European Technical Approval ETA 08/0197

Trade name:	**Guttatec 3 Tab, Guttatec 4 Tab, Guttatec Beaver and Guttatec Diamant**
Holder of the approval:	**Gutta Werke GmbH Bahnhofstrasse 51-57 D-77746 Schutterwald Germany**
Website:	**www.gutta.com**
Generic type and use of construction product(s):	**Low bitumen mass shingles with mineral reinforcement**
Validity from:	**2012-09-10**
to:	**2017-09-09**
Manufacturing plant(s):	**02-03**
This European Technical Approval contains:	**9 pages including 1 annex which forms an integral part of the document.**
This European Technical Approval replaces	**ETA 08/0197, valid from 10/07/2008 until 29/10/2012**

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I LEGAL BASES AND GENERAL CONDITIONS

1. This European Technical Approval is issued by UBAtc in accordance with:
   - Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products[1], modified by Council Directive 93/68/EEC[2] and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council[3];
   - Belgian law of 25 March 1996 concerning the adaptation of legislative and administrative provisions of Member States to the Construction Products Directive (89/106/EEC) for construction products[4] and Belgian Royal Decree of 18 August 1998 concerning construction products[5]
   - Common Procedural Rules for Requesting, Preparing and the Granting of European Technical Approvals set out in the Annex to Commission Decision 94/23/EC[6];

2. The UBAtc is authorized to check whether the provisions of this European Technical Approval are met. Checking may take place in the manufacturing plant(s). Nevertheless, the responsibility for the conformity of the products to the European Technical Approval and for their fitness for the intended use remains with the holder of the European Technical Approval.

3. This European Technical Approval is not to be transferred to manufacturers or agents of manufacturers other than those indicated on page 1, or manufacturing plants other than those laid down in the context of this European Technical Approval.

4. This European Technical Approval may be withdrawn by UBAtc, in particular pursuant to information by the Commission according to Article 5(1) of Council Directive 89/106/EEC.

5. Reproduction of this European Technical Approval including transmission by electronic means shall be in full. However, partial reproduction can be made with the written consent of UBAtc. In this case partial reproduction has to be designated as such. Texts and drawings of advertising brochures shall not contradict or misuse the European Technical Approval.

6. The European Technical Approval is issued by the approval body in its official languages. These versions correspond fully to the version circulated in EOTA. Translations into other languages have to be designated as such.

7. Compared with the previous version, this 1st amended version uses EN 544:2011 as a reference and an additional production facility has been added.

[1] Official Journal of the European Communities N° L 40, 11.2.1989, p. 12
[2] Official Journal of the European Communities N° L 220, 30.8.1993, p. 1
[3] Official Journal of the European Union N° L 284, 31.10.2003, p. 1
[4] Belgian Law Gazette, 21.05.1996
[5] Belgian Law Gazette, 11.09.1998
[6] Official Journal of the European Communities N° L 17, 20.1.1994, p. 34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1. Definition and scope of the product and intended use

1.1 Scope

This ETA applies to bitumen shingles with a mass of bitumen (896 ± 150) g/m² per layer.

It applies to bitumen shingles where the watertightness of the roof covering or wall cladding system is ensured by overlapping, according to the manufacturer's installation instructions (see 4.2), intended to be laid as discontinuous covering for pitched roofs and/or wall cladding.

The assumed working life of the product for the intended use is 25 years[7], provided that the assembled product is subject to appropriate use and maintenance, in accordance with paragraph 5 of this ETA.

1.2 Identification of the product

1.2.1 General

This ETA covers bitumen shingles with a mineral reinforcement. The glassfibre mat reinforcement is coated with bitumen.

The shingle is surfaced on the upperside (i.e. the side of the shingle which is exposed to the weather) with mineral granules and on the underside with sand and/or talc.

The products have a protective strip on the underside.

1.2.2 Dimensions and density

Dimensions and mass of bitumen of the shingles are given in table 1 and figures 1, 2 and 3.

Table 1: Properties

Type	Mass of bitumen (g/m²)	Height (mm)	Width (mm)	Tolerances on length and width (mm)
Guttatec 3 Tab	896 ± 150	336	1000	± 3
Guttatec 4 Tab				
Guttatec Beaver				
Guttatec Diamant		284		

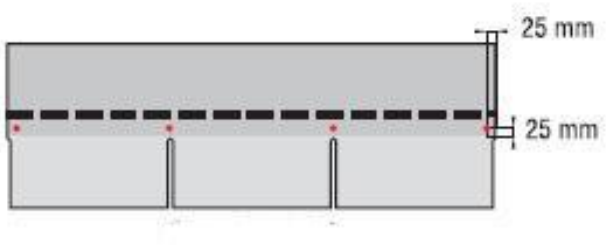

Figure 1: Guttatec 3 Tab

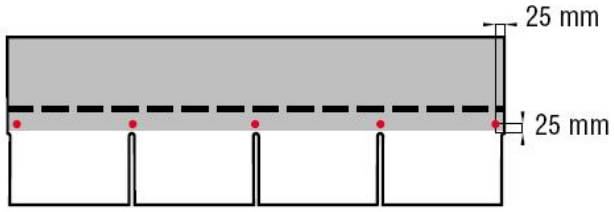

Figure 2: Guttatec 4 Tab

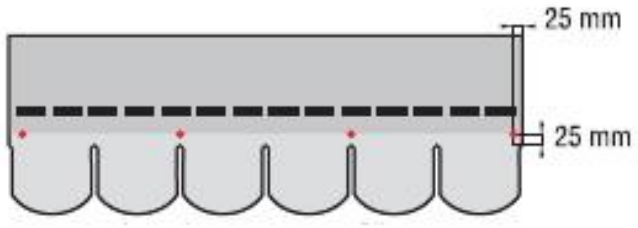

Figure 3: Guttatec Beaver

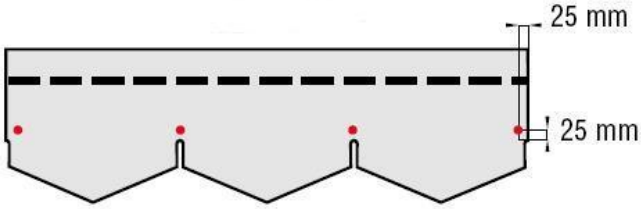

Figure 4: Guttatec Diamant

[7] The indications given as to the working life of the products cannot be interpreted as a guarantee given by the ETA-holder or the approval body. It should only be regarded as a means for specifiers to choose the appropriate criteria for shingles in relation to the expected, economically reasonable working life of the works.

The shingles can be made available in the following colours: Black, Sparkling Black, Forest Green, Chapel Grey, Dual Brown, Tile Red, Flaming Red, Tile Red Ultra, Marine Blue, Slate, Cedarwood and Terracotta.

1.2.3 Ancillary products

1.2.3.1 General

Ancillary products referred to in this ETA, as a part of installation provisions or in the framework of determining performances, are not covered by this ETA and cannot be CE-marked on the basis of it.

1.2.3.2 Elastomeric bitumen based mastic

Elastomeric bitumen based mastic used for manual sealing in case of steep pitches or high wind areas.

Colour	Black
Density (at 20°C)	± 1,2 kg/l
Drying time to touch dry (± 50% RH)	± 24 h
Temperature resistance	-20 °C to 80 °C
Application temperature	0°C to 40°C
Packaging	310 ml

1.2.3.3 Nails

Hot galvanised steel wire roofing nails used to fasten shingles.

Diameter shaft	≥ 2,7 mm
Diameter head	≥ 9 mm
Length	≥ 25 mm
Corrosion protection (zinc coating)	≥ 300 g/m²

1.3 Intended use of the product

The shingles are intended to act as a water-shedding element on walls, ceilings, soffits, and pitched roofs and as a protective covering to the wall structure, ceiling structure or roof deck from weathering elements such as rain, snow, ice, windborne dust, UV radiation and other matters. The minimum pitch of the underlying surface shall be in accordance with the manufacturer's specifications, which are specified in this ETA.

Roof surfaces are not accessible without protection and safety assessment.

2. Characteristics of product(s) and methods of verification

2.1. Safety in case of Fire

2.1.1. Reaction to fire

The shingles have a reaction to fire classification class F according to EN 13501-1.

2.1.2. External fire performance of roofs

The shingles have an external fire performance classification class F_{ROOF} according to EN 13501-5.

2.2. Hygiene, Health and the Environment

2.2.1. Water permeability

The shingles are watertight.

2.2.2. Release of dangerous substances

The shingles comply with all relevant European and national provisions[8] applicable for the uses for which they are brought to the market.

In addition to this ETA clause relating to dangerous substances, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products Directive, these requirements need also to be complied with, when and where they apply.

2.3. Safety in Use – Mechanical resistance

2.3.1. Tensile strength (in the direction of the shingle width)

The shingles have a tensile strength larger than 600 N / 50 mm in accordance with EN 544.

2.3.2. Tensile strength (in the direction of the shingle height)

The shingles have a tensile strength larger than 400 N / 50 mm in accordance with EN 544.

2.3.3. Nail shank resistance

The shingles have a tear resistance larger than 100 N in accordance with EN 544.

[8] Known at the date of issuing.

2.4. Durability

2.4.1. Flow resistance at elevated temperature

The shingles meet the requirements of EN 544.

2.4.2. Adhesion of mineral granules and flakes of slate

The shingles meet the requirements of EN 544.

2.4.3. Water absorption

The shingles meet the requirements of EN 544.

2.4.4. Resistance to peeling for metal-surfaced shingles

Not applicable for these products.

2.4.5. Resistance to blistering (freeze/thaw resistance)

The shingles meet the requirements of EN 544 having been subjected to 25 freeze ((-20 ± 1) °C during (8 ± 0,5) h) / thaw ((50 ± 5) °C during (16 ± 0,5) h) cycles after having been stored in water for (24 ± 1)h at (23 ± 2) °C.

2.4.6. Resistance to UV radiation

After exposure to UV radiation in accordance with EN 544, the following performances still apply:
- tensile strength (in the direction of the shingle width) > 600 N / 50 mm
- tensile strength (in the direction of the shingle height) > 400 N / 50 mm
- tear resistance > 100 N

2.4.7. Resistance to heat ageing

After exposure to (80 ± 2)°C in a ventilated oven for 12 weeks (84 days), the following performances still apply:
- tensile strength (in the direction of the shingle width) > 600 N / 50 mm
- tensile strength (in the direction of the shingle height) > 400 N / 50 mm
- tear resistance > 100 N
- flow resistance < 2 mm
- adhesion of mineral granules < 2,5 g.

2.4.8. Delivery conditions related to fitness for use

The shingles meet the requirements of EN 544, i.e. they do not stick together, preventing damage upon being unpacked at ambient temperatures, and they are free of visible defects such as holes, edges not cleanly cut, rents, cracks, indentations, or delaminations.

3. Evaluation of Conformity and CE marking

3.1. Systems of attestation of conformity

According to the decisions 98/436/EC and 98/437/EC of the European Commission[9] the systems of attestation of conformity given in Table 2 apply.

Table 2 – System(s) of attestation of conformity

Product(s)	Intended use(s)	Level(s) or class(es)	Attestation of conformity system(s)
Wall and roof shingles	Roof coverings subject to reaction to fire regulations	F	4
	Roof coverings subject to external fire performance regulations*	F_{ROOF} and products "deemed to satisfy" without testing	4
	Roof coverings subject to regulations on dangerous substances, in particular those substances defined in Council Directive 76/769/EEC, as amended	-	3
	All uses not referred to above	-	4

System 3: See Directive 89/106/EEC Annex III.2.(ii), Second possibility
System 4: See Directive 89/106/EEC Annex III.2.(ii), Third possibility
* Only applicable for shingles intended to be used on pitched roofs.

The systems of attestation of conformity referred to above are defined as follows:

In the case of system 3:

System 3: Declaration of conformity of the product by the manufacturer on the basis of:
- Task for the manufacturer: factory production control;
- Task for the notified body: initial type-testing of the product.

In the case of system 4:

System 4: Declaration of conformity of the product by the manufacturer on the basis of tasks for the manufacturer:
- Initial type-testing of the product;
- Factory production control.

Note: The manufacturer shall make a declaration of conformity.

[9] Official Journal of the European Communities L 194 of 10/7/1998

3.2 Tasks and responsibilities of the manufacturer and notified bodies

3.2.1 Tasks of the manufacturer

3.2.1.1 Initial type testing

The actions to be undertaken by the manufacturer in the framework of initial type testing have been laid down in Table 3. Approval tests in accordance with clause 2 have been done on samples representative for the product placed on the market and have been taken from on-going production. The test reports should be validated for the purpose of initial type-testing. Additional initial type-testing may be necessary, e.g. when starting a new production line.

The results of all type tests shall be recorded and held by the manufacturer for at least 10 years after the date of last production of the product to which they relate.

3.2.1.2 Factory Production Control

3.2.1.2.1 General

The manufacturer shall establish, document and maintain a FPC system to ensure that the products placed on the market conform to the stated performance characteristics. The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product.

A FPC system conforming with the requirements of EN ISO 9001, and made specific to the requirements of this ETA, is considered to satisfy the above requirements.

The results of inspections, tests or assessments requiring action shall be recorded, as shall any action taken. The action to be taken when control values or criteria are not met shall be recorded.

3.2.1.2.2 Equipment

All weighing, measuring and testing equipment shall be calibrated and regularly inspected according to documented procedures, frequencies and criteria.

3.2.1.2.3 Raw materials and components

The specifications of all incoming raw materials and components shall be documented, as shall the inspection scheme for ensuring their conformity.

3.2.1.2.4 Non-conforming products

In the event of any non-conformity of any product, that product shall be placed into quarantine and action taken to rectify the cause of the non-conformity. Products may not subsequently be dispatched until the problem has been resolved.

3.2.1.2.5 Frequency of testing

The minimum frequency of testing in the framework of factory production control is shown in Table 4.

Table 3 – Initial type-testing of the product (ITT) under the manufacturer's responsibility

Subject/type of control	Test or control method and minimum number of samples
Water permeability	This information is being kept in a confidential file by the UBAtc
Mechanical resistance	
Durability of water permeability	
Durability of mechanical resistance	
Packaging resistance	

Table 4 – Factory Production Control plan for the manufacturer (corner stones)

Subject/type of control	Test or control method[a], minimum number of samples and minimum frequency of control
Watertightness	This information is being kept in a confidential file by the UBAtc
Mass of bitumen	
Geometrical properties(width, height, straightness, squareness and height of slits)	
Release of dangerous substances	
Mechanical resistance	
Durability of water permeability	
Durability of mechanical resistance	
Delivery conditions related to fitness for use	

[a] The manufacturer is allowed to use similar test or control methods, using different equipment and test samples under different conditions, as long as the manufacturer ensures constant product performances, but the frequency of control shall be respected.

3.2.2 Tasks of notified bodies

The corner stones of the actions to be undertaken by the notified body (bodies) in the procedure of attestation of conformity for low bitumen mass shingles are laid down in Table 5.

Table 5 - Initial type-testing of the product (ITT) under the notified body's (bodies') responsibility

Subject/type of control	Test or control method and minimum number of samples
Release of dangerous substances	This information is being kept in a confidential file by the UBAtc

3.3 CE marking and accompanying information

According to Council Directive 93/68/EEC[10] the CE marking consists of the letters "CE" in the form laid down in the Directive. The CE marking symbol and the accompanying information shall be shown on the packaging and/or on the accompanying commercial documents.

The CE marking of low bitumen mass shingles shall be accompanied by the following information:

- the name and address of the producer (legal entity responsible for placing on the market);
- the last two digits of the year in which the CE marking was affixed;
- the number of the European Technical Approval,

CE	"CE" symbol
Gutta Werke GmbH **Bahnhofstrasse 51-57** **D-77746 Schutterwald** **Germany**	Name and address of the producer (legal entity responsible for placing onto the market)
08	Two last digits of year of affixing CE marking
ETA-08/0197	ETA number
Guttatec 3 Tab Guttatec 4 Tab Guttatec Beaver or Guttatec Diamant	Information distinguishing between different products or types specified in the ETA, permitting to establish the performances of the product to which the CE Marking belongs.

Figure 5: Example of CE marking and accompanying information

[10] Official Journal of the European Communities L 220 of 30.8.1993

4. Assumptions under which the fitness of the product(s) for the intended use was favourably assessed

4.1. Manufacturing

The European technical approval is issued for the product on the basis of agreed data/information, deposited with the approval body, which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to the approval body before the changes are introduced. The approval body will decide whether or not such changes affect the ETA and consequently the validity of the CE marking on the basis of the ETA and if so whether further assessment or alterations to the ETA, shall be necessary.

Shingles are made in a continuous web process. Large rolls of fibreglass mat are fed into a dry looper, which serves as an accumulator. The fibreglass mat moves to the coater. At the coater, coating bitumen is applied to the top and bottom surfaces of the sheet. Mineral stabilizers are added to the coating, improving the shingle's fire resistance and weathering characteristics. Next, granules are applied to the top surface of coating. Surfacing is then applied to the back of the sheet to prevent it from sticking to the machine and to other shingles when packaged. A plastic tape is also applied to the back of the sheet to prevent the sealing strips from sticking to the next shingle in the package. The granules are then pressed into the topcoating. Once the sheet is cooled, sealing strips are applied. The sealing strips allow one shingle to bond to the overlying shingle on a roof and thus prevent wind uplift. The roofing sheet is then measured and cut into shingles. The shingles are wrapped into bundles and stored in the warehouse until shipment to the appropriate location.

4.2. Installation

Installation should be in accordance with the following cornerstones, but shall in any case be in accordance with all relevant legal requirements, as far as applicable in the country of use.
The manufacturer's installation guidelines complement the information presented below.

The shingles should be nailed diagonal-up on a roof deck which must be smooth, firm, dry, securely fastened and ventilated. This roof deck should be covered with an underlay in accordance with EN 13859-1, before installing the shingles.

Shingle exposure is function of the roof pitch, but may vary depending on the codes of practice or regulatory provisions in the country of use of the product. Before installing, these provisions should be examined.

The roof pitch is between 15° and 85°. The recommended nailing positions are indicated in figures 6, 7, 8 and 9.

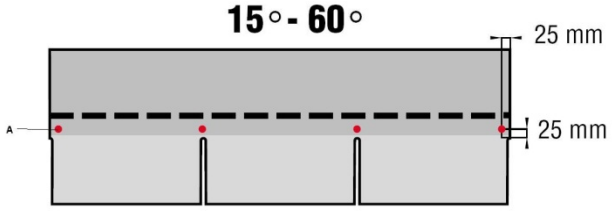

Figure 6: Installing Guttatec 3 Tab shingles

Key
A Recommended positions nails

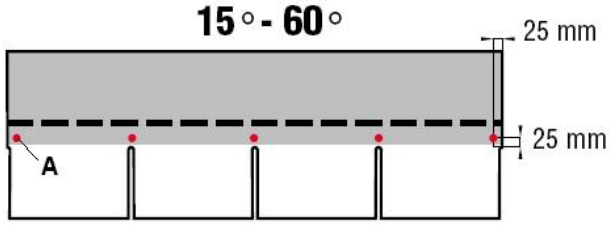

Figure 7: Installing Guttatec 4 Tab shingles

Key
A Recommended positions nails

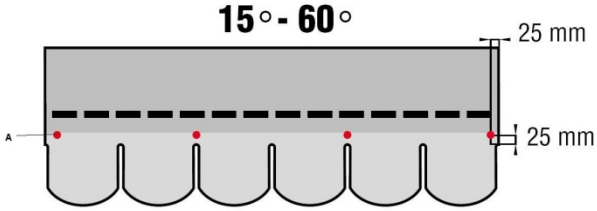

Figure 8: Installing Guttatec Beaver shingles

Key
A Recommended positions nails

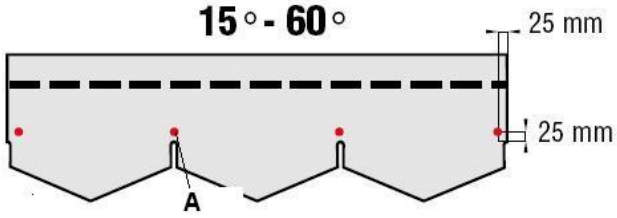

Figure 9: Installing Guttatec Diamant shingles

Key
A Recommended positions nails

In case of steep slope application (> 60°) or high wind areas extra nails and manual sealing with elastomeric bitumen based mastic are required. In high wind areas, for at least the top five courses of the roof, the tabs of each shingle should be sealed (see figures 10, 11, 12 and 13).

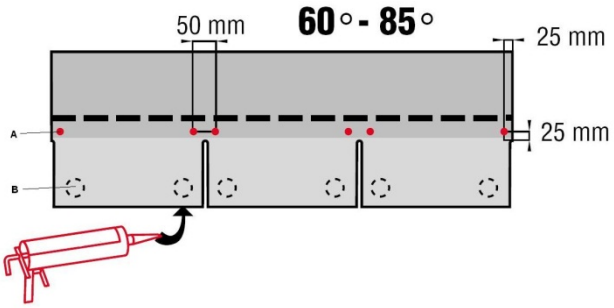

Figure 10: Installing Guttatec 3 Tab shingles

Key
A Recommended positions nails
B Recommended sealing positions

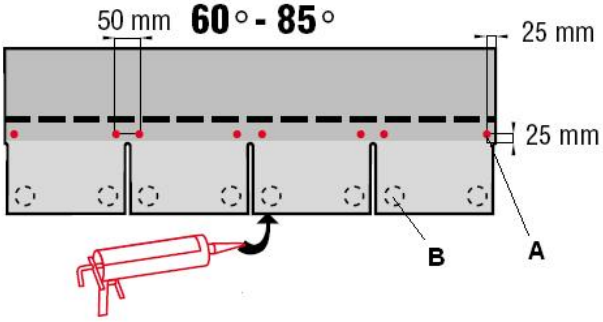

Figure 11: Installing Guttatec 4 Tab shingles

Key
A Recommended positions nails
B Recommended sealing positions

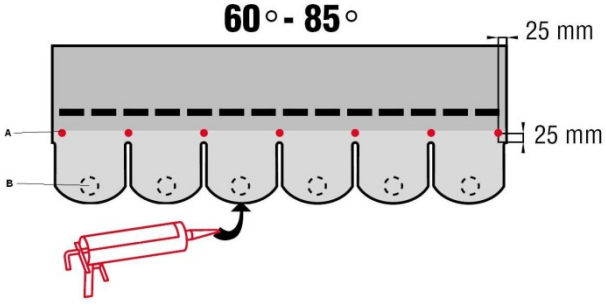

Figure 12: Installing Guttatec Beaver shingles

Key
A Recommended positions nails
B Recommended sealing positions

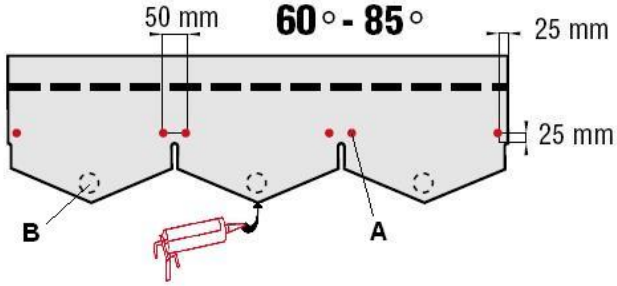

Figure 13: Installing Guttatec Diamant shingles

Key
A Recommended positions nails
B Recommended sealing positions

Elastomeric bitumen based mastic should be applied in amounts no greater than 25 mm in diameter and used sparingly. During cold weather application (< 5°C) additional elastomeric bitumen based mastic should be used.

The hips and the ridges may be cut from the shingles.

5. Recommendations

5.1. Recommendations on packaging, transport and storage

The shingles are wrapped in bundles of 21 (Guttatec 3 Tab and Guttatec 4 Tab), 23 (Guttatec Beaver) or 27 (Guttatec Diamant) shingles in plastic foil.

Each bundle provides for a roof coverage of 3 m². The bundles are palletized and wrapped with plastic foil. These pallets can be transported.

When stored, the shingles should be protected from direct sunlight.

The pallets should not be stacked on top of each other.

5.2. Recommendations on use, maintenance and repair

Damaged shingles should be replaced as soon as possible.

ANNEX 1: References

EN 544:2011 Bitumen shingles with mineral and/or synthetic reinforcements - Product specification and test methods

EN 13859-1:2010 Flexible sheets for waterproofing - Definitions and characteristics of underlays - Underlays of discontinuous roofing

NOTE: The editions of reference documents given above are those which have been adopted by the UBAtc for its specific use when establishing this ETA. When new editions become available, these supersede the editions mentioned only when confirmed by the UBAtc.