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European Technical Assessment

ETA 20/0246 of 07.09.2020

General part

Technical Assessment Body issuing the ETA: ITeC ITeC has been designated according to Article 29 of Regulation (EU) No 305/2011 and is member of EOTA (European Organisation for Technical Assessment)	
Trade name of the construction product	**Baumit CeramicSystem EPS** **Baumit CeramicSystem MW**
Product family to which the construction product belongs	Kits for ETICS with discontinuous claddings as exterior skin.
Manufacturer	**BAUMIT BETEILIGUNGEN GmbH** Wopfing 156 A-2754 Waldegg Austria
Manufacturing plant(s)	**BAUMIT BETEILIGUNGEN GmbH** Wopfing 156 A-2754 Waldegg Austria
This European Technical Assessment contains	21 pages including 4 annexes which form an integral part of this assessment.
This European Technical Assessment is issued in accordance with Regulation (EU) 305/2011, on the basis of	EAD 040287-00-0404 *Kits for external thermal insulation composite system (ETICS) with panels as thermal insulation product and discontinuous claddings as exterior skin.*
This version replaces	ETA 20/0246 issued on 07.04.2020.

General comments

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full (excepted the confidential annexes).

Specific parts of the European Technical Assessment

1 Technical description of the product

This ETA refers to Baumit CeramicSystem EPS & Baumit CeramicSystem MW kits[1] for ETICS applied in-situ in which:

- the exterior skin[2] is composed of ceramic or natural stone cladding elements;
- for the kit Baumit CeramicSystem EPS, the expanded polystyrene (EPS) thermal insulation panel is bonded with 60% minimum bonded surface area[3] and with supplementary mechanical fixings;
- for the kit Baumit CeramicSystem MW, the mineral wool lamella (MW) thermal insulation panel is mechanically fixed with supplementary adhesive.

The kit components of Baumit CeramicSystem EPS & MW kits are given in table 1.1 related with ETICS components. Detailed information and data of all the components are given in the annexes of this ETA.

Table 1.1: ETICS components.

Layer num.	ETICS components	Baumit CeramicSystem EPS (i)	Baumit CeramicSystem MW (ii)	Technical description
1	Base adhesive (between the substrate wall and the thermal insulation panel)	Baumit ProContact / Baumit ProContact DC 56		Table A1.1 of Annex 1
2	Thermal insulation panel	Baumit Protherm (100; 120; 150) Baumit StarTherm (100; 120; 150) (iii)	Baumit MineralTherm Lamella (iii)	Tables A1.2 of Annex 1
3	Mechanical fixings	Baumit S Ejotherm STR U / Ejotherm STR U 2G IsoFux Rocket Fischer Termoz CS 8 Bravoll PTH-S		Table A1.6 of Annex 1
	Base coat	Baumit ProContact / Baumit ProContact DC 56		Table A1.1 of Annex 1
	Glass fibre reinforcement mesh	Baumit StarTex Grob / Baumit CeramicTex		Table A1.3 of Annex 1
4	Cladding adhesive (between the base coat and the skin)	Baumit CeramicFix (Baumit KeramikFix / Baumit Baumacol FlexTop)		Table A1.4 of Annex 1
5	Discontinuous cladding element	Ceramic brick-slips & tiles, sandstone and granite tiles (iv)		Table A2.1 of Annex 2
	Grout	Baumit Ceramic F / Baumit FugenMörtel Keramik F Baumit Ceramic S / Baumit FugenMörtel Keramik S		Table A1.5 of Annex 1

(i) Bonded ETICS with supplementary mechanical fixings with 60% as minimum bonded surface area.
(ii) Mechanically fixed ETICS with supplementary adhesive.
(iii) Or other thermal insulation panels which meet the stated specifications given in tables A1.2 of Annex 1.
(iv) These components are not part of the kit. They are not supplied by the manufacturer but they are available on the market and they have to meet the specifications indicated in this ETA (see Annex 2).

[1] "Kit" means a construction product placed on the market by a single manufacturer as a set of at least two separate components that need to be put together to be incorporated in the construction works (Art. 2 nº 2 CPR).

[2] Set of components comprised of cladding element, cladding adhesive and grout that act as external covering which contributes to the protection against weathering and provide a decorative finish.

[3] Higher minimum bonded surface area may be required by national regulations. Bonded surface area calculated according to clause H.5 of Annex H of EAD 040287-00-0404.

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

Baumit CeramicSystem EPS & MW kits are intended for use as external insulation of buildings' walls. The walls are made of masonry (e.g. bricks, blocks, stones …) or concrete (cast on site or as prefabricated panels).

The characteristics of the walls shall be verified prior to use of Baumit CeramicSystem EPS & MW, especially regarding conditions for reaction to fire classification and for fixing of Baumit CeramicSystem EPS & MW.

Baumit CeramicSystem EPS & MW kits are intended to be used with ceramic or natural stone cladding elements for the exterior skin specified in table A2.1 of Annex 2.

Baumit CeramicSystem EPS & MW kits are designed to give the wall to which it is applied a satisfactory thermal insulation.

The provisions made in this European Technical Assessment are based on an assumed working life of at least 25 years for Baumit CeramicSystem EPS & MW. The indications given on the working life cannot be interpreted as a guarantee given by the producer but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

Baumit CeramicSystem EPS & MW kits are made of non-load bearing construction components. They do not contribute directly to the stability of the wall on which they are installed, but they can contribute to its durability by providing enhanced protection from the effect of weathering.

Baumit CeramicSystem EPS & MW kits can be used on new or existing (retrofit) vertical walls.

Baumit CeramicSystem EPS & MW kits are intended to be used with continuous areas (that means without expansion joints) up to 6 m x 3 m (vertically x horizontally).

Baumit CeramicSystem EPS & MW kits are not intended to ensure the airtightness of the building envelope.

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

The assessment of Baumit CeramicSystem EPS & MW kits for the intended use was performed following the EAD 040287-00-0404 *Kits for external thermal insulation composite system (ETICS) with discontinuous claddings as exterior skin.*

Table 3.1: Summary of Baumit CeramicSystem EPS & MW performance.

Product: Baumit CeramicSystem EPS & MW	**Intended use:** external wall insulation

Basic Works Requirement	**ETA clause**	**Essential characteristic**			**Performance**	
					EPS	**MW Lamella**
BWR 2 Safety in case of fire	3.1	Reaction to fire			B-s1, d0	A2-s1, d0
	---	Façade fire performance			Not assessed	
BWR 3 Hygiene, health and the environment	3.2	Water absorption by capillarity	without skin	after 3 min	Not assessed	
				after 1 h	0,08 kg/m^2	0,11 kg/m^2
				after 24 h	0,42 kg/m^2	0,48 kg/m^2
			with skin	after 3 min	Not assessed	
				after 1 h		
				after 24 h		
	3.3	Water vapour permeability (resistance to water vapour diffusion)			See clause 3.3	

Table 3.1: Summary of Baumit CeramicSystem EPS & MW performance.

Product: Baumit CeramicSystem EPS & MW	**Intended use:** external wall insulation

Basic Works Requirement	**ETA clause**	**Essential characteristic**		**Performance**	
				EPS	**MW Lamella**
	3.4	Accelerated ageing behaviour	after hygrothermal cycles	See clause 3.4	
			after freeze-thaw cycles	Not assessed	
BWR 4 Safety and accessibility in use	---	Wind suction load resistance		Not relevant	Not assessed
	3.5	Impact resistance	Hard body	See clause 3.5	
			Soft body		
	3.6.1	Bond strength	between the external layers and the insulation panel	0,08 MPa	0,08 MPa
	3.6.2		between the insulation panel and the adhesive	0,08 MPa	0,08 MPa
	3.6.3		between the adhesive and the substrate	0,25 MPa	0,25 MPa
	3.7	Tensile strength of the thermal insulation panel	in dry conditioning	100 kPa / 120 kPa / 150 kPa	80 kPa
			in wet conditioning 7 days	Not assessed	
			in wet conditioning 28 days	Not assessed	
	3.8	Shear strength of thermal insulation panel	in dry conditioning	20 kPa	20 kPa
			in wet conditioning 7 days	Not assessed	
			in wet conditioning 28 days	Not assessed	
		Shear modulus of thermal insulation panel	in dry conditioning	1000 kPa	1000 kPa
			in wet conditioning 7 days	Not assessed	
			in wet conditioning 28 days	Not assessed	
	3.9	Dead load behaviour		See clause 3.9	
	---	Pull-through resistance		Not relevant	Not assessed
	---	Pull-out resistance (foam block test)		Not relevant	Not assessed
BWR 5 Protection against noise	---	Improvement of airborne sound insulation		Not assessed	
BWR 6 Energy economy and heat retention	3.10	Thermal conductivity and thermal resistance		See clause 3.10	

Complementary information:

Requirements with respect to the mechanical resistance and stability of non-load bearing parts of the works are not included in the Basic Works Requirement *Mechanical resistance and stability* (BWR 1) but are treated under the Basic Works Requirement *Safety and accessibility in use* (BWR 4).

The fire resistance requirement is applicable to the wall itself (made of masonry, concrete, timber or metal frame) and not to the ETICS alone.

3.1 Reaction to fire

The reaction to fire of Baumit CeramicSystem EPS & MW ETICS has been assessed according to clause 2.2.1 of EAD 040287-00-0404.

Reaction to fire of Baumit CeramicSystem EPS according to EN 13501-1 is class B-s1, d0.

Reaction to fire of Baumit CeramicSystem MW according to EN 13501-1 is class A2-s1, d0.

Note: A European reference fire scenario has not been laid down for façades. In some Member States, the classification of external wall claddings according to EN 13501-1 might not be sufficient for the use in façades. An additional assessment of external wall claddings 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 Water absorption by capillarity

Water absorption by capillarity has been assessed according to clause 2.2.3 of EAD 040287-00-0404.

Water absorption of the individual kit components and the cladding elements are described in Annex 1.

Table 3.2: Maximum values of water absorption by capillarity.

ETICS		**Mean value (kg/m²)**		
		after 3 min (*)	**after 1 h (**)**	**after 24 h (**)**
Baumit CeramicSystem EPS	without skin	Not assessed	0,080	0,422
	with skin		Not assessed	Not assessed
Baumit CeramicSystem MW	without skin	Not assessed	0,112	0,483
	with skin		Not assessed	Not assessed

(*) Values from initial immersion.
(**) Values from 3 minutes immersion.

3.3 Water vapour permeability

Water vapour permeability (resistance to water vapour diffusion) of Baumit CeramicSystem EPS & MW has been assessed according to clause 2.2.4 of EAD 040287-00-0404.

The equivalent water vapour permeability (resistance to water vapour diffusion) of the Baumit CeramicSystem EPS & MW ETICS has been calculated using water vapour permeability of the individual kit components and cladding elements according to Annex D of EAD 040287-00-0404.

The worst case (components and pieces with maximum water vapour permeability and thickness) has been assessed. The range of values obtained are given in tables 3.3.

Water vapour permeability and geometric characteristics of the individual kit components and cladding elements are given in Annexes 1 and 2 respectively.

Table 3.3a: Values range of water vapour permeability for ETICS with EPS.

Baumit CeramicSystem ETICS		**EPS thickness (mm)**	**Z_{ETICS} [(m²·s·Pa)/kg]**		**W_{ETICS} [kg/(m²·s·Pa)]**		**$S_{d\_ETICS\_eq}$ (m)**		**μ_{ETICS_eq}**	
			min	**max**	**min**	**max**	**min**	**max**	**min**	**max**
EPS	**without skin**	40	5,20E+09	1,58E+10	1,92E-10	6,35E-11	1,0	3,2	22	48
		60	7,20E+09	2,18E+10	1,39E-10	4,60E-11	1,4	4,4	21	51
		80	9,20E+09	2,78E+10	1,09E-10	3,60E-11	1,8	5,6	21	53
		100	1,12E+10	3,38E+10	8,93E-11	2,96E-11	2,2	6,8	21	54
		120	1,32E+10	3,98E+10	7,58E-11	2,52E-11	2,6	8,0	21	55
		140	1,52E+10	4,58E+10	6,58E-11	2,19E-11	3,0	9,2	21	55
		160	1,72E+10	5,18E+10	5,81E-11	1,93E-11	3,4	10	20	56
		180	1,92E+10	5,78E+10	5,21E-11	1,73E-11	3,8	12	20	56
		200	2,12E+10	6,38E+10	4,72E-11	1,57E-11	4,2	13	20	57

Table 3.3a: Values range of water vapour permeability for ETICS with EPS.

Baumit CeramicSystem ETICS		EPS thickness (mm)	Z_{ETICS} [(m²·s·Pa)/kg]		W_{ETICS} [kg/(m²·s·Pa)]		$S_{d\_ETICS\_eq}$ (m)		μ_{ETICS_eq}	
			min	max	min	max	min	max	min	max
EPS	with skin – ceramic brick slips	40	7,06E+09	5,70E+10	1,42E-10	1,75E-11	1,4	11,4	25	127
		60	9,06E+09	6,30E+10	1,10E-10	1,59E-11	1,8	12,6	24	115
		80	1,11E+10	6,90E+10	9,04E-11	1,45E-11	2,2	13,8	23	106
		100	1,31E+10	7,50E+10	7,66E-11	1,33E-11	2,6	15,0	22	100
		120	1,51E+10	8,10E+10	6,64E-11	1,23E-11	3,0	16,2	22	95
		140	1,71E+10	8,70E+10	5,86E-11	1,15E-11	3,4	17,4	22	92
		160	1,91E+10	9,30E+10	5,25E-11	1,07E-11	3,8	18,6	22	89
		180	2,11E+10	9,90E+10	4,75E-11	1,01E-11	4,2	19,8	21	86
		200	2,31E+10	1,05E+11	4,34E-11	9,52E-12	4,6	21,0	21	84
EPS	with skin - ceramic tiles	40	9,13E+09	5,90E+10	1,10E-10	1,70E-11	1,8	11,8	32	131
		60	1,11E+10	6,50E+10	8,99E-11	1,54E-11	2,2	13,0	29	118
		80	1,31E+10	7,10E+10	7,62E-11	1,41E-11	2,6	14,2	27	109
		100	1,51E+10	7,70E+10	6,61E-11	1,30E-11	3,0	15,4	26	103
		120	1,71E+10	8,30E+10	5,84E-11	1,21E-11	3,4	16,6	25	98
		140	1,91E+10	8,90E+10	5,23E-11	1,12E-11	3,8	17,8	24	94
		160	2,11E+10	9,50E+10	4,73E-11	1,05E-11	4,2	19,0	24	90
		180	2,31E+10	1,01E+11	4,32E-11	9,90E-12	4,6	20,2	23	88
		200	2,51E+10	1,07E+11	3,98E-11	9,35E-12	5,0	21,4	23	86
EPS	with skin – natural stone tile (sandstone or granite)	40	9,13E+09	5,90E+10	1,10E-10	1,70E-11	1,8	11,8	32	131
		60	1,11E+10	6,50E+10	8,99E-11	1,54E-11	2,2	13,0	29	118
		80	1,31E+10	7,10E+10	7,62E-11	1,41E-11	2,6	14,2	27	109
		100	1,51E+10	7,70E+10	6,61E-11	1,30E-11	3,0	15,4	26	103
		120	1,71E+10	8,30E+10	5,84E-11	1,21E-11	3,4	16,6	25	98
		140	1,91E+10	8,90E+10	5,23E-11	1,12E-11	3,8	17,8	24	94
		160	2,11E+10	9,50E+10	4,73E-11	1,05E-11	4,2	19,0	24	90
		180	2,31E+10	1,01E+11	4,32E-11	9,90E-12	4,6	20,2	23	88
		200	2,51E+10	1,07E+11	3,98E-11	9,35E-12	5,0	21,4	23	86

Where:
Z_{ETICS} = water vapour diffusion resistance of the ETICS;
W_{ETICS} = water vapour diffusion permeance of the ETICS;
$S_{d\_ETICS\_eq}$ = water vapour diffusion-equivalent air layer thickness of the ETICS;
μ_{ETICS_eq} = water vapour diffusion resistance-equivalent factor of the ETICS;
Results have been obtained with the value of water vapour permeability of the air: $\delta_a = 2{,}0 \cdot 10^{-10}$ kg/(m·s·Pa).

Table 3.3b: Values range of water vapour permeability for ETICS with MW Lamella.

Baumit CeramicSystem ETICS		MW thickness (mm)	Z_{ETICS} [(m²·s·Pa)/kg]		W_{ETICS} [kg/(m²·s·Pa)]		$S_{d\_ETICS\_eq}$ (m)		μ_{ETICS_eq}	
			min	max	min	max	min	max	min	max
MW Lamella	without skin	50	1,45E+09	4,00E+09	6,90E-10	2,50E-10	0,3	0,8	5	11
		60	1,50E+09	4,05E+09	6,67E-10	2,47E-10	0,3	0,8	4	10
		80	1,60E+09	4,15E+09	6,25E-10	2,41E-10	0,3	0,8	4	8
		100	1,70E+09	4,25E+09	5,88E-10	2,35E-10	0,3	0,9	3	7
		120	1,80E+09	4,35E+09	5,56E-10	2,30E-10	0,4	0,9	3	6
		140	1,90E+09	4,45E+09	5,26E-10	2,25E-10	0,4	0,9	3	5
		160	2,00E+09	4,55E+09	5,00E-10	2,20E-10	0,4	0,9	2	5
		180	2,10E+09	4,65E+09	4,76E-10	2,15E-10	0,4	0,9	2	5
		200	2,20E+09	4,75E+09	4,55E-10	2,11E-10	0,4	1,0	2	4

Table 3.3b: Values range of water vapour permeability for ETICS with MW Lamella.

Baumit CeramicSystem ETICS		MW thickness (mm)	Z_{ETICS} [(m²·s·Pa)/kg]		W_{ETICS} [kg/(m²·s·Pa)]		$S_{d\_ETICS\_eq}$ (m)		μ_{ETICS_eq}	
			min	max	min	max	min	max	min	max
MW Lamella	with skin – ceramic brick slips	50	3,31E+09	4,53E+10	3,02E-10	2,21E-11	0,7	9,1	10	91
		60	3,36E+09	4,53E+10	2,98E-10	2,21E-11	0,7	9,1	9	82
		80	3,46E+09	4,54E+10	2,89E-10	2,20E-11	0,7	9,1	7	70
		100	3,56E+09	4,55E+10	2,81E-10	2,20E-11	0,7	9,1	6	61
		120	3,66E+09	4,56E+10	2,73E-10	2,19E-11	0,7	9,1	5	54
		140	3,76E+09	4,57E+10	2,66E-10	2,19E-11	0,8	9,1	5	48
		160	3,86E+09	4,58E+10	2,59E-10	2,18E-11	0,8	9,2	4	44
		180	3,96E+09	4,59E+10	2,53E-10	2,18E-11	0,8	9,2	4	40
		200	4,06E+09	4,60E+10	2,46E-10	2,17E-11	0,8	9,2	4	37
MW Lamella	with skin - ceramic tile	50	5,38E+09	4,72E+10	1,10E-10	1,70E-11	1,1	9	16	94
		60	5,43E+09	4,73E+10	8,99E-11	1,54E-11	1,1	9	14	86
		80	5,53E+09	4,74E+10	7,62E-11	1,41E-11	1,1	9	11	73
		100	5,63E+09	4,75E+10	6,61E-11	1,30E-11	1,1	9	10	63
		120	5,73E+09	4,76E+10	5,84E-11	1,21E-11	1,1	10	8	56
		140	5,83E+09	4,77E+10	5,23E-11	1,12E-11	1,2	10	7	50
		160	5,93E+09	4,78E+10	4,73E-11	1,05E-11	1,2	10	7	46
		180	6,03E+09	4,79E+10	4,32E-11	9,90E-12	1,2	10	6	42
		200	6,13E+09	4,80E+10	3,98E-11	9,35E-12	1,2	10	6	38
MW Lamella	with skin – natural stone tile (sandstone or granite)	50	7,85E+09	6,11E+10	1,27E-10	1,64E-11	1,6	12	22	116
		60	7,90E+09	6,11E+10	1,27E-10	1,64E-11	1,6	12	19	106
		80	8,00E+09	6,12E+10	1,25E-10	1,63E-11	1,6	12	16	91
		100	8,10E+09	6,13E+10	1,24E-10	1,63E-11	1,6	12	13	79
		120	8,20E+09	6,14E+10	1,22E-10	1,63E-11	1,6	12	12	70
		140	8,30E+09	6,15E+10	1,21E-10	1,63E-11	1,7	12	10	63
		160	8,40E+09	6,16E+10	1,19E-10	1,62E-11	1,7	12	9	57
		180	8,50E+09	6,17E+10	1,18E-10	1,62E-11	1,7	12	8	53
		200	8,60E+09	6,18E+10	1,16E-10	1,62E-11	1,7	12	8	48

Where:
Z_{ETICS} = water vapour diffusion resistance of the ETICS;
W_{ETICS} = water vapour diffusion permeance of the ETICS;
$S_{d\_ETICS\_eq}$ = water vapour diffusion-equivalent air layer thickness of the ETICS;
μ_{ETICS_eq} = water vapour diffusion resistance-equivalent factor of the ETICS;
Results have been obtained with the value of water vapour permeability of the air: $\delta_a = 2{,}0 \cdot 10^{-10}$ kg/(m·s·Pa).

3.4 Accelerated ageing behaviour

3.4.1 Hygrothermal behaviour

Hygrothermal behaviour of ETICS Baumit CeramicSystem EPS & MW has been tested according to clause 2.2.5.1 of EAD 040287-00-0404 for:

- Baumit CeramicSystem EPS bonded with supplementary mechanical fixings, with cladding element made of granite tile.
- Baumit CeramicSystem MW, mechanically fixed with supplementary adhesive, with cladding elements made of high water absorption brick slips, low water absorption ceramic tiles (group AI_a or BI_a), sandstone tiles and granite tiles.

The following defects have not been observed:

- deterioration such as cracking or delamination of the skin that allows water penetration to the internal layers;
- deterioration or cracking of grout;
- detachment of the skin;
- irreversible deformation.

Mean values of the measured bond strength (according to clause 2.2.5.1 of EAD 040287-00-0404) before and after hygrothermal cycles are given in table 3.5a.

For Baumit CeramicSystem EPS with cladding elements made of high water absorption brick slips, low water absorption ceramic tiles (group AI_a or BI_a) and sandstone tiles, the hygrothermal behaviour have not been assessed.

3.4.2 Freeze-thaw behaviour

This characteristic has not been assessed.

3.5 Impact resistance

Impact resistance of Baumit CeramicSystem EPS & MW ETICS has been tested according to clause 2.2.7 of EAD 040287-00-0404.

Impact resistance for Baumit CeramicSystem EPS & MW with low water absorption ceramic tiles (group AI_a or BI_a), granite tiles and sandstone tiles with thickness equal or greater than 10 mm is given in table 3.4.

Impact resistance for Baumit CeramicSystem EPS & MW with low water absorption ceramic tiles (group AI_a or BI_a) with thickness smaller than those tested (10 mm) has not been assessed.

Impact resistance for Baumit CeramicSystem EPS & MW with brick slips or high water absorption tiles has not been assessed.

Table 3.4: Impact resistance.

Baumit CeramicSystem ETICS	Cladding element	Impact resistance passed	Degree of exposure in use (*)
EPS	Ceramic tiles (group AI_a or BI_a) thickness ≥ 10 mm	Hard body (0,5 kg) impacts of 3 joules Hard body (1,0 kg) impacts of 10 joules with superficial skin damage Soft body (3,0 kg) impacts of 60 joules Soft body (50,0 kg) impacts of 400 joules	Category II
	Granite tiles thickness ≥ 10 mm	Hard body (0,5 kg) impacts of 3 joules Hard body (1,0 kg) impacts of 10 joules Soft body (3,0 kg) impacts of 60 joules Soft body (50,0 kg) impacts of 400 joules	Category I
	Sandstone thickness ≥ 10 mm	Hard body (0,5 kg) impacts of 3 joules Hard body (1,0 kg) impacts of 10 joules Soft body (3,0 kg) impacts of 60 joules Soft body (50,0 kg) impacts of 400 joules	Category I
MW Lamella	Ceramic tiles (group AI_a or BI_a) thickness ≥ 10 mm	Hard body (0,5 kg) impacts of 3 joules Hard body (1,0 kg) impacts of 10 joules with superficial skin damage Soft body (3,0 kg) impacts of 60 joules Soft body (50,0 kg) impacts of 400 joules	Category II
	Granite tiles thickness ≥ 10 mm	Hard body (0,5 kg) impacts of 3 joules Hard body (1,0 kg) impacts of 10 joules Soft body (3,0 kg) impacts of 60 joules Soft body (50,0 kg) impacts of 400 joules	Category I
	Sandstone thickness ≥ 10 mm	Hard body (0,5 kg) impacts of 3 joules Hard body (1,0 kg) impacts of 10 joules Soft body (3,0 kg) impacts of 60 joules Soft body (50,0 kg) impacts of 400 joules	Category I

(*) Category I: This category means that the degree of exposure in use should be a zone readily accessible at ground level to the public and vulnerable to hard body impacts but not subjected to abnormally rough use.

Table 3.4: Impact resistance.

Baumit CeramicSystem ETICS	Cladding element	Impact resistance passed	Degree of exposure in use (*)

Category II: This category means that the degree of exposure in use should be a zone liable to impacts from thrown or kicked objects, but in public locations where the height of the kit will limit the size of the impact; or at lower levels where access to the building is primarily to those with some incentive to exercise care.

Category III: This category means that the degree of exposure in use should be a zone not likely to be damaged by normal impacts caused by people or by thrown or kicked objects.

Category IV: This category means that the degree of exposure in use should be a zone out of reach from ground level.

3.6 Bond strength

Bond strength of Baumit CeramicSystem EPS & MW ETICS has been assessed according to clause 2.2.8 of EAD 040287-00-0404.

3.6.1 Bond strength between the external layers and the insulation panel

Table 3.5a: Bond strength between the external layers and the insulation panel made of EPS.

BAUMIT cladding ETICS		Ageing	Mean value (MPa)	Minimum value (MPa)	Rupture (*)	Ratio (**)
EPS	without skin	In dry conditions	0,108	0,100	100% CS	---
		After hygrothermal cycles	Not assessed			
	with skin – granite tile	In dry conditions	0,124	0,103	95% CS 5% AS	---
		After 2 d. in H_2O + 2h dry	Not assessed			
		After 2 d. in H_2O + 7 d. dry	Not assessed			
		After hygrothermal cycles	0,112	0,102	8% CA 10% CS 82% AS	90%
		After freeze-thaw cycles	Not assessed			
	with skin – other different to granite (ceramic brick slip, ceramic tile or sandstone tile)	In dry conditions	Not assessed			
		After 2 d. in H_2O + 2h dry	Not assessed			
		After 2 d. in H_2O + 7 d. dry	Not assessed			
		After hygrothermal cycles	Not assessed			
		After freeze-thaw cycles	Not assessed			

(*) Rupture type: AS = adhesive rupture. CS = cohesive rupture in support (insulation panel). CA = cohesive rupture in adhesive.

(**) Value after ageing vs value in dry conditions.

Table 3.5b: Bond strength between the external layers and the insulation panel made of MW Lamella.

Baumit CeramicSystem ETICS		**Ageing**	**Mean value (MPa)**	**Minimum value (MPa)**	**Rupture (**)**	**Ratio (***)**
MW Lamella	**without skin**	In dry conditions	0,085	0,083	100% CS	---
	with skin –high water absorption ceramic brick slips	In dry conditions (*)	0,014	0,011	100% CS	---
		After 2 d. in H_2O + 2h dry	Not assessed			
		After 2 d. in H_2O + 7 d. dry	Not assessed			
		After hygrothermal cycles (*)	0,011	0,010	100% CS	78,5%
		After freeze-thaw cycles	Not assessed			
	with skin – low water absorption ceramic brick slips or tiles (group AI_a or BI_a)	In dry conditions (*)	0,012	0,012	100% CS	---
		After 2 d. in H_2O + 2h dry	Not assessed			
		After 2 d. in H_2O + 7 d. dry	Not assessed			
		After hygrothermal cycles (*)	0,009	0,005	100% CS	75%
		After freeze-thaw cycles	Not assessed			
	with skin – sandstone tiles	In dry conditions (*)	0,016	0,015	100% CS	---
		After 2 d. in H_2O + 2h dry	Not assessed			
		After 2 d. in H_2O + 7 d. dry	Not assessed			
		After hygrothermal cycles (*)	0,011	0,010	100% CS	68,8%
		After freeze-thaw cycles	Not assessed			
	with skin – granite tiles	In dry conditions (*)	0,019	0,017	100% CS	---
		After 2 d. in H_2O + 2h dry	Not assessed			
		After 2 d. in H_2O + 7 d. dry	Not assessed			
		After hygrothermal cycles (*)	0,008	0,007	100% CS	42%
		After freeze-thaw cycles	Not assessed			

(*) Values for a thermal insultation material MW (TR5).
(**) Rupture type: AS = adhesive rupture. CS = cohesive rupture in support (insulation panel). CA = cohesive rupture in adhesive.
(***) Value after ageing vs value in dry conditions.

3.6.2 Bond strength between the insulation panel and the base adhesive

Table 3.5c: Bond strength between the insulation panel and the base adhesive.

Insulation panel	**Ageing**	**Mean value (MPa)**	**Minimum value (MPa)**	**Rupture (*)**	**Ratio (**)**
EPS (TR100)	In dry conditions	0,108	0,100	100% CS	---
	After 2 d. in H_2O + 2h dry	0,085	0,081	80% CS 20% AS	78,7%
	After 2 d. in H_2O + 7 d. dry	0,109	0,105	100% CS	100%
EPS (TR150)	In dry conditions	0,160	0,154	100% CS	---
	After 2 d. in H_2O + 2h dry	0,085	0,082	85% CS 15% AS	53%
	After 2 d. in H_2O + 7 d. dry	0,160	0,155	100% CS	100%
MW Lamella (TR80)	In dry conditions	0,085	0,083	100% CS	---
	After 2 d. in H_2O + 2h dry	0,080	0,078	100% CS	94%
	After 2 d. in H_2O + 7 d. dry	0,081	0,079	100% CS	95%

(*) Rupture type: AS = adhesive rupture. CS = cohesive rupture in support (insulation panel). CA = cohesive rupture in adhesive.
(**) Value after ageing vs value in dry conditions.

3.6.3 Bond strength between the base adhesive and the substrate

Table 3.5d: Bond strength between the base adhesive and the substrate.

ETICS	Ageing	Mean value (MPa)	Minimum value (MPa)	Rupture (*)	Ratio (**)
Baumit CeramicSystem EPS & MW	In dry conditions	1,234	1,200	100% CA	---
	After 2 d. in H_2O + 2h dry	0,632	0,605	100% CA	51%
	After 2 d. in H_2O + 7 d. dry	1,555	1,429	100% CA	> 100%

(*) Rupture type: AS = adhesive rupture. CS = cohesive rupture in support (substrate). CA = cohesive rupture in adhesive.
(**) Value after ageing vs value in dry conditions.

3.7 Tensile strength of thermal insulation panel

Tensile strength of thermal insulation panel of Baumit CeramicSystem EPS & MW kit has been assessed according to clause 2.2.9 of EAD 040287-00-0404.

Tensile strength of thermal insulation panels in dry conditioning has been obtained from the DoP thermal insulation panels according to EN 13163 and EN 13162 respectively (see tables A1.2 of Annex A1).

Tensile strength of thermal insulation panels in wet conditioning has not been assessed.

3.8 Shear strength and shear modulus of thermal insulation panel

Shear strength and shear modulus of thermal insulation panel of Baumit CeramicSystem EPS & MW kit has been assessed according to clause 2.2.10 of EAD 040287-00-0404.

Shear strength and shear modulus of thermal insulation panels in dry conditioning has been obtained from the DoP thermal insulation panels according to EN 13163 and EN 13162 respectively (see tables A1.2 of Annex A1).

Shear strength and shear modulus of thermal insulation panels in wet conditioning has not been assessed.

3.9 Dead load behaviour

Dead load behaviour of Baumit CeramicSystem EPS, as bonded ETICS with supplementary mechanical fixing, has been assessed according to clause 2.2.11 of EAD 040287-00-0404.

Dead load behaviour of Baumit CeramicSystem MW as mechanically fixed ETICS with supplementary adhesive has not been assessed.

Dead load behaviour is compatible with the intended use.

In the case of bonded ETICS with supplementary mechanical fixing, the tested specimens and tested results are:

- For Baumit CeramicSystem EPS (specimen size 200 mm x 200 mm with EPS 200 mm thickness):
  - the maximum dead load considered in the test has been 360,5 N (901,2 kg/m^2);
  - the maximum displacements obtained after 24 hours is 2,66 mm. In all the steps considered, the load is stabilized from 3rd hour. The maximum difference between the initial displacement and the final displacement in one step is 1,00 mm.
- For Baumit CeramicSystem MW (specimen size 200 mm x 200 mm with MW Lamella 200 mm thickness).
  - the maximum dead load considered in the test has been 240,2 N (600,4 kg/m^2);
  - the maximum displacements obtained after 24 hours is 1,19 mm. In all the steps considered, the load is stabilized from 3rd hour. The maximum difference between the initial displacement and the final displacement in one step is 0,34 mm.

3.10 Thermal conductivity and thermal resistance

Thermal resistance (R-value) has been assessed according to clause 2.2.15 of EAD 040287-00-0404.

Thermal resistance (R-value) of ETICS with Baumit CeramicSystem EPS & MW has been calculated considering the worst case (maximum thermal conductivity and minimum geometry of the components, see Annexes 1 and 2) according to clause 6.2 of EN ISO 6946.

Table 3.6: Thermal resistance.

ETICS	Insulation thickness (mm)	R_{ETICS} [$(m^2 \cdot K)/W$] (*)	ΔU [$W/(m^2 \cdot K)$]
Baumit CeramicSystem EPS	40	1,01	$\Delta U = n_{fix} \cdot X_p$ (**)
	60	1,51	
	80	2,01	
	100	2,51	
	120	3,01	
	140	3,51	
	160	4,01	
	180	4,51	
	200	5,01	
Baumit CeramicSystem MW	50	1,20	$\Delta U = n_{fix} \cdot X_p$ (**)
	60	1,44	
	80	1,92	
	100	2,40	
	120	2,87	
	140	3,35	
	160	3,82	
	180	4,30	
	200	4,78	

(*) Information regarding the thermal transmittance of the whole external wall (U) including the ETICS and the thermal bridges (ΔU) is given in Annex 3.

(**) Where:
ΔU = correction term of the thermal transmittance for anchors;
n_{fix} = number of anchors per unit area (usually 8, 10 or 12 fix/m^2);
X_p = point thermal transmittance value of one anchor (see table A1.6 of Annex 1).

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

According to the decision 1997/556/EC, as amended of the European Commission[4], the systems of AVCP (see EC delegated regulation (EU) No 568/2014 amending Annex V to Regulation (EU) 305/2011) given in the following table applies.

Table 4.1: Applicable AVPC system.

Product	Intended use	Level or class	System
Baumit CeramicSystem EPS	In external walls not subject to fire regulations	Any	2+
	In external walls subject to fire regulations	B-s1, d0	
Baumit CeramicSystem MW	In external walls not subject to fire regulations	Any	
	In external walls subject to fire regulations	A2-s1, d0	

5 Technical details necessary for the implementation of the AVCP system, as foreseen in the applicable EAD

All the necessary technical details for the implementation of the AVCP system are laid down in the *Control Plan* deposited with the ITeC[5], with which the factory production control shall be in accordance.

Issued in Barcelona on 7 September 2020

by the Catalonia Institute of Construction Technology.

Institut de Tecnologia de la Construcció de Catalunya

Ferran Bermejo Nualart

Technical Director, ITeC

[4] 1997/556/EC – Commission Decision of date 14 July 1997, published in the Official Journal of the European Union (OJEU) L229/14 of 20/08/1997.

[5] The *Control Plan* is a confidential part of the ETA and is only handed over to the notified certification body involved in the assessment and verification of constancy of performance.

ANNEX 1: Technical description of kit components

Table A1.1: Base adhesive and base coat.

Characteristic		Reference	Description
Trade name		---	Baumit ProContact / Baumit ProContact DC 56
Colour		---	Grey
Thickness range (mm)	as adhesive	---	5,0 – 20,0
	as base coat		3,0 – 5,0
Coverage (kg/m^2)	as adhesive	---	6,0 – 7,5
	as base coat		6,0 – 8,0
Particle size grading (mm)		---	≤ 1,2
As delivery (dry powder mortar)	Weight per bag (kg)	---	25 ± 0,1
Hardened mortar	Density (kg/m^3)	cl.L.1 of EAD 040287-00-0404	1400 – 1700
	Water absorption (kg/m^2 after 24 hours)	Annex C of EAD 040287-00-0404	≤ 0,5
	Water vapour permeability, μ	EN 1015-19	< 30
	Thermal conductivity, $\lambda_{10,dry}$ (W/m·K)	EN 1745	0,80
Ash content (%)		cl.L.4.1 of EAD 040287-00-0404	≥ 97 (450 ºC) ≥ 30 (900 ºC)
Organic content (%)		---	≤ 3,0
Heat of combustion (PCS-value) (MJ/kg)		EN ISO 1716	0,4

Table A1.2a: Thermal insulation panel made of EPS.

Characteristic		Reference	Description	
Trade name		---	Baumit ProTherm (1)	Baumit StarTherm (2)
Designation		EN 13163	EPS-EN13163-T2-L1-L2-W2-S1-S2-P3-P4-DS(70,-)1-DS(70,-)2-DS(N)2-BS115-CS(10)70-SS20-TR(100, 120 or 150)-WL(P)0,5-MU60	
Thickness (mm)		EN 823	40 ± 2 – 200 ± 2 (T2)	
Length (mm)		EN 822	1000 ± 2 (L2)	
Width (mm)			500 ± 2 (W2)	
Density (kg/m^3)		EN 1602	13,5 – 20,0	
Reaction to fire		EN 13501-1	E	
Water absorption (partial immersion) (kg/m^2)		EN 12087	< 0,5	
Water vapour resistance factor, μ		EN 12086	20 - 60	
Dimensional stability	normal conditions (70,-)	EN 1603	DS(N)2	
	specific conditions (70, 90)	EN 1604	DS(70,-)1 DS(70,-)2	
Tensile strength perpendicular to faces (kPa)		EN 1607	Depending on the type see notes (1) & (2) ≥ 100, ≥ 120 or ≥ 150	
Bending strength (kPa)		EN 12089	BS115	
Compressive stresses at 10% relative deformation (kPa)		EN 826	CS(10)70	

Table A1.2a: Thermal insulation panel made of EPS.

Characteristic	Reference	Description
Shear strength (kPa)	EN 12090	≥ 20
Shear modulus (kPa)		≥ 1000
Thermal conductivity, λ_D (W/m·K)	EN 13163	≤ 0,040

(1) Baumit ProTherm (100), Baumit ProTherm (120), Baumit ProTherm (150) / Baumit Fassadendämmplatte EPS – F (100), Baumit Fassadendämmplatte EPS – F (120), Baumit Fassadendämmplatte EPS – F (150) or other thermal insulation panels which meet the stated specifications.

(2) Baumit StarTherm (100), Baumit StarTherm (120), Baumit StarTherm (150) / Baumit Fassadendämmplatte EPS – F plus (100), Baumit Fassadendämmplatte EPS – F plus (120), Baumit Fassadendämmplatte EPS – F plus (150) or other thermal insulation panels which meet the stated specifications.

Table A1.2b: Thermal insulation panel made of MW Lamella.

Characteristic		Reference	Description
Trade name		---	Baumit MineralTherm Lamella (1)
Designation		EN 13162	MW-EN13162-T5-DS(T+)-DS(TH)-CS(10)40-SS20-TR80-WS1, WL(P)3-MU1
Thickness (mm)		EN 823	50 ± (-1, +3) – 200 ± 2 (-1, +3) (T5)
Length (mm)		EN 822	1200 ± 2,0 %
Width (mm)			200 ± 1,5 %
Density (kg/m^3)		EN 1602	78,0 – 116,5
Reaction to fire		EN 13501-1	A1
Water absorption (partial immersion) (kg/m^2)	Long term	EN 12087	WS < 1,0
	Short term	EN 1609	WL(P) < 3,0
Water vapour resistance factor, μ		EN 12086	1
Dimensional stability	normal conditions (70,-)	EN 1604	$\Delta\varepsilon l$ < 1%; $\Delta\varepsilon b$ < 1%; $\Delta\varepsilon d$ < 1%;
	specific conditions (70, 90)		
Tensile strength perpendicular to faces (kPa)		EN 1607	≥ 80
Compressive stresses at 10% relative deformation (kPa)		EN 826	CS(10)40
Shear strength (kPa)		EN 12090	≥ 20
Shear modulus (kPa)			≥ 1000
Thermal conductivity, λ_D (W/m·K)		EN 13162	≤ 0,042

(1) Or other thermal insulation panels which meet the stated specifications.

Table A1.3: Reinforcement mesh.

Characteristic	Reference	Description
Trade name	---	Baumit StarTex Grob / Baumit CeramicTex
Mass per unit area (g/m^2)	cl.L.7 of EAD 040287-00-0404	≥ 200
Organic content (%)	cl.L.4.2 of EAD 040287-00-0404	17 – 22
Ash content (625 ºC) (%)		75 – 90
Heat of combustion (PCS-value)	EN ISO 1716	10 MJ/kg
Mesh size (mm)	cl.L.8 of EAD 040287-00-0404	6,5 x 7,0 (± 0,5)

Table A1.4: Cladding adhesive.

Characteristic		**Reference**	**Description**
Trade name		---	Baumit CeramicFix (Baumit KeramikFix / Baumit Baumacol FlexTop)
Generic type		EN 12004	Improved deformable cementitious adhesive with reduced slip and extended open time
Designation			C2TES1
Colour		---	Grey
Thickness range (mm)		---	3,0 – 10,0
Coverage (kg/m^2 per 1 mm thickness)		--	ca. 1,0
Ash content (%)		cl.L.4.1 of EAD 040287-00-0404	≥ 90 (450°C) ≥ 32 (900°C)
Heat of combustion (PCS-value) (MJ/kg)		EN ISO 1716	0,776
Organic content (%)		---	≤ 10
Reaction to fire		EN 13501-1	E
As delivery (dry powder adhesive)	Weight per bag (kg)	---	25,0 ± 0,1
Particle size grading (mm)		cl.L.2 of EAD 040287-00-0404	0,01 – 1,0
Hardened adhesive	Density (kg/m^3)	cl.L.1 of EAD 040287-00-0404	1300 - 1600
	Bond strength in initial conditioning (MPa)	EN 12004	≥ 1,0
	Bond strength after heat ageing (MPa)		≥ 1,0
	Slip (mm)		≤ 0,05
	Water vapour resistance factor, μ, dry/wet	EN 1745	15 / 35
	Thermal conductivity, $\lambda_{10,dry}$ p=50% / p=90% (W/m·K)	EN 1745	0,61 / 0,66

Table A1.5: Grout.

Characteristic			**Reference**	**Description**	
Trade name			---	Baumit Ceramic S / Baumit FugenMörtel Keramik S	Baumit Ceramic F / Baumit FugenMörtel Keramik F
Generic type			---	Hydrophobic, elastified, special grout jointing compound	
Joint width range (mm)			---	8 – 20	
Organic content (%)			---	≤ 2,5	≤ 0,1
As delivery (dry powder mortar)	Weight per bag (kg)		---	25,0 kg	
PCS-value (MJ/kg)			EN ISO 1716	0,2	0,0
Paste	Water-product ratio (l/bag)		---	4,5 - 5,5	2,5 - 3,5
Particle size grading (mm)			---	≤ 1,0	
Hardened mortar	Density (kg/m^3)		cl.L.1 of EAD 040287-00-0404	1400 - 1700	1800 - 2200
	Compressive strength (MP)		EN 998-2	≥ 10	---
			EN 13813	---	≥ 10
	Water absorption	(g after 30 min)	EN 12808-5	≤ 2	
		(g after 240 min)		≤ 5	
	Water vapour resistance factor, μ, dry/wet		EN 1745	15 / 35	
	Thermal conductivity, $\lambda_{10,dry}$ p=50% / p=90% (W/m·K)		EN 1745	0,72 / 0,78	1,40 / 1,53

Table A1.6: Mechanical fixings.

Characteristics	**Description**				
Trade name	**Baumit S**	**Bravoll PTH-S**	**Ejotherm STR U & STR U 2G**	**IsoFux Rocket**	**Fischer Termoz CS 8**
Reference document	ETA 17/0078	ETA 08/0267	ETA 04/0023	ETA 12/0093	ETA 14/0372
Form					
Dimensions Material Mechanical characteristics	According to ETA				
Point thermal transmittance for one anchor, X_p [W/K]	≤ 0,002	≤ 0,002	≤ 0,002	≤ 0,002	≤ 0,002

ANNEX 2: Technical description of cladding elements

Table A2.1: Cladding element.

Characteristic	Reference	Brick slips (*)		Tiles (*)		Natural stone tiles (**)	
Type	EN 14411 EN 1469	Extruded or dry-pressed ceramic tile		Extruded or dry-pressed ceramic tile		Sandstone tile	Granite tile
Designation	EN 14411	AI_b, BI_b, AII_a, BII_a, AII_b, BII_b, AIII, BIII	AI_a, BI_a	AI_b, BI_b, AII_a, BII_a, AII_b, BII_b, AIII, BIII	AI_a, BI_a	---	---
Thickness range (mm)	---	6 – 15		6 – 15		10 – 20	
Length (mm)		≤ 600		≤ 600		≤ 1200	
Width (mm)		≤ 90		≤ 600		≤ 600	
Water absorption (% weight)	EN ISO 10545-3 (brick slips & tiles) EN 1936 (natural stone tiles)	0,5% < Eb ≤ 13,8%	Eb ≤ 0,5%	0,5% < Eb ≤ 13,8%	Eb ≤ 0,5%	≤ 5,7%	≤ 0,5%
Apparent relative density (kg/m^3)		≤ 2900		≤ 2900		≤ 2900	
Weight per square metre (kg/m^2)		20 - 25		20 - 30		25 - 50	
Apparent / Open porosity (%)		---		---		≤ 10,6	
Frost resistance	EN ISO 10545-12 (ceramic brick slip & tile) EN 12371 (sandstone & granite tile)	Acceptable		Acceptable		Acceptable	
Reaction to fire	Decision 96/603/EC as amended	A1 (< 1% organic content and pieces without mesh)					
Water vapour resistance factor, μ	EN ISO 10456	≤ 10000		≤ 10000		≤ 10000	
Thermal conductivity (W/m·K)	EN ISO 10456	< 2,80		< 2,80		< 2,80	

(*) Ceramic tiles according to EN 14411.
(**) Natural stone tiles according to EN 1469.

Table A2.2: Exterior skin.

Characteristic	Reference	Ceramic brick slips	Ceramic tiles	Sandstone tiles	Granite tiles
Weight per unit area (kg/m^2) (*)	---	30 - 35	30 - 40	35 - 60	35 - 60
Joints thickness (mm)	---	8 – 20			
Percentage of joints (% surface)	---	≥ 6%			

(*) Value in final use conditions (cladding element and cladding adhesive with maximum thickness and grout with minimum percentage of joints).

ANNEX 3: Thermal transmittance

The thermal bridges caused by the anchors influence the thermal transmittance of the whole external wall and shall be taken into account using the following calculation:

$U_c = U + \Delta U$ [W/(m²·K)]

Where:

U_c : corrected thermal transmittance of the whole external wall, including thermal bridges;

U : thermal transmittance of the whole external wall without thermal bridges;

ΔU : correction term of the thermal transmittance for anchors

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

R_{ETICS} : thermal resistance of the ETICS [W/(m²·K)] (see table 3.6 in clause 3.10).

$R_{substrate}$: thermal resistance of the substrate wall [W/(m²·K)]

R_{si} : internal surface thermal resistance [W/(m²·K)]

R_{se} : external surface thermal resistance [W/(m²·K)]

$\Delta U = X_p \cdot n_{fix}$

X_p : point thermal transmittance value of one anchor [W/K] (see table A1.6 of Annex 1)

n_{fix} : number of anchors per unit area [1/m²].

ANNEX 4: Design, installation, maintenance and repair criteria

A4.1 Design

The design of the external thermal insulation composite system using Baumit CeramicSystem EPS & MW kits should consider:

- It is assumed that the substrate wall meets the necessary requirements regarding the mechanical strength and the airtightness, as well as the relevant resistance regarding watertightness and water vapour.
- The accommodation of the designed system movements to the substrate or structural movements.
- The execution of singular parts of the façade according to the manufacturer's specifications.

A4.2 Installation

Installation of the external thermal insulation composite system using Baumit CeramicSystem EPS & MW kits should be carried out:

- According to the specifications of the manufacturer and using the components specified in this ETA.
- In accordance with the design and drawings prepared for the specific works. The manufacturer should ensure that the information on these provisions is given to those concerned.
- By appropriately qualified staff and under the supervision of the technical responsible of the specific works.

A4.3 Maintenance and repair

Maintenance of the external thermal insulation composite system using Baumit CeramicSystem EPS & MW kits includes inspections on site, taking into account the following aspects:

- the appearance of any damage such as cracking, detachment, delamination, and mould presence due to permanent moisture or permanent irreversible deformation;
- the presence of water accumulation;

When necessary, any repair to localised damaged areas must be carried out with the same components and following the repair instructions given by the manufacturer.