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European Technical Assessment

ETA 15/0582 of 14/10/2015

General Part

Technical Assessment Body issuing the ETA:	**Institute of Ceramics and Building Materials ICiMB**
Trade name of the construction product	GREINPLAST EPS
Product family to which the construction product belongs	External Thermal Insulation Composite Systems (ETICS) with rendering
Manufacturer	GREINPLAST Sp. z o.o. Krasne 512B 36-007 Krasne, POLAND
Manufacturing plant	GREINPLAST Sp. z o.o. Krasne 512B 36-007 Krasne, POLAND
This European Technical Assessment contains	19 pages including 2 Annexes which form an integral part of this assessment. Annex No 3 Control Plan contains confidential information and is not included in the European Technical Assessment when that assessment is publicly available.
This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of	Guideline for European Technical Approval ETAG 004 of External Thermal Insulation Composite Systems (ETICS) with rendering, version February 2013, used as European Assessment Document (EAD).
This version replaces	The previous ETA with the same number and validity from 22.09.2015

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

Specific part

1. Technical description of the product

This product GREINPLAST EPS is an ETICS (External Thermal Insulation Composite System with rendering) - a kit comprising components which are factory-produced by the manufacturer or component suppliers. 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 onto a wall. The method of fixing and the relevant components are specified in Table 1. The insulation product is faced with a rendering system consisting of one or more layers (site applied), one of which contains reinforcement. The rendering is applied directly to the insulating panels, without any air gap or disconnecting layer.

The ETICS may include special fittings (e.g. base profiles, corner profiles) to treat details of ETICS (connections, apertures, corners, parapets, sills). 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.

Table 1.

	Components	Coverage (kg/m^2)	Thickness (mm)
	Bonded ETICS; partially or fully bonded with supplementary mechanical fixings. National application documents shall be taken into account.		
Insulation materials with associated methods of fixing	• **Insulation product:** panels of expanded polystyrene (EPS) according to EN 13163 *Product characteristics - see Annex 1*	-	20 to 300
	• **Adhesives:** - **GREINPLAST KS** cement based powder requiring addition of 0,23-0,27 l/kg of water - **GREINPLAST K** cement based powder requiring addition of 0,24-0,27 l/kg of water	4,0 to 6,0 4,0 to 6,0	-
	• **Supplementary mechanical fixings:** Plastic anchors covered by relevant ETA according to ETAG 014	-	-

Table 1. cont.

	Components	Coverage (kg/m²)	Thickness (mm)
Base coat	• **GREINPLAST K** cement based powder requiring addition of 0,24-0,27 l/kg of water	3,0 to 4,0	about 3,0
Reinforce-ment	• **Standard glass fibre meshes** - **TG-22** - **VERTEX 145 / AKE 145 / R117 A101** - **SSA-1363-SM0.5 / SSA-1363-150 SM0.5 / SSA-1363-145** - **TG-15** - **SSA-1363-160-SM0.5A** *Products characteristics - see Annex 2*	- - - - -	- - - - -
Key coats	• **GREINPLAST F** ready to use liquid to be used with mineral and acrylic finishing coats • **GREINPLAST SP** ready to use liquid to be used with silicate finishing coats • **GREINPLAST XP** ready to use liquid to be used with silicone, silicone-silicate and nano-silicone finishing coats	about 0,40 about 0,40 about 0,40	- - -
Finishing coats	• **Mineral finishing coat.** Cement based powder requiring addition of 0,20-0,23 l/kg of water **GREINPLAST TB** structure - particles size: floated - 1,0; 1,5; 2,0; 2,5; 3,0 mm **GREINPLAST TK** structure - particles size: ribbed - 2,0; 3,0; 4,0 mm • **Acrylic finishing coat.** Ready to use paste – acrylic binder **GREINPLAST G/KGP** structure - particles size: mosaic - 0,8÷1,2; 1,0÷1,6; 1,2÷2,0 mm	1,4 to 4,8 2,0 to 4,8 2,0 to 7,0	Regulated by particles size

Table 1. cont.

	Components	Coverage (kg/m²)	Thickness (mm)
Finishing coats	**GREINPLAST TAB** structure - particles size: floated - 1,0; 1,5; 2,0; 2,5; 3,0 mm	1,4 to 4,8	Regulated by particles size
	GREINPLAST TAK structure - particles size: ribbed - 1,5; 2,0; 2,5; 3,0 mm	2,0 to 4,8	
	• **Silicate finishing coat.** Ready to use paste – silicate-acrylic binder		
	GREINPLAST TSB structure - particles size: floated - 1,0; 1,5; 2,0; 2,5; 3,0 mm	1,4 to 4,8	
	GREINPLAST TSK structure - particles size: ribbed - 1,5; 2,0; 2,5; 3,0 mm	2,0 to 4,8	
	• **Silicone-silicate finishing coat.** Ready to use paste – silicone-silicate-acrylic binder		
	GREINPLAST THB structure - particles size: floated - 1,0; 1,5; 2,0; 2,5; 3,0 mm	1,4 to 4,8	
	GREINPLAST THK structure - particles size: ribbed - 1,5; 2,0; 2,5; 3,0 mm	2,0 to 4,8	
	• **Silicone finishing coat.** Ready to use paste – silicone-acrylic binder		
	GREINPLAST TXB structure - particles size: floated - 1,0; 1,5; 2,0; 2,5; 3,0 mm	1,4 to 4,8	
	GREINPLAST TXK structure - particles size: ribbed - 1,5; 2,0; 2,5; 3,0 mm	2,0 to 4,8	
	• **Nano-silicone finishing coat.** Ready to use paste – silicone-acrylic binder		
	GREINPLAST TNB structure - particles size: floated - 1,5; 2,0; 2,5; 3,0 mm	1,4 to 4,5	

Table 1. cont.

	Components	Coverage (kg/m²)	Thickness (mm)
Decorative coats	• **GREINPLAST FA** ready to use pigmented liquid to be used optionally with: - mineral finishing coat GREINPLAST TB / GREINPLAST TK - acrylic finishing coat GREINPLAST TAB / GREINPLAST TAK	0,20 to 0,40	-
	• **GREINPLAST FH** ready to use pigmented liquid to be used optionally with: - mineral finishing coat GREINPLAST TB / GREINPLAST TK - acrylic finishing coat GREINPLAST TAB / GREINPLAST TAK - silicone-silicate finishing coat GREINPLAST THB / GREINPLAST THK	0,20 to 0,40	-
	• **GREINPLAST FS** ready to use pigmented liquid to be used optionally with: - mineral finishing coat GREINPLAST TB / GREINPLAST TK - silicate finishing coat GREINPLAST TSB / GREINPLAST TSK	0,20 to 0,40	-
	• **GREINPLAST FX** ready to use pigmented liquid to be used optionally with: - mineral finishing coat GREINPLAST TB / GREINPLAST TK - acrylic finishing coat GREINPLAST TAB / GREINPLAST TAK - silicone finishing coat GREINPLAST TXB / GREINPLAST TXK - silicate finishing coat GREINPLAST TSB / GREINPLAST TSK - silicone-silicate finishing coat GREINPLAST THB / GREINPLAST THK - nano-silicone finishing coat GREINPLAST TNB	0,20 to 0,40	

Table 1. cont.

	Components	Coverage (kg/m²)	Thickness (mm)
Decorative coats	• **GREINPLAST FNX** ready to use pigmented liquid to be used optionally with: - mineral finishing coat GREINPLAST TB / GREINPLAST TK - acrylic finishing coat GREINPLAST TAB / GREINPLAST TAK - silicone finishing coat GREINPLAST TXB / GREINPLAST TXK - silicate finishing coat GREINPLAST TSB / GREINPLAST TSK - silicone-silicate finishing coat GREINPLAST THB / GREINPLAST THK - nano-silicone finishing coat GREINPLAST TNB	0,20 to 0,40	-
Ancillary materials	Remain under the ETA-holder responsibilities		

2. Specification of the intended use in accordance with the applicable European Assessment Document (hereinafter EAD)

This ETICS is intended for use as external insulation of buildings' walls. The walls are made of masonry (bricks, blocks, stones) or concrete (cast on site or as prefabricated panels).

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 is made of non load-bearing construction elements. 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 effect of weathering.

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

The provisions made in this European Technical Assessment are based on an assumed working life of the ETICS of at least 25 years, provided that the requirements for the packaging, transport, storage, installation as well as appropriate use, maintenance and repair are met. The indication given on the working life cannot be interpreted as a guarantee given by the manufacturer or the Technical Assessment Body, but should only be regarded as a means for choosing the appropriate products in relation to the expected, economically reasonable working life of the works.

Design, installation, maintenance and repair of ETICS shall be done in accordance with principles introduced in chapter 7 of ETAG 004, used as EAD, and shall be in conformity with Member States' legislation requirements.

The instructions regarding packaging, transport, storage and installation of ETICS are specified in the manufacturer's technical documentation.

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

The performances of ETICS related to the Basic Requirements were determined in compliance with ETAG 004.

The performances of the kit as described in this chapter are valid provided that the components of the kit comply with Annexes 1÷2.

3.1. Safety in case of fire (BWR 2)

3.1.1. Reaction to fire (ETAG 004: clause 5.1.2.1, EN 13501-1)

Table 2.

Configuration	Max. organic content / Max. heat of combustion	Flame retardant content	Euroclass acc. to EN 13501-1
Adhesive	3,7% / -	No flame retardant	**B-s2, d0**
EPS panels* density ≤ 21,8 kg/m³	- / -		
Base coat	3,7% / -		
Glass fibre mesh	- / 1,9 MJ/m²		
Key coat	9,2% / 1,1 MJ/m²		
Finishing coat: - GREINPLAST TB / GREINPLAST TK - GREINPLAST TSB / GREINPLAST TSK - GREINPLAST TXB / GREINPLAST TXK - GREINPLAST TNB	10,0% / 10,3 MJ/m²		
Decorative coat	18,9% / 2,9 MJ/m²		
Adhesive	3,7% / -	No flame retardant	**C-s2, d0**
EPS panels* density ≤ 21,8 kg/m³	- / -		
Base coat	3,7% / -		
Glass fibre mesh	- / 1,9 MJ/m²		
Key coat	9,2% / 1,1 MJ/m²		
Finishing coat: - GREINPLAST TAB / GREINPLAST TAK - GREINPLAST THB / GREINPLAST THK - GREINPLAST G/KGP (coverage 2,0-4,8 kg/m²)	10,4% / 12,8 MJ/m²		
Decorative coat	18,9% / 2,9 MJ/m²		

Table 2. cont.

Configuration	Max. organic content / Max. heat of combustion	Flame retardant content	Euroclass acc. to EN 13501-1
System with GREINPLAST G/KGP of coverage 4,8-7,0 kg/m²	- / -	No flame retardant	**F**
*flame retardant content in quantity ensuring Euroclass E according to EN 13501-1			

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

3.2. Hygiene, health and environment (BWR 3)

3.2.1. Water absorption (ETAG 004: clause 5.1.3.1)

- Base coat GREINPLAST K:
  - Water absorption after 1 hour < 1 kg/m²;
  - Water absorption after 24 hours < 0,5 kg/m².
- Rendering system: Table 3.

Table 3.

		Water absorption after 24 hours	
		<0,5 kg/m²	**≥0,5 kg/m²**
Rendering system: Base coat GREINPLAST K + relevant key coat + finishing coat indicated hereafter:	GREINPLAST TB GREINPLAST TK	X	-
	GREINPLAST G/KGP	X	-
	GREINPLAST TAB GREINPLAST TAK	X	-
	GREINPLAST TSB GREINPLAST TSK	X	-
	GREINPLAST THB GREINPLAST THK	X	-
	GREINPLAST TXB GREINPLAST TXK	X	-
	GREINPLAST TNB	X	-

3.2.2. Watertightness (ETAG 004: clause 5.1.3.2)

3.2.2.1. Hygrothermal behaviour (ETAG 004: clause 5.1.3.2.1)

Pass (without defects).

3.2.2.2. Freeze-thaw behaviour (ETAG 004: clause 5.1.3.2.2)

Freeze-thaw resistant according to water absorption test.

3.2.3. Impact resistance (ETAG 004: clause 5.1.3.3)

Table 4.

		Single layer of standard mesh TG-22, VERTEX 145 / AKE 145 / R117 A101
Rendering system: Base coat GREINPLAST K + relevant key coat + finishing coat indicated hereafter:	GREINPLAST TB GREINPLAST TK	Category III
	GREINPLAST G/KGP	Category II
	GREINPLAST TAB GREINPLAST TAK	Category I
	GREINPLAST TSB GREINPLAST TSK	Category I
	GREINPLAST THB GREINPLAST THK	Category I
	GREINPLAST TXB GREINPLAST TXK	Category I
	GREINPLAST TNB	Category I
		Single layer of standard mesh SSA-1363-SM0.5 / SSA-1363-150 SM0.5 / SSA-1363-145
Rendering system: Base coat GREINPLAST K + relevant key coat + finishing coat indicated hereafter:	GREINPLAST TB GREINPLAST TK	Category II
	GREINPLAST G/KGP	Category I
	GREINPLAST TAB GREINPLAST TAK	Category I
	GREINPLAST TSB GREINPLAST TSK	Category I
	GREINPLAST THB GREINPLAST THK	Category I
	GREINPLAST TXB GREINPLAST TXK	Category I
	GREINPLAST TNB	Category I

Table 4. cont.

		Single layer of standard mesh TG-15, SSA-1363-160-SM0.5A
Rendering system: Base coat GREINPLAST K + relevant key coat + finishing coat indicated hereafter:	GREINPLAST TB GREINPLAST TK	Category I
	GREINPLAST G/KGP	Category I
	GREINPLAST TAB GREINPLAST TAK	Category I
	GREINPLAST TSB GREINPLAST TSK	Category I
	GREINPLAST THB GREINPLAST THK	Category I
	GREINPLAST TXB GREINPLAST TXK	Category I
	GREINPLAST TNB	Category I
		Double layer of standard mesh TG-22, VERTEX 145 / AKE 145 / R117 A101
Rendering system: Base coat GREINPLAST K + relevant key coat + finishing coat indicated hereafter:	GREINPLAST TB GREINPLAST TK	Category II
	GREINPLAST G/KGP	Category I
	GREINPLAST TAB GREINPLAST TAK	Category I
	GREINPLAST TSB GREINPLAST TSK	Category I
	GREINPLAST THB GREINPLAST THK	Category I
	GREINPLAST TXB GREINPLAST TXK	Category I
	GREINPLAST TNB	Category I

3.2.4. Water vapour permeability (ETAG 004: clause 5.1.3.4)

Table 5.

			Equivalent air thickness s_d
Rendering system: Base coat GREINPLAST K + relevant key coat + finishing coat indicated hereafter + relevant decorative coat:	GREINPLAST TB GREINPLAST TK	GREINPLAST FA	≤ 0,15 m
		GREINPLAST FH	≤ 0,13 m
		GREINPLAST FS	≤ 0,12 m
		GREINPLAST FX	≤ 0,13 m
		GREINPLAST FNX	≤ 0,11 m
	GREINPLAST G/KGP*		≤ 0,18 m
	GREINPLAST TAB GREINPLAST TAK	GREINPLAST FA	≤ 0,40 m
		GREINPLAST FH	≤ 0,48 m
		GREINPLAST FX	≤ 0,36 m
		GREINPLAST FNX	≤ 0,39 m
	GREINPLAST TSB GREINPLAST TSK	GREINPLAST FS	≤ 0,19 m
		GREINPLAST FX	≤ 0,19 m
		GREINPLAST FNX	≤ 0,21 m
	GREINPLAST THB GREINPLAST THK	GREINPLAST FH	≤ 0,31 m
		GREINPLAST FX	≤ 0,24 m
		GREINPLAST FNX	≤ 0,25 m

*mosaic finishing coat – decorative coat not used

Table 5. cont.

			Equivalent air thickness s_d
Rendering system: Base coat GREINPLAST K + relevant key coat + finishing coat indicated hereafter + relevant decorative coat:	GREINPLAST TXB GREINPLAST TXK	GREINPLAST FX	≤ 0,20 m
		GREINPLAST FNX	≤ 0,21 m
	GREINPLAST TNB	GREINPLAST FX	≤ 0,21 m
		GREINPLAST FNX	≤ 0,20 m

3.2.5. Release of dangerous substances (ETAG 004: clause 5.1.3.5, EOTA TR034)

No performance assessed.

Note: There may be 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 Regulation (EU) No 305/2011, these requirements need to be complied with, when and where they apply.

3.3. Safety and accessibility in use (BWR 4)

3.3.1. Bond strength between base coat and insulation product (ETAG 004: clause 5.1.4.1.1)

- Bond strength between base coat GREINPLAST K and insulation product ≥ 0,08 MPa

3.3.2. Bond strength between adhesive and substrate (ETAG 004: clause 5.1.4.1.2)

Table 6.

	Initial state	48 h immersion in water + 2 hours 23°C/50% RH	48 h immersion in water + 7 days 23°C/50% RH
GREINPLAST KS	≥ 0,25 MPa	≥ 0,08 MPa	≥ 0,25 MPa
GREINPLAST K			

3.3.3. Bond strength between adhesive and insulation product (ETAG 004: clause 5.1.4.1.3)

Table 7.

	Initial state	48 h immersion in water + 2 hours 23°C/50% RH	48 h immersion in water + 7 days 23°C/50% RH
GREINPLAST KS[1)]	≥ 0,08 MPa	≥ 0,03 MPa	≥ 0,08 MPa
GREINPLAST K[2)]			
[1)] minimal bonded surface area S: 27% [2)] minimal bonded surface area S: 27%			

3.3.4. Bond strength after aging (ETAG 004: clause 5.1.7.1)

Table 8.

		After hygrothermal cycles
Rendering system: Base coat GREINPLAST K + relevant key coat + finishing coat indicated hereafter:	GREINPLAST TB GREINPLAST TK	≥ 0,08 MPa
	GREINPLAST G/KGP	≥ 0,08 MPa
	GREINPLAST TAB GREINPLAST TAK	≥ 0,08 MPa
	GREINPLAST TSB GREINPLAST TSK	≥ 0,08 MPa
	GREINPLAST THB GREINPLAST THK	≥ 0,08 MPa
	GREINPLAST TXB GREINPLAST TXK	≥ 0,08 MPa
	GREINPLAST TNB	≥ 0,08 MPa

3.3.5. Render strip tensile test (ETAG 004: clause 5.5.4.1)

No performance assessed.

3.4. Protection against noise (BWR 5)

3.4.1. Airborne sound insulation (ETAG 004: clause 5.1.5)

No performance assessed.

3.5. Energy economy and heat retention (BWR 6)

3.5.1. Thermal resistance (ETAG 004: clause 5.1.6.1)

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

$$U_c = U + \chi_p \cdot n$$

where:

$\chi_p \cdot n$ has only to be taken into account if it is greater than 0,04 W/(m^2·K)

U_c: global (corrected) thermal transmittance of the covered wall (W/ (m^2·K))

n: number of anchors (through insulation product) 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 ($\chi_p \cdot n$ negligible for n < 20)

= 0,004 W/K for anchors with a galvanized steel screw with the head covered by a plastic material ($\chi_p \cdot n$ negligible for n < 10)

= negligible for anchors with plastic nails (reinforced or not with glass fibres)

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

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

where:

R_i: thermal resistance of the insulation product (according to declaration in reference to EN 13163) in (m^2·K)/W

R_{render}: thermal resistance of the render (about 0,02 in (m^2·K)/W or determined by test according to EN 12667 or EN 12664)

$R_{substrate}$: 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

The value of thermal resistance of each insulation product shall be given in the manufacturer's documentation along with the possible range of thicknesses. In addition, the point thermal conductivity of anchors shall be given when anchors are used in the ETICS.

3.6. Sustainable use of natural resources (BWR 7)

No performance assessed.

4. Assessment and verification of constancy of performance (hereinafter 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 AVCP systems (further described in Annex V to Regulation (EU) No 305/2011) 1 and 2+ apply.

Table 9.

Product(s)	Intended use(s)	Level(s) or class(es) (Reaction to fire)	System(s)
External thermal insulation composite systems/kits (ETICS) with rendering	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 EAD

The manufacturer shall exercise permanent control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures. The production control system shall ensure performance constancy of the product covered by this European Technical Assessment.

The manufacturer may only use materials / raw materials / constituents stated in the technical documentation of this European Technical Assessment. The factory production control shall be performed in accordance with the Control Plan which is a confidential part of the European Technical Assessment. The Control Plan was developed as a part of factory production control system.

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

Issued in Krakow on 14.10.2015

Signed by

Adam WITEK

Director of Institute of Ceramics and Building Materials

Annexes:

Annex No 1 - Insulation product characteristics

Annex No 2 – Glass fibre meshes characteristics

Annex No 1 - Insulation product characteristics

	Panels of expanded polystyrene EPS
Reaction to fire / EN 13501-1	Euroclass – E max. density: 21,8 kg/m^3
Thermal resistance	Defined in the CE marking in reference to EN 13163 (m^2·K)/W
Thickness / EN 823	EN 13163 - T(1)
Length / EN 822	EN 13163 - L(2)
Width / EN 822	EN 13163 - W(2)
Squareness / EN 824	EN 13163 - Sb(5)
Flatness / EN 825	EN 13163 - P(5)
Dimensional stability under specified conditions / EN 1604	EN 13163 - DS(N)2-DS(70,-)2
Bending strength / EN 12089	≥ 75 kPa EN 13163 – BS75
Water vapour permeability, diffusion factor (μ) / EN 12086 - EN 13163	20 to 40
Tensile strength perpendicular to the faces in dry conditions / EN 1607	≥ 80 kPa EN 13163 min. TR80
Shear strength / EN 12090 - EN 13163	≥ 35 kPa

Annex No 2 – Glass fibre meshes characteristics

Mesh trade name	Description	Alkalis resistance	
		Residual resistance after ageing (N/mm)	Relative residual resistance: % (after ageing) of the strength in the as delivered state
TG-22	Standard glass fibre mesh; Mass per unit area: ≥ 145 g/m^2; Mesh size: 4,0 x 4,0 mm ± 0,5 mm	≥ 20	≥ 50
VERTEX 145 / AKE 145 / R117 A101	Standard glass fibre mesh; Mass per unit area: 145 g/m^2 +10% / -0%; Mesh size: 4,0 x 4,5 mm ± 0,5 mm	≥ 20	≥ 50
SSA-1363-SM0.5 / SSA-1363-150 SM0.5 / SSA-1363-145	Standard glass fibre mesh; Mass per unit area: 150 g/m^2 ± 5%; Mesh size: 3,6 x 4,3 mm ± 5%	≥ 20	≥ 50
TG-15	Standard glass fibre mesh; Mass per unit area: 160 g/m^2 +10% / -5%; Mesh size: 3,5 x 3,5 mm ± 0,5 mm	≥ 20	≥ 50
SSA-1363-160-SM0.5A	Standard glass fibre mesh; Mass per unit area: 160 g/m^2 ± 5%; Mesh size: 3,6 x 3,8 mm ± 0,5 mm	≥ 20	≥ 50