

# AGREEMENT SOUTH AFRICA

CONSTRUCTION  
PRODUCTS  
APPROVALS

AGREEMENT  
CERTIFICATE **97/261**

**Title:**

**Index Fidia "P" Waterproofing**

**Certificate holder:**

**ABE Construction Chemicals (Pty) Ltd**

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Valid until further notice (see third paragraph of preamble on page 1)

## SUBJECT

Index Fidia "P" is a prefabricated waterproofing membrane manufactured from a compound of distilled bitumen and polymers. Fidia "P" comprises two bitumen layers reinforced with a woven spunbonded polyester fabric. The upper face is treated with talc to prevent sticking problems when unrolling the material. The lower face is coated with a sacrificial polyethylene film that is heat-activated for bonding the membrane with the roof substrate. Fidia "P" is available in 3.0 mm, 4.0 mm and 5.0 mm nominal thicknesses.

Fidia "P" is applied by an approved applicator.

## USE

This certificate covers Index Fidia "P" for use as:

- single and double layer waterproofing for use on flat or sloping concrete roofs finished with two coats of bituminous paint such as Silvacote or other coating as recommended by the manufacturer
- as above on flat concrete roofs protected with a 50 mm thick layer of 25 mm clean crushed stone
- for renovation purposes

On normal sand/cement screeds and other substrates, it is also used as:

- tanking to basement walls and floors
- a waterproofing layer behind retaining walls

If the requirements of this certificate are adhered to (see Part 1, Section 6), it provides an assurance of fitness for purpose of Index Fidia "P" waterproofing and Agreement South Africa is of the opinion that the product is satisfactory as set out in Part 1, Section 5.



## COMPLIANCE WITH THE NATIONAL BUILDING REGULATIONS

The following Regulations are satisfied:

A13(1) (a) *Administration*

L1 (b) *Roofs*.

The following deemed-to-satisfy rules as regards fire protection apply:

TT 5.2 (c): an assessment by the SABS or CSIR and that such element or component is suitable for the intended purpose

TT 12.2 and TT 12.3: unless covered with a non-combustible material

TT 12.4: when laid on a non-combustible substrate or a combustible substrate and covered with a non-combustible material

TT 49.4 (a): when laid on a non-combustible substrate or covered with a non-combustible material

**SUMMARY OF PART 1, SECTION 5: ASSESSMENT:** see over

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**SUMMARY OF PART 1, SECTION 5: ASSESSMENT**

| <b>Aspects of performance</b>              | <b>Opinion of Agreement South Africa</b>   | <b>For further information, see Part I, Section</b> |
|--|--|---|
| <b>Physical properties</b>                 | acceptable   | 5.2.1   |
| <b>Behaviour in relation to fire</b>       | combustible unless applied on a non-combustible substrate or covered with a non-combustible material such as crushed stone. Suitable for external use only                       | 5.2.2   |
| <b>Chemical resistance</b>                 | not affected by most chemicals; however, surface damage will occur when substances such as petrol, oil and certain organic solvents come into contact with unprotected Fidia "P" | 5.4   |
| <b>Impact resistance</b>                   | good, however, susceptible to puncturing by sharp objects  | 5.5   |
| <b>Maintenance</b>                         | damaged sheeting can be effectively repaired   | 5.6   |
| <b>Ease of jointing</b>                    | easily jointed by heating the underside of the sheet   | 5.7   |
| <b>Durability</b>                          | 10 years if suitably protected and maintained, can be longer with good maintenance   | 5.8   |
| <b>Adhesion</b>                            | resists the effects of wind suction, elevated temperatures and thermal shock if the correct method of laying is used   | 5.10  |
| <b>Resistance to traffic</b>               | acceptable for light foot traffic and light concentrated loads   | 5.11  |
| <b>Weather-tightness</b>                   | acceptable in normal conditions of exposure  | 5.12  |
| <b>Resistance to passage of moisture</b>   | will adequately resist the passage of moisture when used as tanking and waterproofing of retaining walls   | 5.13  |
| <b>Dimensional stability</b>               | satisfactory   | 5.14  |
| <b>Certificate holder's quality system</b> | based on recommendations contained in ISO 9001 satisfactory  | 5.15  |

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## PREAMBLE

This certificate is issued by the Board of Agreement South Africa in terms of the powers granted to it by the Minister of Public Works.

This certificate covers only Index Fidia "P" waterproofing as imported from Italy by ABE Construction Chemicals (Pty) Ltd, manufactured and installed in accordance with the certificate holder's specification (see Part II) and used within the framework of the limitations and conditions given in this certificate. It does not apply to any other products marketed by ABE Construction Chemicals (Pty) Ltd. Users of Index Fidia "P" waterproofing should satisfy themselves that the limitations and conditions in this certificate are complied with.

The validity of this certificate is subject to continued participation by the certificate holder in Agreement South Africa's post-certification quality assurance scheme. This scheme ensures quality assurance surveillances at regular intervals and, under certain circumstances, certificate re-appraisals. Quality assurance surveillances will be carried out on the certificate holder and his approved applicators at six monthly intervals. Reappraisals are to be requested by the certificate holder prior to making changes to the product and will also be required by Agreement South Africa in the event of changes in the National Building Regulations<sup>1</sup> or to Agreement criteria.

Users of this certificate should satisfy themselves that it remains valid by referring to the latest edition of Agreement South Africa's *Directory of current certificates* or by contacting Agreement South Africa's offices.

Notices affecting the validity of this certificate will be published in the Government Gazette.

The certificate has been granted after a technical appraisal of the performance of Fidia "P" waterproofing based on:

- documentation provided by the applicant
- laboratory tests conducted on the product
- site inspections
- reference to the relevant sections of ACTMAP 1: *Roof waterproofing*.

## PART I: CERTIFICATION

### 1. CERTIFICATE HOLDER

The certificate holder is ABE Construction Chemicals (Pty) Ltd who import Index Fidia "P" from Index Spa in Italy. The product is marketed locally by ABE regional offices.

### 2. SUBJECT

This certificate relates to Index Fidia "P", a prefabricated waterproofing membrane manufactured from a compound of distilled bitumen and polymers. Fidia "P" comprises two bitumen layers reinforced with a woven spunbonded polyester fabric. The upper face is treated with talc to prevent sticking problems when unrolling the material. The lower face is coated with a sacrificial polyethylene film that is heat activated for bonding the membrane with the roof substrate.

The product is manufactured in 3,0 mm, 4,0 mm and 5,0 mm nominal thicknesses. Fidia "P" is applied by approved applicators. It is supplied in rolls that bear the manufacturer's name, batch number, date and Agreement South Africa's identification symbol together with the number of this certificate as illustrated.

### 3. USE

This certificate covers the use of Index Fidia "P" for use as:

- (a) single and double layer waterproofing material for use on flat or sloping concrete roofs finished with two coats of bituminous paint such as Silvacote or other coating as recommended by the manufacturer
- (b) as above on flat concrete roofs protected with a 50 mm thick layer of 25 mm clean crushed stone
- (c) for renovation purposes.

On normal sand/cement screeds and other smooth substrates, it is also used as:

- (d) tanking to basement walls and floors
- (e) a waterproofing layer behind retaining walls.

<sup>1</sup> As published in Government Gazette Notices R2378 and R432 *National Building Regulations and Building Standards Act, 1977*, Government Gazettes No 12780 dated 12 October 1990 and No 13054 dated 8 March 1991).



#### 4. BASIS OF ASSESSMENT

This assessment of Index Fidia "P" is confined to the suitability of the material for the uses listed in Section 3 above, only when the material is laid or installed by an ABE Construction Chemicals' approved contractor. The suitability or otherwise of the substrate and the details at verges, outlets, upstands, construction joints, movement joints and the carrying out of tanking and waterproofing installations are the responsibility of the approved contractor. These will be in accordance with :

- (a) the document *ABE waterproofing manager* (dated January 1997)
- (b) SABS 021-1973 where this is relevant<sup>2</sup>.

#### 5. ASSESSMENT

##### 5.1 General

In the opinion of the Board of Agrément South Africa, Index Fidia "P" as a material is suitable for the uses stated in Section 3 above.

This assessment is based on the assumption that the requirements given in this certificate are complied with and that the Fidia "P" is installed by an approved contractor as set out in Section 4 above.

##### 5.2 Tests conducted

5.2.1 **Physical properties.** Tests were conducted on new samples of Fidia "P" (4 mm) waterproofing, samples that had been exposed at  $80 \pm 3$  °C for up to 56 days and samples exposed to ultra-violet (UV) radiation for 1000 hours. The following tests were conducted:

- (a) impact resistance
- (b) tensile strength
- (c) elongation at break
- (d) tear strength
- (e) heat ageing
- (f) resistance to UV radiation
- (g) bleeding.

All properties of the material when subject to heat ageing and UV radiation, decreased slightly but this is regarded as normal and is acceptable. No blistering occurred during heat ageing.

Impact resistance, tensile strength of the material and of lapped joints, elongation at break and tear strength of Fidia "P" is good and the product should perform satisfactorily. The tensile strength of the joints was greater than that of the single layer of sheet on either side.

Bleeding does not materially effect the physical properties of Fidia "P" but the protective coating must be as recommended by the manufacturer (bituminous based) and be regularly recoated.

The results of tests (a) to (d) are shown in Table 1 below and are regarded as satisfactory.

5.2.2 **Behaviour in relation to fire.** Two sets of tests were conducted on samples of Fidia "P" (4 mm) to determine the following.

- (a) **Ignitability and flame spread.** The nut from a 20 mm diameter bolt, heated to red heat was placed on the surface of a Fidia "P" sample. The bolt was shielded to eliminate any external effects (e.g. wind). Although the material was immediately ignited by the hot-nut the material did not propagate flame spread beyond the area

**Table 1:** Physical properties of Index Fidia "P" (4 mm)

| Sample   | Impact energy to puncture (Joules) | Tensile strength (MPa) |            | Elongation at break (%) |            | Tear strength (N/4 mm) |            |
|--|------------------------------------|------------------------|------------|-------------------------|------------|------------------------|------------|
|  |                                    | Longitudinal           | Transverse | Longitudinal            | Transverse | Longitudinal           | Transverse |
| Index Fidia "P" new material                       | 10,2                               | 4,2                    | 3,3        | 45                      | 43         | 68                     | 87         |
| Material exposed at $80 \pm 3$ °C for              |                                    |                        |            |                         |            |                        |            |
| 1 day  | 10,0                               | 4,2                    | 3,3        | 43                      | 40         | 70                     | 85         |
| 7 days   | 9,5                                | 3,8                    | 3,0        | 41                      | 38         | 66                     | 81         |
| 28 days  | 9,3                                | 3,5                    | 2,9        | 39                      | 38         | 67                     | 80         |
| 56 days  | 9,2                                | 3,5                    | 2,9        | 39                      | 35         | 62                     | 74         |
| Material exposed to UV for 1000 hours              | 9,3                                | 3,5                    | 3,0        | 40                      | 37         | 65                     | 80         |
| Lapped-joint new material                          |                                    | 4,3*                   |            |                         |            |                        |            |
| Lapped-joint material exposed to UV for 1000 hours |                                    | 3,6*                   |            |                         |            |                        |            |

\* Failure did not occur in the lapped areas

<sup>2</sup> All SABS documents are listed with their titles in the Appendix.

directly under the influence of the hot-nut. The material self-extinguished after 5 minutes 25 seconds.

- (b) **Emission of gases.** Samples of Fidia "P" were tested in accordance with the requirements of SABS 0177 Part 4. The samples only ignited after the introduction of a pilot flame, indicating that a substantial amount of pre-heating is required for the material to spread fire.

The results of the test indicate that Fidia "P" is a suitable waterproofing material on roofs and for other external applications. Fidia "P" is not suitable for use in enclosed spaces due to the emission of smoke.

### 5.3 Compliance with National Building Regulations

In the opinion of Agrément South Africa, Fidia "P", when used as a roof covering material in the context of this certificate, relates to the National Building Regulations as set out below. Note that any regulation not specifically referred to, is considered outside the scope of this certificate and must be applied by the local authority in the normal manner.

- (a) **Part A: Administration.** Fidia "P" is deemed to satisfy Regulation A13(1)(a).

The performance of the material when laid in accordance with the requirements of this certificate is adequate for use in any situation where damp-proofing or waterproofing is required in buildings in terms of the National Building Regulations.

- (b) **Part L: Roofs.** Fidia "P" is deemed to satisfy Regulation L1(b), when used as a roof covering on a suitable roof construction.

#### (c) Part T: Fire Protection

- (i) Deemed-to-satisfy rule TT5.2(c) of Section 3 of SABS 0400 has been met.
- (ii) When Fidia "P" is used as a roof covering on combustible substrates, deemed-to-satisfy rules TT12.2 and TT 12.3 of Section 3 of SABS 0400 are considered to be applicable unless the Fidia "P" is covered with 50 mm thick layer of 25 mm (nominal) crushed stone; or
- (iii) in terms of Regulation TT12.4 Fidia "P" laid on a concrete slab or other non-combustible substrate, is considered non-combustible. If laid on a combustible substrate, it is also deemed to satisfy this regulation provided it is covered with crushed stone (see Section 1(c)(ii) above). Used in any other way Fidia "P" is classified as a combustible roof covering in terms of SABS 0177-1981, Section 5.
- (iv) Rule TT49.4(a) is deemed to be satisfied with regard to roofing materials when Fidia "P" is laid on a concrete slab or other non-combustible substrate and is covered with a 50 mm thick layer of 25 mm (nominal) crushed stone.

### 5.4 Chemical resistance

Fidia "P" is not affected by most chemicals. However, surface damage will occur when substances such as petrol, oil and certain organic solvents come into contact with unprotected Fidia "P".

### 5.5 Impact resistance

Fidia "P" has good resistance to impact. While the impact energy required to puncture the material is relatively high compared to that required to puncture other waterproofing materials (1 to 3 joules), Fidia "P" remains vulnerable to puncturing by sharp objects.

Fidia "P" performs adequately under moderate to severe hail conditions.

### 5.6 Maintenance

In the event of damage the sheet can be effectively repaired, after cleaning, by torch welding pieces of Fidia "P" to the damaged area and applying a protective coating. The protective coating (eg bituminous aluminium paint such as Silvacote or other coating recommended by the manufacturer) must be regularly inspected and repainted when necessary.

### 5.7 Ease of jointing

Fidia "P" is easily jointed by heating the underside of the sheet that is to lap the cover sheet. When properly executed the tensile strength at the joint is greater than that of the single layer of Fidia "P" on either side.

### 5.8 Durability

- (a) Inspections of waterproofing applications and tests performed on the material under South African conditions, confirm that the material retains its physical properties to a satisfactory degree.
- (b) Fidia "P" supplied by ABE Construction Chemicals and when applied by an approved applicator has a guaranteed life of 10 years. All evidence suggests that if Fidia "P" is suitably protected and maintained, the useful life should be in excess of 10 years. Users must familiarise themselves with the terms and conditions (suitability) of the guarantee and satisfy themselves that these conditions meet user requirements.
- (c) The long-term durability of Fidia "P" waterproofing depends on:
  - (i) the integrity of the paint on all exposed surfaces being maintained by overcoating with bituminous aluminium paint complying with SABS 802-1972 or other paint compatible with the material as recommended by the manufacturer, at suitable intervals. Bleeding of the material can be expected if a non-recommended paint is used.
  - (ii) the waterproofing being covered with a 50 mm thick layer of 25 mm (nominal) crushed stone immediately after completion of the application of Fidia "P" all in accordance with the certificate holder's waterproofing manual.
- (d) Fidia "P" that is used as tanking to basements and/or behind retaining walls will, under normal circumstances, perform satisfactorily for the life of the building or wall.

### 5.9 Method of laying Fidia "P"

The method chosen for laying Fidia "P" roofing, viz:

- loose laid
- partially bonded
- fully bonded

must be appropriate to the substructure, grading material, slope, geographical area and wind uplift likely to be experienced. This is a dual responsibility of ABE Construction Chemicals and the approved applicator.

### 5.10 Adhesion

Assuming that the appropriate method of laying is used, the adhesion of Fidia "P" waterproofing to

- itself

- normal sound substrates
  - traditional bituminous roofing felts<sup>3</sup>
- is sufficient to resist the effects of wind suction, elevated temperatures and thermal shock likely to occur in practice.

#### 5.11 Resistance to traffic

Fidia "P" can accept without damage, the limited foot traffic and light concentrated loads associated with installation and maintenance.

#### 5.12 Weathertightness

Fidia "P" will maintain its integrity as a weathertight roof covering in all normal conditions of exposure and can accept minor structural movements without damage.

#### 5.13 Resistance to passage of moisture

Data obtained from tests indicate that Fidia "P" and the joints formed when completely sealed and consolidated, will adequately resist the passage of moisture when it is used as tanking to basements or as waterproofing behind retaining walls.

#### 5.14 Dimensional stability

The dimensional stability of Fidia "P" is satisfactory for the uses given in this certificate.

#### 5.15 Certificate holder's quality system

The quality system adopted by Index Spa, the manufacturer of Fidia "P", and applied in his factory in Italy has been monitored and meets the requirements of ISO 9001. It ensures that production standards are constantly maintained by ABE Construction Chemicals who is the distributor in South Africa. ABE Construction Chemicals is SABS ISO 9002 listed and the product is applied by approved applicators.

### 6. CONDITIONS OF CERTIFICATION

#### 6.1 Technical requirements that must be met

Applications by approved applicators must be adequately monitored and relevant records must be kept and maintained to demonstrate achievement of the required quality and effective operation of the ABE waterproofing manual.

#### 6.2 General conditions

Fidia "P" must be manufactured in accordance with the specification lodged with Agrément South Africa and with the manufacturer's quality system. The essential technical requirements set out in Section 6.1 above must be complied with. If any of the materials or manufacturing processes differ from those required above or specified in Part II of this certificate, they are not regarded as complying with the certificate unless such variations have been approved by the Board. This certificate is only valid if users of the product adhere to the installation instructions given in this certificate and in the certificate holder's waterproofing manual. Building authorities or users

who are in any doubt about any details of the product may contact Agrément South Africa.

In granting this certificate, Agrément South Africa makes no representation as to the presence or absence of patent rights subsisting in the subject thereof and/or to the legal right of the certificate holder to market the subject.

This certificate does not relieve the user of the subject from any obligation there may be to obtain the prior approval of the building authority concerned for the use of the subject.

The quality of the materials and workmanship employed in the manufacture of the material must be of an approved standard. While Agrément South Africa considers that the quality and performance of Fidia "P" will be satisfactory provided that the requirements stipulated in this certificate are adhered to, Agrément South Africa does not, on behalf of itself or the Government or any of its employees or agents, guarantee such quality or performance. No action for damages, or any other claim whatsoever lies against Agrément South Africa, its members, the State or any of its employees should the said product fail to comply with the standard set out in the certificate by Agrément South Africa. Control of quality must be exercised by the procedures normally employed for the purpose in building work.

For the purpose of post-certification inspections, the certificate holder must notify Agrément South Africa of the addresses of sites where Fidia "P" is being applied.

In offering the subject of this certificate for sale or in a tender, or submitting it for approval to a building control authority, the certificate holder must declare all variations from the certificate and state whether Agrément South Africa has approved them.

This certificate may be withdrawn if the certificate holder fails to comply with these requirements.

On behalf of the Board of Agrément South Africa



CHAIRMAN  
November 1997

<sup>3</sup> When Fidia "P" is used as a capping sheet in a multi-layer or as a repair medium over deteriorated roof coverings.

## PART II: TECHNICAL DESCRIPTION

### 1. DESCRIPTION AND MANUFACTURE

- 1.1 Fidia "P" prefabricated waterproofing is manufactured by Index Spa in Italy and is an elastomeric waterproofing membrane in sheet form. It is available in three thicknesses with 4 mm accepted as the norm.

Fidia "P" prefabricated waterproofing membrane is manufactured from a compound of distilled bitumen and polymers. After mixing the polymer becomes the dominant material with the bitumen dispersed evenly throughout. Fidia "P" is reinforced with a woven spunbonded polyester fabric (nominal weight 180 g/m<sup>2</sup>) which has high elasticity and resistance to damage. The membranes are manufactured by saturating and coating the reinforcement with the polymer/bitumen mixture, then calendared to the required thickness. The upper face of the membrane is evenly treated with serigraph talc which prevents sticking problems when unrolling the product. The lower face is coated with a non-stick sacrificial polyethylene film. The surface is embossed with small squares which assist in the rapid burn-off of the polyethylene film when heated with a propane gas torch and indicates the correct melting temperature.

Fidia "P" is applied by an approved applicator.

Quality control checks are carried out on the incoming materials, during manufacture and on the final product.

- 1.2 Fidia "P" is supplied in rolls with the following dimensions and weights :

|                                       |     |     |     |
|---------------------------------------|-----|-----|-----|
| thickness (nominal) (mm)              | 3   | 4   | 5   |
| length (m)                            | 10  | 10  | 10  |
| width (m)                             | 1,0 | 1,0 | 1,0 |
| weight (nominal) (kg/m <sup>2</sup> ) | 3,5 | 4,5 | 5,5 |
| weight per roll (nominal) (kg)        | 35  | 45  | 55  |
| roll quantities per pallet            | 30  | 24  | 20  |

For control purposes the manufactured rolls are marked with the date and batch number. This information is entered on the delivery note when orders are delivered to clients.

### 2. MARKETING

Index Fidia "P" is imported into South Africa by ABE Construction Chemicals (Pty) Ltd who undertake the marketing of the product throughout Southern Africa. They provide a technical service to owners, designers and contractors, be this at the design stage or at execution. The installation work is undertaken by contractors who have been approved by ABE Construction Chemicals.

### 3. DELIVERY AND SITE HANDLING

The material is delivered to site in wrapped rolls which bear the manufacturer's name and Agrément South Africa's identification symbol incorporating the certificate number.

Rolls must be handled with care and never dropped or thrown. Rolls must be transported and stored on end on a clean level surface and kept under cover.

### 4. INSTALLATION

#### 4.1 General

Fidia "P" waterproofing must be installed in accordance with ABE Construction Chemicals' waterproofing manual.

#### 4.2 Surface preparation

For the waterproofing membrane to adhere properly to a substrate, the surface must be correctly prepared. Such preparation must produce a surface that is clean and sound and dry prior to the material being applied.

Clean implies that the surface is free of all foreign matter (eg oil, grease, wax, old paint, dust, debris, shutter release, curing membrane and any other contaminants).

Sound implies that the surface is free of all unsound matter (eg millscale, rust, laitance, loose particles, white rust, oxide layers, etc). Any honey-combing or uneven areas must be repaired.

Dry implies that the surface is free of ponding, surface moisture, moisture due to capillary action, at equilibrium with the atmosphere (applicable to porous surfaces such as concrete, plaster, wood etc) and at a surface temperature of at least three degrees above dew point.

(a) **Fiat concrete roofs** (non-trafficable - light foot and maintenance only). Surfaces must be prepared as above and in addition the surfaces must have a fine wood-floated finish, a minimum fall of 1:60 and internal corners must be coved (75 mm minimum) and external corners rounded to a minimum radius of 25 mm. Brick parapets, etc must have flush joints.

(b) **Boarded roofs.** Due to the movement inherent in timber roof structures, there must be a slip-sheet between the deck and waterproofing membrane to accommodate this movement. Boards and decks must be laid to a minimum fall of 1:60 and must be firm, smooth, dry, sound and securely fixed and be strong enough to support work crews and materials. Suitable expansion gaps must be provided between boards (usually 2 mm to 3 mm) as recommended by the board manufacturer.

(c) **Renovation.** Existing waterproofing must be stripped and all surfaces primed with ABE Bituprime, including all verges, around outlets and protrusions and the solvent allowed to evaporate. Some existing waterproofing materials can be overlaid with Fidia "P", but only on consultation with the ABE technical representative.

(d) **Other surfaces** such as foamed concrete, Heraclith, Prolith, thermal insulation boards, etc must be assessed for suitability for applying Fidia "P" by the ABE technical representative.

#### 4.3 Application

Fidia "P" waterproofing can be loose laid (only if covered with a suitable material to prevent uplift), partially bonded or fully bonded as recommended by the ABE technical representative or approved applicator.

All surfaces are primed with ABE Bituprime, including all verges, outlets and protrusions. Porous surfaces should be re-primed if necessary.



The waterproofing membrane is applied by torch bonding using a suitable propane gas torch. The membrane is applied with the surface protected by the polyethylene film facing towards the surface on which it is to be laid. The film will melt with the application of heat indicating the correct melting temperature. The material is simultaneously rolled out and torched with pressure being applied from the top.

With partially bonded applications the flame is only applied to those areas of the sheet to be bonded to the substrate, ensuring that the bonded areas are evenly distributed.

All membranes must be laid to allow side laps of 100 mm and end laps of 150 mm. All laps must be smoothed and the bitumen evenly distributed using a heated, round-headed trowel allowing a thin bitumen bead to form at the overlap.

Where the material is laid on pitched roofs, precautions must be taken to prevent slippage.

In all applications where Fidia "P" is used, care must be exercised to ensure that the material is not punctured during application or subsequent building operations.

#### 4.4 Finishes

- (a) Fidia "P" roofs that will not be subjected to traffic other than that involved in maintenance of the roof and due to the possibility of slight bleeding of the material in hot climates, are normally finished with two coats of bituminous aluminium paint such as Silvacote complying with SABS 802-1972 or other compatible paints as recommended by the manufacturer. Bleeding can be expected if a non-recommended paint finish is applied.
- (b) Further protection may be given to roofs with slopes of less than 10° by applying a 50 mm thick layer of 25 mm (nominal) crushed stone. As well as protecting the surface from ultra violet and radiant heat, the stone acts as an anchor and reduces the need to fully bond the membrane in circumstances where this would normally be required.