

Copyright © Agrément South Africa, 1998(edition 2006)

Subject:
Index Testudo 20 Waterproofing

The master copy of this document appears on the website:
<http://www.agrement.co.za>

Certificate holder:
ABE Construction Chemicals (Pty) Ltd

P O Box 23053 ISIPINGO 4110
Telephone: 031 902 2221 Fax: 031 902 9575
Website: www.abe.co.za

Validity

Users of any Agrément certificate should check its status: all currently valid certificates are listed on the website. In addition, check whether the certificate is [Active](#) or [Inactive](#).

The certificate holder is in possession of a confirmation certificate attesting to his/her status.



Quick guide

Contents	page 3
Preamble	page 4
Conditions of certification	page 5
Assessment	page 6
Compliance with the National Building Regulations	page 6
Technical description	page 9

Description and use

The intended use for Index Testudo 20 Waterproofing is for the waterproofing of trafficable roofs in all regions of South Africa.

Index Testudo 20 Waterproofing is a prefabricated reinforcement waterproofing membrane manufactured from polymer bitumen modified with elastomers and plastomers.

The reinforcement is a non-woven, spunbound polyester. 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, when heat-activated, melts and indicates the correct temperature for bonding the membrane with the roof substrate.

Index Testudo 20 Waterproofing is available in 4 mm and 5 mm thicknesses.

Index Testudo 20 Waterproofing is applied by approved appliers.

This certificate and Agrément South Africa's assessment apply only to Index Testudo 20 Waterproofing manufactured by the certificate holder and applied by trained appliers as described in this certificate, and where the terms and conditions of certification are adhered to.

P O Box 395 Pretoria 0001
Telephone 012 841 3708
Fax 012 841 2539
e-mail agrement@csir.co.za
<http://www.agrement.co.za/>

CONTENTS

PREAMBLE

PART 1: CONDITIONS OF CERTIFICATION

PART 2: ASSESSMENT

Compliance with the National Building Regulations

Table 1: Compliance with the National Building Regulations

Table 2: Assessment

PART 3: TECHNICAL DESCRIPTION

General description

Manufacture

Table 3: Roll dimensions and weights

Table 4: Physical properties

Marketing

Delivery and site handling

Installation

Surface preparation

Application

Finishes

Maintenance

PREAMBLE

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

- has been granted after a technical appraisal of the performance of Index Testudo 20 Waterproofing for the [uses](#) covered by the certificate,
- is independent of any patent rights that may or may not subsist in the subject of the certificate, and
- does not relieve the certificate holder from the obligation to obtain the prior approval of the building authority concerned for the use of the subject.

Agrément South Africa considers that the quality and performance of the Index Testudo 20 Waterproofing will be satisfactory provided that the requirements stipulated in this certificate are adhered to. However, Agrément South Africa does not on behalf of itself, or the State, or any of its employees or agents, guarantee such quality or performance.

Responsibility for compliance with the requirements of this certificate and the quality of the finished product resides with the certificate holder.

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 components and materials fail to comply with the standard set out in this certificate.

Building authorities or users who are in any doubt about any detail or variation, should contact [Agrément South Africa](#).

The validity of this certificate is reviewed every three years. The certificate shall remain valid as long as Agrément South Africa is satisfied that:

- the certificate holder complies with the general and specific conditions of certification and the technical requirements stipulated in the certificate
- the performance-in-use of the subject is acceptable
- any changes in building legislation, regulations, relevant standards or Agrément performance criteria have not invalidated the technical assessment which formed the basis of certification.

Agrément South Africa reserves the right to withdraw the certificate at any time, should reasonable cause exist.

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

PART 1: CONDITIONS OF CERTIFICATION

This certificate covers only the Index Testudo 20 Waterproofing manufactured by the certificate holder, where the waterproofing is applied:

- a) by appliers who are trained by the certificate holder
- b) in accordance with the document *ABE waterproofing manager* (dated January 1997)
- c) in accordance with SANS 10021-1973 where this is relevant.

Any changes to the production process or the material formulation or the method of installation could result in various aspects of the performance of this product no longer complying with Agrément performance criteria. Any change not authorised by Agrément South Africa in writing prior to its implementation will invalidate this certificate and the certificate can then not be used to demonstrate compliance with National Building Regulations.

SANS 10021-1973 *The waterproofing of buildings*

General conditions

Marking

The product packaging must be suitably marked with Agrément South Africa's identification logo together with the number of this certificate.

Validity

The validity of this certificate is subject to the continued participation of the certificate holder in Agrément South Africa's post-certification quality management system.

Reappraisal

- must be requested by the certificate holder before making changes to the product
- will be required by Agrément South Africa if there are changes to the National Building Regulations or the Agrément criteria.

This certificate may be withdrawn if the certificate holder or a registered licensee fails to comply with these requirements.

On behalf of the Board of Agrément South Africa

Chairman
February 2006



PART 2: ASSESSMENT

Scope of assessment

This assessment is based on:

- documentation provided by the client
- laboratory tests conducted on the product
- inspections of the applicant's factory and completed installations
- reference to the relevant sections of Agrément Criteria and Test Method Applicable to a Product (ACTMAP) 1: *Roof waterproofing*.

ACTMAP 1: *Roof Waterproofing*

Assessment

In the opinion of Agrément South Africa, Index Testudo 20 Waterproofing as described in the certificate is suitable for the uses specified (page 1).

The performance in use of Index Testudo 20 Waterproofing will be such that they will satisfy:

- Agrément South Africa's performance criteria and requirements for durability
- the relevant requirements for safety and health prescribed by Agrément South Africa
- where stated in Table 1, the requirements of the National Building Regulations.

Agrément South Africa's detailed comments on the various aspects are set out in Tables 1 and 2 below. Each aspect of performance was assessed by experts in that field.

Compliance with National Building Regulations

The innovative aspects of the Index Testudo 20 Waterproofing relate to the National Building Regulations as set out in Table 1. Any regulation not specifically referred to is considered to be outside the scope of this certificate and must be applied by the local authority in the normal manner.

Republic of South Africa. *National Building Regulations*, Government Notice R. 2378, Government Gazette No 12780, Pretoria, South Africa, 12 October 1990

Table 1: Compliance with the National Building Regulations

Aspects of performance	Opinion of Agrément South Africa	National Building Regulations satisfied
Material	Satisfactory	The materials used in the Index Testudo 20 Waterproofing are deemed to satisfy the requirements of regulation A13 (1) (a): Administration.
Behaviour in fire	<p>Satisfactory. Index Testudo 20 Waterproofing is regarded as a combustible material unless applied as a non-combustible substrate such as paving blocks or premix. Index Testudo 20 Waterproofing is suitable for external use only.</p> <div style="border: 1px solid green; padding: 5px; margin: 5px 0;"> <p>SANS 10400 – 1990 <i>The application of the National Building Regulations</i></p> </div> <div style="border: 1px solid green; padding: 5px; margin: 5px 0;"> <p>SANS 10177: <i>Fire testing of materials, components and elements used in buildings</i></p> </div>	<p>Index Testudo 20 Waterproofing is deemed to satisfy requirements of regulations T1 (1) (a), T1 (1) (d) with regard to spread of smoke, and T1 (1) (e).</p> <p>Deemed to satisfy rules TT5.1(c) and TT5.2(c) of Section 3 of SANS 10400.</p> <p>When Index Testudo 20 Waterproofing is used as a roof covering on combustible substrates, deemed-to-satisfy rules TT 12.2 and TT 12.3 of Section 3 of SANS 10400 are considered to be applicable when Index Testudo 20 Waterproofing is protected with paving blocks or premix.</p> <p>In terms of Regulation TT 12.4 Index Testudo 20 Waterproofing 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 paving blocks or premix. Used in any other way Index Testudo 20 Waterproofing is classified as combustible roof covering in terms of SANS 10177: Part V.</p> <p>Rule TT 49.4(a) is deemed to be satisfied with regard to roofing materials when Index Testudo 20 Waterproofing is laid on a concrete slab or other non-combustible substrate and is covered with paving blocks or premix.</p>
Water penetration	Satisfactory	L1 (b) Roofs.

Table 2: Assessment

Aspects of performance	Opinion of Agrément South Africa	Explanatory notes
Chemical resistance	Satisfactory	Index Testudo 20 Waterproofing 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 Testudo 20. A protective layer of paving blocks or premix must be used to prevent the penetration of the above substances.
Impact resistance	Satisfactory	Index Testudo 20 Waterproofing has good resistance to impact using the Gardner test method. While the impact energy required to puncture the material is relatively high (see Table 4) compared to that required to puncture other waterproofing materials, unprotected Index Testudo 20 Waterproofing remains susceptible to puncturing by sharp objects.

Table 2: Assessment (continued)

Aspects of performance	Opinion of Agrément South Africa	Explanatory notes
Durability	Satisfactory if applied in accordance with the requirements in these certificate.	The long-term durability of Index Testudo 20 Waterproofing depends on the paving blocks or premix being installed as recommended by ABE Construction Chemicals and on the integrity of the blocks or premix being regularly maintained.
Adhesion	Satisfactory	The adhesion of Index Testudo 20 Waterproofing to: <ul style="list-style-type: none"> • itself • normal sound substrates • traditional bituminous roofing felts is sufficient to resist the effect of wind suction, elevated temperatures and thermal shock likely to occur in practice.
Resistance to traffic	Satisfactory	Index Testudo 20 Waterproofing can accept without damage, passenger vehicular traffic when protected with paving blocks or premix.
Weathertightness	Satisfactory	Index Testudo 20 Waterproofing will maintain its integrity as a weathertight roof covering in all normal conditions of exposure and can accept minor structural movements without damage.
Resistance to passage of moisture	Satisfactory	Index Testudo 20 Waterproofing will adequately resist the passage of moisture.
Quality management	The certificate holder's quality management system complies with Agrément South Africa's requirements. Properly applied it will ensure that quality of application will be consistently maintained.	Agrément South Africa's requirements are based on SANS 9001:2000. <div style="border: 1px solid green; padding: 5px; margin: 10px auto; width: fit-content;"> <p>SANS 9001:2000: <i>Quality management systems- Requirements</i></p> </div>

PART 3: TECHNICAL DESCRIPTION

General description

Index Testudo 20 Waterproofing is a prefabricated reinforcement waterproofing membrane manufactured from polymer bitumen modified with elastomers and plastomers.

The reinforcement is a non-woven, spunbound polyester. 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, when heat-activated, melts and indicates the correct temperature for bonding the membrane with the roof substrate.

Index Testudo 20 Waterproofing is available in 4 mm and 5 mm thicknesses.

Index Testudo 20 Waterproofing is applied by approved applicators.

Manufacture

Index Testudo 20 Waterproofing prefabricated waterproofing membrane is manufactured from a compound of polymer bitumen modified with elastomers and plastomers.

Index Testudo 20 Waterproofing is reinforced with a non-woven fabric of continuously extruded spunbound polyester (nominal weight 200 g/m²) which provides resistance to elongation, heat ageing, piercing and puncturing.

The membrane is manufactured by saturating and coating the reinforcement with the polymer-bitumen mixture, then calendered 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 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.

Index Testudo 20 Waterproofing is supplied in rolls with the dimensions and weights set out in Table 3 below.

Table 3: Roll Dimensions and weights

Thickness (nominal) (mm)	4	5
Length (m)	10	10
Width (m)	1,0	1,0
Weight (nominal) (kg/m ²)	4,5	5,0
Weight per roll (nominal) (kg)	45	50
Roll quantities per pallet	24	20

The physical properties of Index Testudo 20 Waterproofing (4mm) are set out in Table 4.

Table 4: Physical properties of Index Fidia “P” Waterproofing

Sample	Impact energy to puncture (Joules)	Tensile strength (MPa)		Elongation at break (%)		Tear strength (Mpa)	
		Longitudinal	Transverse	Longitudinal	Transverse	Longitudinal	Transverse
New material	9,5	3,7	3,3	45	49	70	84
Material exposed at 80 ± 3°C for							
1 days	9,5	3,7	3,1	45	46	74	85
7 days	9,3	3,7	3,0	42	45	69	81
28 days	9,0	3,5	3,0	39	42	67	76
56 days	9,0	3,3	2,8	39	41	66	79
Material exposed to UV for 1000 hours	9,1	3,9	3,0	37	41	68	81
Lapped-joint new material		3,5*					
Lapped-joint material exposed at 80°C for 56 days		3,4					
*Failure did not occur in the lapped areas							

Marketing

Index Testudo 20 Waterproofing membrane is manufactured by Index Spa in Italy. The product is marketed in South Africa by ABE Construction Chemicals (Pty) Ltd regional offices.

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.

Installation

Surface preparation

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

'Clean' means that the surface is free of all foreign matter (e.g. 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 (e.g. 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) **Flat concrete roofs** Surfaces must be prepared as above and in addition the surfaces must have a fine wood-floated finish, a minimum fall of 1:60. Internal corners must be coved (75 mm minimum) and external corners radiused (25 mm minimum). Brick parapets, etc must have flush joints and expansion joints in appropriate positions.
- (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 Index Testudo 20 Waterproofing, 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 Index Testudo 20 Waterproofing by the ABE technical representative.

Application

Index Testudo 20 Waterproofing must be fully bonded when used in trafficable applications as recommended by the ABE technical representative or approved applicator.

All surfaces are primed with ABE Bituprime, including all verges, around 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 application 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 100mm and 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.

When properly executed the tensile strength at the joint is greater than that of the single layer of Index Testudo 20 Waterproofing on either side.

In all applications where Index Testudo 20 Waterproofing is used, care must be exercised to ensure that the material is not punctured during application or subsequent building operations.

Finishes

- (a) Index Testudo 20 Waterproofing can be overlaid with interlocking paving blocks (or similar) bedded on a layer of uncontaminated river sand. The minimum sand thickness is 25 mm and a geotextile slip layer is first laid over the waterproofing. Joints are filled with sand.

The paving blocks may be bedded in mortar with allowance being made for expansion joints.

- (b) Index Testudo 20 Waterproofing may be overlaid with a compacted layer of fine premix. The minimum thickness is 30 mm and is applied directly onto the Index Testudo 20 Waterproofing membrane.

In all cases the ABE technical representative must be consulted.

Maintenance

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