

Established pursuant to Annex II of the Council Directive 89/106 of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products (Construction Products Directive)

ETAG 026

GUIDELINE FOR **EUROPEAN TECHNICAL APPROVAL** Fire Stopping and Fire Sealing Products

Part 5 **Cavity Barriers**

Version February 2011

This Guideline for European Technical Approval is established and published in accordance with Article 11 of the Construction Products Directive as a basis for the preparation and issue of European technical approvals in accordance with Article 9.1 of the Construction Products Directive.

European Technical Approvals are issued by approval bodies authorised and notified in accordance with Article 10 of the Construction Products Directive. These bodies are organized in EOTA. The European Technical Approval, according to the Construction Products Directive, is a favourable technical assessment of the fitness for use of a construction product and the technical specification of the assessed product, serving as basis for the CE marking of this product when and where a harmonised standard according to the Directive is not or not yet available.

Due to technical innovation and the progress of the state of the art, guidelines for technical approval might not reflect the latest developments and experiences gained in approval procedures. The reader of this Guideline is therefore advised to check with an EOTA member whether there are further provisions which have to be taken into account in the use of the Guideline.

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This ETA-Guideline 026 - Part 5 "Cavity Barriers" shall be used in conjunction with the ETA-Guideline 026 "Fire Stopping and Fire Sealing Products" - Part 1 "General". The same numbering of paragraphs as in Part 1 - "General" is used. If a paragraph is not mentioned, then the text of Part 1 - "General" applies without modification.

If the product is a reactive product, or a kit containing a reactive product, this Part shall also be used in conjunction with the EOTA Technical Report 024.

1 SCOPE OF THE ETAG

1.1 Definition of the construction product

This ETA Guideline – Part 5 "Cavity Barriers" shall be used in conjunction with Part 1 – "General" to deliver European Technical Approvals for products intended to be used as non-loadbearing, vertically or horizontally oriented cavity barriers designed to provide fire separation within a concealed space or at its edge. Examples of concealed spaces are:

- the space between leaves of double-leaved walls (horizontal and/or vertical)
- the space underneath raised access floors (vertical)
- the space above suspended ceilings (vertical)
- the space in loft areas between the ceiling and the underside of the roof (vertical)

A cavity barrier is either formed from a single product, from a kit or from a combination with other products assembled on site.

This Part of the ETA Guideline shall not be used for the assessment of seals intended to prevent or restrict the passage of fire (and/or hot smoke) between elements or components or to maintain the integrity and insulation performance of one or more fire separating elements at linear joints. Such products are covered by Part 3 "Linear Joint and Gap Seals" of this ETA Guideline.

For cavity barriers incorporating service penetrations, refer also to Part 2 of this ETA Guideline for testing and evaluation of the penetration seals. The referenced document shall be used as the basis for the assessment of cavity barriers with provision for penetration by structural members. For details see 2.4.2.

Testing of cavity barriers in external cladding systems requires a 'Façade Fire' test which has not yet reached the stage of harmonisation and is outside the scope of this ETAG Part.

Table 1-1 Examples of products intended to be used as cavity barriers:

Product	Typical Applications ¹
flexible fabrics/curtains	sub-division of roof voids and voids above suspended ceilings.
boards	as above for fabrics
slabs	sub-division of spaces below raised access floors
strips – passive or reactive	closure of cavities in walls

1.2 Intended use of the construction product

Cavity Barriers may be used in various environmental conditions but, by definition, they are never fully exposed. Therefore, only the following use categories are relevant. These are based on the general principles specified in Part 1 – "General". The use categories are:

- Type Z₁: Products for cavity barriers intended for use under internal conditions with high humidity, including temperatures below 0°C.
- Type Z_2 : Products for cavity barriers intended for use under internal conditions with humidity classes other than Z_1 excluding temperatures below 0°C.

Requirements relevant for the establishment of the use categories are presented in 2.4.12.

¹ List not exhaustive

These uses apply for internal humidity class 5 in accordance with EN ISO 13788.

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*The declaration of the use category Z_1 shall include temperature limits, if relevant, e.g. type $Z_{1 (-5/+60)^{\circ}C}$, according to the rules given in EOTA TR 024 table 4-1 and 4-2.

NOTE: Products that meet requirements for type Z_1 meet the requirements for Z_2 .

The product's resistance to environmental conditions other than those listed above is not covered in this part of the ETAG (see 2.4.12.1.1) and may be assessed on a case by case basis as necessary. The approval body shall obtain suitable evidence for the assessment and present details in the ETA.

1.3 Assumed working life of the construction product

The provisions and the verification and assessment methods included or referred to in this ETAG have been written based upon the assumed working life of the Fire Stopping and/or Fire Sealing Product for the intended use of 25 years when installed in the works, provided that the Fire Stopping and/or Fire Sealing Product is subject to appropriate use and maintenance (see 4.4). However, if the product is a reactive material or includes a reactive material, the working life is assumed to be 10 or 25 years depending on available evidence. These provisions are based upon the current state of the art and the available knowledge and experience. Additional assumptions made are given in Part 1 – "General".

"Assumed working life" means that, when an assessment following the ETAG provisions is made, and when this working life has elapsed, the real working life may be, in normal use conditions, considerably longer without major degradation affecting the Essential Requirements.³

The indications given as to the working life of the construction product cannot be interpreted as a guarantee given by the product manufacturer or his representative or the approval body issuing the ETA, but are regarded only as a means for choosing the appropriate products in relation to the expected economically reasonable working life of the works (see 5.2.2 of Interpretative Documents).

1.4 Terminology

1.4.1 Common terms relating to the Construction Products Directive

For the meaning of these terms see EOTA document "Common terms used in Guidelines for European technical approval" published on the EOTA website.

1.4.2 Specific terms used in this part of the ETAG

1.4.2.1 Cavity barrier

A non-loadbearing vertically or horizontally oriented element designed to provide fire separation within or at the edges of a concealed space (cavity). According to the requirements of Member States, the insulation rating can be zero, less than or equal to the integrity rating.

1.4.2.2 Concealed space

A space in a building not normally accessible to the occupants where there may be development and/or spread of fire.

1.5 Procedure in the case of a significant deviation from the ETAG

See Part 1 - "General"

2 ASSESSMENT OF FITNESS FOR USE

2.1 Meaning of "fitness for use"

See Part 1 - "General"

2.2 Elements of the assessment of fitness for use

See Part 1 - "General"

2.3 Relationship of requirements to the product characteristics and methods of verification and assessment

The product characteristics, methods of verification and assessment criteria which are relevant for the fitness of Fire Stopping and Fire Sealing Products for the intended use referred to in 1.2 are given in Table 1 of Part 1 – "General" and apply except where modified or specified below.

The real working life of a product incorporated in a specific works depends on the environmental conditions to which that works is subject and the particular conditions of the design, execution, use and maintenance of that works may be outside this ETAG. Therefore it cannot be excluded that in these cases the real working life of the product may also be shorter than the assumed working life.

Nr	Product characteristic	Option "No Performance Determined"	Method of verification and assessment	Expression of product performance			
	Essential Requirement	nt 1: Mechanical	resistance and st	ability			
	None						
	Essential Req	uirement 2: Safe	ety in case of fire				
1	Reaction to fire	Permitted: Class F according to EN 13501-1	2.4.1	Classes A1 to F according to EN 13501-1*			
2	Resistance to fire	Not permitted	2.4.2	Classification according to			
	4.2.3 Limitation of generation and spread of fire and smoke within construction works			EN 13501-2			
	Essential Requirement 3: Hygiene, health and environment						
3	Air permeability (material property)	Permitted	2.4.3	Declared value			
4	Water permeability (material property)	Not relevant to these products	-	-			
5	Release of dangerous substances	Not permitted	2.4.5	Indication of dangerous substances or "No dangerous substances" 4			
	Essential I	Requirement 4:	Safety in use				
6	Mechanical resistance and stability	Permitted	2.4.6	See 2.4.6			
7	Resistance to impact/movement	Permitted	2.4.7				
8	Adhesion * and ***	Permitted	2.4.8	See 2.4.8			
	Essential Requi	rement 5: Protect	ction against noise)			
9	Airborne sound insulation	Permitted	2.4.9	Single number rating			
	Essential Requirement 6: Energy economy and heat retention						
10	Thermal properties	Permitted	2.4.10	Declared value			
11	Water vapour permeability **	Permitted	2.4.11	Declared value			
	General aspe	ects relating to fit	ness for use ***				
12	Durability and serviceability	Not permitted	2.4.12	Use category regarding environmental conditions			
	is characteristic is placed under ER 4 for conv	venience, but also	relates to other ER's	as well, particularly ER 2.			

^{**} This characteristic also relates to ER 3

^{***}Aspects of durability and economy of the works (see CPD Annex 1, sentence 1 and 2) which are not dealt with under Essential Requirements 1 to 6. Such aspects are also referred to as "serviceability".

In this ETAG "classified according to EN 13501-1" is taken to mean testing and classification according to EN 13501-1 or classification A1 according to Decision 96/603/EEC as amended or a relevant CWFT Decision as clarified in the FOREWORD of EN 13501-1:2007.

 $^{^{4}\, {\}sf EU} \ {\sf data} \ {\sf base} \ \bar{\sf see} : \underline{{\sf www.Europa.eu.int/comm/enterprise/construction/internal/dangsub/dangmain.htm}$

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2.4 Product characteristics which are relevant for the fitness for use

2.4.1 Reaction to fire

2.4.1.1 Method of verification

Case 1: Normal case

See Part 1 – "General" for general information.

If the test regime for a certain class requires a test according to EN 13823 (SBI) the mounting and fixing procedure described in Annex A.1 shall be used.

Case 2: Products satisfying the requirements for the fire reaction class A1, without the need for testing

See Part 1 - "General"

Case 3: Products classified without the need for further testing (CWFT)

See Part 1 - "General"

2.4.1.2 Method of assessing and judging

The product shall be classified according to EN 13501-1.

2.4.2 Resistance to fire

2.4.2.1 Method of verification

An assembly representative of the system in which the cavity barrier is intended to be incorporated or installed shall be tested and reported in accordance with EOTA TR 031. The test configuration shall be determined based on the intended use of the product.

Cavity barriers with provision for penetration by services shall be verified by additionally referring to ETAG 026-2. Dependent on the configuration of the product, the cavity barrier shall form the penetration seal or the supporting construction in the fire test as in practice. An example of the cavity barrier forming the supporting construction would be where the cavity barrier incorporates e.g. an intumescent collar.

2.4.2.2 Method of assessing and judging

Products having insulation characteristics equal to their integrity (e.g. El 30) can be classified according to EN 13501-2 as non-loadbearing elements.

Products with insulation ratings lower than integrity ratings can also be classified according to EN 13501-2 as non-loadbearing elements but only by using a combination of classes such as E30 and (in addition) E115 (E30 to cover a requirement for 30 minutes integrity and E115 to cover a requirement for 15 minutes insulation). Cavity barriers with provision for penetration by services shall be additionally assessed and judged according ETAG 026-2.

2.4.3 Air permeability

2.4.3.1 Method of verification

Where a cavity barrier is claimed to have specific resistance to air flow, the principles of the test method described in EN 1026 shall be applied. The window test sample described in the standard shall be replaced with a suitably designed sample of the cavity barrier.

Method of assessing and judging

The test result of the material air permeability shall be presented as area specific leakage rate with the unit being m³h⁻¹m⁻².

NOTE: This is a deviation from EN 1026.

2.4.4 Water permeability

Not relevant to these products.

2.4.5 Release of dangerous substances

2.4.5.1 Method of verification

See Part 1 - "General"

2.4.5.2 Method of assessing and judging

See Part 1 - "General"

2.4.6 Mechanical resistance and stability

2.4.6.1 Method of verification

See 2.4.7.1

NOTE It is assumed that the impact test covers both static and dynamic loads.

2.4.6.2 Method of assessing and judging

See 2.4.7.2

2.4.7 Resistance to impact / movement

2.4.7.1 Method of verification

Where necessary a test according to EOTA TR 001 shall be used to show evidence of impact resistance/ load-bearing capacity, but only where

the product width is in excess of 150 mm and it is exposed e.g. in a roof space

and where either

 no precautions (precautions/protection are not covered by this ETAG) are taken to prevent a person falling against a vertical cavity barrier

or

 the necessary load-bearing capacity (to prevent any injury of persons e.g. by failure of the barrier) is required to be maintained,.

Where the cavity barrier is designed for a width in excess of 150 mm but less than 400 mm the test methods described in EOTA TR 001, clause 3 apply. Where the width is in excess of 400 mm EOTA TR 001 clause 2 applies, subject to the following provisions:

- Design of the specimens

The size and specification of the test specimen for impact resistance shall be the maximum size covered by the fire resistance classification, up to a maximum of 3m x 3m. Where relevant, the sample shall include a joint. The specimen shall be mounted into a suitably rigid supporting frame using the fixing accessories that form the ETA applicant's system.

It is permissible to use only one specimen for both safety in use and serviceability.

2.4.7.2 Method of assessing and judging

The zone type for which the product is suitable, by reference to EOTA TR 001, shall be given in the ETA together with the maximum dimensions of the cavity barrier and the type of impactor used.

2.4.8 Adhesion (including other forms of fixing of accessible products)

2.4.8.1 Method of verification

For larger products as described in 2.4.7.1, adhesion or other form of fixing e.g. mechanical, is covered by verifications and/or tests performed according to 2.4.7.

For products in small spaces, such as wall cavities, which are not normally required to be tested for impact resistance, it is necessary to demonstrate that any adhesive used to hold the product in place in non-fire conditions has adequate performance. The performance characteristics for adhesives shall be verified in accordance with European technical specifications (e.g. EN) for the adhesives under consideration:

- harmonized European product standards as published by CEN or
- European Technical Approvals as published by EOTA,

Where such European technical specifications do not refer to the required aspects of performance, reference can be made to ETAG 018-4 Section 5.4 which covers relevant verification methods.

The adhesive shall only be subjected to the specified verification methods if the corresponding characteristics are relevant for the application under consideration and as far as relevant for its fitness for the intended use(-s).

2.4.8.2 Method of assessing and judging

See 2.4.7.2 and, where relevant, ETAG 018-4

2.4.9 Airborne sound insulation

2.4.9.1 Method of verification

If a test is required to determine a single number rating it shall be conducted according to EN ISO 140-10. If the purpose of the test is to show that the acoustic properties of the building element which contains the cavity barrier is not impaired a test according EN ISO 140-3 shall be conducted.

2.4.9.2 Method of assessing and judging

The measured airborne sound insulation is expressed as a single number rating R_w, D_{n,w} in accordance with EN ISO 717-1.

2.4.10 Thermal resistance

2.4.10.1 Method of verification

See Part 1 - "General"

2.4.10.2 Method of assessing and judging

See Part 1 – "General"

2.4.11 Water vapour permeability

2.4.11.1 Method of verification

See Part 1 - "General"

NOTE: Water vapour permeability is considered as a material property. It is not the intention of this test to show water vapour leakage at the interface of the cavity barrier with the supporting construction.

2.4.11.2 Method of assessing and judging

See Part 1 - "General"

2.4.12 Durability and Serviceability

2.4.12.1 Method of verification

2.4.12.1.1 General

There are two groups of materials used for cavity barrier products:

- Materials covered by a standard: see 2.4.12.1.2.
- Materials not covered by a standard: see 2.4.12.1.3 and 2.4.12.1.4.

The assessment of any single product may require consideration of materials of both types. Where the product is intended to be used in environmental conditions not covered by Z_1 and Z_2 , e.g. acid, alkaline or saline conditions, further confirmatory evidence or tests will be necessary as determined by the Approval Body.

2.4.12.1.2 Durability of materials covered by a standard.

2.4.12.1.2.1 Mineral wool

Mineral wool complying with the requirements of EN 13162 or EN 14303 is deemed to satisfy the durability requirements for use categories Z_1 and Z_2 .

2.4.12.1.2.1 Gypsum boards

Gypsum plasterboard complying with the requirements of EN 520 is deemed to satisfy the durability requirements for use categories Z_2 .

2.4.12.1.3 Materials not covered by a standard

2.4.12.1.3.1 General

The principle of the durability tests is to select suitable physico-chemical or technological properties of the product and to check whether these properties have changed during exposure of the product to defined exposure conditions.

2.4.12.1.3.2 The properties to be assessed shall be:

- Board type products covered by ETAG 018 Part 4: see the relevant chapter of that ETAG.
- Board type products other than covered by ETAG 018 Part 4 (i.e. boards specifically designed for the application as cavity barriers):

A case by case approach shall be taken to define the relevant properties depending on the nature of the product. Examples of properties that may be selected are appearance (e.g. blistering, cracking), density, thickness and mechanical properties.

Intumescent strips and composite strips:

Property	Test method
Appearance	B.6
Expansion ratio	See EOTA TR 024 3.1.11
Expansion pressure	See EOTA TR 024 3.1.12

• Fabrics:

Property	Test method
Appearance	B.6
Tear strength of fabric	B.5.1

Fixings:

Property	Test method	
Corrosion resistance	Refer to harmonised standards or ETA's for the type of	
	material used.	

2.4.12.1.4 Component and materials compatibility

The Approval Body shall examine the design of the product and make an assessment, using well-established principles, of the suitability of materials in contact. It is impossible to prescribe all the possible risk areas but these include the possibility of bi-metallic corrosion, the effects of over-painting etc.

2.4.12.2 Method of assessing and judging

2.4.12.2.1 Materials/products covered by a standard

When the material/product meets the relevant requirements given in the standards referenced they are considered as being durable.

2.4.12.2.2 Materials/products not covered by a standard

Basically, to achieve a positive assessment of durability no change in the assessed property is allowed. However, as repeatability and reproducibility of most of the test methods to determine relevant properties are unknown a deviation of the mean values of the property assessed before and after exposure of not more than 15% may be taken as a positive result of the durability assessment.

In case of high scatter of the test results an alternative is to take a statistical approach, using an appropriate high number of test specimens. This approach may be used to demonstrate that the mean value of the property after exposure does not deviate from the mean value before exposure.

3 EVALUATION AND ATTESTATION OF CONFORMITY AND CE MARKING

3.1 System of attestation of conformity

See Part 1 - "General"

3.1 Tasks and responsibilities for the manufacturer and notified bodies

3.2.1 Tasks for the manufacturer

The corner stones of the actions to be undertaken by the manufacturer of the Fire Stopping and/or Fire Sealing Product in the procedure of attestation of conformity are laid down in Part 1 – "General" and in Table 3.

The alternatives for implementation are:

- The ETA holder produces the product, i.e. he ensures FPC himself
- The product/component is supplied to the ETA holder, i.e. the ETA holder needs to ensure the supplier performs the FPC as specified in the ETA or accompanying documentation.

Table 3 - Control plan for the manufacturer; corner stones

Nr	Subject/type of control (product, raw/constituent material, component - indicating characteristic concerned)	Test or control method	Minimum number of specimens ⁵	Minimum frequency of control	
	Factory production control (FPC)				
Table	Table 3.1 Boards				
Table	Table 3.1.1 Calcium silicate boards				
1	See ETAG No 018 Part 4				
Table	Table 3.1.2 Mineral wool				
Mine	Mineral wool manufactured according to EN 14303 or EN 13162 ⁷				

One specimen is normally considered to be sufficient. The final number of specimens is to be defined in the ETA or accompanying documents.

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The abbreviations given stand for the frequency of tests: 1/b = once per batch, 1/10b = once per 10 batches, 1/6m = once per 6 month, 1/h = once per hour, decl = declaration of conformity of the supplier of the component(s)

for continuous production the frequency shall be defined by the EOTA body on a case by case basis depending on the peculiarities of the manufacturing process and the level of quality management system installed;

for discontinuous production: A batch is the specific amount of material produced at one time using the same process and the same conditions of manufacture.

Products produced according to EN 13162 or EN 14303 may be suitable for cavity barrier applications but "melting point" and density are properties relevant for this application which are not covered in EN 13162 or EN 14303.

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1	see EN 13162			
2	Apparent density	B.5.2.1	-	1/b
3	"Melting point"	B.8 7	-	1/delivery
Mine	ral wool not manufactured according t	o EN 13162 or EN	14303	
1	Apparent density	B.5.2.1	-	1/b
2	"Melting point"	B.7	-	1/delivery
3	See EN 13162 Annex B ⁸			
Tabl	e 3.1.3 Gypsum boards		·	
1	See EN 520 ⁹			
2	Density	B.5.2.2	-	1/b
Tabl	e 3.1.4 Boards other than Calcium s	ilicate, Mineral wo	ol and Gypsum I	pased boards
1	TGA or DTA	B.2	-	1/b
2	Content of non-volatile components	B.3	-	1/b
3	Weight loss on heating	B.4	-	1/b
4	Dimensions	B.8	-	1/b
5	Apparent density	B.5.2.2	-	1/b

The following properties are not considered essential for the fire resistance performance: thermal resistance – thermal conductivity, tensile strength parallel to faces, compressive stress or strength, Tensile strength perpendicular to faces, point load, compressive creep, short and long term water absorption, water vapour transmission, dynamic stiffness, thickness d_L , thickness d_B and air flow resistance.

For components produced in accordance with a harmonized technical specification to be suitable for use in a cavity barrier, the Approval Body shall check that the component manufacturer declares (and operates FPC for) all characteristics judged, by agreement between Approval Body and the cavity barrier manufacturer, to be applicable for the use of the component in the barrier

Tal	ole 3.2 Fabrics			
1	Type of fabric(s)			1/b (decl)
2	Dimensions	B.8		1/b
3	Tear strength of fabric	B.5.1.1		1/b (decl)
4	Weight per unit area of fabric			1/b (decl)
5	Tear strength of seams (if relevant)	One method from B.5.1.2 shall be used		1/b (decl)
Tal	ole 3.3 Other Components e.g. Fixings	;		
1	Dimensions	B.8		1/b
2	Other suitable properties to be agreed between the Notified Body and manufacturer.	-	-	1/b (decl)

3.2.2 Tasks for notified bodies

The corner stones of the actions to be undertaken by the notified body (bodies) in the procedure of attestation of conformity for Fire Stopping and/or Fire Sealing Products are laid down in Table 4.

3.2.2.1 Initial type-testing of the product (ITT)

Direct tests related to the properties listed in the mandate (fire resistance, mechanical resistance and stability, adhesion, resistance to impact/movement, release of dangerous substances) will already have been done as part of the approval tests and it will not normally be necessary for these to be repeated for ITT. However, depending on the degree to which the samples used for the approval testing were representative of the product produced under the conditions of current production (e.g. when prototypes were used), some confirmatory tests may need to be done out of the list given in Table 4.

3.2.2.2 Initial inspection of factory and factory production control (FPC)

The relevant properties are listed in Table 4.

3.2.2.3 Continuous surveillance, judgment and assessment of factory production control (FPC)

The relevant properties are listed in Table 4. The minimum surveillance frequency is normally twice a year.

Table 4 - Control plan for the notified body (bodies); corner stones

N°	Subject of control	Test or control	Criteria, if any	Min.number of	Min frequency of		
		method		specimens	control		
	Initial type-testing of the product (ITT)						
	See 2.4.1 to 2.4.12 and Table 5 The approval tests are acceptable for ITT						
	Initial inspection of factory and factory production control (FPC)						
	See Part 1 – "General" and Table 3 of this part						
	Continuous surveillance, judgment and assessment of factory production control (FPC)						
	See Part 1 – "General" and Table 3 of this part						

3.2.3 Special methods of control and testing used for the evaluation

See Annex B

3.3 CE marking and accompanying information

See Part 1 - "General"

Example of CE marking and accompanying information:



1234

Any Company

Street 1, City,

Country

07

1234-CPD-0321

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Product 'Name'

Cavity Barrier

Use category

"CE" marking

Identification number of notified certification body

Name and address or the identifying mark of the producer (legal entity responsible for the manufacturer) or his authorised representative established in the EEA

Two last digits of year of affixing CE marking

Number of EC certificate of conformity

ETA number

ETAG number and trade name of the product

Designation of the product (YYY); reference to the ETA; use category

Other relevant characteristics see specific ETA

4. ASSUMPTIONS UNDER WHICH THE FITNESS FOR THE INTENDED USE IS ASSESSED

4.1 Manufacture of the product

No specific provisions

4.2 Packaging, transport, storage of the product

For general advice see Part 1 - "General".

When a component of the product, as delivered, has a limited shelf life, it is assumed that the manufacturer gives a clear indication of that life and, when appropriate, restrictions on the storage conditions (e.g. temperature, humidity).

4.3 Installation of the product in the works

- Information accompanying the product

It is assumed that the manufacturer provides information on:

- the use conditions in terms of environmental conditions (e.g. dry indoor use) as covered by the ETA
- instruction for the correct installation of the product

4.4 Use, maintenance, repair

It is assumed that the manufacturer provides information for installation, use and repair especially on the method of repair where this is anticipated during the life of the product.

4.5 Auxiliary components

See Part 1 - "General

5 IDENTIFICATION OF THE CONSTRUCTION PRODUCT

5.1 Means of identification

All components of the Fire Stopping and Fire Sealing Products shall be clearly identified in accordance with section 5 of Part 1 – "General" of this ETAG. Wherever possible a harmonised European Technical Specification shall be used to identify the component. If the product is a reactive material, the EOTA Technical Report 024 "Reactive Products" has to be taken into account. For products not covered by a harmonised European Technical Specification or the EOTA Technical Report "Reactive Products" see Part 1 – "General" and the following:

When the option "Fingerprinting" is taken, for most products IR (Infra-Red Spectroscopy) plus a TGA (Thermogravimetric Analysis) or DTA (Differential Thermal Analysis) will be appropriate. ¹⁰

Alternatively, or in addition, the applicant, or a third party at his request, may disclose the formulation to the EOTA body for identification purposes.

For the purpose of testing of physical characteristics the properties listed in Table 5 shall be determined depending on the type of the product. The test methods given are recommendations only.

Drawings will be useful particularly for products that are formed or contain formed components such as collars, modular systems / cable boxes or for products that are characterised by a specific geometrical shape, dimensions etc.

In many cases a combination of the options will be taken to cover all necessary aspects.

Table 5 – Physical product characteristics, methods of verification and criteria used for checking the product identity

Table 5.1 Boards

Table 5.1.1 Calcium silicate boards

N°	Product characteristic	Verification method
1	See ETAG No 18 Part 4	

Table 5.1.2 Mineral wool boards

Mineral wool boards manufactured according to EN 14303 or EN 13162 7		
1	see EN 13162 or EN 14303	
2	Apparent density	B.5.2.1
3	"Melting point"	One method from B.7 shall be selected
Mineral wool boards not manufactured according to EN 13162 or EN 14303		
1	Apparent density	B.5.2.1
2	"Melting point"	One method from B.7 shall be selected
3	See EN 13162 Annex B Fout! Bladwijzer niet gedefinieerd.	

Table 5.1.3 Gypsum boards

1	See EN 520	
2	Density	EN 520

Table 5.1.4 Boards other than Calcium silicate-, Mineral wool and Gypsum based boards

1	TGA or DTA	B.2
2	Content of non-volatile components	B.3
3	Weight loss on heating	B.4
4	Dimensions	B.8
5	Apparent density	B.5.2.2

Table 5.2 Strips, compressible (including composite, laminated, impregnated – passive or reactive)

(
1	Dimensions (including laminations etc.)	B.8
2	Density after lamination / impregnation (degree of impregnation) etc., if relevant	B.5.4
3	Expansion ratio, if relevant	EOTA TR 024, clause 3.1.11

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There are three options for identification the individual components of a product: by "fingerprinting" (combination of TGA/DTA <u>and IR</u>); by depositing the composition and formulation or by verifying physical characteristics). The latter may include a combination of TGA <u>or</u> DTA plus ash content/non-volatile components and density or other.

^{11 &}quot;Board" includes also mats and slabs

Table 5.3 Fabrics

1	Type of material(s)	Specification / Drawings
2	Dimensions	B.8 / Drawings
3	Tear strength of fabric	B.5.1.1
4	Weight per unit area of fabric	B.5.3
5	Tear strength of seams (if relevant)	One method from B.5.1.2 shall be used
6	Impregnation / flame retardants (quantity per unit area of fabric)	

5.2 Product characteristics which are relevant for identification checking

See tables 5.1 to 5.3 and the related verification methods in Annex B referenced in the tables.

6 FORMAT OF ETAS ISSUED ON THE BASIS OF THE ETAG

European technical approvals issued on the basis of this ETAG shall be in accordance with the ETA format given in the Addendum to this ETAG.

7 REFERENCE DOCUMENTS

This ETA-Guideline Part 5 incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed below. For dated references subsequent amendments to, or revisions of these publications, apply to this ETAG only when incorporated in it by amendment or revision. For undated references the latest dated revision of the publication referred to, applies. For further updating conditions see Part 1 – "General" - Foreword.

7.1 EC Documents

Commission Decision 96/603/EC	Commission Decision of 4 October 1996 establishing the list of products belonging to Classes A 'No contribution to fire' provided for in Decision 94/611/EC implementing Article 20 of Council Directive 89/106/EEC on construction products
Commission Decision 2000/605/EC	Commission Decision of 26 September 2000 amending Decision 96/603/EC establishing the list of products belonging to Classes A 'No contribution to fire' provided for in Decision 94/611/EC implementing Article 20 of Council Directive 89/106/EEC on construction products
Commission Decision 2003/424/EC	Commission Decision of 6 June 2003 amending Decision 96/603/EC establishing the list of products belonging to Classes A 'No contribution to fire' provided for in Decision 94/611/EC implementing Article 20 of Council Directive 89/106/EEC on construction products
7.0 Due less (Ou e s'C' e s (' e s e	

7.2 Product Specifications

ETAG 026 - 1 ETAG 026 - 2	Fire Stopping and Fire Sealing Products. Part 1 – General Fire Stopping and Fire Sealing Products. Part 2 – Penetration Seals.
ETAG 018 - 4	Fire Protective Products. Part 4 – Fire Protective Board, Slab and Mat Products and Kits.
EN 13162	Thermal insulation products for buildings – Factory made mineral wool (MW) products – Specification
EN 520	Gypsum plasterboards. Definitions, requirements and test methods.
EN 14303:2010	Thermal insulation products for building equipment and industrial installations. Factory made mineral wool products (MW). Specification

7.3 Test methods and classification standards

EN ISO 140-3 Acoustics – Measurement of sound insulation in buildings and of building elements – Part 3: Laboratory measurements of airborne sound insulation of building elements

EN ISO 140-10	Acoustics – Measurements of sound insulation in buildings and of building elements – Part 10: Laboratory measurement of airborne sound insulation of small building elements.
EN ISO 717-1	Acoustics – Rating of sound insulation of buildings and of building elements – Part 1: Airborne sound insulation.
EN 1026	Windows and doors – Air permeability – Test method
EN 1602	Thermal insulating products for building applications – Determination of the apparent density.
EN ISO 3219	Plastics – Polymers/resins in the liquid state or as emulsions or dispersions – Determination of viscosity using a rotational viscometer with defined shear rate
EN ISO 3251	Paints, varnishes and plastics – Determination of non-volatile-matter content
EN ISO 3451	Plastics – Determination of ash – Part 1: General methods
EN ISO 11925	Reaction to fire tests – Ignitability of building products subjected to direct impingement of flame – Part 2: Single-flame source test.
EN 13501-1	Fire classification of construction products and building elements – Part 1: Classification using test data from reaction to fire tests.
EN 13501-2	Fire classification of construction products and building elements – Part 2: Classification using test data from fire resistance tests.
EN ISO 13788	Hygrothermal performance of building components and building elements – Internal surface temperature to avoid critical surface humidity and interstitial condensation – Calculation methods.
EN 13823, 2:2002	Reaction to fire tests for building products – Building products, excluding floorings, exposed to the thermal attack by a single burning item.
EN ISO 13934-1	Tensile properties of fabrics – Part 1: Determination of maximum force and elongation at maximum force using the strip method
EN ISO 13935	Seam tensile properties of fabrics and made-up textile articles –
	Part 1: Determination of maximum force to seam rupture using the strip method.
	Part 2: Determination of maximum force to seam rupture using the grab method.
EN 29073	Methods of test for non-wovens. Determination of mass per unit area.
7.4 Other references	
EOTA TR 001	Determination of impact resistance of panels and panel assemblies.
EOTA TR 024	Characterisation, Aspects of Durability and Factory Production Control for Reactive Materials, Components and Products.
EOTA TR 031	Fire Resistance Tests for Cavity Barriers

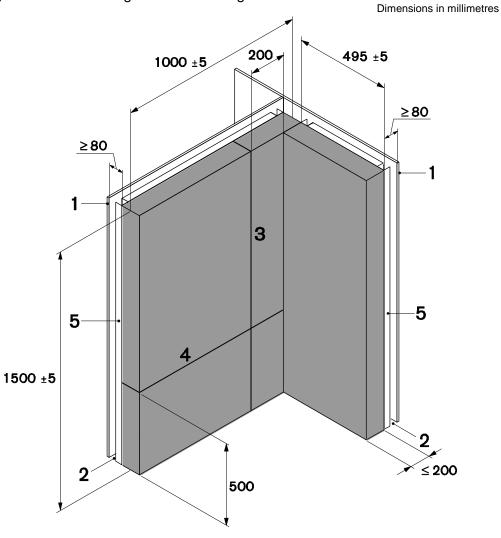
ANNEX A

Mounting and Fixing Procedures for Reaction to Fire Tests

A.1 Tests according to EN 13823 (SBI)

The product shall be tested in an installation representative of practical use and comprising all components. The thickness of each component of the cavity barrier shall be representative of the installation in practice for the product. The maximum thickness of 200 mm given in EN 13823 may be reduced, provided a minimum unaffected thickness of 10 mm of the product or component forming the surface is left after the test.

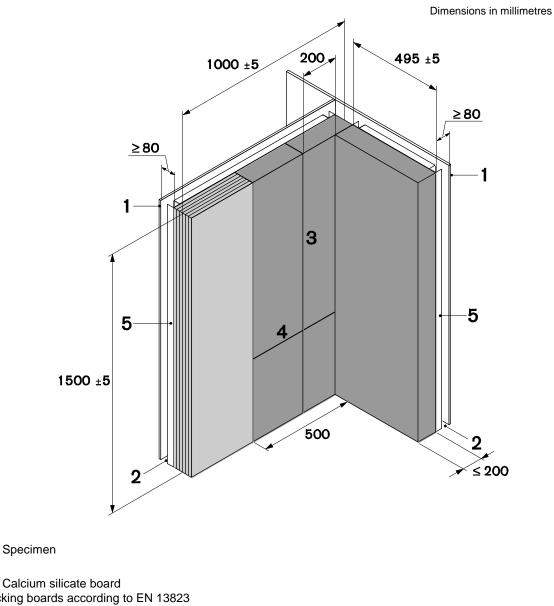
Regarding the size of the specimen the standard configuration shown in Figure A.1 is normally used. Where no lateral spread of flame is expected, outside the area on the long wing covered by the specimen, the configuration shown in Figure A.2 may be used alternatively. When in a test using the configuration according to A.2, lateral spread of flame outside this area is observed the test shall be repeated using the standard configuration according to A.1.



Key

- 1 Backing boards according to EN 13823
- 2 Air gap
- 3 Vertical joint (where relevant)
- 4 Horizontal joint (where relevant)
- 5 Supporting frame (optional, see Figure A.3)

Figure A.1 Standard configuration



1 Backing boards according to EN 13823

2 Air gap

Key

- 3 Vertical joint (where relevant)
- Horizontal joint (where relevant)
- Supporting frame (optional, see Figure A.3)

Figure A.2 - Configuration when no lateral spread of flame outside the specimen area on the left wing is expected.

When using the configuration according to Figure A.2 the part of the wing that is not covered by the test material shall be made of calcium silicate board.

A.2 Tests according to EN ISO 11925-2 (small burner test)

The standard size of the specimen (250 x 90 x maximum 60 mm) shall be used whenever possible, e.g. by flattening the product or cutting it into the required size.

NOTE: Where the specimen has a cut surface this surface shall not be used as the test surface exposed to the flame.

Where the geometry or nature of the product does not allow the use of the standard specimen size the following rules apply:

- Where the width of the product is smaller than 90 mm, the actual width of the product is used.
- For thin specimens a calcium silicate backing board shall be used.

According to EN ISO 11925-2 edge flaming is required only where the edge is exposed in practice (protrusion from the surface). This is normally not the case for cavity barriers.

ANNEX B

TEST PROCEDURES

B.1 IR (Infra-Red Spectroscopy)

The test shall be carried out according to the instruction manual of the equipment used. See also EOTA TR 024, Annex C.3 for details when used as identification method (Fingerprint).

B.2 Thermo-analytical methods

B.2.1 Thermo-gravimetric Analysis (TGA)

See EOTA TR 024 Annex C.2

Where the method is used for Fingerprinting the prescribed heating rate, size of specimen, material of crucible and rinsing gas shall be used.

B.2.2 Differential Thermal Analysis (DTA)

NOTE This method is less suitable for intumescent materials than TGA, especially for the purpose of "Fingerprinting".

B.3 Content of non-volatile components

Test according to EN ISO 3251.

The value reported as a declared value for identification shall be the mean value of at least three specimens.

B.4 Weight loss on heating

Test according to EN ISO 3451-1, subject to the following provisions: As weight loss on heating is a characteristic of a material, protective foils or coatings should be removed if at all possible. When the product is tested with a protective foil or coating this shall be recorded to ensure consistency with future tests.

NOTE The standard was written for plastics but other materials can also be tested following the principles of the standard.

The value reported as a declared value for identification shall be the mean value of at least three specimens.

B.5 Mechanical properties

B.5.1 Tear strength

B.5.1.1 Fabrics

Test according to EN ISO 13934-1

B.5.1.2 Seam

Test according to EN ISO 13935-1 or EN ISO 13935-2. The ETA shall specify the method used.

B.5.2 Density

B.5.2.1 Mineral wool

Test according to EN 1602

B.5.2.2 Boards other than Calcium silicate, Mineral wool and Gypsum based boards

Depending on the type of product the test method shall be determined case by case.

B.5.3 Weight per unit area of fabrics

Test according to EN 29073-1.

B.5.4 Pre-foamed products

The density is calculated from the weight and the volume of the specimen. The weight of the specimen shall be determined with a balance of an accuracy of 0.1g. The dimensions can be determined to the next mm either using a steel rule when the product has a regular shape, or determining the volume by using a water displacement technique.

B.6 Visual examination

The appearance of the product shall be examined for changes in e.g. colour, texture, shape and for the appearance of cracks, fissures etc. If changes in appearance are not reflected in the results of the examination of the other properties given in 2.4.1.3.1.1.3.2, possible consequences of the changes in appearance, on durability, should be assessed on a case by case basis.

B.7 Behaviour of mineral wool at high temperature (for identification and FPC)

B.7.1 Visual method of determining the "Melting point"

A sample of the mineral wool shall be pre-treated at 550 ± 10 °C in a muffle furnace until the organic binder is eliminated. Cut cube specimens of 10 mm x 10 mm x 10 mm from the pre-treated sample.

The cube specimens are inserted into a tube furnace having an internal diameter of 25 mm preheated to a temperature approximately 30 degrees below the expected melting temperature. This is achieved by placing the specimen on a suitable carrier (e.g. a metal or ceramic pin or spatula) which is supported outside the tube furnace. The specimen is moved slowly to the centre of the furnace, where the temperature sensor is located. The specimen is held for 10 minutes in that position. The specimen is then carefully removed from the furnace and examined to determine whether it has melted. The furnace temperature is noted.

If the specimen is unchanged, raise the furnace temperature by 10 degrees, wait until the temperature is stabilized and repeat the test with a new specimen.

If the specimen has melted, lower the temperature by 10 degrees and repeat the measurement with a new specimen. The temperature where the wool started melting is called the "melting" point.

The dimensions of the inner diameter of the tube furnace and the specimen may be changed provided the ratio is kept constant.

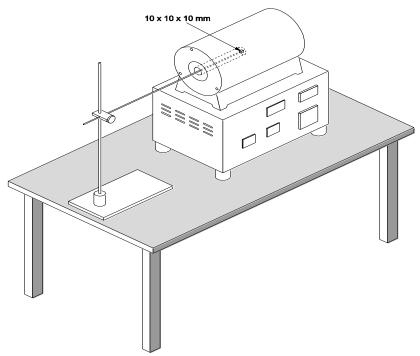


Figure: Test preparation for B.7.1

B.7.2 Any thermo-analytical method may be used, e.g. DTA or TGA

B.8 Dimensions

B.8.1 Thickness

The thickness of products in the form of sheets, boards, strips, fabrics, etc. is determined by means of a suitable gauge to the nearest 0.1 mm at 5 locations of the specimen. The minimum size of the specimen is 10x10 cm or a minimum length of 50 cm in case of strips.

B.8.2 Other dimensions

The dimensions shall be determined to an accuracy of 0.5% by means of a suitable gauge.

ADDENDUM: Model for ETA'S issued on the basis of ETAG 026 Part 5 Cover page of the ETA

according to Document 5.1 (new ETA), Document 5.2 (modified ETA) or Document 5.3 (ETA with extended period of validity), as relevant.

Page 2 of the ETA

with headline Page 2 of ETA-xx/xxxx, issued on dd.mm.yyyy[, validity extended on dd.mm.yyyy]

I LEGAL BASES AND GENERAL CONDITIONS

- 1 This European Technical Approval is issued by ...(name of approval body) in accordance with:
 - Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products ¹² modified by Council Directive 93/68/EEC¹³ and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council ¹⁴:
 - ...(indicate respective national law transposing the CPD; only if the national law of the Member State of the issuing approval body so requires);
 - Common Procedural Rules for Requesting, Preparing and the Granting of European Technical Approvals set out in the Annex to Commission Decision 94/23/EC¹⁵;
 - Guideline ...(indicate title and number of ETA Guideline on the basis of which the ETA is granted, unless ETA is issued without an ETA Guideline in accordance with point 3.2 of the Common Procedural Rules, pursuant to Article 9(2) of the CPD).
- The ...(name of issuing approval body) is authorized to check whether the provisions of this European Technical Approval are met. Checking may take place in the manufacturing plant(s). Nevertheless, the responsibility for the conformity of the products to the European Technical Approval and for their fitness for the intended use remains with the holder of the European Technical Approval.
- This European Technical Approval is not to be transferred to manufacturers or agents of manufacturers other than those indicated on page 1, or manufacturing plants other than those /indicated on page 1/ laid down in the context/ of this European Technical Approval (delete as appropriate).
- This European Technical Approval may be withdrawn by ... (name of issuing approval body), in particular pursuant to information by the Commission according to Article 5(1) of Council Directive 89/106/EEC.
- Reproduction of this European Technical Approval including transmission by electronic means shall be in full. However, partial reproduction can be made with the written consent of ... (name of issuing approval body). In this case partial reproduction has to be designated as such. Texts and drawings of advertising brochures shall not contradict or misuse the European Technical Approval.
- The European Technical Approval is issued by the approval body in its official language(s). This (These) version(s) corresponds (correspond) fully to the version circulated in EOTA. Translations into other languages have to be designated as such.

Page 3 and following pages of the ETA

with headline Page ... of ETA-xx/xxxx, issued on dd.mm.yyyy[, validity extended on dd.mm.yyyy]

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of product(s) and intended use

1.1 Definition of the construction product

(Specific text: description of the cavity barrier (e.g. design, details of the materials and the dimensions (e.g. maximum size and minimum thickness, layer thickness of a strip,...), details regarding permissible fasteners or required framings), instructions for the installation of the product (e.g. sequence of work steps), details of permissible variations/modifications, if any...)

Official Journal of the European Communities N° L 40, 11.2.1989, p. 12

Official Journal of the European Communities N° L 220, 30.8.1993, p. 1

Official Journal of the European Union N° L 284, 31.10.2003, p.1

Official Journal of the European Communities N° L 17, 20.1.1994, p. 34

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1.2 Intended use

(Specific text: description of type and thickness of the elements in which the cavity barrier is allowed to be installed, and the use category, ...)

The provisions made in this European technical approval are based on an assumed working life of the ... (product) of ... years. 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.

2 Characteristics of product(s) and methods of verification

..... (Specific text)

The ETA shall clearly specify the tested assembly, identifying the components used (e.g. supporting construction, mechanical fasteners, etc.), the dimension or range of sizes, the configuration etc.

The field of application shall be specified, taking account of all relevant parameters, e.g. dimension of the cavity barrier type of supporting construction, the use conditions in terms of environmental conditions (e.g. dry indoor use), the method of preparation of the supporting construction before installation of the product, etc.

The following statements may be considered for inclusion in the ETA: General:

"Other parts or support constructions must not penetrate the cavity barrier unless suitably protected."

"Provisions shall be taken such that cavity barriers cannot be stepped on or are not subjected to forces higher than the limit taken from the impact tests, e.g. by protective guarding."

Specific provisions:

2.[] Emission of dangerous substances or radiation

..... (Specific text)

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

3 Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

According to the decision ... *(number)* of the European Commission ¹⁶ system 1 attestation of conformity applies. This system of attestation of conformity is defined as follows:

System 1: Certification of the conformity of the product by a approved certification body on the basis of:

- (a) Tasks for the manufacturer:
 - (1) factory production control;
 - (2) further testing of samples taken at the factory by the manufacturer in accordance with a prescribed test plan;
- (b) Tasks for the approved body:
 - (3) initial type-testing of the product (or, normally, validation of the approval tests);
 - (4) initial inspection of factory and of factory production control;
 - (5) continuous surveillance, assessment and approval of factory production control.

3.2 Responsibilities

3.2.1 Tasks of the manufacturer

3.2.1.1 Factory production control

The manufacturer shall exercise permanent internal 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, including records of results performed. This production control system shall insure that the product is in conformity with this European technical approval.

The manufacturer may only use initial / raw / constituent materials (as relevant) stated in the technical documentation of this European technical approval.

The factory production control shall be in accordance with the "Control Plan of ...(date) relating to the European technical approval ETA -...(number) issued on ...(date)" which is part of the technical documentation of this

¹⁶ Official Journal of the European Communities L .../... (number) of ... (day/month/year)

European technical approval. The "Control Plan" is laid down in the context of the factory production control system operated by the manufacturer and deposited at the ...(name of the approval body). 17

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

3.2.1.2 Other tasks of manufacturer

.... (Specific text, if relevant)

Additional information

The manufacturer shall provide a technical data sheet and an installation instruction with the following minimum information:

Technical data sheet:

- Field of application:
 - Building elements for which the cavity barrier is suitable, type and properties of the building elements such as minimum thickness, density, and in case of lightweight constructions the construction requirements.
 - Limits in size, minimum thickness etc. of the cavity barrier
- Construction of the cavity barrier including the necessary components and additional products (e.g. fixings) with clear indication whether they are generic or specific.

Installation instructions:

- Steps to be followed, in general
- Special precautions

The manufacturer shall, on the basis of a contract, involve a body (bodies) which is (are) approved for the tasks referred to in section 3.1 in the field of ...(product) in order to undertake the actions laid down in section 3.3. For this purpose, the "control plan" referred to in sections 3.2.1.1 and 3.2.2 shall be handed over by the manufacturer to the approved body or bodies involved.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of the European technical approval ETA ...(number) issued on ...(date).

3.2.2 Tasks of approved bodies

The approved body (bodies) shall perform the

- initial type-testing of the product,
- initial inspection of factory and of factory production control,
- continuous surveillance, assessment and approval of factory production control,

in accordance with the provisions laid down in the "Control Plan of ...(date) relating to the European technical approval ETA -...(number) issued on ...(date)".

The approved body (bodies) shall retain the essential points of its (their) actions referred to above and state the results obtained and conclusions drawn in (a) written report (reports).

The approved certification body involved by the manufacturer shall issue an EC certificate of conformity of the product stating the conformity with the provisions of this European technical approval.

In cases where the provisions of the European technical approval and its "Control Plan" are no longer fulfilled the certification body shall withdraw the certificate of conformity and inform the ...(name of approval body) without delay.

3.3 CE marking

The CE marking shall be affixed on the ...(product itself - indicate where on the product, if necessary; or the label attached to it; packaging; accompanying commercial document, e.g. the EC declaration of conformity). The marking "CE" shall be followed by the identification number of the approved certification body and be accompanied by the following additional information:

- the name and address of the producer (legal entity responsible for the manufacturer),
- the last two digits of the year in which the CE marking was affixed,
- the number of the EC certificate of conformity for the product,
- the number of the European technical approval,
- the number of the guideline for European technical approval
- indicate use category/ use categories of the product as listed in accordance with the provisions of the ETAG,

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Example(s) of CE marking and accompanying information for ...(product):



1234

Any Company Street 1, City,

Country 07

1234-CPD-0321

ETA-07/2135 ETAG N°026-part 5 Product 'Name'

Cavity Barrier
Use category Y_{2 (-5/+70)°C}

"CE"-marking

Identification number of approved certification body

Name and address or the identifying mark of the producer (legal entity responsible for the manufacturer)or his authorised representative established in the EEA

Two last digits of year of affixing CE marking Number of EC certificate of conformity ETA number

ETAG number

Designation of the product (YYY); reference to the ETA; use category Other relevant characteristics see specific ETA

.... (If the content of the CE marking and accompanying information is not the same for all products covered in the ETA, give further examples of CE marking and accompanying information for each of the possible cases in accordance with the provisions of the ETAG)

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

4.1 Manufacturing

..... (Specific text, as far as relevant)

The European technical approval is issued for the product on the basis of agreed data/information, deposited with the ...(Approval Body name), which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to the ...(Approval Body name) before the changes are introduced. The ...(Approval Body name) will decide whether or not such changes affect the ETA and consequently the validity of the CE marking on the basis of the ETA and if so whether further assessment or alterations to the ETA, shall be necessary.

4.2 Installation

..... (Specific text, as far as relevant)

5 Indications to the manufacturer

- 5.1 Packaging, transport and storage, including shelf life if applicable
- (Specific text, as far as relevant)
- 5.2 Use, maintenance, repair
- (Specific text, as far as relevant)

ANNEX 1 - DESCRIPTION OF PRODUCT(S)

..... (Specific text and/or drawings, as far as relevant)

..... (Give further annexes as far as necessary)