof.

Sepa forte and Sepa light Roof Tile Underlays have adequate resistance to wind uplift forces in most locations in Ireland and may be considered superior in strength to Type 1F reinforced bitumen underlay as defined in BS 747:1994 '*Specification for roofing felts*'.

Design wind speeds should be determined - the maximum net wind pressure must not exceed 2.5kPa as calculated in accordance with BS 6399-2: 1997 '*Loading for buildings: Code of practice for wind loads*'.

3.3 WEATHERTIGHTNESS

Tests confirm that Sepa forte and Sepa light Roof Tile Underlays will resist the passage of water, wind-blown snow and dust into the interior of a building under all conditions to be found in a roof constructed to ICP 2:2002, BS 5534-1:2003, and BS 8000-6:1990.

The underlay may be used to provide temporary waterproofing to the structure of the building prior to the installation of tiles or slates. It is recommended however that this period of time be kept to a minimum in accordance with the manufacturer's guidance.

3.4 VENTILATION

Particular attention should be given to ensure that there is adequate ventilation to the roof space at both eaves and ridge levels in accordance with Part F of the Building Regulations 1997 to 2007. Ridge vents must be flashed and sealed to the underlay to ensure that the roof space is ventilated at all times.

Where the ceiling has to be fixed to the soffit of the rafters and insulation is to be fitted between rafters, as in dormer roof construction, a continuous ventilation space of at least 50mm should be arranged for as shown in Diagram 6D of Technical Guidance Document to Part F of the Building Regulations 1997 to 2007; in these circumstances it will be necessary to install a vapour control layer at the warm side of the insulation. The vapour control layer should be of a minimum 500-gauge polyethylene or its equivalent, with sealed laps.

It is essential that roofs be constructed so as to minimise the risk of moisture vapour entering the attic space and forming condensation. In accordance with good building construction practice, all openings for services and trap doors should be draught sealed, and trap doors should not be located in bathrooms, shower rooms or kitchens.

4.1 BEHAVIOUR IN FIRE

Sepa forte and Sepa light Roof Tile Underlays have similar properties in relation to fire as those of polythene sheets, which are acceptable until BS 5534-1:2003, and so will present no additional fire hazard to a roof structure in which it is incorporated, in comparison with conventional roof tile underlays.

Sepa forte and Sepa light Roof Tile Underlays have the risk of fire spread when used unsupported if the material is accidentally ignited during maintenance works etc. (e.g. roofer or plumbers torch). As with all types of sarking material, care must be taken during building and maintenance to avoid the material becoming ignited. The underlays should not come into contact with hot chimney surfaces as per clauses 2.15 to 2.17 of the Technical Guidance Document to Part J of the Building Regulations 1997 to 2007.

Toxicity is negligible when used for a roofing application.

4.2 WATER PENETRATION

Sepa forte and Sepa light Roof Tile Underlays, when used in accordance with this Certificate, present no significant risk of water penetration.

4.3 WATER VAPOUR PENETRATION AND CONDENSATION RISK

Sepa forte and Sepa light Roof Tile Underlays have significantly lower water vapour permeability than that quoted as a minimum for conventional roof tile underlays in BS 5534-1:2003 but because of the micro-perforations they have water vapour permeability in excess of that for polythene sheet. BS 5534-1: 2003 also describes the factors to be considered in reducing condensation to a satisfactory minimum. The general design guides contained in BS 5250: 2002 Sections 8.4.2.2 to 8.4.2.6 must be met when installing these products.

Sepa forte and Sepa light Roof Tile Underlays should be treated as impermeable underlays when considering ventilation requirements of the roof.

4.4 DURABILITY AND MAINTENANCE

Sepa forte and Sepa light Roof Tile Underlays, once installed in accordance with this Certificate, manufacturer's instructions and relevant codes of practice, are virtually unaffected by conditions normally found in a roof space and will have a design life comparable with that of the roof and in accordance with BS 7543:2003 *Guide to the durability of building elements, products and components*.

The durability of the roof underlay will be dependent on the performance of the roof covering (slates/tiles) and this could be compromised if the roof is not routinely maintained or is subjected to inappropriate traffic.

Such maintenance would involve building owners having their roofs inspected annually, preferably in late autumn. Inspection should include checking for missing, damaged or loose slates/tiles and their accessories or flashings. Clogged gutters or downpipes should be unblocked and cleaned.

4.5 TESTS AND ASSESSMENTS WERE CARRIED OUT TO DETERMINE THE FOLLOWING:

- Tensile strength
- Elongation at break
- Tear strength
- Dimensional accuracy
- Dimensional stability
- UV stability
- Water vapour resistance
- Cold temperature flexibility
- Efficiency of the construction process

4.6 OTHER INVESTIGATIONS

(i) Existing data on product properties in relation to fire, toxicity, environmental impact and the effect on mechanical strength/stability and durability were assessed.

(ii) The manufacturing process was examined including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

(iii) Site visits were conducted to assess the practicability of installation and the history of performance in use of the product.

(iv) Driving rain resistance was assessed.

(v) A condensation risk analysis was performed.

5.1 National Standards Authority of Ireland ("NSAI") following consultation with the Irish Agrément Board ("IAB") has assessed the performance and method of installation of the product/process and the quality of the materials used in its manufacture and certifies the product/process to be fit for the use for which it is certified provided that it is manufactured, installed, used and maintained in accordance with the descriptions and specifications set out in this Certificate and in accordance with the manufacturer's instructions and usual trade practice. This Certificate shall remain valid for five years from date of issue so long as:

(a) the specification of the product is unchanged.

(b) the Building Regulations 1997 to 2007 and any other regulation or standard applicable to the product/process, its use or installation remains unchanged.

(c) the product continues to be assessed for the quality of its manufacture and marking by NSAI.

(d) no new information becomes available which in the opinion of the NSAI, would preclude the granting of the Certificate.

(e) the product or process continues to be manufactured, installed, used and maintained in accordance with the description, specifications and safety recommendations set out in this certificate.

(f) the registration and/or surveillance fees due to IAB are paid.

5.2 The IAB mark and certification number may only be used on or in relation to product/processes in respect of which a valid Certificate exists. If the Certificate becomes invalid the Certificate holder must not use the IAB mark and certification number and must remove them from the products already marked.

5.3 In granting Certification, the NSAI makes no representation as to;

(a) the absence or presence of patent rights subsisting in the product/process; or

(b) the legal right of the Certificate holder to market, install or maintain the product/process; or

(c) whether individual products have been manufactured or installed by the Certificate holder in accordance with the descriptions and specifications set out in this Certificate.

5.4 This Certificate does not comprise installation instructions and does not replace the manufacturer's directions or any professional or trade advice relating to use and installation which may be appropriate.

5.5 Any recommendations contained in this Certificate relating to the safe use of the certified product/process are preconditions to the validity of the Certificate. However the NSAI does not certify that the manufacture or installation of the certified product or process in accordance with the descriptions and specifications set out in this Certificate will satisfy the requirements of the Safety, Health and Welfare at Work Act. 1985, or of any other current or future common law duty of care owed by the manufacturer or by the Certificate holder.

5.6 The NSAI is not responsible to any person or body for loss or damage including personal injury arising as a direct or indirect result of the use of this product or process.

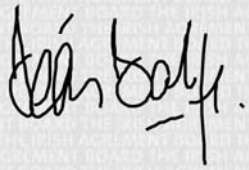
5.7 Where reference is made in this Certificate to any Act of the Oireachtas, Regulation made thereunder, Statutory Instrument, Code of Practice, National Standards, manufacturer's instructions, or similar publication, it shall be construed as reference to such publication in the form in which it is in force at the date of this Certification.

The Irish Agrément Board

This Certificate No. **04/0205** is accordingly granted by the NSAI to **Klober Ltd.** on behalf of The Irish Agrément Board.

Date of Issue: **July 2004**

Signed



Seán Balfe
Director of the Irish Agrément Board

Readers may check that the status of this Certificate has not changed by contacting the Irish Agrément Board, NSAI, Glasnevin, Dublin 9, Ireland. Telephone: (01) 807 3800. Fax: (01) 807 3842. www.nsai.ie

Revision: August 2007
Inclusion of Span-Tech (Sepa) light.

Revision: March 2008
Revise product name to Sepa forte and Sepa light.