

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-08/0365
of 17 December 2018

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

Lobatherm System P

Product family
to which the construction product belongs

Product area code: 4
External Thermal Insulation Composite System with
rendering
on expanded polystyrene for use on building walls

Manufacturer

quick-mix Gruppe GmbH & Co. KG
Mühlenschweg 6
49090 Osnabrück
DEUTSCHLAND

Manufacturing plant

quick-mix Gruppe GmbH & Co. KG
Mühlenschweg 6
49090 Osnabrück
DEUTSCHLAND

This European Technical Assessment
contains

21 pages including 4 annexes which form an integral part
of this assessment

Annex 5 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

ETAG 004, edition 2000, amended 2013,
used as EAD according to Article 66 Paragraph 3 of
Regulation (EU) No 305/2011.

The European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and shall be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may only be made with the written consent of the issuing Technical Assessment Body. Any partial reproduction shall be identified as such.

This European Technical Assessment may be withdrawn by the issuing Technical Assessment Body, in particular pursuant to information by the Commission in accordance with Article 25(3) of Regulation (EU) No 305/2011.

SPECIFIC PART

1 Technical description of the product

1.1 Definition of the kit

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 all components of the ETICS specified in this ETA.

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

The insulation product is faced with a rendering system consisting of one base coat and finishing coat (site applied), in which the base coat 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 ...) 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.

1.2 Composition of the ETICS

	Components National application documents shall be taken into account	Coverage [kg/m ²]	Thickness [mm]
Insulation material with associated method of fixing	Bonded ETICS:		
	• Insulation product (see annex 1 for product characteristics) factory-prefabricated expanded polystyrene (EPS)		
	- standard EPS	–	≤ 400
	- elastified EPS	–	≤ 200
	• Adhesives (minimum bonded surface 40 %) (cement based powders with additional synthetic-resin powder requiring addition of 22 – 33 % water)		
	- Lobatherm SKS-L weiß Spachtel- und Klebemörtel leicht	} about 4.0 (prepared)	–
	- Lobatherm AKM-SP weiß Armierungs- und Klebemörtel Super Plus	} about 5.0 (prepared)	–
- Lobatherm SKS grau/weiß Spachtel- und Klebemörtel	–		
- Lobatherm AKM grau/weiß Armierungs- und Klebemörtel	–		
- Lobatherm KMS Klebemörtel	} 4.0 to 6.0 (prepared)	–	
- Lobatherm Klebemörtel		–	
- DBK FAS Universalklebe- und Spachtelmörtel für WDVS		–	

	Components National application documents shall be taken into account	Coverage [kg/m ²]	Thickness [mm]
Insulation material with associated method of fixing	Mechanically fixed ETICS with profiles and supplementary adhesive: <ul style="list-style-type: none"> • Insulation product (see annex 1 for product characteristics) factory-prefabricated expanded polystyrene (EPS) <ul style="list-style-type: none"> - standard EPS • Supplementary adhesive (equal to bonded ETICS, minimum bonded surface 20 %) • Profiles (see annex 3 for product characteristics) <ul style="list-style-type: none"> - "PVC-Halteleiste" and - "PVC-Verbindungsleiste" Polyvinyl chloride (PVC) profiles • Anchors for profiles (see annex 2 for product characteristics) <ul style="list-style-type: none"> - WS 8 L - ejothem SDK U - SDF-K plus - ejothem NK U 	-	60 to 200
	Mechanically fixed ETICS with anchors and supplementary adhesive: <ul style="list-style-type: none"> • Insulation product (see annex 1 for product characteristics) factory-prefabricated expanded polystyrene (EPS) <ul style="list-style-type: none"> - standard EPS - elastified EPS • Supplementary adhesive (equal to bonded ETICS, minimum bonded surface 40 %) • Anchors for insulation product and anchors with ETA according to EAD330196-00-0604¹ with characteristics defined in annex 2 	- -	60 to 400 60 to 200
Base coat	Lobatherm SKS grau/weiß Spachtel- und Klebemörtel Lobatherm AKM grau/weiß Armierungs- und Klebemörtel identical with the equally named adhesives given above	5.0 to 6.5 (prepared)	4.0 to 5.0
Glass fibre mesh	Standard mesh: GWS Armierungsgewebe Alkali- and slide-resistant glass fibre mesh with mass per unit area of about 165 g/m ² and mesh size of about 4,0 mm x 4,0 mm (see annex 4 for product characteristics)	-	-

¹ EAD330196-00-0604 Plastic anchors for fixing of external thermal insulation composite systems with rendering

	Components National application documents shall be taken into account	Coverage [kg/m ²]	Thickness [mm]
Glass fibre mesh	Standard mesh: GWP Armierungsgewebe Alkali- and slide-resistant glass fibre mesh with mass per unit area of about 180 g/m ² and mesh size of about 7,0 mm x 7,0 mm (see annex 4 for product characteristics)	–	–
	Reinforced mesh: PGP Panzergewebe (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 480 g/m ² an mesh size of about 9,0 mm x 6,0 mm. (see annex 4 for product characteristics)	–	–
Key coat	MPGp Mineral-Putzgrundierung pigmentiert Ready to use pigmented acrylic - resin dispersion with potassium silicate	about 0.300 l/m ²	–
	APGp Acrylat-Putzgrundierung pigmentiert Ready to use pigmented acrylic -resin dispersion: For the compatibility with the finishing coats see below	about 0.300 l/m ²	–
Finishing coat	To use with key coat " MPGp Mineral-Putzgrundierung pigmentiert " if applicable[†]: <ul style="list-style-type: none"> Thick layered cement based powder requiring addition of about 22 – 33% of water: <ul style="list-style-type: none"> EFS Edelfeinputz SPS Scheibenputz (particle size 2.0 – 3.0 and 5.0 mm) SPP Scheibenputz PAROS (particle size 1.0 – 2.0 and 3.0 mm) MRS Münchner Rauputz (particle size 2.0 and 3.0 mm) HFS Hydrocon® Feinputz HSS Hydrocon® Scheibenputz (particle size 2.0 – 3.0 and 5.0 mm) HRS Hydrocon® Rillenputz (particle size 2.0 and 3.0 mm) VPS Leicht-Varioputz Thick layered cement based powder requiring addition of about 22 – 33% of water: <ul style="list-style-type: none"> KPS Kratzputz (particle size 2.0 and 4.0 mm) Thin layered cement based powder requiring addition of about 30 – 38% of water: <ul style="list-style-type: none"> LSS Leicht-Scheibenputz (particle size 2.0 – 3.0 and 4.0 mm) LRS Leicht-Rillenputz (particle size 2.0 – 3.0 und 4.0 mm) 	(prepared): about 7.0 3.0 to 7.0 3.0 to 7.0 2.0 to 5.0 2.6 to 9.1 3.0 to 7.0 3.0 to 7.0 4.0 to 7.0 15.0 to 30.0 (prepared)	about 5.0 2.0 to 5.0 2.0 to 5.0 2.0 to 4.0 2.0 to 7.0 2.0 to 4.0 2.0 to 4.0 6.0 to 8.0 6.0 to 12.0 2.0 to 4.0 2.0 to 4.0

	Components National application documents shall be taken into account	Coverage [kg/m ²]	Thickness [mm]
Finishing coat	<ul style="list-style-type: none"> • Ready to use pastes – silicate/acrylic binder: SKK und SKR Silikatputz (particle size 2.0 and 3.0 mm) To use with key coat "APGp Acrylat-Putzgrundierung pigmentiert" if applicable *: • Ready to use paste – acrylic/siloxane binder: SXF Siloxan-Faschenputz (particle size 1.0 mm) SXK und SXR Siloxanputz (particle size 1.5 – 2.0 and 3.0 mm) SXK-SF und SXR-SF Siloxanputz Superfix (particle size 1.5 – 2.0 and 3.0 mm) SHK und SHR Silikonharzputz (particle size 1.5 – 2.0 and 3.0 mm) SHK – SF und SHR – SF Silikonharzputz Superfix (particle size 1.5 – 2.0 and 3.0 mm) KHK und KHR Kunstharzputz (particle size 1.5 – 2.0 and 3.0 mm) 	<p>2.5 to 6.0</p> <p>(prepared): 1.0 to 1.5</p> <p>2.0 to 4.8</p> <p>2.0 to 4.8</p> <p>2.0 to 4.8</p> <p>2.0 to 4.8</p> <p>1.5 to 4.8</p>	<p>2.0 to 4.0</p> <p>1.0 to 1.5</p> <p>1.5 to 4.0</p> <p>1.5 to 4.0</p> <p>1.5 to 4.0</p> <p>1.5 to 4.0</p> <p>1.0 to 4.0</p>
Ancillary material	Remains the responsibility of the manufacturer.		
* The instruction to the installer concerning the use of a key coat remains the responsibility of the manufacturer.			

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 either by bonding or mechanically. 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 choice of the method of fixing depends on the characteristics of the substrate, which could need preparation (see clause 7.2.1 of ETAG 004) and on the national instructions.

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 "Lobatherm System P" 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 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.

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 localized 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 to 4.

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 13501-1:2007
Base coat	max. 4.2 %	no flame retardent	
EPS-insulation product	in quantity ensuring Euroclass E according to EN 13501-1	in quantity ensuring Euroclass E according to EN 13501-1	
profiles	-	-	
anchors	-	-	
rendering system: Base coat with finishing coat and compatible key coat indicated in clause 1.2:			
EFS Edelfeinputz	max. 3.0 %	no flame retardent	B – s2,do
SPS Scheibenputz			
SPP Scheibenputz PAROS			
MRS Münchner Rauputz			
HSF Hydrocon® Feinputz			
HSS Hydrocon® Scheibenputz			
HRS Hydrocon® Rillenputz			
VPS Leicht-Varioputz			
KPS Kratzputz			
LSS Leicht-Scheibenputz			
LRS Leicht-Rillenputz	max. 12.0 %		
SKK und SKR Silikatputz			
SXF Siloxan-Faschenputz	max. 17.0 %	min. 3.0 %	
SXK und SXR Siloxanputz			
SXK-SF und SXR-SF Siloxanputz Superfix			
SHK und SHR Silikonharzputz		no flame retardent	
SHK – SF und SHR – SF Silikonharzputz Superfix			
KHK und KHR Kunstharzputz			

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 h < 1.0 kg/m ²	Water absorption after 24 h < 0.5 kg/m ²
Lobatherm SKS grau/weiß Spachtel- und Klebemörtel	x	x
Lobatherm AKM grau/weiß Armierungs- und Klebemörtel	x	x

English translation prepared by DIBt

Rendering system:

		Water absorption after 24 hours	
		< 0.5 kg/m ²	≥ 0.5 kg/m ²
Rendering system: Base coat with finishing coat indicated in clause 1.2:	EFS Edelfeinputz	x	
	SPS Scheibenputz	x	
	SPP Scheibenputz PAROS		x
	MRS Münchner Rauputz	x	
	HFS Hydrocon® Feinputz	x	
	HSS Hydrocon® Scheibenputz	x	
	HRS Hydrocon® Rillenputz	x	
	VPS Leicht-Varioputz	x	
	KPS Kratzputz	x	
	LSS Leicht-Scheibenputz	x	
	LRS Leicht-Rillenputz	x	
	SKK und SKR Silikatputz	x	
	SXF Siloxan-Faschenputz		x
	SXK und SXR Siloxanputz	x	
	SXK-SF und SXR-SF Siloxanputz Superfix	x	
	SHK und SHR Silikonharzputz		x
SHK-SF und SHR-SF Silikonharzputz Superfix	x		
KHK und KHR Kunstharzputz	x		

3.3.2 Hydrothermal behaviour (ETAG 004 – clause 5.1.3.2)

Hygrothermal cycles tests have not been performed for this ETICS. An extensive experience on site has been assessed by the DIBt in Germany.

Freeze/thaw behaviour

Freeze/thaw cycles have not been performed for the ETICS with finishing coats "SPP Scheibenputz PAROS", "SXF Siloxan-Faschenputz" and "SHK und SHR Silikonharzputz".

3.3.3 Impact resistance (ETAG 004 – clause 5.1.3.3)

Rendering system: Base coat with finishing coat indicated in clause 1.2:	Single standard mesh: "GWS Armierungsgewebe"
EFS Edelfeinputz	Category III
SPS Scheibenputz (t ≥ 3 mm)	Category III
SPP Scheibenputz PAROS (t ≥ 3 mm)	Category II
MRS Münchner Rauputz (t ≥ 3 mm)	Category III
HFS Hydrocon® Feinputz	no performance assessed
HSS Hydrocon® Scheibenputz	no performance assessed
HRS Hydrocon® Rillenputz	no performance assessed
VPS Leicht-Varioputz (t ≥ 8 mm)	Category III

Rendering system: Base coat with finishing coat indicated in clause 1.2:	Single standard mesh: "GWS Armierungsgewebe"
KPS Kratzputz (t ≥ 11 mm)	Category II
LSS Leicht Scheibenputz (t ≥ 3 mm)	Category III
LRS Leicht-Rillenputz (t ≥ 3 mm)	Category III
SKK und SKR Silikatputz (t ≥ 3 mm)	Category I
SXK und SXR Siloxanputz (t ≥ 3 mm)	Category III
SHK und SHR Silikonharzputz (t ≥ 3 mm)	Category III
KHK und KHR Kunstharzputz	Category II

The impact resistance of all other configurations of the ETICS was unproved (no performance assessed).

3.3.4 Water vapour permeability (ETAG 004 – clause 5.1.3.4)

Rendering system: Base coat with finishing indicated in clause 1.2: (evaluated without decorative coating or key coat)	Equivalent air thickness s_d
EFS Edelfeinputz	≤ 1.0 m (Test result obtained with a layer thickness 5 mm : 0.3 m)
SPS Scheibenputz	≤ 1.0 m (Test result obtained with a layer thickness 3 mm : 0.3 m)
SPP Scheibenputz PAROS	≤ 1.0 m (Test result obtained with a layer thickness 3 mm : 0.3 m)
MRS Münchner Rauputz	≤ 1.0 m (Test result obtained with a layer thickness 3 mm : 0.3 m)
HFS Hydrocon® Feinputz	≤ 1.0 m (Test result obtained with a layer thickness 3 mm : 0.24 m)
HSS Hydrocon® Scheibenputz	≤ 1.0 m (Test result obtained with a layer thickness 3 mm : 0.24 m)
HRS Hydrocon® Rillenputz	≤ 1.0 m (Test result obtained with a layer thickness 3 mm : 0.24 m)
VPS Leicht- Varioputz	≤ 1.0 m (Test result obtained with a layer thickness 7 mm : 0.3 m)
KPS Kratzputz	≤ 1.0 m (Test result obtained with a layer thickness 12 mm : 0.4 m)
LSS Leicht Scheibenputz	≤ 1.0 m (Test result obtained with a layer thickness 3 mm : 0.3 m)
LRS Leicht Rillenputz	≤ 1.0 m (Test result obtained with a layer thickness 3 mm : 0.3 m)
SKK und SKR Silikatputz	≤ 1.0 m (Test result obtained with a layer thickness 3 mm : 0.3 m)

Rendering system: Base coat with finishing indicated in clause 1.2: (evaluated without decorative coating or key coat)	Equivalent air thickness s_d
SXF Siloxan-Faschenputz	≤ 1.0 m (Test result obtained with a layer thickness 3 mm : 0.3 m)
SXK und SXR Siloxanputz	≤ 1.0 m (Test result obtained with a layer thickness 3 mm : 0.3 m)
SXK-SF und SXR-SF Siloxanputz Superfix	≤ 1.0 m (Test result obtained with a layer thickness 3 mm : 0.3 m)
SHK und SHR Silikonharzputz	≤ 1.0 m (Test result obtained with a layer thickness 3 mm : 0.3 m)
SHK-SF und SHR-SF Silikonharzputz Superfix	$\leq 1,0$ m (Ergebnis ermittelt mit einer Schichtdicke von 3 mm : 0,3 m)
KHK und KHR Kunstharzputz	$\leq 1,0$ m (Ergebnis ermittelt mit einer Schichtdicke von 8 mm : 0,49 m)

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

Essential characteristic	Performance
Release of dangerous substances	no performance assessed

3.4 Safety and accessibility in use (BWR 4)

3.4.1 Bond strength between base coat and insulation product (EPS) (ETAG 004 – clause 5.1.4.1.1)

Base coat	Conditioning		
	Initial state	After hygrothermal cycles	After freeze/thaw test
Lobatherm SKS grau/weiß Spachtel- und Klebemörtel	≥ 0.08 MPa	≥ 0.08 MPa	Test not required because freeze/thaw cycles not necessary
Lobatherm AKM grau/weiß Armierungs- und Klebemörtel	≥ 0.08 MPa	≥ 0.08 MPa	

3.4.2 Bond strength between adhesive and substrate resp. insulation product (EPS) (ETAG 004 – clauses 5.1.4.1.2 and 5.1.4.1.3)

Adhesive	Substrate resp. insulation product	Conditioning		
		Initial state	2 d immersion in water and 2 h drying	2 d immersion in water and 7 d drying
Lobatherm SKS- L weiß Spachtel- und Klebemörtel leicht	Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
	EPS	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa

Adhesive	Substrate resp. insulation product	Conditioning		
		Initial state	2 d immersion in water and 2 h drying	2 d immersion in water and 7 d drying
Lobatherm AKM-SP weiß Armierungs- und Klebemörtel Super Plus	Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
	EPS	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa
Lobatherm SKS grau/weiß Spachtel- und Klebemörtel	Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
	EPS	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa
Lobatherm AKM grau/weiß Armierungs- und Klebemörtel	Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
	EPS	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa
Lobatherm KMS Klebemörtel	Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
	EPS	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa
Lobatherm Klebemörtel	Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
	EPS	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa
DBK FAS Universalklebe- mörtel und Spachtelmörtel für WDVS	Concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
	EPS	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa

Bonded surface:

For bonded ETICS the calculated minimal bonded surface area, according to ETAG 004, clause 6.1.4.1.3 is 40 %.

3.4.3 Bond strength after ageing (ETAG 004 – clause 5.1.7.1):

Rendering system: Base coat with finishing coat indicated in clause 1.2	EFS Edelfeinputz	Experience on site
	SPS Scheibenputz	
	SPP Scheibenputz PAROS	
	MRS Münchner Rauputz	≥ 0.08 MPa
	HFS Hydrocon® Feinputz	
	HSS Hydrocon® Scheibenputz	
	HRS Hydrocon® Rillenputz	Experience on site
	VPS Leicht- Varioputz	
	KPS Kratzputz	
	LSS Leicht Scheibenputz	
	LRS Leicht Rillenputz	
	SKK und SKR Silikatputz	
	SXF Siloxan-Faschenputz	
	SXK und SXR Siloxanputz	
	SXK-SF und SXR-SF Siloxanputz Superfix	
	SHK und SHR Silikonharzputz	
	SHK-SF und SHR-SF Silikonharzputz Superfix	
	KHK und KHR Kunstharzputz	≥ 0.08 MPa

3.4.4 Fixing strength (displacement test) (ETAG 004 – clause 5.1.4.2)

Test not required therefore no limitation of ETICS length required.

3.4.5 Wind load resistance (ETAG 004 – clause 5.1.4.3)

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

3.4.5.1 Safety in use of mechanically fixed ETICS using 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/mm ²
Failure loads [N / panel] (Static Foam Block Test)	Horizontal profiles fixed every 30 cm and 49.4 cm long vertical connection profiles	Minimal: 950 Average: 1010

3.4.5.2 Safety in use of mechanically fixed ETICS using anchors

Apply to all anchors listed in the clause 1.2 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/mm ²	
Plate diameter of anchor			∅ 60 mm	∅ 90 mm
Failure loads [N]	Anchors not placed at the panel joints (Static Foam Block Test)	R _{panel}	Minimal: 510 Average: 520	Minimal: 720 Average: 730
	Anchors placed at the panel joints (Pull-through test)	R _{joint}	Minimal: 400 Average: 430	Minimal: 430 Average: 470

Apply to all anchors listed in the clause 1.2 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/mm ²	
Plate diameter of anchor			∅ 60 mm	
Failure loads [N]	Anchors not placed at the panel joints (Static Foam Block Test)	R _{panel}	Minimal: 350 Average: 360	
	Anchors placed at the panel joints (Pull-through test)	R _{joint}	Minimal: 300 Average: 310	

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 [d]	Conditions of installation *
ejothem STR U, ejothem STR U 2G (ETA-04/0023)	100 mm > d ≥ 80 mm (for standard and elastified EPS)	– Maximum installation depth of the anchor plate: 15 mm (△ thickness of insulation cover) – Maximum depth of die: 5 mm
	≥ 100 mm (for standard and elastified EPS)	– Maximum installation depth of the anchor plate: 15 mm (△ thickness of insulation cover) – Maximum depth of die: 20 mm
* according to the appropriate ETA of anchor		

3.4.6 Render strip tensile test (ETAG 004 – clause 5.5.4.1)

The average value of crack width of the reinforced base coats measured at a render strain value of 1 % is:

Base coat	Glass fibre mesh	Average value of crack width w _{m(1%)}
Lobatherm SKS grau/weiß Spachtel- und Klebemörtel	GWS Armierungsgewebe	0.12 mm
	GWP Armierungsgewebe	No performance assessed
Lobatherm AKM grau/weiß Armierungs- und Klebemörtel	GWS Armierungsgewebe	0.12 mm
	GWP Armierungsgewebe	No performance assessed

English translation prepared by DIBt

3.5 Protection against noise (BWR 5)

For the protection against noise no performance was assessed for this product.

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 $0.02 (m^2 \cdot K)/W$.

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

The thermal bridges caused by 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 [$W/(m^2 \cdot K)$]

n : number of anchors per m^2

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:

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

$\chi_p = 0.002 W/K$ 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.

4 Assessment and verification of constancy of performance (AVCP) 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
"Lobatherm System P"	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 to E) ⁽³⁾ , F	2+
	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 (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 17 December 2018 by Deutsches Institut für Bautechnik

Dirk Brandenburger
Head of Department

beglaubigt:
Windhorst

European Technical Assessment
ETA-08/0365

English translation prepared by DIBt

Page 17 of 21 | 17 December 2018

Annexes:

Annex 1: Thermal insulation product characteristic

Annex 2: Anchors

Annex 3: Profiles

Annex 4: Reinforcement

English translation prepared by DIBt

Annex 1: Thermal insulation product characteristic

Factory-prefabricated, uncoated panels made of expanded polystyrene (EPS) to EN 13163:2015 shall be used, having the description and characteristics defined in the Table below.

Description and characteristics	For bonded ETICS	For mechanically fixed ETICS	
		with anchors and supplementary adhesive	with profiles and supplementary adhesive ****
Reaction to fire; EN 13501-1:2007	Class E*		
Thermal resistance [(m ² ·K)/W]	Defined in the CE marking in reference to EN 13163:2015		
Tolerances			
Length; EN 822:2013	± 0.6 % or ± 3 mm whichever gives the greatest numerical tolerance (class L3)		
Width [mm]; EN 822:2013	± 2 (class W2)		
Thickness [mm]; EN 823:2013	± 1 (class T1)		
Squareness [mm/m]; EN 824:2013	± 2 (class S2)		
Flatness [mm/m]; EN 825: 2013	5 (class P5)		
Dimensional stability under			
- laboratory conditions [%]; EN 1603:2013	± 0.2 (class DS(N)2)		
- specified temperature and humidity conditions [%]; EN 1604:2013	2 (level DS(70,-)2 or level DS(70,-)1)		
Water absorption (long term partial immersion) [kg/m ²]; EN 12087:2013	W _{ip} ≤ 0.5		
Water vapour diffusion resistance factor; EN 12086:2013	μ = 20 – 78		
Tensile strength perpendicular to the faces in dry conditions** [kPa]; EN 1607:2013			
- standard EPS	σ _{mt} ≥ 80	σ _{mt} ≥ 100	σ _{mt} ≥ 150
- elastified EPS***	σ _{mt} ≥ 80	σ _{mt} ≥ 80	not used
Bending strength** [kPa]; EN 12089:2013	σ _b ≥ 50		
Apparent density [kg/m ³]; EN 1602: 2013	ρ _a ≤ 30		
Shear strength** [kPa]; EN 12090: 2013	20 ≤ f _{tk} ≤ 170		
Shear modulus [MPa]; EN 12090: 2013	1.0 ≤ G _m ≤ 3.8		
- standard EPS			
- elastified EPS***	0.3 ≤ G _m ≤ 1.0	0.3 ≤ G _m ≤ 1.0	not used
Testing of characteristics see EN 13163:2015.			
* See the conditions of clause 3.2 for the EPS.			
** Minimal value of all single values			
*** Elastified EPS is made from standard EPS by short time high load pressing to reduce the dynamic stiffness. The protection against noise of the entire wall is improved by the use of elastified EPS related to an ETICS with standard EPS.			
**** Thermal insulation materials for mechanically fixed ETICS with profiles must circumferentially at the edges, 24 mm from the inner surface, get an approx. 3 mm wide and 13 to 18 mm deep groove cut-in at the factory.			

Annex 2: Anchors

All anchors with ETA according to EAD330196-00-0604¹ with characteristics having the description below shall be used in the mechanically fixed ETICS:

- plate diameter of anchor ≥ 60 mm resp. ≥ 90 mm
- plate stiffness ≥ 0.3 kN/mm
- load resistance of the anchor plate ≥ 1.0 kN

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

The anchors listed in the Table in clause 1.2 with reference to the respective ETA shall be used in the mechanically fixed ETICS with profiles for fixing the horizontal profiles.

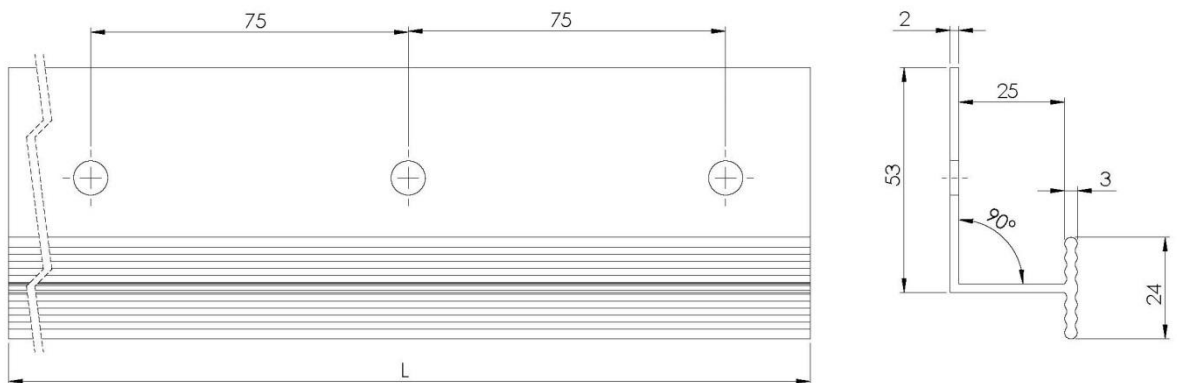
Trade name	ETA-number
WS 8 L	ETA-02/0019
IsoFux ND-8Z	ETA-04/0032
SDF-K plus	ETA-04/0064
ejotherm NK U	ETA-05/0009

Annex 3: Profiles

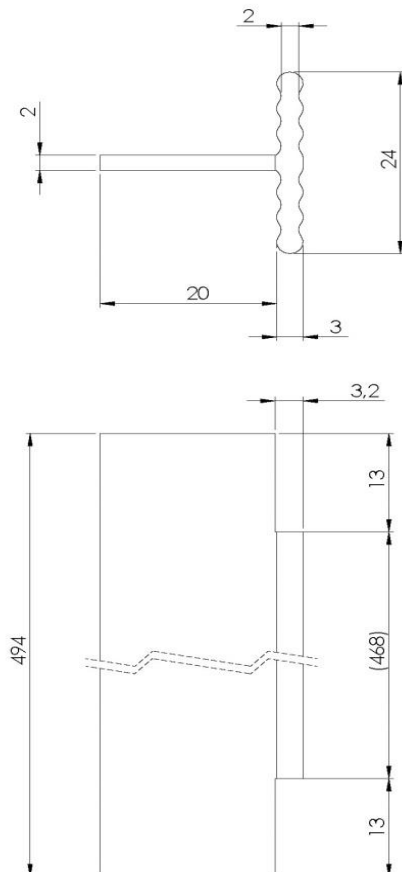
Polyvinyl chloride (PVC) profiles, PVC-U, EGL, 082-05-T33 to EN ISO 1163-1:1999 are to be used in the mechanically fixed ETICS with profiles.

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)



Annex 4: Reinforcement (glass fibre mesh)

Characteristics (alkali resistance): Pass

	Description	Residual strength after ageing [N/mm]	Relative residual strength after ageing, of the strength in the as-delivered state [%]
"GWS Armierungsgewebe"	Alkali- and slide-resistant glass fibre mesh with mass per unit area of about 165 g/m ² and mesh size of about 4 mm x 4 mm	≥ 20	≥ 50
"GWP Armierungsgewebe"	Alkali- and slide-resistant glass fibre mesh with mass per unit area of about 180 g/m ² and mesh size of about 7 mm x 7 mm	≥ 20	≥ 50
"PGP Panzergewebe"	Alkali- and slide-resistant glass fibre mesh with mass per unit area of about 480 g/m ² and mesh size of about 9 mm x 6 mm	no performance assessed	no performance assessed