

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

ETA-11/0300  
of 27 August 2016

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

Capatect-WDVS-Phenolharzschaum

Product family  
to which the construction product belongs

Product area code: 4  
External Thermal Insulation Composite System with  
rendering on phenolic foam for the use as external  
insulation of building walls

Manufacturer

CAPAROL  
Farben Lacke Bautenschutz GmbH  
Roßdörfer Straße 50  
64372 Ober-Ramstadt  
DEUTSCHLAND

Manufacturing plant

CAPAROL  
Farben Lacke Bautenschutz GmbH  
Roßdörfer Straße 50  
64372 Ober-Ramstadt  
DEUTSCHLAND

This European Technical Assessment  
contains

15 pages including 3 annexes which form an integral part  
of this assessment

Annex 4 Control Plan contains confidential information  
and is not included in the European Technical  
Assessment when that assessment is publicly available

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

Guideline for European technical approval of "External  
Thermal Insulation Composite Systems with Rendering",  
ETAG 004, edition 2000, amended 2013,  
used as European Assessment Document (EAD)  
according to Article 66 Paragraph 3 of Regulation (EU)  
No 305/2011.

This version replaces

ETA-11/0300 issued on 26 August 2011

**European Technical Assessment**

**ETA-11/0300**

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## Specific Part

### 1 Technical description of the product

#### 1.1 Definition and composition of the kit

This product is an ETICS (External Thermal Insulation Composite System) with rendering - a kit comprising components which are factory-produced by the manufacturer or component suppliers. It's made up on site from these. The ETICS manufacturer is ultimately responsible for all components of the ETICS specified in this ETA.

The ETICS kit comprises a prefabricated insulation product of phenolic foam (PF) to be bonded and additional mechanically fixed onto a wall. The method of fixing and the relevant components are specified in the table below.

The insulation product is faced with a rendering system consisting of one or more layers (site applied), one of which contains reinforcement. The rendering is applied directly to the insulating panels, without any air gap or disconnecting layer.

The ETICS may include special fittings (e.g. base profiles, corner profiles ...) to treat details of ETICS (apertures, corners, parapets ...). Assessment and performance of these components is not addressed in this ETA, however the ETICS manufacturer is responsible for adequate compatibility and performance within the ETICS when the components are delivered as a part of the kit.

#### Composition of the ETICS

	Components (National application documents shall be taken into account)	Coverage [kg/m <sup>2</sup> ]	Thickness [mm]
Insulation material with associated method of fixing	<b>Mechanically fixed ETICS with anchors and supplementary adhesive:</b>		
	• <b>Insulation product</b> (see annex 1 for product characteristics) factory-prefabricated phenolic foam (PF)	–	40 to 140
	• <b>Supplementary Adhesives</b> (minimum bonded surface 40 %)		
	– <b>Capatect-Klebe-und Armierungsmasse 186 M</b> (cement based powder requiring addition of about 20 % – 24 % of water)	3.5 to 4.5	–
	– <b>Capatect-Klebe-und Spachtelmasse 190</b> (cement based powder requiring addition of about 20 % – 24 % of water)	about 4.0	–
	– <b>Capatect-Dämmkleber 185</b> (cement based powder requiring addition of about 20 % of water)	4.0 to 5.0	–
	– <b>Capatect ArmaReno 700</b> (cement based powder requiring addition of about 20 % – 25 % of water)	4.0 to 5.0	–

	<b>Components</b> (National application documents shall be taken into account)	<b>Coverage</b> [kg/m <sup>2</sup> ]	<b>Thickness</b> [mm]
	<ul style="list-style-type: none"> <li>• <b>Anchors for insulation product</b> (see annex 2 for product characteristics) all anchors with ETA according to ETAG 014<sup>1</sup> with characteristics defined in annex 2</li> </ul>		
<b>Base coat</b>	<b>Capatect-CS-Klebe-und Armierungsmörtel 850</b> Cement based powder with additional redispersible synthetic-resin and aggregates requiring addition of 36 – 40 % of water.	5.5 to 8.0	5.0 to 7.0
<b>Glass fibre mesh</b>	<b>Capatect-Gewebe 650</b> Alkali- and slide-resistant glass fibre mesh with mass per unit area of about 160 g/m <sup>2</sup> and mesh size of about 4.0 mm x 4.0 mm. (see annex 3 for product characteristics) <b>Capatect-Panzergebebe 652</b> (implemented in addition to the standard mesh to improve the impact resistance) Alkali- and slide-resistant glass fibre mesh with mass per unit area of about 330 g/m <sup>2</sup> and mesh size of about 6.0 mm x 6.0 mm. (see annex 3 for product characteristics)	–  –	–  –
<b>Key coat</b>	<b>Putzgrund 610</b> <sup>*</sup> Ready to use liquid – synthetic resin binder For the compatibility with the finishing coats see below.	about 0.2 l/m <sup>2</sup>	–
<b>Finishing coat</b>	<b>To use with key coat "Putzgrund 610":</b> <sup>*</sup> <ul style="list-style-type: none"> <li>• Cement based powder requiring addition of about 28 – 44 % of water: <b>Capatect-Mineral-Leichtputz R</b> (particle size 2 to 5 mm) <b>Capatect-Mineral-Leichtputz K</b> (particle size 2 to 5 mm)</li> <li>• Cement based powder requiring addition of about 40 % of water: <b>Capatect-Modellier- und Spachtelputz 134</b> (particle size 1.5 mm)</li> </ul>	2.3 to 4.5 2.3 to 4.5  about 4.0	2.0 to 5.0 2.0 to 5.0  2 to 5
<b>Ancillary material</b>	Remains the responsibility of the manufacturer.		
* The instruction to the installer concerning the use of a key coat remains the responsibility of the ETA-holder.			

<sup>1</sup> ETAG 014

Plastic anchors for fixing of external thermal insulation composite systems with rendering

## **2 Specification of the intended use in accordance with the applicable European assessment Document (hereinafter called EAD)**

### **2.1 Intended use**

This ETICS is intended to be used as external insulation to the walls of buildings made of masonry (bricks, blocks, stones ...) or concrete (cast on site or as prefabricated panels) with and without rendering. The characteristics of the walls shall be verified prior to use of the ETICS, especially regarding conditions for reaction to fire classification and for fixing of the ETICS. It shall be designed to give the wall to which it is applied satisfactory thermal insulation.

The ETICS is non load-bearing construction element. It does not contribute directly to the stability of the wall on which it is installed, but it can contribute to durability by providing enhanced protection from the effects of weathering.

The ETICS can be used on new or existing (retrofit) vertical walls.

The ETICS is not intended to ensure the air tightness of the building structure.

The verifications and assessment methods on which this European Technical Assessment (hereinafter called ETA) is based lead to the assumption of a working life of the ETICS "Capatect-WDVS-Phenolharzschaum" of at least 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer, but are to be regarded only as a means for choosing the right products in relation to the assumed economically reasonable working life of the works

### **2.2 Manufacturing**

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

### **2.3 Design and installation**

The installation instructions including special installation techniques and provisions for the qualification of the personnel are given in the manufacturer's technical documentation.

Design, installation and execution of ETICS are to be in conformity with national documents. Such documents and the level of their implementation in Member States' legislation are different. Therefore, the assessment and declaration of performance are done taking into account general assumptions introduced in the chapters 7.1 and 7.2 of ETAG 004 used as EAD, which summarize how information introduced in the ETA and related documents is intended to be used in the construction process and gives advice to all parties interested when normative documents are missing.

### **2.4 Packing, transport and storage**

The information on packaging, transport and storage is given in the manufacturer's technical documentation. It is the responsibility of the manufacturer to ensure that this information is made know to the concerned people.

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## 2.5 Use, maintenance, repair

The finishing coat shall normally be maintained in order to fully preserve the ETICS performance. Maintenance includes at least:

- visual inspection of the ETICS,
- the repairing of localised damaged areas due to accidents,
- the aspect maintenance with products adapted and compatible with the ETICS (possibly after washing or ad hoc preparation).

Only products which are compatible with the ETICS shall be used.

Necessary repairs should be performed as soon as the need has been identified.

The information on use, maintenance and repair is given in the manufacturer's technical documentation. It is the responsibility of the manufacturer to ensure that this information is made know to the concerned people.

## 3 Characteristics of products and methods of verification

### 3.0 General

The performances of the kit as described in this chapter are valid provided that the components of the kit comply with Annexes 1 - 3.

### 3.1 Mechanical resistance and stability (BWR 1)

not relevant

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

#### Reaction to fire (ETAG 004 - clause 5.1.2)

Configurations	Organic content	Flame retardant content	Euroclass according to EN 13501-1
Base coat	max. 2.9 %	no flame retardant	
PF- insulation product	In quantity ensuring Euroclass C - s2,d0 according to EN 13501-1	In quantity ensuring Euroclass C - s2,d0 according to EN 13501-1	
Anchors	-	-	
<b>rendering system</b> Base coat with finishing coat and compatible key coat indicated in clause 1.1:			
Capatect-Mineral-Leichtputz R, Capatect-Mineral-Leichtputz K, Capatect-Modellier- und Spachtelputz 134	max. 3.7 %	no flame retardant	B - s1,d0

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### 3.3 Hygiene, health and environment (BWR 3)

#### 3.3.1 Water absorption (capillarity test) (ETAG 004 - clause 5.1.3.1)

- **Base coat:**
  - Water absorption after 1 hour < 1 kg/m<sup>2</sup>
  - Water absorption after 24 hours < 0.5 kg/m<sup>2</sup>
- **Rendering system:**

		Water absorption after 24 h	
		< 0.5 kg/m <sup>2</sup>	≥ 0.5 kg/m <sup>2</sup>
<b>Rendering system:</b> Base coat with finishing coat and compatible key coat indicated in clause 1.1	Capatect-Mineral-Leichtputz R30		x
	Capatect-Mineral-Leichtputz R50		x
	Capatect-Mineral-Leichtputz K20		x
	Capatect-Mineral-Leichtputz K50	x	
	Capatect-Modellier- und Spachtelputz 134	x	

#### 3.3.2 Hydrothermal behaviour (ETAG 004 - clause 5.1.3.2)

Pass (without defects)

##### Freeze/thaw behaviour

The ETICS with the finishing coats "Capatect-Mineral-Leichtputz K/ R" has been assessed as freeze/thaw resistant according to the simulated method.

#### 3.3.3 Impact resistance (ETAG 004 - clause 5.1.3.3)

The verified resistance to hard body impact of the ETICS reinforced with "Capatect-Gewebe 650" and all finishing coats results in the classification into category III.

The impact resistance for base coat and finishing coat with the combination of "Capatect-Gewebe 650" and "Capatect-Panzergebebe 652" was unproved.

#### 3.3.4 Water vapour permeability (ETAG 004 - clause 5.1.3.4)

<b>Rendering system:</b> Base coat with finishing indicated in clause 1.1	<b>Equivalent air thickness s<sub>d</sub></b>
Capatect-Mineral-Leichtputz R30	≤ 1.0 m (Test result obtained with particle size 3 mm: 0.15 m)
Capatect-Mineral-Leichtputz R50	≤ 1.0 m (Test result obtained with particle size 5 mm: 0.30 m)
Capatect-Mineral-Leichtputz K20	≤ 1.0 m (Test result obtained with particle size 2 mm: 0.35 m)
Capatect-Mineral-Leichtputz K50	≤ 1.0 m (Test result obtained with particle size 5 mm: 0.15 m)
Capatect-Modellier- und Spachtelputz 134	≤ 1.0 m (Test result obtained with a layer thickness 5 mm: 0.14 m)

#### 3.3.5 Release of dangerous substances (ETAG 004 - clause 5.1.3.5, EOTA TR 034)

<b>Essential characteristic</b>	<b>Performance</b>
Release of dangerous substances	no performance assessed

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**3.4 Safety and accessibility in use (BWR 4)**

**3.4.1 Bond strength between base coat and insulation product (PF) (ETAG 004 - clause 5.1.4.1.1)**

Conditioning		
Initial state	After hygrothermal cycles	After freeze/thaw test
≥ 0.08 MPa	< 0.08 MPa but failure in the insulation product	Test not required because freeze/thaw cycles not necessary

**3.4.2 Bond strength after ageing (ETAG 004 - clause 5.1.7.1)**

<b>Rendering system:</b> Base coat with finishing coat and compatible key coat indicated in clause 1.1	Capatect-Mineral-Leichtputz R	< 0.08 MPa but failure in the insulation product
	Capatect-Mineral-Leichtputz K	
	Capatect-Modellier- und Spachtelputz 134	

**3.4.3 Fixing strength (displacement test) (ETAG 004 - clause 5.1.4.2)**

Test not required therefore no limitation of ETICS length required.

**3.4.4 Wind load resistance (ETAG 004 - clause 5.1.4.3)**

**3.4.4.1 Safety in use of mechanically fixed ETICS using anchors**

The following failure loads only apply to the listed combination and the characteristics of the insulation product given in annex 1.

Apply to all anchors listed in the Table in clause 1.1 mounted on the insulation panels surface. No deep mounting applies to this ETICS.					
Thickness of PF insulation product				40 mm < d < 60 mm	60 mm ≤ d ≤ 140 mm
Plate diameter of anchor				≥ Ø 60 mm	
Failure loads [N]	Anchors not placed at the panel joints (Pull-through test/dry conditions)	R <sub>panel</sub>	Minimal: Average:	640 750	680 730
	Anchors placed at the panel joints (Pull-through test/dry conditions)	R <sub>joint</sub>	Minimal: Average:	510 690	630 720
	Anchors not placed at the panel joints (Pull-through test/wet conditions)	R <sub>panel</sub>	Minimal: Average:	625 670	660 725
	Anchors placed at the panel joints (Pull-through test/wet conditions)	R <sub>joint</sub>	Minimal: Average:	465 595	615 700

**3.4.5 Render strip tensile test (ETAG 004 - clause 5.5.4.1)**

The average value of crack width of the base coat reinforced with the glass fibre mesh "Capatect-Gewebe 650" measured at a render strain value of 1 % is about 0.06 mm.

**3.5 Protection against noise (BWR 5)**

NPD (no performance determined)



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### 3.6 Energy economy and heat retention (BWR 6)

#### 3.6.1 Thermal resistance

The nominal value of the additional thermal resistance  $R$  provided by the ETICS to the substrate wall is calculated in accordance with EN ISO 6946:2007 from the nominal value of the insulation product's thermal resistance  $R_D$  given accompanied to the CE marking and from the thermal resistance of the rendering system  $R_{render}$  which is about  $0.02 \text{ (m}^2 \cdot \text{K)/W}$ .

$$R = R_D + R_{render}$$

The thermal bridges caused by anchors increases the thermal transmittance  $U$ . This influence had to take into account according to EN ISO 6946:2007.

$$U_c = U + \chi_p \cdot n \quad \text{corrected thermal transmittance [W/(m} \cdot \text{K)]}$$

where:  $\chi_p \cdot n$  influence of thermal bridges

$n$  number of anchors per  $\text{m}^2$

$\chi_p$  local influence of thermal bridge caused by an anchor. The values listed below can be taken into account, if not specified in the anchor's technical approval

$\chi_p = 0.004 \text{ W/K}$  for anchors with a galvanized steel screw with the head covered by a plastic material

$\chi_p = 0.002 \text{ W/K}$  for anchors with a stainless steel screw with the head covered by plastic material, and for anchors with an air gap at the head of the screw

### 3.7 Sustainable use of natural resources (BWR 7)

For the sustainable use of natural resources no performance was investigated for this product.

## 4 Assessment and verification of constancy of performance system applied, with reference to its legal base

According to the European Commission decision 97/556/EC amended by the European Commission decision 2001/596/EC, the assessment and verification of constancy of performance system (AVCP) applies suitable following table (see Annex V to Regulation (EU) No 305/2011):

Product	Intended use	Levels or classes (Reaction to fire)	Systems
"Capatect-WDVS Phenolharzschaum"	in external wall subject to fire regulations	A1 <sup>(1)</sup> , A2 <sup>(1)</sup> , B <sup>(1)</sup> , C <sup>(1)</sup>	1
		A1 <sup>(2)</sup> , A2 <sup>(2)</sup> , B <sup>(2)</sup> , C <sup>(2)</sup> , D, E, (A1 to E) <sup>(3)</sup> , F	2+
	in external wall not subject to fire regulations	any	2+
<sup>(1)</sup> Products/materials for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material) <sup>(2)</sup> Products/materials not covered by footnote (1) <sup>(3)</sup> Products/materials that do not require to be tested for reaction to fire (e.g. products/materials of Classes A1 according to Commission Decision 96/603/EC)			

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**5 Technical details necessary for the implementation of the AVCP system, as provided for in 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 27 August 2016 by Deutsches Institut für Bautechnik.

Dirk Brandenburger  
Head of Department

*beglaubigt:*  
Windhorst

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**Annexes:**

- Annex 1: Thermal insulation product characteristic
- Annex 2: Anchors
- Annex 3: Reinforcement

**Annex 1: Thermal insulation product characteristic**

Factory-prefabricated panels made of phenolic foam (PF) (PF panel "Kooltherm K 5") to EN 13166:2008, coated on both sides with glass fibre fleece shall be used, having the description and characteristics defined in the Table below.

Description and characteristics	For with anchors and supplementary adhesive mechanically fixed ETICS
Reaction to fire; EN 13501-1:2007	Class C - s2,d0
Thermal resistance [(m <sup>2</sup> ·K)/W]	Defined in the CE marking in reference to EN 13166:2008
<b>Tolerances</b>	
Length [mm/panel]; length: 1200 mm; EN 822:1994	± 2
Width [mm/panel]; width: 400 mm; EN 822:1994	± 2
Thickness [mm]; EN 823:1994 - 40 mm ≤ d <sub>N</sub> ≤ 100 mm - d <sub>N</sub> ≥ 100 mm	± 2 - 2/+4
Squareness [mm/m]; EN 824:1994 - in length and width [mm/m] - in thickness [mm]	± 2 ≤ 2
Flatness [mm/m]; EN 825:1994	± 3.5
<b>Dimensional stability</b>	
under laboratory conditions [%]; EN 1603:1996 - relative changes in length and width	± 0.2
at specified temperature (48 h at (70 ± 2) °C) [%]; EN 1604:1996 - relative changes in length and width - relative changes in thickness	± 1 ± 2
under specified temperature and humidity conditions (48 h at (70 ± 2) °C/(90 ± 5) % RH) [%]; EN 1604:1996 - relative changes in length, width - relative changes in thickness	± 0.5 ± 1.5
at -20 °C (48 h at (-20 ± 2) °C) [%]; EN 1604:1996 - relative changes in length and width - relative changes in thickness	± 0.5 ± 1.5
Water absorption (short term immersion) [kg/m <sup>2</sup> ]; EN 1609:1997	W <sub>p</sub> ≤ 0.9
Water vapour diffusion resistance factor; EN 12086:1997	μ = 35
Tensile strength perpendicular to the faces* [kPa]; EN 1607:1996 PF without coating (fleece) - in dry conditions	σ <sub>mt</sub> ≥ 72
- in wet conditions**	σ <sub>mt</sub> ≥ 50

Description and characteristics	For with anchors and supplementary adhesive mechanically fixed ETICS
Tensile strength perpendicular to the faces* [kPa]; EN 1607:1996 PF with coating (fleece) - in dry conditions	$\sigma_{mt} \geq 40$
- in wet conditions**	$\sigma_{mt} \geq 15$
Bending strength* [kPa]; EN 12089:1997	$\sigma_b \geq 200$
Apparent density [kg/m <sup>3</sup> ]; EN 1602:1996	$35 < \rho_a < 45$
Closed cell content [%]; EN ISO 4590:2003	$\Psi_O \geq 90$
Shear strength* [kPa]; EN 12090:1997	$50 < f_{rk} \leq 70$
Shear modulus [MPa]; EN 12090:1997	$1.8 \leq G_m \leq 2.4$
Testing of characteristics see EN 13166:2008.	
* Minimal value of all single values	
** According to ETAG 004 clause 5.2.4.1.2	

## Annex 2: Anchors

All anchors with ETA according to ETAG 014<sup>1</sup> with characteristics having the description below shall be used in the mechanically fixed ETICS:

- plate diameter of anchor  $\geq 60$  mm
- plate stiffness  $\geq 0.3$  kN/mm
- load resistance of the anchor plate  $\geq 1.0$  kN

These characteristics and the characteristic tension resistance of the anchors shall be taken from the corresponding ETA.

**Annex 3: Reinforcement (glass fibre mesh)**

Characteristics (alkali resistance): Pass

	Description	Residual strength after ageing  [N/mm]	Relative residual resistance after ageing in % of the strength in the as-delivered state
"Capatect-Gewebe 650"	Alkali- and slide-resistant glass fibre mesh with mass per unit area of about 160 g/m <sup>2</sup> and mesh size of about 4.0 mm x 4.0 mm	≥ 20	≥ 50
"Capatect-Panzerewebe 652"	(implemented in addition to the standard mesh to improve the impact resistance) Alkali- and slide-resistant glass fibre mesh with mass per unit area of about 330 g/m <sup>2</sup> and mesh size of about 6.0 mm x 6.0 mm	no performance determined	no performance determined