European Technical Assessment
ETA-03/0049 of 26 May 2017

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:
Deutsches Institut für Bautechnik

Trade name of the construction product
Composite waterproofing "WILOTEK-PLUS"

Product family
to which the construction product belongs
Liquid applied composite waterproofing for roofs with heavy protection on the basis of hot-applied polymer-modified bitumen and a polymerbitumen sheeting

Manufacturer
bausysteme vertriebsgesellschaft mbh
Kirchplatz 1
6370 Kitzbühel
ÖSTERREICH

Manufacturing plant

This European Technical Assessment contains
11 pages including 6 annexes which form an integral part of this assessment

This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of

This version replaces

European Assessment Document (EAD) 030065-00-0402

ETA-03/0049 issued on 16 August 2012
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Specific Part

1 Technical description of the product

The composite roof waterproofing kit WILOTEKT-PLUS is a sealing system for roofs with two sealing layers on concrete. The following components are part of the kit:

- Primer "WILOTEKT-Grundierung" on the basis of bitumen
- Internal layer for reinforcement "WILOTEKT-Bewehrungseinlage" on the basis of a glass silk fabric mat with a mesh
- Polymer modified unfilled bitumen "WILOTEKT-Elastomerbitumen, melted and hot applied liquid material "Elastomerbitumen"
- Polymer modified bitumen waterproofing sheet "WILOTEKT-Polymerbitumen-Dachdichtungsbahn" or alternatively

After application of the primer for first sealing layer the reinforcement layer is rolled out. The hot polymer modified bitumen is poured on the pre-rolled reinforcement layer. The polymer modified bitumen is unfilled to ensure its flowing through the reinforcement layer and its penetrating into all irregularities of the concrete structural deck.

In the same step the second sealing layer is produced by rolling a polymer modified bitumen waterproofing sheet into the hot polymer modified bitumen so that the sheet is fully bonded.

Concerning the resistance to root penetration no substances for protection against root penetration are used within the product kit.

As an assembled system these components form a homogeneous seamless roof waterproofing. Annex A shows the components and the system build-up of the roof waterproofing kit.

2 Specification of the intended use in accordance with the applicable EAD

The composite roof waterproofing kit is used for the roof waterproofing of used and unused roofs e.g. terraces, park decks and roof areas planted with ex- and intensive vegetation (green roofs) (see Annex B).

The composite roof waterproofing kit is only used underneath a heavy surface protection\(^1\) which could be also a flooring wearing surface.

The surfaces to be waterproofed shall have a slope from 0 % to 5 %.

The verification and assessment methods on which this European Technical Assessment is based lead to the assumption of working life of the product of 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

The levels of use categories and performances given in Section 3 are only valid if the liquid applied roof waterproofing is used in compliance with the specifications and conditions given in Annex B and the installation instructions of the manufacturer stated in the technical documents.

Performance of the product and references to the methods used for its assessment

### 3.1 Safety in case of fire (BWR 2)

<table>
<thead>
<tr>
<th>Essential characteristic</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reaction to fire</td>
<td>See Annex A</td>
</tr>
<tr>
<td>External fire performance</td>
<td>See Annex A</td>
</tr>
</tbody>
</table>

### 3.2 Hygiene, health and the environment (BWR 3)

<table>
<thead>
<tr>
<th>Essential characteristic</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water vapour permeability</td>
<td>See Annex A</td>
</tr>
<tr>
<td>Watertightness</td>
<td>See Annex A</td>
</tr>
<tr>
<td>Resistance to perforation</td>
<td>See Annex A</td>
</tr>
<tr>
<td>Resistance to fatigue movement</td>
<td>See Annex A</td>
</tr>
<tr>
<td>Resistance to the effects of low and high surface temperatures</td>
<td>See Annex A</td>
</tr>
<tr>
<td>Working Life</td>
<td>See Annex A</td>
</tr>
<tr>
<td>Resistance to heat aging</td>
<td>See Annex A</td>
</tr>
<tr>
<td>Resistance to water aging</td>
<td>See Annex A</td>
</tr>
<tr>
<td>Resistance to plant roots</td>
<td>See Annex A</td>
</tr>
<tr>
<td>Effects of application conditions</td>
<td>See Annex A</td>
</tr>
</tbody>
</table>

### 3.3 Safety and accessibility in use (BWR 4)

<table>
<thead>
<tr>
<th>Essential characteristic</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance to wind loads</td>
<td>See Annex A</td>
</tr>
</tbody>
</table>

### 3.4 General aspects

The verification of durability and serviceability is part of testing the essential characteristics. Durability and serviceability is only ensured if the specifications of intended use according to Annex B and the specifications of the technical file of the manufacturer are kept.
4

Assessment and verification of constancy of performance (AVCP) system applied with reference to its legal base


<table>
<thead>
<tr>
<th>Product</th>
<th>Intended use(s)</th>
<th>Level or class</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>composite roof waterproofing kit</td>
<td>For uses subject to external fire performance regulations</td>
<td>$B_{\text{ROOF}}^{(1)}$</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>For uses subject to reaction to fire</td>
<td>E</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>All other roof waterproofing uses (all other characteristics)</td>
<td>—</td>
<td>3</td>
</tr>
</tbody>
</table>

5

Technical details necessary for the implementation of the AVCP system, as provided for the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at Deutsches Institut für Bautechnik.

Issued in Berlin on 26 May 2017 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow
Head of Department

beglaubigt:

Hemme
Applicable to the composite roof waterproofing "WILOTEKT-PLUS"

Minimum quantity consumed of liquid applied component:
Layer Thickness of liquid applied layer

Performance of the product:
Reaction to fire
External fire performance
Water vapour permeability
Watertightness
Resistance to perforation
Resistance to fatigue movement
Resistance to the effects of low and high surface temperatures

Working Life
Resistance to heat aging
Resistance to water aging
Resistance to plant root
Effects of application conditions
Resistance to wind loads

1. rough concrete structural ceiling, slope 0 % to ≤ 5 % (S1)
2. "WILOTEKT-Grundierung"
3. "WILOTEKT-Elastomerbitumen" together with "WILOTEKT-Bewehrungseinlage" (1st sealing layer)
4. "WILOTEKT-Polymerbitumen-Dachabdichtungsbahn" (see Annex A2), (2nd sealing layer)

Instead of the "WILOTEKT-Polymerbitumen-Dachabdichtungsbahn" it can be used a CE marked polymer bitumen sheet according to EN 13707 or EN 13969 which meet the specification stated in Annex A2.

1 Classifications in sense of ETAG 005 Part 1, Liquid applied Roof waterproofing

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1 Composite waterproofing "WILOTEKT-PLUS"
bauysteme vertriebsgesellschaft mbH

/System built-up and performances of the product

Annex A1
"WILOTEKT Polymerbitumen-Dachdichtungsbahn"

or

polymer-bitumen waterproofing-sheet according EN 13707 respectively EN 13969 with CE-marking

- sanded on both sides
- reinforced with fleece

with the following essential characteristics

<table>
<thead>
<tr>
<th>Essential characteristic</th>
<th>Test procedure</th>
<th>Dimension</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reaction to fire</td>
<td>EN 11925-2</td>
<td></td>
<td>class E, EN 13501-1</td>
</tr>
<tr>
<td>Thickness</td>
<td>EN 1849-1</td>
<td>mm</td>
<td>≥ 3.5</td>
</tr>
<tr>
<td>Mass per unit area</td>
<td>EN 1849-1</td>
<td>g/m²</td>
<td>≥ 3900</td>
</tr>
<tr>
<td>Visible defects</td>
<td>EN 1850-1</td>
<td></td>
<td>none</td>
</tr>
<tr>
<td>Dimensional stability</td>
<td>EN 1107-01</td>
<td>%</td>
<td>&lt; 0.5</td>
</tr>
<tr>
<td>Tensile strength</td>
<td>EN 12311-1</td>
<td>N/50 mm</td>
<td>≥ 800</td>
</tr>
<tr>
<td>Tensile elongation</td>
<td>EN 12311-1</td>
<td>%</td>
<td>≥ 35</td>
</tr>
<tr>
<td>Resistance to tearing</td>
<td>EN 12310-1</td>
<td>N</td>
<td>&gt; 260</td>
</tr>
<tr>
<td>Flexibility at low temperature</td>
<td>EN 1109</td>
<td>°C</td>
<td>&lt; -22</td>
</tr>
<tr>
<td>Flow resistance at elevated temperature</td>
<td>EN 1110</td>
<td>°C</td>
<td>&gt; 100</td>
</tr>
</tbody>
</table>

Only polymer modified bitumen waterproofing sheets without any chemicals used to prevent root penetration can be used.

Composite waterproofing "WILOTEKT-PLUS"
bauysteme vertriebsgesellschaft mbH

Requirements on the waterproofing sheet

Annex A2
Installation

The performances of the roof waterproofing can be assumed only, if the installation is carried out according to the installation instructions stated in the technical file of the manufacturer, in particular taking account of the following points:

- installation by appropriately trained personnel,
- installation of only those components which are marked components of the kit,
- installation with the required tools and adjuvants
- precautions during installation,
- inspecting the roof surface for cleanliness and correct preparation, applying a primer before applying the product,
- inspecting compliance with suitable weather and curing conditions,
- ensuring a thickness of the cured liquid waterproofing by processing appropriate minimum quantities of material
- ensuring of the minimum quantity consumed of liquid applied component by the casting process of at least 2,5 kg/m² . In the case of unevennesses, the consumption must be increased.
- ensuring an overlap of the bitumen sheet and of the reinforcement of at least 10 cm
- inspections during installation and of the finished product and documentation of the results.
Green Roof / Basement Car park greening

1. WILOTEKT-PLUS (see Annex A1)
2. PE-foil as separating layer
3. drainage, gravel 16/32 mm
4. filter fleece
5. Soil / Substratum
6. Plants (extensive/intensive)

Inverted Roof

1. WILOTEKT-PLUS (see Annex A1)
2. thermal insulation
3. filter fleece
4. gravel layer ≥ 50 mm
1. WILOTEKT-PLUS (see Annex A 1)
2. Thermal insulation
3. Filter fleece
4. drainage, gravel 16/32 mm
5. Filter fleece
6. Soil / Substrate
7. Plants (extensive/intensive)

1. WILOTEKT-PLUS (see Annex A1)
2. Thermal insulation
3. Filter fleece
4. gravel 8/10 mm
5. stab cover

Composite waterproofing "WILOTEKT-PLUS"
bauysteme vertriebsgesellschaft mbH

Possible applications of the composite waterproofing "WILOTEKT-PLUS"
Inverted park deck

1. WILOTEKT-PLUS (see Annex A1)
2. Thermal insulation
3. Filter fleece
4. grit
5. composite block roadway surfacing with sanding sand 0/2

6. WILOTEKT-PLUS (see Annex A1)
7. Thermal insulation
8. Precast concrete elements as road surface