

PRACTICAL EXPERIENCE IN THE IMPLEMENTATION OF ETAG 034 FOR CERAMIC EXTERNAL WALL CLADDING KITS - CE MARKING OF KITS IN ACCORDANCE WITH EU CONSTRUCTION PRODUCTS REGULATION NO. 305/2011

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ABSTRACT

In June 2012, the European Commission approved its 034 Guideline for European Technical Approval of Kits for External Wall Claddings (ETAG 034) developed by EOTA¹, which has thus made it possible to obtain CE marking for wall cladding kits through either the old method of preparing a European Technical Approval document as defined in CPD (Construction Products Directive) 89/106/EEC or the current way of preparing an ETA - European Technical Assessment – as defined in the CPR - Construction Products Regulation (EU) No. 305/2011 (which came into full force on 1st July, 2013).

The ITeC collaborated in the preparation at European level of this ETAG 034 and was the first body in Europe to draft and deliver two European Technical Assessments (ETA) in the field, one of which concerned ceramic tile cladding. As a result of that work, we have an extensive background and expertise in assessing this type of building systems and, more generally, industrial dry façade cladding systems, for which other European Technical Assessments and DSUs – Declaration of Suitable Use - have been prepared, the latter at Spanish national level.

The new EU Regulation No. 305/2011 enhances the current trend of using CE marking as a means to providing information about the technical performance of products, with a view to free trade and the free movement of goods throughout the European market.

Within such a context, this paper will discuss:

- IteC's experience in implementing ETAG 034 for ceramic cladding kits, highlighting practical matters to take into consideration depending on the different types of ceramic cladding and fixing methods used (performance, assessment methods, critical points, etc.).
- Issues that registered owners of the system should take into account to define their kits and components according to market needs,
- Why CE marking is necessary for façade cladding kits if the ceramic tile already has a CE mark under the recognised standard EN 14411,
- What it means for a kit to have the CE mark (both for the registered owner of the product and its users) and what information it contains,
- How to obtain ETA based on the ETAG 034.

In short, this paper aims to inform manufacturers from the ceramic industry and subsidiary companies about the possibilities of the CE marking of their kits at a time when it is imperative to innovate in building systems that provide greater added value to the product, thereby enabling these kits to be marketed on the European and world markets. Furthermore, this information should be of interest to specifications writers, whose responsibility with regard to the proper use of CE marked products is underlined more strongly within the philosophy of the new EU Regulation No. 305/2011.

1. GENERAL CONCEPTS ABOUT CE MARKING UNDER CPR (EU) NO. 305/2011

In order to obtain CE marking for a construction product, the conditions set forth in the Construction Products Regulation (CPR (EU) No. 305/2011), which replaces the former Construction Products Directive (CPD 89/106/EEC), have to be met. These conditions are based on standardised rules (i.e. rules agreed by all Member States of the European Union) on how to express the performance of construction products in relation to their essential characteristics and to the use of CE marking on construction products.

To achieve a CE mark, the manufacturer of a construction product is obliged to issue a Declaration of Performance (DoP) when the product is launched onto the market covered by a standardised technical approval.

There are two kinds of European technical approval: harmonized standards and European Assessment Documents - EAD (for products not covered or not fully covered by a harmonised standard). These approval specifications include the methods for assessing the performance of a construction product in relation to its essential characteristics.

When a construction product is covered by a harmonised standard, it is required to bear the CE mark; however, in the case of European Assessment Documents (EAD), in general there is no such requirement, although it is possible that the regulations of certain member states call for CE marking on some of these products.

For manufacturers to issue a Declaration of Performance (DOP) for a construction product not covered or not fully covered by a harmonized standard, first a European Technical Assessment (ETA) has to be prepared based on the relevant European Assessment Document (EAD).

European Assessment Documents (EAD) and European Technical Assessments (ETA) must be prepared by a technical assessment body (TAB) (such as ITeC), in accordance with Article 19 of the CPR.

The European Technical Approval Guidelines (ETAG) can be used as EATs (see Article 66.3 of the CPR). Consequently, the ETAG 034 for façade cladding kits can be used to prepare the corresponding ETAs.

Table 1 explains the new terminology and new acronyms used in CPR (EU) No. 305/2011 in comparison with those used in the earlier CPD.

(EU) Regulation Nº 305/2011		EEC Directive 89/106	
---	Basic requirements for construction projects	---	Essential requirements
DoP	Declaration of Performance	---	EC conformity declaration
ETA	European Technical Assessment	ETA	European Technical Approval
EAD	European Assessment Document	ETAG	ETA Guideline
		CUAP	Common Understanding of Assessment Procedure
TAB	Technical Assessment Body	AB	Approval Body
AVCP	Assessment and Verification of Constancy of Performance	---	Attestation of conformity

Table 1. New terminology and acronyms used in EU Regulation No. 305/2011.

2. CE MARKING FOR CERAMIC EXTERNAL WALL CLADDING

In accordance with standard EN 14411 (UNE EN 14411 in Spain), ceramic tiles produced by extrusion and dry pressing methods and used as flooring or on indoor and/or external walls must carry the CE mark.

The latest version of the standard (EN 14411:2012, replacing EN 14411:2006) was published in the European Commission's Communication 2013/C 59/01 (EU Gazette of 28th February 2013) and the two standards have a term of co-existence that concludes on 1st July 2014.

Standard EN 14411 indicates a number of key characteristics of ceramic tiles used for cladding exterior walls (ceramic wall cladding) and deals with them as an individual

product, only considering their adhesion properties when the tiles are attached directly to the wall substrate by means of adhesives or mortars.

The end performance of any façade cladding depends, among other things, on the fixing system; therefore, both items need to be characterised and assessed together (ceramic tile plus fixing method). However, the standard does not consider the tile's essential features when the fixing method is by means of mechanical components (clamps, metal sections, fasteners, etc.) onto an underlying subframe, which has become a widely used construction solution in recent years.

In this regard, the European Technical Approval Guideline 034 (ETAG 034) was approved for façade cladding kits² in 2012. It covers cladding items (including the ceramic tiles) fixed exclusively by mechanical means, and defines the construction product (kit) as a set of components, as a minimum the cladding item (e.g. ceramic tile) and its fixings.

However, the 034 Guideline explicitly excludes cladding items that are fixed to the subframe by adhesive. The assessment of building systems, systems that are already in use on the market, calls for the drafting of a specific EAD (a document that today has not yet been drawn up) to enable the relevant ETA and subsequently the CE marking of the kit to take place.

The following sections deal with the main criteria to be taken into account in the quest to obtain a CE mark for a ceramic tile façade cladding kit.

Table 3 lays out the essential characteristics of ceramic cladding kits - the ones that are common to both standard EN 14411 and ETAG 034 are marked with an asterisk (*).

3. ADVANTAGES OF CE MARKING FAÇADE CLADDING KITS

The main advantages that the CE mark gives the registered owner of the kit are:

- It authorises the kit to circulate throughout the single European market, as well as markets outside Europe where the CE mark is commercially well-recognised.
- It provides standardised expression of the kit's technical performance, thus making it understood by the various European building codes.
- It makes the kit a preferred choice for the technical project leader, who is encouraged by the manufacturer's acceptance of liability with regard to the kit's performance via a regulated certification framework.
- It provides a significant step forward in terms of how the sector views the quality of the kit.

The CE mark also provides a number of benefits for technical project managers or other agents involved in the construction process:

- Responsibility for the supplied kit's performance is assumed by the registered owner of the system (supplier of the product according to the Spanish Construction Organisation Act) and certified under the CE mark's own regulated certification system.
- Kit performance is declared for a set of well-known end use conditions, which generally deal with questions concerning how the kit is fixed to the supporting wall and the environmental conditions for which it is suitable.
- Assessment of the kit's durability and identification of the environmental conditions associated with such durability.
- It provides enhanced comparability of the benefits of different kits on equal terms, since all test methods, classification and certification are standardised.

4. CERAMIC CLADDING KITS ACCORDING TO ETAG 034

4.1. SCOPE OF THE ETAG 034

The ETAG 034 covers kits for external wall cladding that consist of a cladding item mechanically fixed to a subframe (whether or not specific to the kit), which in turn is fixed to the outer wall substrate, both for new constructions and refurbishments. Additionally, a layer of thermal insulation is generally fitted to the outer wall substrate.

The outer wall substrate is not part of the kit - it can be made of a series of materials (concrete, ceramic or concrete masonry, and metal or wood trusses) and by itself must be capable of ensuring the mechanical strength and air tightness, as well as impermeability to water and resistance to steam, required of the façade, where relevant (e.g. open joint cladding).

There must be an air chamber between the cladding and the heat insulation or the substrate wall, which may be ventilated or not but must always have suitable drainage of any water that may accumulate inside (as a result of rainwater ingress or condensation).

The cladding may be made of a variety of materials, including ceramics, although the ETAG 034 specifically excludes some materials like glass, stone agglomerate, certain types of composite panels and those that are covered with cladding applied on site.

Fixing devices must be made of metal (mainly galvanized steel, stainless steel or aluminium), while the subframe may be wood or also metal.

As stated, the ETAG 034 explicitly excludes kits for cladding that is attached directly to the subframe, as well as those kits that are already covered by the standard for curtain walls (EN 13830), those in which the cladding has to be in direct contact with the ground, and kits for suspended ceilings or those that contain non-vertical sections.

The Guide consists of two parts - application of one part or the other depends on how the registered owner² of the kit defines the cladding:

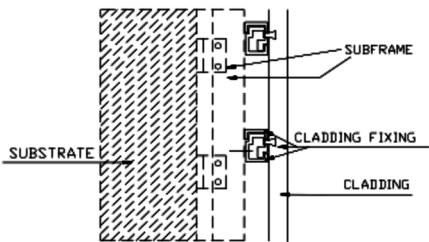
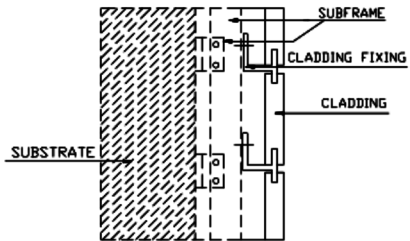
- Part I: Kits for ventilated façades comprising the cladding and its corresponding fixings.
- Part II: Kits for ventilated or non-ventilated façades comprising the cladding, the corresponding fixings, the subframe and, optionally, the layer of heat insulation.

Thus, the minimum kit (cladding and fixing device) can only be defined for use in façades with a ventilated air chamber (part I), whereas if the kit includes all the components (part II), usage is extended to both façades with ventilated air chambers⁴ and non-ventilated air chambers.

4.2. FAMILIES OF CERAMIC CLADDING KITS

In order to simplify the understanding and application of the ETAG 034 (mainly with regard to mechanical properties and performance), eight families (from "A" to "H"), which relate to how the cladding is fixed, have been defined.

The families that are commonly used for ceramic tile kits are indicated in Table 2. However, other families or fixing methods are possible and, as indicated in paragraph 2.2.1 of ETAG 034, can be assessed on the basis of their similarities with the pre-defined families.

Family	Diagram in the ETAG 034	Description
B		Cladding kits in which the fixing device consists of: • a special type of anchor rod that is placed in boreholes driven into the inner face of the cladding, • a specifically-shaped fixing or clamp on which the special retainer is fitted, • a specially-shaped horizontal section on which the fixings or clamps are fitted. At least 4 special anchors and brackets are necessary to fix a fastener.
C		Cladding kits in which the fixing device consists of concealed horizontal sections, fastening clips or pins. The main characteristic of this family is that the cladding item must have a slotted line, drill hole or specific housing (especially relevant to extruded tiles) in which the fixing is fitted.

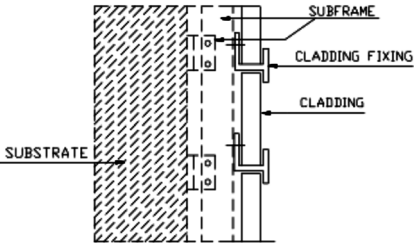
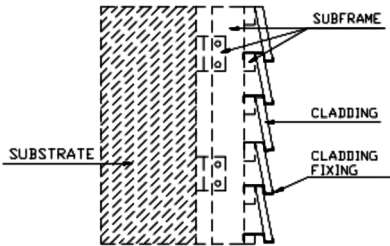
F		Cladding kits in which the fastening device consists of visible sections or clamps that hug the edge of the cladding piece.
H		Cladding kit in which the fixing device consists of a hook-type anchor that supports the tile above it while at the same time restrains the tile below to prevent it from falling. The cladding tiles are fitted with a vertical overlap.

Table 2. Families for ceramic cladding kits.

4.3. DEFINING A CERAMIC EXTERNAL WALL CLADDING KIT

The components that form part of a ceramic external wall cladding kit are:

1. The ceramic tiles which constitute the cladding item.
2. Fixing devices which may be formed by simple components (e.g. clips, hooks, horizontal sections, etc.) or by several components (e.g. a specially-shaped horizontal rail plus the specially designed fastening clip).
3. A subframe, usually made up of sections and uprights, square and wall brackets and fasteners (section to bracket or bracket to support structure).
4. Optionally, a layer of thermal insulation.

A façade cladding kit must include at least the cladding part (ceramic tile) and its fixing, which together constitute the “minimum kit” that can be assessed according to ETAG 034.

The registered owner of the kit must define all the components in the kit (at least, the “minimum kit”), even though it is possible that the registered owner only manufactures or markets one or a number of the components in that kit (e.g. the ceramic tiles).

When the registered owner of the kit only markets the cladding item (ceramic tile), the registered owner may nevertheless issue an ETA document according to ETAG 034 provided that the other components in the kit (fixings, subframe, etc.) meet the following conditions:

- They must be available on the market as single components or standalone devices,
- They must be specified in the ETA document (with a description of their dimensions, material and uses). The manufacturer or trade name can also be included in the ETA.
- All tests to assess the kits should be carried out using the specified components.

The holder of the ETA is responsible for the kit on the market and is therefore liable for the kit meeting the performance levels defined in the ETA. To this end, the holder shall ensure, inter alia, that any kit fitted on a particular construction project comprises the components defined in the ETA.

In this regard, it is important to note that the holder of the ETA should control the constancy of performance of both the components he manufactures and those components that are out-sourced or defined on the ETA.

Because the method of assessing and verifying consistency of performance is the 2+ system (see Annex V of CPR), such control should be audited and certified by a notified body in the field of façade cladding (such as, for example, the ITeC).

4.4. MAIN PROPERTIES, ASSESSMENT METHODS AND OTHER ASPECTS TO TAKE INTO CONSIDERATION WHEN IMPLEMENTING THE ETAG 034

As previously stated, the performance of a kit depends on the performance of its component parts, its assembly and on the compatibility between those components.

Table 3 below lays out the various properties and assessment methods derived from the basic requirements called for by the CPR. Furthermore, it discusses the most important aspects to be taken into account for each property and method when assessing a kit for ceramic façade cladding based on ItEC's expertise in applying the ETAG 034.

In addition to the essential properties listed in Table 3, Annex C of each part of the ETAG 034 sets out the identification features that must be declared for each component in the kit.

Property	Method	Remark
1. Mechanical strength and stability		
---	---	The mechanical strength and stability of the non-bearing parts of the construction are not included under this heading but instead are covered by the requirements for safety and user accessibility.
2. Safety in the event of fire		
Reaction to fire (*)	Sect. 5.2.1 and 5.2.2 of ETAG 034-1	Ceramic tiles and metal components are classified as class A1 without the need to be tested, according to EC Decision 96/603 (as amended). Therefore, a complete kit that only contains such components can be classified as A1. However, there are a number of components that may form part of the kit that could influence its reaction to fire classification, e.g. EPDM rubber seals or other organic materials, waterproof sheeting, and especially the heat insulation material that comes after the air chamber.
Fire resistance	---	Fire resistance is applied to the entire façade and not just the cladding. The cladding kit in itself is not required to meet specific fire resistance levels.
3. Hygiene, health and environment		
Watertightness of seals. Protection from rain	Sect. 5.3.1 of ETAG 034-1	If the joints between tiles are open, the kit should be defined as non-watertight (this does not affect the wall's impermeability to water). In this case, what is taken into consideration is that the first layer behind the air chamber should be composed of low water absorbing materials. Likewise, water sensitive materials in the subframe (e.g. wood) must be protected against moisture. In some cases, joints between ceramic tiles are designed to afford some degree of watertightness despite being open - in such cases, it is recommended they be assayed to determine how watertight they are.

Water permeability of the cladding item (only for non-ventilated façade kits) (*)		Sect. 5.3.2 of ETAG 034-2	Water absorption of the tiles according to EN 14411.
Steam permeability (only for non-ventilated façade kits)		Sect. 5.3.3 of ETAG 034-2	Steam permeability of ceramic tiles can be defined from the tabulated values given in EN ISO 10456. Moreover, if the kit contains insulation and waterproof sheeting, the steam permeability of those components must be defined.
Air chamber drainage capacity (only for ventilated façade kits)		Sect. 5.3.4 of ETAG 034-1	This is analysed using the construction details of certain points on the façade. Likewise, the cladding material and its geometrics should also be considered.
Emission of hazardous substances		Sect. 5.3.5 of ETAG 034-1	A declaration should be made with regard to the emission of hazardous substances for each of the components in the kit.
4. User safety and accessibility			
Wind resistance of the assembled system (**)		Sect. 5.4.1 of ETAG 034-1	Testing to be performed for each type of fixing and subframe, taking as the minimum the mechanically weakest design.
Resistance of the assembled system to vertical loads (***)		Sect. 5.4.2.3.3 of ETAG 034-1	Testing to be implemented for each type of fixing device and subframe, taking as the minimum the mechanically weakest design.
Mechanical strength of the components (**):			
Cladding items	Flexural strength and cross-breaking strength (**)	Sect. 5.4.2 of ETAG 034-1	The flexural and cross-breaking strength of ceramic tiles according to standard EN 14411. In the case of extruded tiles, it is of utmost importance to take into account the means by which the tile is supported when its flexural strength is measured.

Joint between the cladding item and the fixing device	Uniaxial tension (***)	Sect. 5.4.2.2.1 of ETAG 034-1	Testing to be implemented for each type of fixing device.
	Shear (***)	Sect. 5.4.2.2.2 of ETAG 034-1	
	Combined tension and shearing load (***)	Sect. 5.4.2.2.3 of ETAG 034-1	
	Strength of housings on cladding items and fixing devices (***)	Sect. 5.4.2.3.1 of ETAG 034-1	Testing to be implemented for each type of slot housing (mainly to be taken into account for extruded tiles) and for each type of fixing device (section, clip, fastener, etc.).
	Strength of pull-through fixing device (***)	Sect. 5.4.2.3.4 of ETAG 034-1	Testing to be considered mainly when the fixing device is a horizontal section.
Fixing device strength (***)		Sect. 5.4.2.6.1 of ETAG 034-1	Testing to be implemented for each type of fixing device.
Profile bars used in subframe	Material strength properties	Sect. 5.4.2.1 of ETAG 034-2	To be defined according to relevant European standards, e.g. EN 1991-1-1 and EN 755-2 for aluminium sections, EN 1993-1 and EN 10346 for steel, etc.
	Cross-section inertia of bars		To be taken from the calculation of the metal profile's actual section.
Subframe squaring	Resistance to horizontal and vertical force	Sect. 5.4.2.1 of ETAG 034-2	Testing to be implemented for each type of square bracket, at least the one with the weakest geometry. The use of calculations can also be considered bearing in mind that the forces at which the displacement and deformation levels indicated in the testing standard need to be determined. In the event that calculations are used, the recommendation is to carry out at least one test to validate the calculations.

Subframe screws, bolts, rivets and anchor rods	Shear strength	Sect. 5.4.2.1 of ETAG 034-2	To be defined in accordance with relevant European standards.
	Tensile strength		
	Pull-out resistance (on support)		The bolts that anchor the subframe support parts (fixings between the square brackets and the substrate), should be CE marked as per the corresponding EAD (e.g. ETAG 001, 020 or 029) providing that CE marking is mandatory in the member state where the kit is used.
Assembled system's resistance to dynamic horizontal forces		Sect. 5.4.3 of ETAG 034-1	In the case of ceramic cladding kits, the need to implement testing or not can be assessed on the grounds of the tile's flexural strength data.
Impact strength of the assembled system		Sect. 5.4.4 of ETAG 034-1	Testing to be implemented for each type of fixing device, taking the least favourable arrangement as the minimum. Ceramic cladding kits are especially sensitive to the impact of hard objects. The appearance of cracks or breakages in ceramic tiles following impacts, even when not round, should be taken as a weakness in the tile's performance and the kit should be classed accordingly.
Resistance to seismic activity of the assembled system		Sect. 5.4.5 of ETAG 034-1	As far as this property is concerned, ETAG 034 refers to European and/or national regulations. However, except for a testing method developed by a particular country (e.g. France), no specific standardised European-wide tests have been established for these types of kits.
Hygrothermal behaviour of the assembled system		Sect. 5.4.6 of ETAG 034-1	Testing to be implemented for cladding items that may be sensitive to extreme hygrothermal variations. Some countries such as Poland require this test to be carried out.
5. Protection from noise			
Insulation against air-borne noise (only for non-ventilated façades)		Sect. 5.5 of ETAG 034-2	The influence of the cladding kit (positive or negative) with regard to the substrate wall is considered.
Dynamic stiffness of insulation (only for kits containing insulation)			As per the standard for the insulation used in the kit.

6. Energy savings and heat insulation			
Thermal insulation (only for non-ventilated façades)		Sect. 5.6.1 of ETAG 034-2	The influence of the cladding kit (positive or negative) with regard to the substrate wall is considered.
Thermal resistance of insulation (only for kits containing insulation)		Sect. 5.6.2 of ETAG 034-2	As per the standard for the insulation used in the kit.
7. Sustainable use of natural resources			
Durability and service matters:			
Resistance to pulsating loads		Sect. 5.7.1 of ETAG 034-2	Testing to be implemented for each type of fixing device taking the least favourable arrangement as the minimum.
Dimensional stability of components	Cladding item (*)	Sect. 5.7.2 of ETAG 034-1	Linear thermal expansion index and wet bulging of ceramic tiles as per standard EN 14411.
	Fixing devices and subframe components	Sect. 5.7.2 of ETAG 034-2	To be defined in accordance with relevant European regulations.
Resistance of cladding item to immersion in water (*)		Sect. 5.7.4 of ETAG 034-1	Define water absorption in ceramic tiles as per standard EN 14411.
Resistance of cladding item to frost and thawing (*)		Sect. 5.7.4 of ETAG 034-1	Ceramic tile resistance to frost as per standard EN 1441.
Resistance to chemical and biological attacks	Cladding	Sect. 5.7.5 of ETAG 034-1	Not applicable to ceramic cladding.
	Subframe components	Sect. 5.7.5 of ETAG 034-2	Considered only for wooden and plastic materials.
Rust Corrosion	Cladding	Sect. 5.7.6 of ETAG 034-1	Not applicable to ceramic cladding.
	Cladding fixing devices		Considered only for metallic materials. Degree of protection defined as per relevant European standards.
	Subframe components	Sect. 5.7.6 of ETAG 034-2	Considered only for metallic materials. Degree of protection defined as per relevant European standards.
	Electrochemical compatibility between metal components		Considered only for different types of metallic materials that may be in contact with each other.

UV radiation	Sect. 5.7.6 of ETAG 034-2	Not applicable to ceramic cladding.
(*) Properties common to standard EN 14411. (**) Minimum properties to be declared. Remaining properties can be declared as UDP (undeclared performance). (***) Properties only applicable to certain families of kits.		

Table 3. Main properties and assessment methods.

5. CONCLUSIONS

Within the scope of standard EN 14411, a ceramic tile is required to bear the CE mark as per this regulation; however, although CE marking lays down performance standards for the tile as an individual product, the benefits that the designer needs to know when the tile is mechanically fixed are not considered, even though some of these properties are especially important for the proper design and use of such products for construction purposes.

The ETAG 034 does establish performance levels for the kit which include, among other components, the cladding item (i.e. the tiles).

Therefore, a kit (a set of two or more components), which as a minimum consists of the ceramic tile and its fixing device, may have a CE mark (not mandatory in Spain) on the basis of an ETA drafted under ETAG 034 used as an EAD.

To do so, the registered owner of the kit must define the kit within the scope of the ETAG 034, taking into account the components he wishes to market as well as the design and implementation criteria for use of the kit for construction purposes. The registered owner is responsible for the kit and its defined components.

In order for a kit to come under the scope of the ETAG 034, it must always contain the cladding item and must be mechanically fixed. The definition can be for either a minimum kit (cladding item and its fixing device) or a complete kit, which includes all the components for covering the façade.

The registered owner of the kit can only place the cladding item on the market if the remaining components exist as individual components and their performance is considered in the ETA.

For CE marking, the registered kit holder must make a DoP on the basis of the ETA, which shall mandatorily have been carried out by a TAB in accordance with the ETAG 034 and which defines the properties and the tests required for the defined kit - see Table 3.

REFERENCES

- [1] DOUE L 88/5 del 4 de abril de 2011. Reglamento (UE) Nº 305/2011 del Parlamento Europeo y del Consejo de 9 de marzo de 2011 por el que se establecen las condiciones armonizadas para comercialización de productos de construcción y se deroga la Directiva 89/106/CEE del Consejo. <http://new.eur-lex.europa.eu/legal-content/ES/TXT/?uri=OJ:L:2011:088:TOC>
- [2] ETAG 034. Kits for external wall claddings <http://www.eota.eu/en-GB/content/etags-used-as-ead/26/>
- [3] UNE EN 14411:2013. Baldosas cerámicas. Definiciones, clasificación, características, evaluación de la conformidad y marcado.
- [4] DITE 13/0166 (ETA 13/0166). Kit para revestimiento exterior cerámico de fachada ventilada. <http://www.itec.es/certificacion/ficheros.aspx?tipus=dite&num=13/0166>

¹ EOTA European Organisation for Technical Approvals (www.eota.eu).

² A kit is a set of at least two separate components that need to be assembled in order to be used on a construction project. A kit is considered as a construction product and should be placed on the market by a sole manufacturer (distinction should be made between the manufacturer of the kit and the manufacturer of components in a kit) or trader.

³ The registered owner of a kit (and therefore the holder of the ETA and CE mark) is the company that places the kit on the market and is accordingly liable for its performance.

⁴ An air chamber or cavity wall is considered to be ventilated if it meets the specifications laid down in section 3.2.10 of the ETAG 034; however, those specifications do not match the ones set out in standard UNE EN ISO 6946, i.e. it is possible to have an air chamber that has to be considered as non-ventilated even though, from the thermal point of view, it is highly ventilated.