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Autorizován a notifikován podle článku 10 Směrnice Rady 89/106/EC z 21. prosince 1988 o sbližování zákonů, předpisů a správních postupů členských zemí týkajících se stavebních výrobků.

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European Technical Approval ETA-07/0192

(English translation prepared by TZUS Prague - Original version in Czech language)

Obchodní název *Trade name*	**TURBO** **TURBO-S** **TURBO-SA** **TURBO-SO** **TURBO-SO PROTECT** **TURBO-SISI**
Držitel schválení *Holder of approval*	KREISEL – Technika Budowlana Sp z o.o. ul. Sz. Szeregów 23 60-462 Poznan Republic of Poland
Druh a použití výrobku *Generic type and use of construction product*	Vnější tepelně izolační kompozitní systém (ETICS) s omítkou z pěnového polystyrenu pro použití jako vnější izolace stěn budov. *External Thermal Insulation Composite Systems with Rendering on polystyrene for as external insulation to the walls of buildings.*
Platnost od *Validity from*	11.07.2011
do *to*	05.09.2012
prodloužena od *extended from*	06.09.2012
do *to*	05.09.2017
Výrobce *Manufacturer*	KREISEL – Technika Budowlana Sp z o.o. ul. Sz. Szeregów 23 60-462 Poznan Republic of Poland
Toto Evropské technické schválení obsahuje *This European Technical Approval contains*	21 stran *21 pages*

EOTA

European Organisation for Technical Approvals
Evropská organizace pro technické schvalování

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- Government Decree No. 190/2002 Coll.[4], , as amended
- Common Procedural Rules for Requesting, Preparing and the Granting of European Technical Approvals set out in the Annex to Commission Decision 94/23/EC[5]
- Guideline for European Technical Approval of « External Thermal Insulation Composite Systems with Rendering » ETAG No. 004, Edition March 2000

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1 Official Journal of the European Communities N° L 40. 11/02/1989, p. 12
2 Official Journal of the European Communities N° L 220. 30/08/1993, p. 1
3 Official Journal of the European Communities N° L 284, 31/10/2003, p. 1
4 Collection of Laws of the Czech Republic Vol. 79 No. 190. 21.5.2002
5 Official Journal of the European Communities N° L 17, 20/01/1994, p. 34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of products and intended use

The External Thermal Insulation Composite System (ETICS):
TURBO
TURBO-S
TURBO-SA
TURBO-SO
TURBO-SO PROTECT
TURBO-SISI
hereinafter referred to as the ETICS, is designed and installed in accordance with the ETA holder's design and installation instructions, deposited with the Technical and Test Institute for Construction Prague s.p. (TZÚS). The ETICS comprises the following components which are factory-produced by the ETA holder or its supplier and of which it is then installed into the construction work.

This system is sold under trade names corresponding with the finishing coat used, in compositions arising from 1.1.

1.1 Definition of the product

Table No. 1

Components (see 2.3 for further description and characteristics of the components)		**Coverage** (kg/m²)	**Thickness** (mm)
Partially bonded ETICS with supplementary mechanical fixing (pursuant to the ETA-holder's instructions, the minimal bonded surface shall be 40 %). National application documents shall be taken into account.			
Insulation material with associated method of fixing	**Insulation product**		
	Foam polystyrene slabs (EPS) with properties given in table No. 17 of this ETA	-	50 – 250
	Adhesive		
	LEPSTYR 210 *Product as delivered:* powder *Preparation:* powder requiring addition of 0.25 l/kg of water *Composition:* silica sand, Portland cement, refining additives	4.0 – 5.0 of dry mixture	-
	Klebemörtel "Kreisel PL" *Product as delivered:* powder *Preparation:* powder requiring addition of 0.25 l/kg of water *Composition:* silica sand, Portland cement, refining additives		
	Klebe und Armierungsmörtel „Wärmedämm - System" *Product as delivered:* powder *Preparation:* powder requiring addition of 0.25 l/kg of water *Composition:* silica sand, Portland cement, refining additives		
Mechanically fixed ETICS with supplementary bonding (pursuant to the ETA-holder's instructions, the minimal bonded surface shall be 30 %). National application documents shall be taken into account.			
Insulation material with associated method of fixing	**Insulation product**		
	Foam polystyrene slabs (EPS) with properties given in table No. 17 of this ETA	-	50 – 250
	Adhesive		
	LEPSTYR 210 *Product as delivered:* powder *Preparation:* powder requiring addition of 0.25 l/kg of water *Composition:* silica sand, Portland cement, refining additives	4.0 – 5.0 of dry mixture	-

Components (see 2.3 for further description and characteristics of the components)			Coverage (kg/m²)	Thickness (mm)
	Klebemörtel "Kreisel PL" *Product as delivered:* powder *Preparation:* powder requiring addition of 0.25 l/kg of water *Composition:* silica sand, Portland cement, refining additives			
	Klebe und Armierungsmörtel „Wärmedämm - System" *Product as delivered:* powder *Preparation:* powder requiring addition of 0.25 l/kg of water *Composition:* silica sand, Portland cement, refining additives			
	Anchors			
	ejotherm NT U plastic nailed-in anchors	ETA-05/0009	-	-
	ejotherm NTK U plastic nailed-in anchors	ETA-07/0026		
	ejotherm ST U plastic screwed-in anchors	ETA-02/0018		
	ejotherm STR U plastic screwed-in anchors	ETA-04/0023		
	ejotherm SDM-T plus U plastic screwed-in anchors	ETA-04/0064		
	KOELNER KI8M plastic nailed-in anchors	ETA-06/0191		
	WKRĘT – MET LFN Ø 8, LFM Ø 8 plastic nailed-in anchors	ETA-06/0080		
Base coat	**Trowel finished matter base coat**			
	Styrlep 220 *Product as delivered:* powder *Preparation:* powder requiring addition of 0.25 l/kg of water *Composition:* silica sand, Portland cement, refining additives		4.0-5.0 of dry mixture for double reinforce-ment: 6.0-7.0 of dry mixture	3 - 5 for double reinforce-ment: 5
	Styrlep-B 225 *Product as delivered:* powder *Preparation:* powder requiring addition of 0.28 l/kg of water *Composition:* silica sand, Portland cement, refining additives			
	Klebe und Armierungsmörtel „Wärmedämm - System" (matter identical with **Styrlep 220)** *Product as delivered:* powder *Preparation:* powder requiring addition of 0.25 l/kg of water *Composition:* silica sand, Portland cement, refining additives			
	Armierungsmörtel KREISEL A *Product as delivered:* powder *Preparation:* powder requiring addition of 0.26 l/kg of water *Composition:* silica sand, Portland cement, refining additives			
	Reinforcement			
	Glass fibre mesh for ETICS-in one or two layers **VERTEX R 117 A101** (mesh size 3.5 x 4.5 mm) **VERTEX R 131 A101** (mesh size 3.5 x 3.5 mm) **VERTEX R 167 A101** (mesh size 6.0 x 7.0 mm)		1.1 – 1.2 2.2 – 2.4 m^2/m^2 of ETICS	-
Key coat	**TYNKOLIT-T 330 / PUTZGRUND** *Product as delivered:* ready-to-use liquid *Preparation:* stir *Composition:* dispersion of acrylic resin, fillers, silica sand and special additives *Use:* key coat of base coat intended for acrylic and mineral finishing coats		0.2 – 0.3	-

Components (see 2.3 for further description and characteristics of the components)		Coverage (kg/m²)	Thickness (mm)
	TYNKOLIT-SA 331 / PUTZGRUND-SA *Product as delivered:* ready-to-use liquid *Preparation:* stir *Composition:* water glass, dispersion of acrylic resin, fillers, silica sand and special additives *Use:* key coat of base coat intended for silicate finishing coats.	0.2 – 0.3	-
	TYNKOLIT-SO 332 / PUTZGRUND-SO *Product as delivered:* ready-to-use liquid *Preparation:* stir *Composition:* dispersion of silicone resin, fillers, silica sand and special additives *Use:* key coat of base coat intended for silicone finishing coats		
	TYNKOLIT-SISI 333 / PUTZGRUND-SISI *Product as delivered:* ready-to-use liquid *Preparation:* stir *Composition:* dispersion of silicone resin, water glass, fillers, silica sand and special additives *Use:* key coat of base coat intended for SISI silicate-silicone finishing coats.		
	PUTZGRUND *Product as delivered:* ready-to-use liquid *Preparation:* dilute with max 10% of water acc. to absorption of the substrate *Composition:* dispersion of acrylic resin, fillers, silica sand and special additives *Use:* key coat of base coat for mineral, silicate, silicate-silicone (SISI), silicone and acrylic finishing coats. It is not essential to key coats for **STYRLEP-B 225.**		
Finishing coat	**Mineral renderings (they are not intended for rendering systems with double reinforcement and thickness of the base coat of 5 mm):**		
	POZTYNK - SZ BR 062 / KREISEL KORNSTRUKTURPUTZ mineral rendering particle size 1 mm; 1.5 mm; 2 mm; 3 mm *Product as delivered:* powder requiring addition of 0.25 l/kg of water *Composition:* white lime hydrate with hydraulic lime, dried sand, waterproof additives, ancillary substances	2.1 – 4.3 acc. to the max. particle size	according to max. particle size
	POZTYNK - SZ DR 061 / KREISEL REIBEPUTZ mineral rendering particle size 1 mm; 2 mm; 3 mm *Product as delivered:* powder requiring addition of 0.25 l/kg of water *Composition:* white lime hydrate with hydraulic lime, dried sand, waterproof additives, ancillary substances	2.0 – 4.1 acc. to the max. particle size	
	Acrylic renderings:		
	AKRYTYNK BR 010 / KREISEL AKRYLPUTZ KORN acrylic rendering – max. particle size 1.5 mm, 2.0 mm, 3 mm *Product as delivered:* ready-to-use paste *Composition:* acrylic binder, mineral filler, stabilizing agent	2.4 – 5.0 acc. to the max. particle size	according to max. particle size
	AKRYTYNK DR 010 / KREISEL AKRYLPUTZ REIBE acrylic rendering – max. particle size 1.5 mm, 2.0 mm, 3 mm *Product as delivered:* ready-to-use paste *Composition:* acrylic binder, mineral fillers, stabilizing agent	1.7 – 3.7 acc. to the max. particle size	

Components (see 2.3 for further description and characteristics of the components)		Coverage (kg/m²)	Thickness (mm)
	Silicone renderings:		
	SILIKOTYNK BR 030 / KREISEL SILIKONHARZPUTZ KORN silicone rendering – max. particle size 1.5 mm, 2.0 mm, 3 mm *Product as delivered:* ready-to-use paste *Composition:* silicone binder, mineral fillers, stabilizing agent	2.4 – 5.0 acc. to the max. particle size	according to max. particle size
	SILIKOTYNK DR 030 / KREISEL SILIKONHARZPUTZ REIBE silicone rendering – max. particle size 1.5 mm, 2.0 mm, 3 mm *Product as delivered:* ready-to-use paste *Composition:* silicone binder, mineral fillers, stabilizing agent	1.7 – 3.7 acc. to the max. particle size	
	SILIKON PROTECT BR 031 / KREISEL SILIKON PROTECT KORN silicone rendering – max. particle size 1.5 mm, 2.0 mm, 3 mm *Product as delivered:* ready-to-use paste *Composition:* silicone binder, mineral fillers, stabilizing agent	2.4 – 5.01 acc. to the max. particle size	
	SILIKON PROTECT DR 031 / KREISEL SILIKON PROTECT REIBE silicone rendering – max. particle size 1.5 mm, 2.0 mm, 3 mm *Product as delivered:* ready-to-use paste *Composition:* silicone binder, mineral fillers, stabilizing agent	1.7 – 3.7 acc. to the max. particle size	
	Silicate renderings:		
	SILIKATYNK BR 020 / KREISEL SILIKATPUTZ KORN silicate rendering – max. particle size 0.5 mm; 1.5 mm; 2 mm; 3 mm *Product as delivered:* ready-to-use paste *Composition:* potassium water glass, mineral fillers, stabilizing agent	0.9 – 5.0 acc. to the max. particle size	according to max. particle size
	SILIKATYNK DR 020 / KREISEL SILIKATPUTZ REIBE silicate rendering – max. particle size 1.5 mm; 2 mm; 3 mm *Product as delivered:* ready-to-use paste *Composition:* potassium water glass, mineral fillers, stabilizing agent	1.7 – 3.7 acc. to the max. particle size	
	Silicate-silicone renderings:		
	SISITYNK BR 040 / KREISEL SISIPUTZ KORN silicate-silicone rendering - max. particle size 1.5 mm, 2 mm, 3 mm *Product as delivered:* ready-to-use paste *Composition:* potassium water glass, silicone binder, mineral fillers, stabilizing agent	2.4 – 5.0 acc. to the max. particle size	according to max. particle size
	SISITYNK DR 040 / KREISEL SISIPUTZ REIBE silicate-silicone rendering - max. particle size 1.5 mm, 2 mm, 3 mm *Product as delivered:* ready-to-use paste *Composition:* potassium water glass, silicone binder, mineral fillers, stabilizing agent	1.7 – 3.7 acc. to the max. particle size	
Protective coating (for mineral finishing coats)	**FARBA EGALIZACYJNA 005 / KREISEL Egalisierungsfarbe** *Product as delivered:* ready-to-use liquid *Preparation:* do not dilute *Composition:* silicone resin emulsion	0.15 - 0.25 l/m² acc. to particle size of the finishing coat	-
	FARBA AKRYLOWA 001 / KREISEL AKRYL - Fassadenfarbe DISPER - R *Product as delivered:* ready-to-use liquid *Preparation:* do not dilute *Composition:* acrylic resin emulsion		
	FARBA SILIKATOWA 002 / KREISEL SILIKAT – Fassadenfarbe *Product as delivered:* ready-to-use liquid *Preparation:* do not dilute *Composition:* water glass		

Components (see 2.3 for further description and characteristics of the components)		Coverage (kg/m²)	Thickness (mm)
	FARBA SILIKONOWA 003 / KREISEL SILIKON – Fassadenfarbe *Product as delivered:* ready-to-use liquid *Preparation:* do not dilute *Composition:* silicone resin emulsion	0.15 - 0.25 l/m² acc. to particle size of the finishing coat	-
	FARBA SISI 004/ KREISEL SISI – Fassadenfarbe *Product as delivered:* ready-to-use liquid *Preparation:* do not dilute *Composition:* silicone resin emulsion		
	KREISEL SILIKON - Fassadenfarbe / HASIT SILIKONHARZ Fassadenfarbe 770 *Product as delivered:* ready-to-use liquid *Preparation:* do not dilute *Composition:* silicone resin emulsion		
	KREISEL Disper-R / HASIT Disper Extra Fassadenfarbe *Product as delivered:* ready-to-use liquid *Preparation:* do not dilute *Composition:* silicone resin emulsion *Use applicable for all types of coatings:* coating over POZTYNK - SZ BR 062 / KREISEL KORNSTRUKTURPUTZ a POZTYNK - SZ DR 062 / KREISEL REIBEPUTZ mineral renderings ensuring colour harmonization		
Ancillary materials	It corresponds with the description in accordance with Section 3.2.2.5 of the ETAG, remain under the ETA holder's responsibilities.		

1.2 Intended use

This ETICS **TURBO, TURBO-S, TURBO-SA, TURBO-SO, TURBO-SO PROTECT, TURBO-SISI** is applied to external walls of buildings. The walls are made of masonry (bricks, blocks, stones ...) or concrete (cast on site or as precast panels) having reaction-to-fire classification of A1 or A2-s2, d0 in accordance with EN 13501-1 or designation A1 in accordance with EC decision 96/603/EC as amended. The ETICS is designed to provide the wall to which it is applied with satisfactory thermal insulation.

The ETICS must be designed and executed in accordance with the ETA holder's approval of fixing and installation instructions (ETA). The system consists of components manufactured either by the ETA holder or their supplier. It is the ETA holder who is responsible for the system in the end. All components of the system must be defined by the ETA holder.

The ETICS is non-loadbearing. It does not contribute directly to the stability of the wall to which it is applied and it is not intended to ensure water-tightness of the building texture; however, it can contribute to durability by providing enhanced protection from the effect of weathering. It must ensure the minimum thermal resistance of more than 1.0 m^2K/W.

The ETICS can be used on new or existing (retrofit) vertical walls. It can also be used on horizontal or inclined surfaces which are not exposed to precipitation.

The ETICS as a product must be of such characteristics in order the building texture which it is applied to if properly designed and executed will meet the essential requirements (CPD Directive, Art. 2.1).

The choice of fixing method and proper application to the existing external wall depends on the characteristics of the substrate and particular surrounding conditions of the building. Requirements laid down in Chap. 4 and 7 must be taken into account (see ETAG No. 004, edition 2000) and shall be in accordance with the national regulations.

The provisions made in this European Technical Approval (ETA) are based on an assumed intended working life of at least 25 years of the ETICS in question, provided its properly used and maintained. The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer or the approval body, but are to be used as a means for selecting appropriate products in relation to the expected economically reasonable working life of the works.

2 Characteristics of products and methods of verification

2.1 General

The identification tests and the assessment of fitness for the intended use of this ETICS in accordance with the Essential Requirements were carried out in accordance with "ETAG 004, Guideline for European Technical Approval of External Thermal Insulation Composite Systems" concerning External Thermal Insulation Composite Systems with rendering (hereinafter referred to as "ETAG 004").

The ETA is issued for the ETICS on the basis of the agreed details deposited with the Technical and Test Institute for Construction (hereinafter referred to as "TZÚS") Prague, s.p. which identifies the ETICS that has been assessed and judged. Any changes to the production process of the ETICS or to the ETICS itself which could result in the deposited details being incorrect should be notified to the TZÚS Prague, s.p. before the changes are introduced. TZÚS Prague, s.p. shall decide whether or not such changes can affect the ETA and consequently the validity of the CE marking based on the ETA and if so whether further assessment and /or alteration to the ETA is required.

2.2 ETICS characteristics

2.2.1 Reaction to fire

Table No. 2

Composition of the system	Heat of combustion (MJ/kg) / Organic content (%)	Thickness	Flame retardant content	Euroclass pursuant to EN 13501-1:2003
adhesive	≤ 0.66 / ≤ 2.51	max. 5 mm	no flame retardants	B – s2, d0
EPS slabs of density of ≤ 20 kg/m^3	- / -	-	in the amount ensuring the Euroclass E in accordance with EN 13501-1:2003	
base coat render	≤ 0.31 / ≤ 2.72	max. 5 mm	no flame retardants	
glass fibre mesh	- / max. 20	-	no flame retardants	
finishing coat	≤ 1.76 / -	max. 3 mm	no flame retardants	
protective coating for mineral finishing coats	≤ 5.93 / -	max. 0.12 mm	no flame retardants	

Note: A European reference fire scenario for facades has not been laid down so far. In some Member States, the classification pursuant to EN 13501-1 might not be sufficient for the use in facades. An additional assessment of the ETICS pursuant to national regulations (e.g. based on a large scale test) might be necessary to comply with the Member State regulations until the existing European classification system has been completed.

2.2.2 Water absorption (test of capillarity)

Base coat:

STYRLEP 220 / Klebe und Armierungsmörtel „Wärmedämm - System", STYRLEP-B 225, Armierungsmörtel KREISEL A

- Water absorption after 1 hour < 1 kg/m²
- Water absorption after 24 hours < 0.5 kg/m²

Rendering systems:

Table No. 3

Rendering systems	Finishing coats		Water absorption after 24 hours	
			< 0.5 kg/m²	≥ 0.5 kg/m²
base coat of STYRLEP 220/ Klebe und Armierungsmörtel „Wärmedämm - System", STYRLEP-B 225, Armierungsmörtel KREISEL A + finishing coats with relevant key coat acc. to table acc. to table	**mineral finishing coats + protective coating**			
	POZTYNK - SZ BR 062 / KREISEL KORNSTRUKTURPUTZ	FARBA EGALIZACYJNA 005 / KREISEL Egalisierungsfarbe	X	
		FARBA AKRYLOWA 001 / KREISEL AKRYL-Fassadenfarbe DISPER-R	X	
		FARBA SILIKATOWA 002 / KREISEL SILIKAT-Fassadenfarbe	X	
		FARBA SILIKONOWA 003 / KREISEL SILIKON-Fassadenfarbe	X	
		FARBA SISI 004 / KREISEL SISI-Fassadenfarbe	X	
		KREISEL SILIKON-Fassadenfarbe / HASIT SILIKONHARZ Fassadenfarbe 770	X	
		KREISEL Disper-R / HASIT Disper Extra Fassadenfarbe	X	
	POZTYNK - SZ DR 061 / KREISEL REIBEPUTZ	FARBA EGALIZACYJNA 005 / KREISEL Egalisierungsfarbe	X	
		FARBA AKRYLOWA 001 / KREISEL AKRYL-Fassadenfarbe DISPER-R	X	
		FARBA SILIKATOWA 002 / KREISEL SILIKAT-Fassadenfarbe	X	
		FARBA SILIKONOWA 003 / KREISEL SILIKON-Fassadenfarbe	X	
		FARBA SISI 004 / KREISEL SISI-Fassadenfarbe	X	
		KREISEL SILIKON-Fassadenfarbe / HASIT SILIKONHARZ Fassadenfarbe 770	X	
		KREISEL Disper-R / HASIT Disper Extra Fassadenfarbe	X	
	acrylic finishing coats			
	AKRYTYNK BR 010 / KREISEL AKRYLPUTZ KORN		X	
	AKRYTYNK DR 010 / KREISEL AKRYLPUTZ REIBE		X	
	silicone finishing coats			
	SILIKOTYNK BR 030 / KREISEL SILIKONHARZPUTZ KORN		X	
	SILIKOTYNK DR 030 / KREISEL SILIKONHARZPUTZ REIBE		X	
	SILIKON PROTECT BR 031 / KREISEL SILIKON PROTECT KORN		X	
	SILIKON PROTECT DR 031 / KREISEL SILIKON PROTECT REIBE		X	
	silicate finishing coats			
	SILIKATYNK BR 020 / KREISEL SILIKATPUTZ KORN		X	
	SILIKATYNK DR 020 / KREISEL SILIKATPUTZ REIBE		X	
	silicate-silicone finishing coats			
	SISITYNK BR 040 / KREISEL SISIPUTZ KORN		X	
	SISITYNK DR 040 / KREISEL SISIPUTZ REIBE		X	

Table No. 4

Rendering systems	Finishing coats		Water absorption after 24 hours	
			< 0.5 kg/m²	≥ 0.5 kg/m²
base coat of STYRLEP-B 225 + finishing coats without key coat acc. to table:	**mineral finishing coats + protective coating**			
	POZTYNK - SZ BR 062 / KREISEL KORNSTRUKTURPUTZ	FARBA EGALIZACYJNA 005 / KREISEL Egalisierungsfarbe	X	
		FARBA AKRYLOWA 001 / KREISEL AKRYL-Fassadenfarbe DISPER-R	X	
		FARBA SILIKATOWA 002 / KREISEL SILIKAT-Fassadenfarbe	X	
		FARBA SILIKONOWA 003 / KREISEL SILIKON-Fassadenfarbe	X	
		FARBA SISI 004 / KREISEL SISI-Fassadenfarbe	X	
		KREISEL SILIKON-Fassadenfarbe / HASIT SILIKONHARZ Fassadenfarbe 770	X	
		KREISEL Disper-R / HASIT Disper Extra Fassadenfarbe	X	
	POZTYNK - SZ DR 061 / KREISEL REIBEPUTZ	FARBA EGALIZACYJNA 005 / KREISEL Egalisierungsfarbe	X	
		FARBA AKRYLOWA 001 / KREISEL AKRYL-Fassadenfarbe DISPER-R	X	
		FARBA SILIKATOWA 002 / KREISEL SILIKAT-Fassadenfarbe	X	
		FARBA SILIKONOWA 003 / KREISEL SILIKON-Fassadenfarbe	X	
		FARBA SISI 004 / KREISEL SISI-Fassadenfarbe	X	
		KREISEL SILIKON-Fassadenfarbe / HASIT SILIKONHARZ Fassadenfarbe 770	X	
		KREISEL Disper-R / HASIT Disper Extra Fassadenfarbe	X	
	acrylic finishing coats			
	AKRYTYNK BR 010 / KREISEL AKRYLPUTZ KORN		X	
	AKRYTYNK DR 010 / KREISEL AKRYLPUTZ REIBE		X	
	silicone finishing coats			
	SILIKOTYNK BR 030 / KREISEL SILIKONHARZPUTZ KORN		X	
	SILIKOTYNK DR 030 / KREISEL SILIKONHARZPUTZ REIBE		X	
	SILIKON PROTECT BR 031 / KREISEL SILIKON PROTECT KORN		X	
	SILIKON PROTECT DR 031 / KREISEL SILIKON PROTECT REIBE		X	
	silicate finishing coats			
	SILIKATYNK BR 020 / KREISEL SILIKATPUTZ KORN		X	
	SILIKATYNK DR 020 / KREISEL SILIKATPUTZ REIBE		X	
	silicate-silicone finishing coats			
	SISITYNK BR 040 / KREISEL SISIPUTZ KORN		X	
	SISITYNK DR 040 / KREISEL SISIPUTZ REIBE		X	

2.2.3 Hygrothermal behaviour

The test to hygrothermal-cycling was carried out on four walls.

None of the following defects occurred on the assessed external renderings or the base coat during and after the tests:

- blistering or peeling of any part of the rendering system
- failure or cracking associated with joints between the insulation product boards or profiles fitted with the system
- detachment of the render
- cracking allowing water penetration into the insulation layer

Thus, the ETICS has been assessed as resistant to hygrothermal cycles.

2.2.4 Freeze / thaw behaviour

Water absorption of the rendering systems was lower than 0.5 kg/m^2 after 24 hours and the ETICS with these finishing coats has been assessed as freeze/thaw resistant.

2.2.5 Impact resistance

The resistance to hard body impacts (3 J and 10 J) and to perforation (Perfotest) suggests the following use categories:

Table No. 5

Rendering systems	Finishing coats	1 x standard glass fibre mesh	2 x standard glass fibre mesh
base coat of STYRLEP 220/ Klebe und Armierungsmörtel „Wärmedämm - System", + finishing coats with relevant key coat acc. to table:	**mineral finishing coats + protective coating**		
	POZTYNK - SZ BR 062 / KREISEL KORNSTRUKTURPUTZ + all types of protective coatings POZTYNK - SZ DR 061 / KREISEL REIBEPUTZ + all types of protective coatings	Category III	NPD
	acrylic finishing coats		
	AKRYTYNK BR 010 / KREISEL AKRYLPUTZ KORN AKRYTYNK DR 010 / KREISEL AKRYLPUTZ REIBE	Category II	Category I
	silicone finishing coats		
	SILIKOTYNK BR 030 / KREISEL SILIKONHARZPUTZ KORN SILIKOTYNK DR 030 / KREISEL SILIKONHARZPUTZ REIBE SILIKON PROTECT BR 031 / KREISEL SILIKON PROTECT KORN SILIKON PROTECT DR 031 / KREISEL SILIKON PROTECT REIBE	Category II	Category I
	silicate finishing coats		
	SILIKATYNK BR 020 / KREISEL SILIKATPUTZ KORN SILIKATYNK DR 020 / KREISEL SILIKATPUTZ REIBE	Category III	Category I for particle size 0.5 mm NPD
	silicate-silicone finishing coats		
	SISITYNK BR 040 / KREISEL SISIPUTZ KORN SISITYNK DR 040 / KREISEL SISIPUTZ REIBE	Category II	Category I

Table No. 6

Rendering systems	Finishing coats	1 x standard glass fibre mesh	2 x standard glass fibre mesh
base coat of STYRLEP-B 225 + finishing coats with relevant key coat or without coat acc. to table:	**mineral finishing coats + protective coating**		
	POZTYNK - SZ BR 062 / KREISEL KORNSTRUKTURPUTZ + all types of protective coatings POZTYNK - SZ DR 061 / KREISEL REIBEPUTZ + all types of protective coatings	Category III	NPD
	acrylic finishing coats		
	AKRYTYNK BR 010 / KREISEL AKRYLPUTZ KORN AKRYTYNK DR 010 / KREISEL AKRYLPUTZ REIBE	Category II	Category I
	silicone finishing coats		
	SILIKOTYNK BR 030 / KREISEL SILIKONHARZPUTZ KORN SILIKOTYNK DR 030 / KREISEL SILIKONHARZPUTZ REIBE SILIKON PROTECT BR 031 / KREISEL SILIKON PROTECT KORN SILIKON PROTECT DR 031 / KREISEL SILIKON PROTECT REIBE	Category II	Category I
	silicate finishing coats		
	SILIKATYNK BR 020 / KREISEL SILIKATPUTZ KORN SILIKATYNK DR 020 / KREISEL SILIKATPUTZ REIBE	Category III	Category I for particle size 0.5 mm NPD
	silicate-silicone finishing coats		
	SISITYNK BR 040 / KREISEL SISIPUTZ KORN SISITYNK DR 040 / KREISEL SISIPUTZ REIBE	Category II	Category I

Table No. 7

Rendering systems	Finishing coats	1 x standard glass fibre mesh	2 x standard glass fibre mesh
base coat of Armierungsmörtel KREISEL A + finishing coats with relevant key coat acc. to table:	**mineral finishing coats + protective coating**		
	POZTYNK - SZ BR 062 / KREISEL KORNSTRUKTURPUTZ + all types of protective coatings POZTYNK - SZ DR 061 / KREISEL REIBEPUTZ + all types of protective coatings	Category III	NPD
	acrylic finishing coats		
	AKRYTYNK BR 010 / KREISEL AKRYLPUTZ KORN AKRYTYNK DR 010 / KREISEL AKRYLPUTZ REIBE	Category II	Category I
	silicone finishing coats		
	SILIKOTYNK BR 030 / KREISEL SILIKONHARZPUTZ KORN SILIKOTYNK DR 030 / KREISEL SILIKONHARZPUTZ REIBE SILIKON PROTECT BR 031 / KREISEL SILIKON PROTECT KORN SILIKON PROTECT DR 031 / KREISEL SILIKON PROTECT REIBE	Category II	Category I
	silicate finishing coats		
	SILIKATYNK BR 020 / KREISEL SILIKATPUTZ KORN SILIKATYNK DR 020 / KREISEL SILIKATPUTZ REIBE	Category III	Category I for particle size 0.5 mm NPD
	silicate-silicone finishing coats		
	SISITYNK BR 040 / KREISEL SISIPUTZ KORN SISITYNK DR 040 / KREISEL SISIPUTZ REIBE	Category II	Category I

2.2.6 Water vapour permeability

Table No. 8

Rendering systems	Finishing coats	Equivalent diffusion thickness (m)	
		Thickness of the base coat of 3 mm	Thickness of the base coat of 5 mm
base coat of STYRLEP 220/ Klebe und Armierungsmörtel „Wärmedämm - System", STYRLEP-B 225, Armierungsmörtel KREISEL A + finishing coats with relevant key coat acc. to table:	**mineral finishing coats + protective coating**		
	POZTYNK - SZ BR 062 / KREISEL KORNSTRUKTURPUTZ + all types of protective coatings POZTYNK - SZ DR 061 / KREISEL REIBEPUTZ + all types of protective coatings	≤ 2.0 (test result obtained with max. particle size 3 mm: 0.3)	NPD
	acrylic finishing coats		
	AKRYTYNK BR 010 / KREISEL AKRYLPUTZ KORN AKRYTYNK DR 010 / KREISEL AKRYLPUTZ REIBE	≤ 2.0 (test result obtained with max. particle size 1.5; 2; 3 mm: 0.4)	≤ 2.0 (test result obtained with max. particle size 1.5; 2; 3 mm: 0.5)
	silicone finishing coats		
	SILIKOTYNK BR 030 / KREISEL SILIKONHARZPUTZ KORN SILIKOTYNK DR 030 / KREISEL SILIKONHARZPUTZ REIBE	≤ 2.0 (test result obtained with max. particle size 1.5; 2; 3 mm: 0.4)	≤ 2.0 (test result obtained with max. particle size 1.5; 2; 3 mm: 0.5)
	SILIKON PROTECT BR 031 / KREISEL SILIKON PROTECT KORN SILIKON PROTECT DR 031 / KREISEL SILIKON PROTECT REIBE	≤ 2.0 (test result obtained with max. particle size 3 mm: 0.3)	≤ 2.0 (test result obtained with max. particle size 3 mm: 0.3)
	silicate finishing coats		
	SILIKATYNK BR 020 / KREISEL SILIKATPUTZ KORN SILIKATYNK DR 020 / KREISEL SILIKATPUTZ REIBE	≤ 2.0 (test result obtained with max. particle size 1.5; 2; 3 mm: 0.3)	≤ 2.0 (test result obtained with max. particle size 1.5; 2; 3 mm: 0.3)
	silicate-silicone finishing coats		
	SISITYNK BR 040 / KREISEL SISIPUTZ KORN SISITYNK DR 040 / KREISEL SISIPUTZ REIBE	≤ 2.0 (test result obtained with max. particle size 1.5; 2; 3 mm: 0.4)	≤ 2.0 (test result obtained with max. particle size 1.5; 2; 3 mm: 0.4)

Table No. 9

Rendering systems	Finishing coats	Equivalent diffusion thickness (m)	
		Thickness of the base coat of 3 mm	Thickness of the base coat of 5 mm
base coat of STYRLEP-B 225 + finishing coats without key coat acc. to table:	mineral finishing coats + protective coating		
	POZTYNK - SZ BR 062 / KREISEL KORNSTRUKTURPUTZ + all types of protective coatings POZTYNK - SZ DR 061 / KREISEL REIBEPUTZ + all types of protective coatings	≤ 2.0 (test result obtained with max. particle size 3 mm: 0.3)	NPD
	acrylic finishing coats		
	AKRYTYNK BR 010 / KREISEL AKRYLPUTZ KORN AKRYTYNK DR 010 / KREISEL AKRYLPUTZ REIBE	≤ 2.0 (test result obtained with max. particle size 1.5; 2; 3 mm: 0.4)	≤ 2.0 (test result obtained with max. particle size 1.5; 2; 3 mm: 0.5)
	silicone finishing coats		
	SILIKOTYNK BR 030 / KREISEL SILIKONHARZPUTZ KORN SILIKOTYNK DR 030 / KREISEL SILIKONHARZPUTZ REIBE	≤ 2.0 (test result obtained with max. particle size 1.5; 2; 3 mm: 0.4)	≤ 2.0 (test result obtained with max. particle size 1.5; 2; 3 mm: 0.5)
	SILIKON PROTECT BR 031 / KREISEL SILIKON PROTECT KORN SILIKON PROTECT DR 031 / KREISEL SILIKON PROTECT REIBE	≤ 2.0 (test result obtained with max. particle size 3 mm: 0.3)	≤ 2.0 (test result obtained with max. particle size 3 mm: 0.3)
	silicate finishing coats		
	SILIKATYNK BR 020 / KREISEL SILIKATPUTZ KORN SILIKATYNK DR 020 / KREISEL SILIKATPUTZ REIBE	≤ 2.0 (test result obtained with max. particle size 1.5; 2; 3 mm: 0.3)	≤ 2.0 (test result obtained with max. particle size 1.5; 2; 3 mm: 0.3)
	silicate-silicone finishing coats		
	SISITYNK BR 040 / KREISEL SISIPUTZ KORN SISITYNK DR 040 / KREISEL SISIPUTZ REIBE	≤ 2.0 (test result obtained with max. particle size 1.5; 2; 3 mm: 0.3)	≤ 2.0 (test result obtained with max. particle size 1.5; 2; 3 mm: 0.3)

2.2.7 Release of dangerous substances

The ETICS of the given composition is considered to meet the safety requirements regarding the occurrence of dangerous substances in accordance with the H Instructions (Harmonized Approach to Dangerous Substances pursuant to Guidelines for Construction Products, issued in 2002, regarding dangerous substances).

In this respect, a written declaration of conformity was made by the manufacturer.

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

2.2.8 Safety in use

2.2.8.1 Bond strength

Bond strength between the base coat and polystyrene

Table No. 10

Base coat render: STYRLEP 220 / Klebe und Armierungsmörtel „Wärmedämm - System", STYRLEP-B 225, Armierungsmörtel KREISEL A		
Conditioning		
No complementary conditioning	**After hygrothermal cycles (on the wall)**	**After the freeze/thaw cycles (on samples)**
≥ 0.08 MPa	≥ 0.08 MPa	it was not necessary to carry out the tests

The bond strength between the adhesive and the substrate and the EPS (safety in use for the bonded ETICS).

Table No. 11

Adhesive:	**LEPSTYR 210. Klebemörtel "Kreisel PL", Klebe und Armierungsmörtel „Wärmedämm - System"**		
Substrate	**No complementary conditioning**	**48 h's immersion in water + 2 h 23°C/50 %RH**	**48 h's immersion in water + 7days 23°C/50 %RH**
concrete	≥ 0.25 MPa	≥ 0.08 MPa	≥ 0.25 MPa
expanded polystyrene	≥ 0.08 MPa	≥ 0.03 MPa	≥ 0.08 MPa

The bonded ETICS can be installed with application of the adhesive on a surface of 20%. The ETA holder requires 40 % for the bonded systems.

2.2.8.2 *Fixing strength (displacement test)*

The test is not required because the ETICS fulfils the following criteria:

- the bonding surface for mechanically fixed ETICS with supplementary bonding exceeds 20%
- after Render Strip Tensile Test at 2 % of elongation, only cracks of width of less or equal to 0.2 mm were observed

2.2.8.3 *Wind load resistance*

Safety in use when fixing the ETICS with anchors.

The following values only apply to the combination (anchor's trade name) / (EPS characteristics) mentioned in the first line of the table.

Table No. 12

Type of anchor	**Trade name**	ejotherm NT U		ETA-05/0009
		ejotherm NTK U		ETA-07/0026
		ejotherm ST U		ETA-02/0018
		ejotherm STR U		ETA-04/0023
		ejotherm SDM-T plus U		ETA-04/0064
		KOELNER KI 8M		ETA-06/0191
	Plate diameter (mm)	60 and more		
EPS properties	**Thickness**			≥ 60
	Tensile strength perpendicular to the faces (kPa)			≥ 100
Maximal load in pull through	Anchors not placed at the panel joints *(pull–through test of fixings – ETAG 004, Clause 5.1.4.3, scheme 1a)*		R_{panel}	Minimal value: 0.51 kN Average value: 0.52 kN
	Anchors placed at the panel joints *(pull–through test of fixings + foam block test – ETAG 004, Clause 5.1.4.3, scheme 2b)*		R_{joint}	Minimal value: 0.40 kN Average value: 0.43 kN

Table No. 13

Type of anchor	**Trade name**	ejotherm STR U countersunk assembly		ETA-04/0023
	Plate diameter (mm)	60		
EPS properties	**Thickness**			≥ 100
	Tensile strength perpendicular to the faces (kPa)			≥ 100
Maximal load in pull through	Anchors not placed at the panel joints *(pull–through test of fixings – ETAG 004, Clause 5.1.4.3, scheme 1a)*		R_{panel}	Minimal value: 0.47 kN Average value: 0.48 kN
	Anchors placed at the panel joints *(pull–through test of fixings + foam block test – ETAG 004, Clause 5.1.4.3, scheme 2b)*		R_{joint}	Minimal value: 0.36 kN Average value: 0.39 kN

Table No. 14

Type of anchor	**Trade name**	WKRĘT – MET LFN Ø 8, LFM Ø 8		ETA-06/0080
		KOELNER Ki 8M		ETA-06/0191
	Plate diameter (mm)	60		
EPS properties	**Thickness (mm)**			≥ 50
	Tensile strength perpendicular to the faces (kPa)			≥ 100
Maximal load in pull through	Anchors not placed at the panel joints *(pull–through test of fixings – ETAG 004, Clause 5.1.4.3, scheme 1a)*	R_{panel}		Minimal value: 0.41 kN Average value: 0.42 kN
	Anchors placed at the panel joints *(pull–through test of fixings + foam block test – ETAG 004, Clause 5.1.4.3, scheme 2b)*	R_{joint}		Minimal value: 0.36 kN Average value: 0.39 kN

$$R_d = (R_{panel} \times n_{panel} + R_{joint} \times n_{joint}) / \gamma$$

n_{panel}: number (per m^2) of anchors not placed at the panel joints
n_{joint}: number (per m^2) of anchors placed at the panel joints
γ: national safety factor

2.2.9 Thermal resistance

The thermal transmittance of the substrate wall covered with the ETICS is calculated in accordance with the standard EN ISO 6946:

$U = U_c + \chi_p \cdot n$

Where: $\chi_p \cdot n$ has only to be taken into account if it is greater than 0.04 W/(m^2.K)

U: global thermal transmittance of the covered wall W/ (m^2.K)

n: number of anchors per 1 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:

= 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 value of $\chi_p \cdot n$ is negligible for $n < 20$)

= 0.004 W/K for anchors with a galvanised steel screw with the head covered by plastic material (the value of $\chi_p \cdot n$ is negligible for $n < 10$)

= negligible for anchors with plastic nails

U_c: thermal transmittance of the current part of the covered wall (excluding thermal bridges) in W/ (m^2.K) determined as follows:

$$U_c = \frac{1}{R_i + R_{render} + R_{substrate} + R_{se} + R_{si}}$$

Where: R_i: thermal resistance of the insulation product (see the CE marking for EPS pursuant to EN 13163) in m^2.K/W

R_{render}: thermal resistance of the render (about 0.02 m^2.K/W)

$R_{substrate}$: thermal resistance of the substrate of the building (concrete, brick…) in m^2.K/W

R_{se}: external superficial thermal resistance in m^2.K/W

R_{si}: internal superficial thermal resistance in m^2.K/W

2.2.10 Aspects of durability and serviceability

2.2.10.1 Bond strength after ageing

Table No. 15

Rendering systems: base coat of STYRLEP 220/Klebe und Armierungsmörtel „Wärmedämm - System", STYRLEP-B 225, Armierungsmörtel KREISEL A + finishing coats with relevant key coat acc. to table:	**mineral finishing coats + protective coating**	≥ 0.08 MPa
	POZTYNK - SZ BR 062/ KREISEL KORNSTRUKTURPUTZ + all types of protective coatings POZTYNK - SZ DR 061/ KREISEL REIBEPUTZ + all types of protective coatings	
	acrylic finishing coats	
	AKRYTYNK BR 010 / KREISEL AKRYLPUTZ KORN AKRYTYNK DR 010 / KREISEL AKRYLPUTZ REIBE	
	silicone finishing coats	
	SILIKOTYNK BR 030/ KREISEL SILIKONHARZPUTZ KORN SILIKOTYNK DR 030/ KREISEL SILIKONHARZPUTZ REIBE SILIKON PROTECT BR 031/ KREISEL SILIKON PROTECT KORN SILIKON PROTECT DR 031/ KREISEL SILIKON PROTECT REIBE	
	silicate finishing coats	
	SILIKATYNK BR 020/ KREISEL SILIKATPUTZ KORN SILIKATYNK DR 020/ KREISEL SILIKATPUTZ REIBE	
	silicate-silicone finishing coats	
	SISITYNK BR 040/ KREISEL SISIPUTZ KORN SISITYNK DR 040/ KREISEL SISIPUTZ REIBE	

Table No. 16

Rendering systems: base coat of STYRLEP-B 225 + finishing coats without key coat acc. to table:	**mineral finishing coats + protective coating**	≥ 0.08 MPa
	POZTYNK - SZ BR 062/ KREISEL KORNSTRUKTURPUTZ + all types of protective coatings POZTYNK - SZ DR 061/ KREISEL REIBEPUTZ + all types of protective coatings	
	acrylic finishing coats	
	AKRYTYNK BR 010 / KREISEL AKRYLPUTZ KORN AKRYTYNK DR 010 / KREISEL AKRYLPUTZ REIBE	
	silicone finishing coats	
	SILIKOTYNK BR 030/ KREISEL SILIKONHARZPUTZ KORN SILIKOTYNK DR 030/ KREISEL SILIKONHARZPUTZ REIBE SILIKON PROTECT BR 031/ KREISEL SILIKON PROTECT KORN SILIKON PROTECT DR 031/ KREISEL SILIKON PROTECT REIBE	
	silicate finishing coats	
	SILIKATYNK BR 020/ KREISEL SILIKATPUTZ KORN SILIKATYNK DR 020/ KREISEL SILIKATPUTZ REIBE	
	silicate-silicone finishing coats	
	SISITYNK BR 040/ KREISEL SISIPUTZ KORN SISITYNK DR 040/ KREISEL SISIPUTZ REIBE	

2.3 Components' characteristics

2.3.1 Insulation product

2.3.1.1 Slabs made of expanded polystyrene (EPS) for bonded ETICS or for mechanically fixed ETICS

Factory-prefabricated, uncoated boards with right edges made of expanded polystyrene (EPS) pursuant to EN 13163 being described in the table below.

Table No. 17

Description of characteristics	**EPS slabs**
	For bonded and mechanically fixed ETICS
Reaction to fire / EN 13501-1	Euroclass – E, density ≤ 20 kg/m^3 thickness of 50 – 250 mm
Thermal resistance (m^2.K)/W	Defined in the CE marking according to the declaration in compliance with EN 13163
Thickness (mm) / EN 823	(50 - 250) ± 1 (EPS-EN 13163 - T2)
Length (mm) / EN 822	± 2 (EPS-EN 13163 - L2)

Width (mm) / EN 822		± 2 (EPS-EN 13163 - W2)
Squareness (mm/m) / EN 824		EPS-EN 13163 – S2
Flatness (mm) / EN 825		EPS-EN 13163 – P3
Surface condition		Cut surface (homogeneous, without "skin")
Dimensional stability under:	specified humidity and temperature / EN 1604	EPS-EN 13163-DS(70.-)2
	laboratory conditions / EN 1603	EPS-EN 13163-DS(N)2
Water absorption (partial immersion) / EN 1609		< 1 kg/m^2
Water vapour permeability, diffusion factor (μ) / EN 12086 – EN 13163		20 - 70
Tensile strength perpendicular to the front of the slab in dry conditions (kPa) /EN 1607		≥ 100 (EPS EN 13163-TR 100)
Shear strength (MPa) / EN 12090		≥ 0.02
Shear modulus of elasticity (MPa) /EN 12090		≥ 1.0

2.3.2 Anchors

Anchors for EPS:

Plastic anchors with expansion pin, plate of diameter of 60 mm and screw or nail with a flat head.

Table No. 18

Trade name	**Plate diameter (mm)**	**Characteristic pull-out resistance**
ejotherm NT U	60	see ETA - 05/0009
ejotherm NTK U	60	see ETA - 07/0026
ejotherm ST U	60	see ETA – 02/0018
ejotherm STR U	60	see ETA – 04/0023
ejotherm SDM –T plus U	60	see ETA - 04/0064
KOELNER KI8M	60	see ETA – 06/0191
WKRĘT – MET LFN Ø 8, LFM Ø 8	60	see ETA – 06/0080

2.3.3 Base coat

The maximum crack width of the base coat with glass fibre mesh is smaller or equal to 0.2 mm at 2 % render strain value.

2.3.4 Glass fibre mesh

Table No. 19

Glass fibre mesh	Vertex R117 A101 Vertex R131 A101 Vertex R167 A101	
	warp	weft
Residual strength after ageing: (N/mm)	≥ 20	≥ 20
Relative residual strength: (%) (after ageing) of the strength in the as-delivered state	≥ 50	≥ 50

3 Evaluation and Attestation of Conformity and CE marking

3.1 Attestation of Conformity system

In accordance with Decision 97/556/EC of the European Commission amended by 2001/596/EC, the system 2+ of attestation of conformity applies.

In addition, the system 1 and 2+ of attestation of conformity apply with regard to reaction to fire pursuant to Decision 2001/596/EC of the European Commission.

Considering the Euroclasses B and F for the reaction to fire, the system of attestation of conformity, regarding other characteristics than reaction to fire, is the system 2+. This system is described in Council Directive 89/106/EEC Annex III, 2 (ii), First possibility as follows:

Declaration of conformity of the ETICS by the manufacturer based on:

a) Tasks for the manufacturer:
   (1) initial-type testing of the ETICS and the components
   (2) factory production control
   (3) testing of samples taken at the factory in accordance with the prescribed Control Plan

b) Tasks for the Notified Body:
   (4) Certification of factory production control based on:
      - initial inspection of the factory and factory production control
      - continuous surveillance, assessment and approval of the factory production control (FPC)

Considering the Euroclass B for reaction to fire, the system of attestation of conformity, regarding reaction-to-fire characteristic, is the system 1. The system 1 is described in Council Directive 89/106/EEC Annex III, 2 (i), as follows:

Certification of conformity of the ETICS by a Notified certification Body based on:

a) Tasks for the manufacturer:
   (1) factory production control (FPC)
   (2) further testing of samples taken at the factory in accordance with the prescribed Control Plan

b) Tasks for the Notified Body
   (3) initial-type testing of the ETICS and the components
   (4) initial inspection of the factory and factory production control
   (5) continuous surveillance, assessment and approval of the factory production control (FPC).

3.2 Responsibilities

3.2.1 Tasks for the manufacturer

3.2.1.1 Factory production control

The manufacturer shall perform permanent internal control of production. All elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. The production control system shall ensure that the product conforms with this European Technical Approval.

The manufacturer may only use initial/raw/constituent materials (as relevant) laid down in the technical documentation of this European Technical Approval.

For components of the ETICS not manufactured by the ETA holder and application of the whole kit of the ETICS in the building structure and for factory production control (FPC) done by other manufacturer, it is the ETA holder's responsibility to ensure that the factory production control (FPC) for these components meets the requirements of the European Technical Approval.

The factory production control (FPC) and the provisions taken by the ETA holder for components not manufactured by them shall be in accordance with the Control Plan[6] relating to the European Technical Approval which is a part of the technical documentation of this European Technical Approval. The Control Plan[6] is laid down within the context of the factory production control system operated by the manufacturer and deposited with the Technical and Test Institute for Construction Prague.

The results of the factory production control shall be recorded and evaluated in accordance with the provisions of the Control Plan[6].

3.2.1.2 Other tasks for the manufacturer

The manufacturer shall contractually involve a body (bodies) which is (are) notified for the tasks referred to in section 3.1 in the field of the ETICS in order to undertake the actions laid down in section 3.3. For this purpose, the Control Plan6 referred to in sections 3.2.1.1 and 3.2.2 shall be handed over by the manufacturer to the notified body or bodies involved.

For initial type testing (in case of the system 2+), the results of the tests performed as part of the assessment for the European Technical Approval shall be used unless there are any changes in the production line or the plant. In such cases, the initial type testing has to be agreed between the TZÚS Prague, s.p. and the Notified Bodies involved.

The manufacturer shall make a "EC declaration of conformity" stating that the construction product is in conformity with the provisions of the European Technical Approval. The initial type-testing mentioned above could be taken over by the manufacturer for the purposes of the declaration.

3.2.2 Tasks for the Notified Bodies

The notified body (bodies) shall carry out the:

- initial type-testing of the product (for system 1)

  The results of the tests performed as part of the assessment for the European Technical Approval can be used unless there are any changes to the production line or the plant. In such cases, the initial type testing has to be agreed between the TZÚS Prague, s.p. and the Notified Bodies involved.

- initial inspection of factory and of factory production control (FPC)

  The Notified Body shall ascertain that, in accordance with the Control plan[6], the factory (the employees and the equipment in particular) and the factory production control (FPC) are suitable to ensure continuous and proper manufacture of the components according to the specifications mentioned in clause 2 of this ETA.

- continuous surveillance, assessment and approval of the factory production control (FPC)

  The Notified Body shall make surveillance inspections at the factory:

  - at least twice a year. Further agreement between the Technical and Test Institute for Construction Prague and the Notified Body involved, this frequency can be reduced to once a year after a probative period

  or

  - at least once a year for manufacturers having a factory production control system which complies with EN ISO 9001 covering the manufacturing of the ETICS components.

  It shall be verified that the system of the factory production control and the specified automated manufacturing process are maintained taking account of the Control Plan[6].

These tasks shall be performed in accordance with the provisions laid down in the Control Plan[6] relating to the European Technical Approval.

The Notified Body (Bodies) shall retain the essential points of its (their) actions mentioned above and present the results obtained and conclusions drawn in (a) written report (reports).

- In the case of the AoC system 1

  The notified body involved by the manufacturer shall issue an EC certificate of conformity of the product certifying conformity with the provisions of this European Technical Approval.

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[6] The Control Plan has been deposited with the Technical and Test Institute for Construction Prague and is made available only to the notified bodies involved in the conformity attestation process.

- In the case of the AoC system 2+
  The notified body involved by the manufacturer shall issue an EC certificate of conformity of the factory production control (FPC) certifying conformity with the provisions of this European Technical Approval.

In cases where the provisions of the European Technical Approval and its Control Plan[6] are no longer fulfiled, the certification body shall withdraw the certificate of conformity and inform Technical and Test Institute for Construction Prague, without delay.

3.3 CE marking

The CE marking shall be affixed either to the product itself, a label attached to it, the packaging or on the commercial documents accompanying the components of the ETICS. The letters « CE » shall be accompanied by the identification number of the Notified Body involved and the following additional information:

- name or identification mark and address of the ETA holder
- last two digits of the year in which the CE marking was affixed
- number of the EC certificate of conformity of Factory Production Control (system 2+)
- number of the EC certificate of conformity of the ETICS (system 1)
- number of the European Technical Approval
- ETICS trade name
- number of the ETAG.

4 Assumptions under which the fitness of the product for the intended use was favourably assessed

4.1 Manufacture

The European Technical Approval is issued for the ETICS based on the agreed details/information deposited with the Technical and Test Institute for Construction Prague which identify/identifies the ETICS that has been assessed and judged. Any changes in the ETICS or production process which could result in this deposited details/information being incorrect should be notified to the Technical and Test Institute for Construction Prague before the changes are introduced. TZÚS Prague, s.p. shall decide whether or not such changes can affect the ETA and consequently the validity of the CE marking based on the ETA and if so whether further assessment or alteration to the ETA is required.

The components of the ETICS shall correspond to the products being subject to the approval tests as far as their composition and manufacturing process are concerned.

4.2 Installation

4.2.1 General

It is the ETA holder's responsibility to provide the interested persons with the information about the design and application of the ETICS. This information can be given in the form of technological procedures and copies of the relevant parties of the ETA. In addition, all the data concerning the execution of product shall be clearly indicated on the packaging and/or the enclosed instruction sheets using one or several illustrations.

In any case, the usage of the product shall comply with the national regulations and particularly those concerning fire resistance, structural analysis including wind load resistance and structural physics.

Only the components described in clause 1.1 of characteristics according to clause 2 of this ETA can be used for the ETICS.

The requirements given in ETAG 004, chapter 4 and chapter 7 have to be considered.

4.2.2 Design

For the bonded ETICS, the minimum area to be bonded and the method of bonding must comply with the ETICS characteristics (see Section 2.1.8.1 of this ETA) as well as the national

regulations. The ETA holder specifies the minimal bonded surface of 30 % for the partially bonded ETICS with supplementary fixing.

For mechanically fixed ETICS with supplementary bonding, the choice and the amount of supplementary fixings shall be determined considering:

- the design wind load suction and the national regulations (taking the national safety factors, the design rules, ... into account)
- the characteristic pull–out strength of the anchors off the considered substrate (see the installation parameters – effective anchorage, characteristic resistance ... – in the ETA of the anchors)
- safety in use of the ETICS (Clause 2.2.8) according to the method of fixing.

4.2.3 Execution

It should be done by trained employees only.

The recognition and preparation of the substrate as well as the generalities about the execution of the ETICS shall be carried out in compliance with:

- chapter 7 of ETAG No. 004, with compulsory removal of any existing paint finishes and any organic renders
- the national regulations in force

The particularities in execution linked to different methods of fixing and application of the rendering system shall be handled in accordance with the ETA holder prescriptions. In particular, it is necessary to comply with the quantities of the rendering applied, the thickness regularity and the drying periods between layers.

5 Indication to the manufacturer

5.1 Packaging, transport and storage

Packaging of the components has to be such that the products are protected from moisture during transport and storage unless other measures are foreseen by the manufacturer for this purpose.

The components have to be protected from damage.

It is the responsibility of the manufacturer(s) to ensure that these provisions are easily accessible to the employees concerned.

5.2 Use, maintenance, repair

The finishing coat shall be normally maintained in order to fully preserve the ETICS's performances.

Maintenance includes at least:

- repairs 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).

Necessary repairs should be done as soon as possible.

It is important to carry out maintenance using readily available products and equipment, without causing any damage to the appearance.

It is the responsibility of the manufacturer(s) to ensure that these provisions are easily accessible to the employees concerned and that all necessary information on maintenance is handed over to the user.

The original Czech version is signed by

Ing. Jozef Pôbiš
Head of the Approval Body