Deutsches Institut für Bautechnik

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Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

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European Technical Assessment

ETA-07/0184 of 24 February 2023

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 "B" mit Unterputz Capatect ZF-Spachtel 699 und Unterputz Capatect ZF- Spachtel 699 SPRINTER
Product family to which the construction product belongs	Product area code: 4 External Thermal Insulation Composite System with rendering on expanded polystyrene intended for use on 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	21 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	EAD 040083-00-0404
This version replaces	ETA-07/0184 issued on 27 November 2019

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Specific part

1 Technical description of the product

This product is an External Thermal Insulation Composite System (ETICS) 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 the ETICS.

The ETICS kit comprises a prefabricated insulation product of expanded polystyrene (EPS) to be bonded and if necessary additional mechanically fixed onto a wall. The methods of fixing and the relevant components are specified in annex 1.

The insulation product is faced with a rendering system consisting of one base and finishing coat (site applied), the base coat contains reinforcement. The rendering system 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 ...) for connection to adjacent building elements (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.

2 Specification of the intended use in accordance with the applicable European assessment Document

The performances in Section 3 can only be assumed if the ETICS is used in accordance with the specifications and under the boundary conditions specified in Annexes 2 to 5.

The verifications and assessment methods on which this ETA is based lead to the assumption of a working life of the "Capatect WDVS "B" mit Unterputz Capatect ZF-Spachtel 699 und Unterputz Capatect ZF- Spachtel 699 SPRINTER" 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.

For use, maintenance and 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 localized damaged areas due to accidents,
- the aspect maintenance with products compatible with the ETICS (possibly after washing or ad hoc preparation).

Necessary repairs are to be carried out 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 known to the concerned people.

3 Characteristics of products and methods of verification

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire of the ETICS	(see annex 2) Euroclass according to EN 13501-1
Reaction to fire of the EPS-insulation product – Apparent density of the EPS-insulation product according to EN 1602	(see annex 2) Euroclass E according EN 13501-1 Value [kg/m³]
Facade fire performance	no performance assessed
Propensity to undergo continuous smouldering of ETICS	no performance assessed

3.2 Hygiene, health and environment (BWR 3)

Essential characteristic	Performance	
Release of dangerous substances	no performance assessed	
Water absorption Base coat after 1 hour after 24 hours **Rendering system** after 1 hour after 24 hours EPS- insulation product after 24 h	(see annex 3.1) Average [kg/m²] Average [kg/m²] Average [kg/m²] Average [kg/m²] maximum value 0.5 kg/m²	
Water-tightness of the ETICS Hygrothermal behaviour on the test wall	Pass without defects	
Water-tightness of the ETICS: Freeze/thaw behaviour	The water absorption of the base coats as well as the rendering systems is less than 0.5 kg/m² for all configurations of the ETICS. The ETICS is so assessed as freeze/thaw resistant.	
Impact resistance	(see annex 3.2) Category	
Water vapour permeability - Rendering system - EPS insulation product	(see annex 3.3) s_d value [m]. μ = 20 – 70	Thickness of the insulation product 400 mm

3.3 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Bond strength between base coat and EPS-insulation product	(see annex 4.1) - Minimal value/average [kPa], rupture type Initial state (28 d immersion) - Minimal value/average [kPa], rupture type: after hygrothermal cycles

Essential characteristic	**Performance**
between adhesive and substrate	(see annex 4.2) - Thickness [mm] of the used adhesives - Minimal value/average [kPa]: Initial state (dry conditions) - Minimal value/ average [kPa]: after 2 d immersion in water, 2 h drying - Minimal value/ average [kPa]: after 2 d immersion in water, 7 d drying
between adhesive and EPS insulation	(see annex 4.3) - Thickness [mm] of the used adhesives - Minimal value/average [kPa]: Initial state (dry conditions) - Minimal value/ average [kPa]: after 2 d immersion in water, 2 h drying - Minimal value/ average [kPa]: after 2 d immersion in water, 7 d drying
Fixing strength (displacement test)	Test not required therefore no limitation of ETICS length required.
Wind load resistance of ETICS pull-through test of fixing static foam block test	(see annex 4.4) - R_{panel} [kN/fixing], - R_{joint} [kN/fixing], - Plate diameter of anchor ≥ 60 mm resp. ≥ 90 mm - plate stiffness ≥ 0.3 kN/mm² - load resistance of the anchor plate ≥ 1.0 kN
Tensile strength perpendicular to the faces in dry conditions standard EPS elastified EPS	 $\sigma_{mt} \geq 80$ kPa (bonded ETICS) $\sigma_{mt} \geq 100$ kPa (bonded ETICS with anchors) $\sigma_{mt} \geq 150$ kPa (bonded ETICS with profiles) $\sigma_{mt} \geq 80$ kPa
Shear strength of the ETICS	$20 \leq f_{\tau k} \leq 170$ [kPa]
Shear modulus of the ETICS standard EPS elastified EPS	 $1.0 \leq G_m \leq 3.8$ [MPa] $0.3 \leq G_m \leq 1.0$ [MPa]
Pull-through resistance of the fixing of profiles	≥ 0.5 kN
Render strip tensile test	(siehe Anhang 4.5) crack width w_{rk} [mm]
Bond strength after ageing finishing coat tested on the rig finishing coat not tested on the rig	(see annex 4.6) Minimal value/average [kPa] Minimal value/average [kPa]

Essential characteristic	Performance
Tensile strength of the glass fibre mesh in the as-delivered state	(see annex 4.7) Average [N/mm]
Residual tensile strength of the glass fibre mesh after aging	(see annex 4.7) Average [N/mm]
Relative residual tensile strength of the glass fibre mesh after aging	(see annex 4.7) Average [%]
Elongation of the glass fibre mesh in the as-delivered state	(see annex 4.7) Average [%]
Elongation of the glass fibre mesh after aging	(see annex 4.7) Average [%]

3.4 Protection against noise (BWR 5)

Essential characteristic	Performance
Airborne sound insulation of ETICS	no performance assessed
Dynamic stiffness of the EPS insulation product	no performance assessed
Air flow resistance of the EPS insulation product	no performance assessed

3.5 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Thermal resistance of ETICS	(see annex 5) Calculated value or measurement value R [(m² · K)/W]
thermal transmittance of ETICS	(see annex 5) Calculated value or measurement value U [W/(m² · K)]

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

In accordance with EAD No. 040083-00-0404 the applicable European legal act is:
[97/556/EC changed by 2001/596/EC
The systems to be applied are:

Product	Intended use	Levels or classes (Reaction to fire)	Systems
"Capatect WDVS "B" mit Unterputz Capatect ZF-Spachtel 699 und Unterputz Capatect ZF-Spachtel 699 SPRINTER"	ETICS in external wall subject to fire regulations	A1 (1), A2 (1), B (1), C (1)	1
		A1 (2), A2 (2), B (2), C (2), D, E, (A1 bis E) (3), F	2+
	ETICS in external wall not subject to fire regulations	any	2+

(1) 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)
(2) Products/materials not covered by footnote (1)
(3) 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)

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable European Assessment Document

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 24 February 2023 by Deutsches Institut für Bautechnik

Anja Rogsch
Head of Section

beglaubigt:
Windhorst

Annex 1
Composition of the ETICS

	Components National application documents shall be taken into account	**Coveragee [kg/m²]**	**Thickness [mm]**
Insulation material with associated method of fixing	**Bonded ETICS:** • **Insulation product** factory-prefabricated expanded polystyrene (EPS)* - standard-EPS - elastified EPS • **Adhesives** – **Capatect Klebe- und Armierungsmasse 186 M** (cement based powder requiring addition of 20 - 24 % water) – **Capatect Klebe- und Spachtelmasse 190** (cement based powder requiring addition of 20 - 24 % water) – **Capatect Klebe- und Armierungsmasse 133 Leicht** (cement based powder requiring addition of 36 - 40 % water) – **Capatect Klebe- und Armierungsmasse 131 SL** (cement based powder requiring addition of 40 - 43 % water) – **Capatect Dämmkleber 185** (cement based powder requiring addition of about 20 % water) – **Capatect ArmaReno 700** (cement based powder requiring addition of 20 - 25 % water) – **Capatect ZF-Spachtel 699** (organic based ready to use paste) – **Capatect ZF-Spachtel 699 SPRINTER** (organic based ready to use paste) – **Capatect Klebe- und Armierungsmasse 186 M SPRINTER** (cement based powder requiring addition of about 22 % water) – **Capatect X-TRA 300** (cement based powder requiring addition of 36 - 40 % water)	– – 3.0 to 5.0 (powder) 3.0 to 5.0 (powder) 3.0 to 3.5 (powder) 3.0 to 3.5 (powder) 4.0 to 5.0 (powder) 3.5 to 5.0 (powder) 2.0 to 4.0 2.5 to 3.0 3.0 to 5.0 (powder) 4.0 to 5.0 (powder)	≤ 400 ≤ 200 – – – – – – – – –
	Mechanically fixed ETICS with profiles and supplementary adhesive: • **Insulation product** factory-prefabricated expanded polystyrene (EPS)* – standard EPS • **Supplementary adhesives** (equal to bonded ETICS) • **Profiles** – Halteleiste PVC – Verbindungsleiste PVC Polyvinyl chloride (PVC) profiles	– –	60 to 200

	Components National application documents shall be taken into account	**Coveragee [kg/m²]**	**Thickness [mm]**
Insulation material with associated method of fixing	• **Anchors for profiles** – WS 8 L – ejotherm SDK U – SDF-K plus – ejotherm NK U		
	Mechanically fixed ETICS with anchors and supplementary adhesive: • **Insulation product** factory-prefabricated expanded polystyrene (EPS)* - standard-EPS - elastified EPS • **Supplementary adhesives** (equal to bonded ETICS) • **Anchors for insulation product** anchors with ETA acc. to EAD 330196-01-0604[1]	 – – 	 60 to 400 60 to 200
Base coat	**Capatect ZF-Spachtel 699** Ready to use paste (cement free) consisting of a styrolacrylate binder in watery dispersion. **Capatect ZF-Spachtel 699 SPRINTER** Ready to use paste (cement free) consisting of a styrolacrylate binder in watery dispersion. Identical with the equally named adhesives given above.	2.0 to 5.2 2.6 to 6.5	2.0 to 5.0 2.0 to 5.0
Glass fibre mesh	**Capatect Gewebe 650** Alkali- and slide-resistant glass fibre mesh with mass per unit area of about 160 g/m² and mesh size of about 4.0 mm x 4.0 mm. **Capatect Panzergewebe 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/m² and mesh size of about 6.0 mm x 6.0 mm.	– –	– –
Key coat	**Putzgrund 610** Ready to use pigmented liquid – styrol acrylatebinder For the compatibility with the finishing coats see below.	about 0.20 l/m²	–

[1] EAD 330196-01-0604 Plastic anchors made of virgin or non -virgin material for fixing of ETICS with rendering

	Components National application documents shall be taken into account	**Coveragee [kg/m²]**	**Thickness [mm]**
Finishing coat	**To use with key coat "Putzgrund 610" if applicable***:**		
	• Ready to use pastes – acrylate binder:		
	Capatect Fassadenputz R** (particle size 2.0 to 3.0 mm)	2.8 to 3.6	regulated by particle size
	Capatect Fassadenputz K** (particle size 1.5 to 3.0 mm)	2.7 to 4.3	
	Capatect Fassadenputz K ignifugé (particle size 1.5 to 2.0 mm)	2.7 to 3.3	
	• Ready to use pastes – acrylate/silicone resin emulsion:		
	Capatect AmphiSilan-Fassadenputz R** (particle size 2.0 to 3.0 mm)	2.5 to 3.5	
	Capatect AmphiSilan-Fassadenputz K** (particle size 1.5 to 3.0 mm)	2.5 to 4.1	
	Capatect AmphiSilan Fassadenputz K ignifugé (particle size 1.5 to 2.0 mm)	2.5 to 3.2	
	Capatect AmphiSilan Fassadenputz K SPRINTER**** (particle size 2.0 to 3.0 mm)	3.2 to 4.1	
	• Ready to use paste – vinyl acetate ethylene binder		
	Capatect Fassadenputz Fein	3.0 to 4.5	2.0 to 3.0
	• Ready to use pastes – styrol acrylate binder – associated with synthetic briquettes:		
	Meldorfer Flachverblender mit	4.0 to 5.0	6.0
	Meldorfer Ansatzmörtel 080	3.0 to 4.0	1.0 to 4.0
Ancillary material	Remain under the manufacturer's responsibility.		

* Factory-prefabricated, uncoated panels made of expanded polystyrene (EPS) shall be used.
** K / R indicates different structures of the finishing coats.
*** The instruction to the installer concerning the use of a key coat remains the responsibility of the manufacturer.
**** The finishing coat is only applicable with base coat. "Capatect ZF-Spachtel 699 SPRINTER".

Annex 2
Safety in case of fire (BWR 2)

2.1 Reaction to fire

Configuration	Organic content	Flame retardant content	Euroclass according to EN 13501-1
Base coat "Capatect ZF – Spachtel 699"	max. 9.3 %	min. 11.2 %	B - s2,d0
EPS-insulation product	Euroclass E according to EN 13501-1	Euroclass E according to EN 13501-1	
Profile	-	-	
Dübel	-	-	
Rendering system: Base coat with finishing coat and compatible key coat indicated hereafter:			
Capatect Fassadenputz R, K with key coat Putzgrund 610	max. 7.3 %	min. 3.0 %	
Capatect Fassadenputz K ignifugé with key coat Putzgrund 610			
Capatect AmphiSilan-Fassadenputz R, K with key coat Putzgrund 610			
Capatect AmphiSilan-Fassadenputz K ignifugé with key coat Putzgrund 610	max. 6.7 %	min. 6.1 %	
Capatect Fassadenputz Fein with key coat Putzgrund 610	max. 8.9 %	no flame retardent	
Meldorfer Flachverblender mit Meldorfer Ansatzmörtel 080 with key coat Putzgrund 610	max. 9.2 % max. 9.9 %	min. 9.0 % no flame retardent	

Configuration	Organic content	Flame retardant content	Euroclass according to EN 13501-1
Base coat "Capatect ZF – Spachtel 699 Sprinter"	max. 9.5 %	min. 11.7 %	C - s2,d0
EPS-insulation product thickness max. 300 mm apparent density max. 25 kg/m³	Euroclass E according to EN 13501-1	Euroclass E according to EN 13501-1	
Profile	-	-	
Dübel	-	-	
Rendering system: Base coat with finishing coat and compatible key coat indicated hereafter:			
Capatect AmphiSilan Fassadenputz K SPRINTER	max. 8.8 %	min. 3.0 %	

2.2 Apparent density of the EPS-insulation product according to EN 1602

$\rho_a \leq 30$ kg/m³

Annex 3

Hygiene, health and environment (BWR 3)

3.1 Water absorption (capillarity test)

Base coat

Base coat	Average water absorption [kg/m²]	
	after 1 h	after 24 h
Capatect ZF-Spachtel 699	0.07	0.12
Capatect ZF-Spachtel 699 SPRINTER	0.02	0.32

Rendering system:

Rendering system: Base coat "Capatect ZF-Spachtel 699"with finishing coat indicated hereafter	Average water absorption [kg/m²]	
	after 1 h	after 24 h
Capatect Fassadenputz R, K	0.04	0.32
Capatect Fassadenputz K ignifugé	0.01	0.45
Capatect AmphiSilan Fassadenputz R/K	0.09	0.46
Capatect AmphiSilan Fassadenputz K ignifugé	0.03	0.42
Capatect Fassadenputz Fein	0.05	0.35
Meldorfer Flachverblender mit Meldorfer Ansatzmörtel 080	0.06	0.19

Rendering system: Base coat "Capatect ZF-Spachtel 699 SPRINTER" with finishing coat indicated hereafter	Average water absorption [kg/m²]	
	after 1 h	after 24 h
Capatect AmphiSilan Fassadenputz K SPRINTER	0.05	0.31

3.2 Impact resistance

Rendering system: Base coat "Capatect ZF-Spachtel 699" with finishing coat indicated hereafter.	**Single standard mesh "Capatect-Gewebe 650"**	
	(t < 6 mm)	(t ≥ 6 mm)
Capatect Fassadenputz R, K	category II	category I
Capatect Fassadenputz K ignifugé	no performance assessed	
Capatect AmphiSilan Fassadenputz R, K	category II	category I
Capatect AmphiSilan Fassadenputz K ignifugé	no performance assessed	
Capatect Fassadenputz Fein	category II	category II
Meldorfer Flachverblender mit Meldorfer Ansatzmörtel 080		category I

For the impact resistance for base coat "Capatect ZF-Spachtel 699"and finishing coats with the combination of "Capatect-Gewebe 650" and "Capatect-Panzergewebe 652" no performance was assessed.

For the impact resistance for base coat "Capatect ZF-Spachtel 699 SPRINTER"and finishing coat "Capatect AmphiSilan Fassadenputz K SPRINTER" no performance was assessed.

3.3 Water vapour permeability ETICS

Rendering system: Base coat "Capatect ZF-Spachtel 699" with finishing coat and compatible key coat indicated hereafter	**Equivalent air thickness s_d**
Capatect Fassadenputz R, K	≤ 1.5 m (Test result obtained with particle size 3 mm: 0.8 m)
Capatect Fassadenputz K ignifugé	≤ 1.5 m (Test result obtained with layer thickness 2 mm: 0.4 m)
Capatect AmphiSilan Fassadenputz R, K	≤ 1.5 m (Test result obtained with particle size 3 mm: 0.8 m)
Capatect AmphiSilan Fassadenputz K ignifugé	≤ 1.5 m (Test result obtained with layer thickness 2 mm: 0.4 m)
Capatect Fassadenputz Fein	≤ 1.5 m (Test result obtained with layer thickness 3 mm: 0.8 m)
Meldorfer Flachverblender mit Meldorfer Ansatzmörtel 080	≤ 1.5 m (Test result: 0.9 m)

Rendering system: Base coat "Capatect ZF-Spachtel 699 SPRINTER" with finishing coat and compatible key coat indicated hereafter	**Equivalent air thickness s_d**
Capatect AmphiSilan Fassadenputz K SPRINTER	≤ 1.5 m (Test result obtained with layer thickness 8 mm: 1.48 m)

Annex 4

Safety and accessibility in use (BWR 4)

4.1 Bond strength between base coat and insulation product (EPS)

		Conditioning		
		Initial state [kPa]	**After hygrothermal cycles [kPa]**	**After freeze/thaw test**
Capatect ZF- Spachtel 699	Average	125	125	Test not required because freeze/thaw cycles not necessary
	Minimal value	117	117	
Capatect ZF- Spachtel 699 SPRINTER	Average	128	112	
	Minimal value	125	105	

4.2 Bond strength between adhesive and substrate

Substrate: concrete		**Initial state [kPa]**	**2 d immersion in water and 2 h drying [kPa]**	**2 d immersion in water and 7 d drying [kPa]**
Capatect Klebe- und Armierungsmasse 186 M	Average	820	452	894
	Minimal value	790	410	870
Capatect Klebe- und Spachtelmasse 190	Average	1020	1000	1110
	Minimal value	930	590	101
Capatect Klebe- und Armierungsmasse 133 Leicht	Average	658	465	704
	Minimal value	586	419	677
Capatect Klebe- und Armierungsmasse 131 SL	Average	535	367	629
	Minimal value	496	328	435
Capatect Dämmkleber 185	Average	1852	1735	1771
	Minimal value	1350	1620	1595
Capatect ArmaReno 700	Average	980	730	1090
	Minimal value	860	630	950
Capatect ZF- Spachtel 699	Average	1025	649	519
	Minimal value	990	553	411
Capatect ZF- Spachtel 699 SPRINTER	Average	767	-	835
	Minimal value	683	-	746
Capatect Klebe- und Armierungsmasse 186 M SPRINTER	Average	920	420	550
	Minimal value	800	330	490
Capatect X-TRA 300	Average	678	310	671
	Minimal value	532	283	653

4.3 Bond strength between adhesive and insulation product (EPS)

		Initial state [kPa]	2 d immersion in water and 2 h drying [kPa]	2d immersion in water and 7 d drying [kPa]
Capatect Klebe- und Armierungsmasse 186 M	Average	93	83	94
	Minimal value	89	79	91
Capatect Klebe- und Spachtelmasse 190	Average	110	90	110
	Minimal value	90	87	97
Capatect Klebe- und Armierungsmasse 133 Leicht	Average	150	99	127
	Minimal value	135	85	117
Capatect Klebe- und Armierungsmasse 131 SL	Average	145	136	161
	Minimal value	115	89	137
Capatect Dämmkleber 185	Average	121	111	123
	Minimal value	110	101	112
Capatect ArmaReno 700	Average	110	70	120
	Minimal value	100	60	90
Capatect ZF- Spachtel 699	Average	125	133	110
	Minimal value	117	109	95
Capatect ZF- Spachtel 699 SPRINTER	Average	128	-	130
	Minimal value	122	-	124
Capatect Klebe- und Armierungsmasse 186 M SPRINTER	Average	110	100	110
	Minimal value	110	90	100
Capatect X-TRA 300	Average	120	78	100
	Minimal value	96	66	92

Minimal bonded surface area

S [%] = 0.03 N/mm² x 100 / 0.08 N/mm²

S = 37.50 %

The minimal bonded surface S of bonded ETICS is 40 %.

4.4 Wind load resistance

The following failure loads only apply to the listed combination of component characteristics and the characteristics of the insulation product.

4.4.1 Wind load resistance of ETICS mechanically fixed with profiles

Characteristics of the EPS **(standard EPS)**	Dimensions	500 mm x 500 mm
	Thickness	≥ 60 mm
	Tensile strength perpendicular to the faces	**≥ 150 kPa**
	Shear modulus	≥ 1.0 N/mm²
Failure load [kN/panel] (Static Foam Block Test)	Horizontal profiles fixed every 30 cm and 49.4 cm long vertical connection profiles	Minimal: 0,095 Average: 0,101

4.4.2 Wind load resistance of ETICS mechanically fixed with anchors

Apply to all anchors listed in annex 1 mounted on the insulation panels surface				
Characteristics of the EPS **(standard EPS)**	Thickness		≥ 60 mm	
	Tensile strength perpendicular to the faces		**≥ 100 kPa**	
	Shear modulus		≥ 1.0 N/mm²	
Plate diameter of anchor			∅ 60 mm	∅ 90 mm
plate stiffness			≥ 0.3 kN/mm	
load resistance of the anchor plate			≥ 1.0 kN	
Failure load [kN]	Anchors not placed at the panel joints (Static Foam Block Test)	R_{panel}	Minimal: 0.51 Average: 0.52	Minimal: 0.72 Average: 0.73
	Anchors placed at the panel joints (Pull-through test)	R_{joint}	Minimal: 0.40 Average: 0.43	Minimal: 0.43 Average: 0.47

Apply to all anchors listed in annex 1 mounted on the insulation panels surface			
Characteristics of the EPS **(elastified EPS)**	Thickness		≥ 60 mm
	Tensile strength perpendicular to the faces		**≥ 80 kPa**
	Shear modulus		≥ 0.3 N/mm²
Plate diameter of anchor			∅ 60 mm
plate stiffness			≥ 0.3 kN/mm
load resistance of the anchor plate			≥ 1.0 kN
Failure load [kN]	Anchors not placed at the panel joints (Static Foam Block Test)	R_{panel}	Minimal: 0.35 Average: 0.36
	Anchors placed at the panel joints (Pull-through test)	R_{joint}	Minimal: 0.30 Average: 0.31

The failure loads specified above for a plate diameter of anchor of 60 mm apply to the following anchors with deep mounting but only on the following conditions of installation:

Anchor	Thickness of the EPS [t]	Conditions of installation*
ejotherm STR U, ejotherm STR U 2G (ETA-04/0023) STR-Carbon (ETA-13/0009)	100 mm > t ≥ 80 mm (for standard and elastified EPS)	– Maximum installation depth of the anchor plate: 15 mm (≙ thickness of insulation cover) – Incision depth: 20 mm
	≥ 100 mm (for standard and elastified EPS)	– Maximum installation depth of the anchor plate: 15 mm (≙ thickness of insulation cover) – Incision depth: 35 mm
TERMOZ 8 SV (ETA-06/0180)	≥ 80 mm (for standard EPS only)	– Maximum installation depth of the anchor plate: 15 mm (≙ thickness of insulation cover)
Hilti ETICS screwed-in anchor D 8-FV (ETA-07/0288)	≥ 100 mm (for standard and elastified EPS)	– Minimum thickness of fixture in the insulation panel: t_{fix} = 80 mm; only setting tools according to ETA-07/0288 are to be used.
* according to the appropriate ETA of anchor		

4.5 Render strip tensile test

No cracks occurred during the Render Strip Tensile Test of the base coat reinforced with the glass fibre mesh "Capatect Gewebe 650" at a render strain value of 1 %.

4.6 Bond strength after aging [kPa]

Base coat "Capatect ZF- Spachtel 699" with finishing coat indicated hereafter		**7 d immersion in water and 7 d drying [kPa]**	**After hygrothermal cycles [kPa]**
Capatect Fassadenputz R, K	Average	100	
	Minimal value	96	
Capatect Fassadenputz K ignifugé	Average	140	
	Minimal value	130	
Capatect AmphiSilan Fassadenputz R, K	Average	100	
	Minimal value	95	
Capatect-Fassadenputz Fein	Average	150	
	Minimal value	130	
Meldorfer Flachverblender mit Meldorfer Ansatzmörtel 080	Average		96
	Minimal value		93

Base coat "Capatect ZF- Spachtel 699 SPRINTER" with finishing coat indicated hereafter		**7 d immersion in water and 7 d drying [kPa]**	**After hygrothermal cycles [kPa]**
Capatect AmphiSilan Fassadenputz K SPRINTER	Average		97
	Minimal value		62*
* < 80 kPa but failure in thermal insulation material			

4.7 Reinforcement (glass fibre mesh)

Capatect Gewebe 650	Average warp	Average weft
Tensile strength in as-delivered state	44.8 N / mm	44.8 N / mm
Residual tensile strength after aging	30.6 N / mm	30.2 N / mm
Relative residual tensile strength after aging	68.3 %	67.4 %
Elongation in as-delivered state	3.6 %	3.6 %
Elongation after aging	1.49 %	1.31

Capatect Panzergewebe 652	Average warp	Average weft
Tensile strength in as-delivered state	64.0 N / mm	70.0 N / mm
Residual tensile strength after aging	32.0 N / mm	35.0 N / mm
Relative residual tensile strength after aging	50.0 %	50.0 %
Elongation in as-delivered state	4.5 %	4.5 %
Elongation after aging	4.0 %	4.0 %

Annex 5

Energy economy and heat retention (BWR6)

Thermal resistance und thermal transmittance

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 (m² · K)/W.

$R = R_D + R_{render}$

The thermal bridges caused by mechanical fixing (anchors, profiles) increases the thermal transmittance U. This influence had to take into account according to EN ISO 6946:2007

$U_c = U + \chi_p \cdot n$

Where:	U_c:	corrected thermal transmittance [W/(m² · K)]
	n:	number of anchors per m²
	χ_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 ETA:
	χ_p = 0.004 W/K	for anchors with a galvanized steel screw with the head covered by a plastic material
	χ_p = 0.002 W/K	for anchors with a stainless steel screw covered by plastic anchors and for anchors with an air gap at the head of the screw

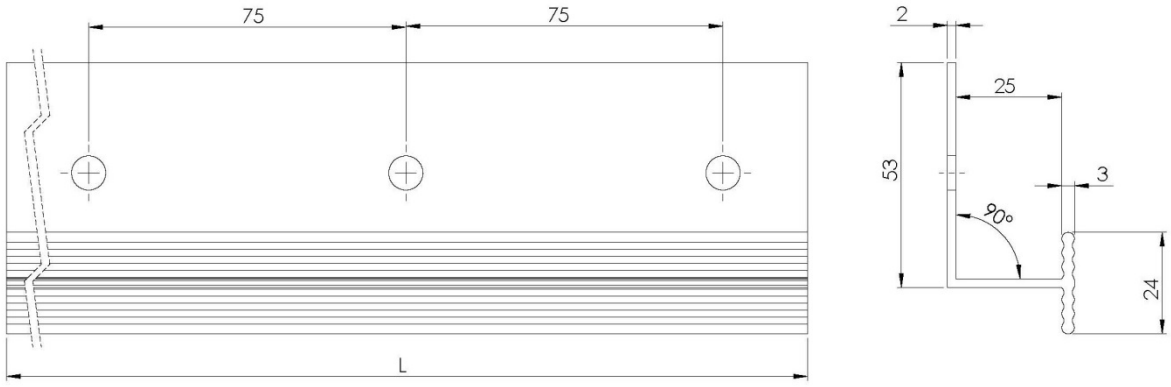
The thermal bridges caused by profiles are negligible.

Annex 6: Profiles

Polyvinyl chloride (PVC) profiles, PVC-U, EGL, 082-05-T33 to EN ISO 1163-1, are to be used in the mechanically fixed ETICS with profiles.

The Pull-through resistance of fixings from profiles is ≥ 500 N.

Horizontal profile – "Halteleiste PVC" (dimensions in millimetres)



Vertical connection profile – "Verbindungsleiste PVC" (dimensions in millimetres)