European Organisation for Technical Approvals
Europäische Organisation für Technische Zulassungen
Organisation Européenne pour l'Agrément Technique

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

for

Fire Stopping and Fire Sealing Products

Part 1 General

Edition 2008 – 01 - 01

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.

Copy right: EOTA

Note: The copy right refers to the English reference version established by EOTA. For publications in accordance with Article 11.3 of the Construction Products Directive the national laws, regulations and administrative provisions of the Member State concerned are applicable.

Table of contents **Page**

Foreword

Background of the ETAG

This Guideline has been drawn up by the EOTA Working Group 11.01/04 "*Fire Stopping, Fire Sealing and Fire Protective Products".*

The WG consisted of members from nine EU-countries (Austria, Belgium, Denmark, Finland, France, Germany (Convenor), Spain, Sweden and the United Kingdom) and three European industrial organisations (CEPMC (Council of European Producers of Materials for Construction), EAPFP (European Association for Passive Fire Protection), and EURIMA (European Insulation Manufacturers Association)).

The Guideline specifies the performance requirements, the verification methods used to examine the various aspects of performance, the assessment criteria used to judge the performance for the intended use and the presumed conditions for the design and execution of the fire stopping or fire sealing products in the works. Since fire stopping and fire sealing products are based on different materials, which necessitate additional specific verification and/or assessment, these products are divided into 4 families of products and kits, dealt with in specific parts.

This ETAG Guideline Part 1 – "General" shall be used in conjunction with one of the specific parts for a family of products.

The general assessment approach of the Guideline is based on relevant existing knowledge and testing experience.

Updating conditions

EOTA Comprehension Documents permanently take on board all useful information on the general understanding of this ETAG as developed when delivering ETA's in consensus by the EOTA members. Readers and users of this ETAG are advised to check the current status of these documents with an EOTA member.

EOTA may need to make alterations/corrections to the ETAG during its life. These changes will be incorporated into the official version on the EOTA web-site **www.eota.eu** and the actions will be listed and dated in the associated **Progress File**.

Readers and users of this ETAG are asked to check the current status and content of this document with that on the EOTA web-site. The front cover will indicate if and when an amendment took place.

1 SCOPE OF THE ETAG

1.1 Definition of the construction product

This ETAG shall be used to deliver European Technical Approvals for fire stopping and fire sealing products. These products are intended to prevent or restrict the passage of fire and/or smoke between elements or components, or to maintain the integrity and insulation performance of a penetrated or discontinuous fire separating element for a specified duration.

This ETAG "Fire Stopping and Fire Sealing Products" is divided into the following parts:

Part 1: General

Part 2: Penetration Seals

Part 3: Linear Joint and Gap Seals

Part 4: Air Transfer Grilles

Part 5: Cavity Barriers

The ETAG does not cover ducts, casings and mechanical dampers [1] or the use of fire stopping and fire sealing products in construction works where special extreme fire scenario apply (e.g. traffic tunnels, nuclear plants etc.).

[1] If the English term "damper" is used in the sense of air transfer grilles, based on intumescent materials, and used in openings in walls, partitions or in ducts then these forms of "damper" are included in the Guideline

1.2 Intended use of the construction product

The wide variation in European climatic conditions and in the user stresses imposed on structures depending on the type of structure and use intensity will make it necessary for fire stopping and fire sealing products to restrict their usage to defined situations allowing them to achieve the predicted Working life.

In general fire stopping and fire sealing products will be influenced with regard to their working lives and durability by different degradation factors which shall be taken into account in the scope for the fire stopping and fire sealing products, if relevant – see the relevant other parts of this ETA Guideline:

- temperature
- freeze/thaw
- humidity (water vapour)
- liquid water
- rain
- UV exposure
- pollution (e.g. for industrial regions: high SO_2, H_2S, NO_x; for coastal regions: high chloride levels)
- biological attack

These possible degradation factors that affect the true working life and/or durability of "Fire Stopping and Fire Sealing Products" shall be defined by "use categories" in accordance with the EOTA GUIDANCE DOCUMENT 003 – "Assessment of working life of products". If further degradation factors of importance exist, they will be considered in the other parts of this ETAG.

In general the following use categories are defined for the fire stopping and fire sealing products –and shall be used as a basis for assessment.

OUTDOOR USE

- EXPOSED TO RAIN AND UV
- NOT EXPOSED TO RAIN AND UV

INDOOR USE

It depends on the different products (described in the relevant other parts of this Guideline) whether further sub-divisions - as referred to in the EOTA GUIDANCE DOCUMENT 003 - of the internal and external use categories are necessary or not. The specific parts will deal with detailed methods of durability assessment.

Whether the fire stopping and fire sealing product is assessed for indoor and/or outdoor use or for more than one of the use categories depends on the applicant.

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 or fire sealing products for the intended use of 10 or 25 years [2] when installed in the works, provided that the single fire stopping or fire sealing product is subject to appropriate use and maintenance (see 4.4). These provisions are based upon the current state of the art and the available knowledge and experience.

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

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

---

[2] For details see the part of this ETAG which is relevant for a specific product (family).

[3] The real working life of a product incorporated in a specific works depends on the environmental conditions to 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.

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 ETAG

1.4.2.1 Ablative materials:

Materials designed not to expand significantly when heated but may consume energy through chemical or physical processes.

1.4.2.2 Air transfer grille:

A product that allows air movement through elements of construction

1.4.2.3 Boards/Panels:

Rigid product of rectangular shape and cross section, in which the thickness is uniform and substantially smaller than the other dimensions

1.4.2.4 Cavity Barrier:

A barrier, used to close or separate a concealed space, the purpose of which is to restrict the spread of smoke/fire and to be fire resistant in itself. *Cavity barriers* can vary in size and type from 'small' which, for example, would be used within a cavity brick wall, to 'large' which can be over 2 m by 2 m used to divide large enclosed spaces, for example within ceiling voids.

1.4.2.5 Intumescent materials:

Materials which expand, creating a foam or char, when exposed to heat in the conditions of fire

1.4.2.6 Linear Joint/Gap:

A gap with a width not exceeding 150 mm and with a length at least 10 times its width

1.4.2.7 Linear Joint/Gap Seal:

Seals designed to maintain the fire resistance at structural discontinuities which may occur between and within fire separating elements. There are several types of Linear Gap Seals, which may be classified by their construction: with/without backing material, with/without cover material, with/without support material.

1.4.2.8 Penetration seal:

The system used to maintain the fire resistance of a separating element at the position where there is provision for services to pass through the separating element.

1.4.2.9 Reactive material:

The generic term for materials which react chemically or physically if exposed to heat generated by a fire. The term includes both intumescent and ablative materials.

1.4.2.10 Slab:

Semi-rigid product of rectangular shape and cross section in which the thickness is uniform and substantially smaller than the other dimensions

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

The provisions of this ETAG apply to the preparation and issue of European technical approvals in accordance with Art. 9.1 of the CPD and section 3.1 of the Common Procedural Rules.

In cases in which a certain provision of this ETAG is not or not fully applicable or a particular aspect of a product and/or intended use to be assessed is not or not sufficiently covered by the methods and criteria of the ETAG, the procedure of Art. 9.2 of the CPD and section 3.2 of the Common Procedural Rules applies with regard to the deviation or aspect concerned.

2 ASSESSMENT OF FITNESS FOR USE

2.1 Meaning of "fitness for use"

"Fitness for (the intended) use" of a construction product means that the product has such characteristics that the ***works*** in which it will be incorporated ***can***, if properly designed and built,

1. ***satisfy*** the Essential Requirements when and where such works are subject to regulations containing such requirements (CPD Art. 2.1) and
2. ***be fit*** for their intended use, account being taken of economy, ***and*** in this connection ***satisfy*** the Essential Requirements for an economically reasonable working life, if normally maintained (see CPD Annex I, sentence 1 and 2).

2.2 Elements of the assessment of fitness for use

The assessment of the fitness of a construction product for its intended use includes:

- the identification of the characteristics of the product which are relevant to its fitness for use (in the following referred to as "regulatory" characteristics);
- the establishment of methods for the verification and assessment of the regulatory product characteristics and the expression of the respective product performances;
- the identification of regulatory characteristics to which the option "No Performance Determined" applies for the reason that in one or more Member States they are not relevant for the fulfilment of the requirements applicable to the works;
- the identification of regulatory characteristics for which limit values (threshold values) have to be respected for technical reasons.

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. For the different fire stopping and fire sealing products see the relevant other parts of this ETAG.

Table 1 - Product characteristics and methods of verification and assessment

Nr	Product characteristic	Option "No Performance Determined"	Method of verification and assessment	Expression of product performance
Essential Requirement 1: Mechanical resistance and stability				
	None			
Essential Requirement 2: Safety in case of fire				
1	Reaction to fire	Permitted: Class F according to EN 13501-1	2.4.1	Classes A1-E according to EN 13501-1
2	Resistance to fire 4.2.3 Limitation of generation and spread of fire and smoke within construction works	Not permitted	2.4.2	Classification according to EN 13501-2
Essential Requirement 3: Hygiene, health and environment				
3	Air permeability	Permitted	2.4.3	assessment or declared value
4	Water permeability	Permitted	2.4.4	assessment or declared value
5	Release of dangerous substances	Permitted	2.4.5	Indication of dangerous substances or "No dangerous substances"[4]
Essential Requirement 4: Safety in use				
6	Mechanical resistance and stability	Permitted	2.4.6	Declared values, levels etc., as appropriate
7	Resistance to impact/movement	Permitted	2.4.7	Declared values, levels etc., as appropriate
8	Adhesion ([1])	Permitted	2.4.8	Declared values, levels etc., as appropriate
Essential Requirement 5: Protection against noise				
9	Airborne sound insulation	Permitted	2.4.9	Single number rating
10	Impact sound insulation	Permitted	2.4.10	Single number rating
Essential Requirement 6: Energy economy and heat retention				
11	Thermal properties	Permitted	2.4.11	Declared values, levels etc., as appropriate
12	Water vapour permeability ([2])	Permitted	2.4.12	Declared values, levels etc., as appropriate
General aspects relating to fitness for use ([3])				
13	Durability and serviceability	Not permitted	2.4.13	Specific requirements and assessments are described in the other parts of this ETA Guideline

([1]) This characteristic is placed under ER 4 for convenience, but also relates to other ERs as well, particularly ER 2.
([2]) This characteristic also relates to ER 3
([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".

[4] EU data base see: www.Europa.eu.int/comm/enterprise/construction/internal/dangsub/dangmain.htm

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

The fire stopping and/or fire sealing product shall be tested, using the test method(s) relevant for the corresponding reaction to fire class, in order to be classified according to EN 13501-1.

Mountings and fixing provisions that are considered to be appropriate for the testing of the fire stopping and fire sealing product and that are representative for the fire stopping or fire sealing' intended use application are specified in the other parts of this ETA Guideline, where relevant.

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

The fire stopping and/or fire sealing product is considered to satisfy the requirements for performance class A1 of the characteristic reaction to fire, in accordance with the provisions of EC decision 96/603/EC (as amended) without the need for testing on the basis of its listing in that decision.

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

The fire stopping and/or fire sealing product is considered to satisfy the requirements for the required performance class of the characteristic reaction to fire in accordance with EC decision 2003/43/EC without the need for further testing on the basis of its conformity with the specification of the product detailed in that decision and its intended end use application being covered by that decision.

Detailed information is given in the relevant other parts of this ETA Guideline.

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

The part of the works or assembled system in which the fire stopping and/or fire sealing product is intended to be incorporated, installed or applied shall be tested, using the test method relevant for the corresponding fire resistance class, in order to be classified according to the appropriate part of EN 13501.

Detailed information is given in the relevant other parts of this ETA Guideline.

2.4.2.2 Method of assessing and judging

The part of the works or assembled system in which the fire stopping and/or fire sealing product is intended to be incorporated, installed or applied shall be classified according to the appropriate part of EN 13501.

2.4.3 Air permeability

2.4.3.1 Method of verification

Air permeability of the Fire Sealing and Fire Stopping Product shall be assessed by comparing the ETA-applicant's design solutions with standard construction details and good engineering practice.

If the air permeability cannot be assessed by the use of existing knowledge, e.g. because of unfamiliar or innovative solutions for the relevant construction details, tests shall be carried out under the responsibility of the Approval Body.

Detailed test methods, if appropriate, are given in the relevant other parts of this ETA Guideline.

2.4.3.2 Method of assessing

The air permeability of the product shall be given in qualitative or quantitative terms depending on the type of assessment.

For some products, the value will be valid for the assembled system, as subjected to testing, and this information will be provided in the ETA.

2.4.4 Water permeability

2.4.4.1 Method of verification

Water permeability (liquid water penetration) of the Fire Sealing and Fire Stopping Product intended to be externally or internally shall be assessed by comparing the ETA-applicant's design solutions with standard construction details and good engineering practice.

If the water permeability cannot be assessed by the use of existing knowledge, e.g. because of unfamiliar or innovative solutions for the relevant construction details, tests shall be carried out under the responsibility of the Approval Body.

Detailed test methods, if appropriate, are given in the relevant other parts of this ETA Guideline.

2.4.4.2 Method of assessing

The water permeability of the product shall be given in qualitative or quantitative terms depending on the type of assessment.

For some products, the value will be valid for the assembled system, as subjected to testing, and this information will be provided in the ETA.

2.4.5 Release of dangerous substances

2.4.5.1 Method of verification

2.4.5.1.1 Presence of dangerous substances

The applicant shall submit a written declaration stating whether or not the fire stopping and fire sealing product contains dangerous substances according to European and national regulations, when and where relevant in the Member States of destination, and shall list these substances.

2.4.5.1.2 Compliance with the applicable regulations

If the fire stopping and fire sealing product contains dangerous substances as declared above, the ETA will provide the method(s) which has been used for demonstrating compliance with the applicable regulations in the Member States of destination, according to the dated EU data-base (method(s) of content or release, as appropriate).

2.4.5.1.3 Application of the precautionary principle

An EOTA member has the possibility to provide to the other members, through the Secretary General, warning about substances which, according to Health authorities of its country, are considered to be dangerous under sound scientific evidence, but are not yet regulated. Complete references about this evidence will be provided.

This information once agreed upon, will be kept in an EOTA data base, and will be transferred to the Commission services.

The information contained in this EOTA data base will also be communicated to any ETA applicant.

On the basis of this information, a protocol of assessment of the Fire Stopping and Fire Sealing Product, regarding this substance, could be established on request of a manufacturer with the participation of the Approval Body that raised the issue.

2.4.5.2 Method of assessing

The Fire Stopping and Fire Sealing Product/kit shall comply with all relevant European and national provisions applicable for the uses for which it is brought to the market.

The attention of the applicant should be drawn to the fact that for other uses or other Member States of destination there may be other requirements which would have to be respected. For dangerous substances contained in the product but the NPD option (no performance determined) is applicable.

2.4.6 Mechanical resistance and stability

2.4.6.1 Method of verification

For specific fire stopping and/or fire sealing products mechanical resistance and stability shall be verified in accordance with the test methods as specified in the relevant other parts of this ETA Guideline.

2.4.6.2 Method of assessing and judging

The criteria and the way of expressing the results of the verification methods are specified in the relevant other parts of this ETA Guideline.

2.4.7 Resistance to impact / movement

2.4.7.1 Method of verification

For specific fire stopping or fire sealing products, impact resistance shall be verified in accordance with the test methods as specified in the relevant other parts of this ETA Guideline.

2.4.7.2 Method of assessing and judging

The criteria and the way of expressing the results of the verification methods are specified in the relevant other parts of this ETA Guideline.

2.4.8 Adhesion

2.4.8.1 Method of verification

For specific fire stopping and fire sealing products adhesion shall be verified in accordance with the test methods as specified in the relevant other parts of this ETA Guideline.

2.4.8.2 Method of assessing and judging

The criteria and the way of expressing the results of the verification methods are specified in the relevant other parts of this ETA Guideline.

2.4.9 Airborne sound insulation

2.4.9.1 Method of verification

Airborne sound insulation shall be verified in accordance with EN ISO 140-3 or EN 20140-10.

2.4.9.2 Method of assessing and judging

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

2.4.10 Impact sound insulation

2.4.10.1 Method of verification

Impact sound insulation shall be verified in accordance with EN ISO 140-6.

2.4.10.2 Method of assessing and judging

The measured impact sound insulation is expressed as a single number rating, in accordance with EN ISO 717-2.

2.4.11 Thermal insulation

2.4.11.1 Method of verification

The thermal conductivity shall be determined based on declared values as quoted in either:

— European harmonised product standards or European technical approvals; or

— declared values following EN 12524

Where the applicant declares specific thermal conductivity values, these should be tested in accordance with EN 12664, EN 12667 or EN 12939 or similar European standards which are based on the same principle.

Alternatively, the thermal resistance and thermal transmittance (U-value) may be verified by testing according to EN ISO 8990.

If necessary, the thermal resistance shall be calculated on the basis of EN ISO 6946.

In principle, thermal bridges should be prevented. However, if such bridges do occur, their effect on the overall thermal performance shall be incorporated in the above mentioned thermal resistance calculations, taking into account results of thermal bridges calculation methods as described in EN ISO 14683, EN ISO 10211-1and EN ISO 10211-2.

NOTE EN 12524 can be used, as far as applicable for the product concerned.

2.4.11.2 Method of assessing and judging

On the basis of the verification method used, the corresponding tabulated or measured λ-value (in W/mK), the thermal resistance value R (in m^2 K/W), or the thermal transmittance coefficient, U (in W/m^2K), calculated

in accordance with EN ISO 6946, shall be declared. The source of the declared values or the standard used to determine the values shall be quoted.

2.4.12 Water vapour permeability

2.4.12.1 Method of verification

Where relevant, water vapour transmission coefficient shall be determined on the basis of tabulated values as declared in either:

— European harmonised product standards or European technical approvals; or

— declared values following EN 12524

Where the applicant declares specific water vapour transmission coefficient values, these shall be tested in accordance with EN ISO 12572 or EN 12086 or similar European standards which are based on the same principle.

NOTE EN 12524 can be used, as far as applicable for the product concerned.

2.4.12.2 Method of assessing and judging

The tabulated or measured value of the water vapour transmission coefficient (μ-value) shall be declared. The source of the values or the standard used to determine the values shall be quoted.

2.4.13 Durability and Serviceability

2.4.13.1 Method of verification

2.4.13.1.1 General

Fire stopping and fire sealing products shall be assessed, taking into account the following agents:

- physical agents:
- chemical agents

The test methods – if relevant with respect to the use categories, described in chapter 2.2 - are described in the relevant sub-parts of this ETA Guideline.

2.4.13.1.2 Biological attack

Fire stopping and fire sealing products may be influenced by biological effects, i.e. mould growth and or subject to deterioration due to attack by insects or mammals, e.g. rodents. This ETA-Guideline foresees no assessment to cover this eventuality. In general, it is an assumption that design provisions will prevent deterioration from occurring (see 4.7). Where approval bodies expect biological attack to be of particular importance for specific products, additional, case-by-case assessment should take place, taking into account the nature of the biological agent (the type of mould or mammal).

2.4.13.2 Method of assessing and judging

The Approval Body shall assess the possible effects on the performance of the assembled system due to the declared limits, which could be e.g

- physical
- chemical
- biological

The ETA shall contain the results, expressed in quantitative or qualitative terms, of the verification methods used to verify the durability and serviceability aspects of the product, related to one or more essential requirements.

3 EVALUATION AND ATTESTATION OF CONFORMITY AND CE MARKING

3.1 System of attestation of conformity

According to the decision 1999/454/EC of the European Commission [5], as amended, the systems) of attestation of conformity given in Table 2a applies.

Table 2a - System(s) of attestation of conformity applicable to fire stopping or fire sealing products

Product(s)	Intended use(s)	Level(s) or class(es) (Resistance to fire)	Attestation of conformity system(s)
Fire Stopping and Fire Sealing Products	for fire compartmentation and/or fire protection or fire performance	any	1

In addition, according to the decision 1999/454/EC of the European Commission [5], as amended, the systems of attestation of conformity given in Table 2b apply to fire stopping and fire sealing products with regard to reaction to fire.

Table 2b - Choice of the system of attestation of conformity applicable fire stopping and fire sealing products with respect to reaction to fire

Product(s)	Intended use(s)	Level(s) or class(es) *(reaction to fire)*	Attestation of conformity system(s)
Fire Stopping and Fire Sealing Products	for uses subject to regulations on reaction to fire	A1*, A2*, B*, C*	1
		A1**, A2**, B**, C**, D, E,	3
		(A1 to E) *** , F	4

System 1: See Directive 89/106/EEC Annex III.2.(i), without audit-testing of samples
System 3: See Directive 89/106/EEC Annex III.2.(ii), Second possibility
System 4: See Directive 89/106/EEC Annex III.2.(ii), Third possibility

* Products/materials for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material)

** Products/materials not covered by footnote (*)

*** Products/materials that do not require to be tested for reaction to fire (e.g. products/materials of class A1 according to Commission Decision 96/603/EC, as amended)

The systems of attestation of conformity referred to above are defined as follows:

System 1: Certification of the conformity of the product by a notified 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 notified body:
   (3) initial type-testing of the product;
   (4) initial inspection of factory and of factory production control;
   (5) continue surveillance, assessment and approval of factory production control.

System 3: Declaration of conformity of the product by the manufacturer on the basis of:

(a) Tasks for the manufacturer:
   Factory production control;

(b) Tasks for the notified body:
   Initial type-testing of the product.

[5] Official Journal of the European Communities L178/52 of 14/7/1999

System 4: Declaration of conformity of the product by the manufacturer:

Tasks for the manufacturer:

(1) Initial type-testing of the product;
(2) Factory production control.

NOTE In any case (also for system 1), the manufacturer has to make a declaration of conformity.

3.2 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 Table 3 and 3.2.1.1 to 3.2.1.6.

Table 3 - Control plan for the manufacturer;

Nr	Subject/type of control	Test or control method	Criteria, if any	Minimum number of specimens [6]	Minimum frequency of control [6]
Factory production control (FPC)					
1	Quality management (system)	3.2.1.1 to 3.2.1.6			
2	Characteristics of the product	See the relevant other parts of this ETAG			

3.2.1.1 General

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, incl. records of results performed in accordance with the test plan. This production control system shall ensure that the product is in conformity with the European Technical Approval (ETA).

Manufacturers having a quality management system which complies with EN ISO 9001 and which includes all relevant requirements of the ETA are recognised to satisfy the FPC requirements of the Directive.

3.2.1.2 Personnel and equipment

The personnel involved in the production process shall be identified, sufficiently qualified and trained to operate and maintain the production equipment. Machinery and equipment shall be regularly maintained and this shall be documented. All processes and procedures of production shall be recorded at regular intervals.

3.2.1.3 Traceability of processes

The manufacturer shall maintain a traceable documentation of the production process from purchasing or delivery of raw or basic raw materials up to the storage and delivery of finished products.

3.2.1.4 Non-conforming products

Products that do not comply with requirements as specified in the ETA shall be separated from the conforming products and marked as such. The manufacturer shall register non-compliant production and action(s) taken to prevent further non-conformities. External complaints shall also be documented, as well as actions taken.

3.2.1.5 Materials/components in products/kits

Where the manufacturer buys in products as a component of a product or kit he shall ensure that the characteristics of materials/components comply with the specification.

3.2.1.6 Control of monitoring and measuring devices

Where necessary, measuring equipment shall be

---

6 For details see the relevant other parts of this ETAG

- calibrated or verified at specific intervals, or prior to use, against measurement standards traceable to international or national measurement standards; where no standards exists, the basis used for calibration shall be recorded;
- be adjusted or re-adjusted as necessary;
- be identified to enable calibration standard to be determined;

When the equipment is found not to conform to requirements the validity of previous measuring results shall be assessed and recorded. Appropriate action shall be taken on the equipment and any product affected.

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 fire sealing products are laid down in Table 4.

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

Nr	Subject/type of control	Test or control method	Criteria, if any	Minimum number of specimens	Minimum frequency of control
Initial type-testing of the product (ITT)					
See 3.2.2.1, 3.2.2.2 and the relevant other parts of this ETAG					
Initial inspection of factory and factory production control (FPC)					
See 3.2.2.1, 3.2.2.2, Table 3 and Annex A					
Continuing surveillance, judgment and assessment of factory production control (FPC)					
See 3.2.2.1, 3.2.2.2, Table 3 and Annex A					

3.2.2.1 For resistance to fire

For the initial type testing of the product (see Annex III.1.a of the CPD) the tasks for the approved body will be limited to the following characteristics, where relevant:

- Resistance to fire
- Mechanical resistance and stability
- Adhesion
- Resistance to impact/movement
- Release of dangerous substances

Approval tests will have been conducted by the approval body or under its responsibility (which may include a proportion conducted by an indicated laboratory or by the manufacturer, witnessed by the approval body) in accordance with section 2.4 of this ETAG, unless the ETA-holder has opted to make use of the possibility not to declare the product's performance (NPD) [7]. The approval body will have assessed the results of these tests in accordance with section 2.4 of this ETAG, as part of the ETA issuing procedure.

These tests should be used for the purposes of Initial Type Testing.

System 1:
This work should be validated by the approved body for certificate of conformity purposes.

For the initial inspection of the factory and of the factory production control (see Annex III.1.f) of the CPD), and for the continuing surveillance, judgement and assessment of the factory production control (see Annex III.1 g) of the CPD), parameters related to the following characteristics shall be of interest to the approved body, where relevant:

- Resistance to fire
- Mechanical resistance and stability
- Adhesion
- Resistance to impact/movement

It is recommended to conduct surveillance inspections at least twice per year.

---

7 NPD not permitted for resistance to fire

3.2.2.2 Uses subject to reaction to fire regulations

For fire stopping and fire sealing products under systems 1 and 3, regarding the initial type testing of the product [see Annex III.1.a) of the CPD], the task for the approved laboratory will be limited to the assessment of the reaction to fire class, as indicated in the Commission Decision 94/611/EC.

For fire stopping and fire sealing products under system 1, for the initial inspection of the factory and of the factory production control [see Annex III.1.f) of the CPD], and for the continuing surveillance, assessment and approval of the factory production control [see Annex III.1.g) of the Construction Products Directive], parameters related to the reaction to fire class, as indicated in the Commission Decision 94/611/EC shall be of the interest of the approved body.

It is recommended to conduct surveillance inspections at least twice per year.

3.2.3 Special methods of control and testing used for the evaluation

See the relevant other parts of this ETAG.

3.3 CE marking and accompanying information

According to Council Directive 93/68/EEC[8] the CE marking consists of the letters "CE" in the form laid down in the Directive, followed by the identification number of the notified certification body, where applicable. For products subject to Council Directive 89/106/EEC the identification number of the notified certification body shall be given.

The CE marking of fire stopping and fire sealing products shall be accompanied by the following information:

- the name and address of the producer or the authorised representative established in the EEA,
- 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,
- number of the ETAG used
- Relevant performance characteristics (see NOTES 1 to 3 below)
- Intended use, use category as relevant

NOTE 1 If the ETA provides all the information regarding the performance characteristics, then reference to the ETA is sufficient.

NOTE 2 If the ETA covers more than one type of a Fire Stopping and Fire Sealing Product, and the type designation provides all the information regarding the performance characteristics, then reference to the ETA and the relevant type is sufficient.

NOTE 3 Only when the above two options do not provide all the necessary information regarding the mandated performance characteristics (Table 1), then additional information regarding the performance characteristics needs to accompany the CE marking.

[8] Official Journal of the European Communities L 220 of 30.8.1993

Example of CE marking and accompanying information:

CE	"CE" marking
1234	Identification number of notified certification body
Any Company Street 1, City, Country	Name and address of the producer or its authorised representative established in the EEA
04	Two last digits of year of affixing CE marking
1234-CPD-0321	Number of EC certificate of conformity
ETA-07/1234	ETA number
ETAG XXX – Part 1 and XY	ETAG number
YYY use category	Designation of the product (YYY), 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

The approval body shall check that the manufacturer takes suitable precautions to limit the risk of damage or deterioration during transport and storage.

Specific requirements are given in the relevant other parts of this ETA Guideline.

4.3 Installation of the product in the works

Installation of the Fire Stopping and Fire Sealing Product shall be practicable under normal site conditions and is assumed to be performed by adequately trained installers.

The manufacturer shall provide an Installation Guide for his product. Attention shall be drawn, in the ETA, to any particular precautions necessary when installing the product, taking account of the degree of training of installers.

The Fire Stopping and Fire Sealing Product shall be assessed on the assumption that the element to which it is attached or the assembly into which it is inserted in the works allows for correct fixing and does not apply excessive stress, in a manner for which the product was not designed. Such stress could arise, for example, due to thermal movement or structural settlement. The sub-parts of this ETAG will give guidance where possible but, ultimately, it is for the user to ensure that the product characteristics set out in the ETA can be realised in particular installations.

Specific aspects for various products are given in the relevant other parts of this ETA Guideline.

4.4 Use, maintenance, repair

The assessment of the fitness for use is based on the assumption that damage, for example that caused by impact, is repaired. It is further assumed that replacement of components in Fire Stopping and Fire Sealing Product during maintenance will be undertaken using materials covered by the ETA.

Specific requirements are given in the relevant other parts of this ETA Guideline.

4.5 Components in kits

With an interchange of a component of a Fire Stopping and Fire Sealing Product, it shall be ensured that the new component does not have a negative influence on the performance level and/or the Working life of that product.

4.6 Auxiliary components

In many cases it is necessary to include auxiliary components, such as fixings, adhesives etc. in an assembled system, for the purpose of testing a particular manufacturer's Fire Stopping and Fire Sealing Product. This is particularly relevant in tests to determine resistance to fire, where most products cannot be tested in isolation.

The results of such tests will only be valid for the product in service, if it is used with auxiliary components having the same performance characteristics. It is therefore crucial that the auxiliary components are clearly specified as such in the ETA.

This can be achieved in two ways: by a specific or generic reference.

A 'specific' reference means a reference to a particular manufacturer's product by name, type number etc.

A 'generic' reference means a reference to a standard or other specification that completely defines that product. It is for the Approval Body to determine which procedure is to be used in order to ensure that correct auxiliary components can be fully described. It is then the responsibility of the user/installer to ensure that the correct auxiliary components are obtained and used in the Works.

The inclusion, in an ETA, of a reference to auxiliary components, is not to be taken as any guarantee or assurance of the component's durability or ongoing consistency of production.

4.7 Biological attack

In rare cases, deterioration of the fire stopping and fire sealing products may occur due to biological attack, i.e. mould growth on the products and/or the products being subject to deterioration due to insects or mammals infestation. This ETA-Guideline does not foresee product assessment for resistance to biological attack, but where approval bodies expect biological attack to be of particular importance for specific products, additional, case-by-case assessment should take place (see 2.4.13.1.2).

Moulds and other fungi that may damage products require warm (10°C to 35°C), humid conditions (RH > 70%), and a suitable food source. Mould growth is encouraged by dark conditions and lack of air movement. Design solutions should prevent the possibility of mould growth by ensuring that areas where these products are used can be ventilated sufficiently. Users should use the ventilation possibilities offered.

Proper water tightness of the building envelope, using appropriate design principles and details are essential. During the exposed and partially enclosed phases of construction, to minimize the potential for mould growth, it is important to minimize the risk of water damage and wet surfaces due to external factors such as rain, snow, flooding, and high relative humidity. During construction, the following should be considered to minimize the potential for mould growth: minimizing the exposure of interior building products to exterior conditions; protecting stored materials from moisture; minimizing moisture accumulation within the building; prevent spillage of water within the building; maintaining the integrity of the building envelope components through ongoing monitoring and inspections; achieving balance control of thermal comfort and relative humidity in the building; checking all material deliveries to validate that components are dry and clean; reject wet or mouldy materials, and monitoring installations to ensure they remain clean and dry (including the HVAC systems).

In addition, where animals (insects, mammals) might attack these products, design solutions should prevent animal access to places where the products have been used and habitable voids that might harbour animals should be either avoided or sealed.

5 IDENTIFICATION OF THE CONSTRUCTION PRODUCT

5.1 Means of identification

5.1.1 General

The product which is the subject of the technical approval shall be identified by (either individually or in combination):

- Testing of product characteristics as laid down in the relevant other parts of this ETA Guideline.
- Fingerprinting.
- Formulation.
- Manufacturing process parameters.
- Calculations, detailing, drawings

5.1.2 Components in kits

For products supplied as kits, the ETA-holder has the following options regarding the specification of components and these options will have been taken into account by the approval body issuing the ETA:

The incorporation of **specific components;** that is, components from a particular supplier that have been accepted by the approval body on the basis of their performance in the application.

The incorporation of **generic components;** that is, components that have been accepted by the Approval Body on the basis of conformity to a relevant standard that fully covers the product in the application.

A kit could include *specific* **and**/**or** *generic* types of specifications for components. Furthermore, it is likely that during the lifetime of an ETA, the holder will wish to change the specifications and/or supplier of some components.

The European Technical Approval is issued for the kit on the basis of agreed data and information, deposited with the issuing Approval Body, which identifies the kit and its components that has been assessed and judged. Changes to the kit, it components or production process, which could result in this deposited data and information being incorrect, should be notified to the Approval Body before the changes are introduced. The Approval Body 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. Where a component has been defined in terms of a specific manufacturer's product or where a generic specification does not fully cover the fitness of a component for use in a Fire Protective Product, any change can only be approved by the approval body issuing the ETA, on completion of additional verification as is deemed necessary.

Generally, in such cases, issuing a modified ETA will be necessary, with the consequent amendment of the instructions to the approved body.

Where a component of a Fire Stopping and Fire Sealing Product is specified generically, e.g. by reference to a standard, and the approval body has confirmed, in the ETA the full adequacy of that specification to prove the fitness for use of the component in the Fire Protective Product, then a change of supplier will be acceptable.

The approved body checks the documentation as deemed necessary by the approval body issuing the ETA. In case of doubt reference shall be made to the approval body.

With an interchange of a component of Fire Stopping and Fire Sealing Product, it shall be ensured that the new component does not have a negative influence on the performance level or the life of that product.

5.2 Product characteristics which are relevant for identification checking

See the relevant other parts of this ETA Guideline.

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 the specific parts of this ETAG.

7 REFERENCE DOCUMENTS

7.1 General

This ETA-Guideline 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.

EOTA Technical Reports go into detail in some aspects and as such are not part of the ETAG but express the common understanding of existing knowledge and experience of the EOTA-bodies at that moment. When knowledge and experience is developing, especially through approval work, these reports can be amended and supplemented.

7.2 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

Commission Decision 1999/454/EC Commission Decision of 22 June 1999 on the procedure for attesting the conformity of construction products pursuant to Article 20(2) of Council Directive 89/106/EEC as regards fire stopping, fire sealing and fire protective products

Commission Decision 2001/596/EC Commission Decision of 8 January 2001 amending Decisions 95/467/EC, 96/578/EC, 96/580/EC, 97/176,EC, 97/462/EC, 97/556/EC, 97/740/EC, 97/808/EC, 98/213/EC, 98/214/EC, 98/279/EC, 98/436/EC, 98/437/EC, 98/599/EC, 98/600/EC, 98/601/EC, 1999/89/EC, 1999/90/EC, 1999/91/EC, 1999/454/EC, 1999/469/EC, 1999/470/EC, 1999/471/EC, 1999/472/EC, 2000/245/EC, 2000/273/EC and 2000/447/EC on the procedure for attesting the conformity of certain construction products pursuant to Article 20 of Council Directive 89/106/EEC

7.3 Test methods and classification standards

EN 12086	Thermal insulating materials for building application - Determination of water vapour transmission properties
EN 12524	Building materials and products – Hygrothermal properties – Tabulated design values
EN 12664	Building materials – Determination of thermal resistance – dry and moist products with medium and low thermal resistance
EN 12667	Building materials – Determination of thermal resistance – dry and moist products with high and medium thermal resistance
EN 12939	Building materials - Determination of thermal resistance - thick products of high and medium thermal resistance
EN 13501-1	Fire classification of construction products and building elements - Classification using test data from reaction to fire tests
EN 13501-2	Fire classification of construction products and building elements Part 2: Classification using data from fire resistance tests, excluding ventilation services
EN 20140-10	Acoustics; Measurement of sound insulation in buildings and of building elements – Part 10: Laboratory measurement of airborne sound insulation of small building elements
EN ISO 140-3	Acoustics; Measurement of sound insulation in buildings and of building elements – Part 3: Laboratory measurement of airborne sound insulation
EN ISO 140-6	Acoustics; Measurement of sound insulation in buildings and of building elements – Part 6: Laboratory measurement of Impact sound insulation of floors
EN ISO 717	Acoustics - Rating of sound insulation of buildings and of building elements Part 1: Airborne sound insulation Part 2: Impact sound insulation
EN ISO 6946	Building components and building elements – Thermal resistance and thermal transmittance – Calculation method
EN ISO 8990	Thermal insulation - Determination of steady-state thermal transmission properties - Calibrated and guarded hot box
EN ISO 10211	Thermal bridges in building construction – Heat flows and surface temperatures Part 1: General calculation methods Part 2: Linear thermal bridges
EN ISO 12572	Building materials – Determination of water vapour transmission properties
EN ISO 14683	Thermal bridges in building construction - Linear thermal transmittance - Simplified methods and default values

7.4 Others

EN ISO 9001	Quality management systems – Requirements

ANNEX A

RECOMMENDED CHECKLIST FOR INITIAL INSPECTION OF FACTORY, FACTORY PRODUCTION CONTROL AND THE CONTINUING SURVEILLANCE OF FACTORY PRODUCTION CONTROL

A.1 General

The purpose of this checklist is primarily to assist those involved in the implementation of the technical specification in the sector groups. The checklist is a recommendation for use by the notified bodies and not legally binding. It complies with the provisions of the CPD and of Guidance Papers 'B' and 'K'. The checklist is intended for initial inspection and the continuing surveillance only.

A.2 Initial inspection of the factory and factory production control (FPC)

The initial inspection of the factory provides for the identification and documentation of the kind and manner of the manufacturing process and factory production control of the products. This is to enable the notified body/inspection body to assess the compliance with the provisions of the technical specification on the one hand and to provide a baseline to identify possible changes that may occur during surveillance.

A.3 Surveillance of factory production control (FPC)

The surveillance of the manufacturing process includes checking the documentation of the factory production control to ensure continuous compliance with the provisions of the technical specification, and the identification of changes by comparing data obtained during the initial inspection or during the latest inspection.

A.4 Examples for questions to be considered

01	Which provisions are included in the control plan regarding the Initial Type Testing? Could the Approval Tests be used as Initial Type Tests or are further tests necessary?
02	Does the ETA-holder apply a quality management system related to the technical specification and if so, is that proved by a valid certificate and by whom? Does the factory production control for the products to be certified form part of the quality management system?
03	Does the ETA-holder have direct control of the appropriate machinery for the production of the products to be certified, or are key elements of the production with respect to the essential characteristics subcontracted to others on or off the site?
04	Is the maintenance of machinery and measuring equipment carried out properly, regularly, and is this documented and is the documentation up to date?
05	Are the personnel involved in the production sufficiently qualified and trained to operate and maintain the production equipment? Have the personnel involved in the production been identified?
06	Are all processes and procedures of the production recorded at regular intervals or continuously (automatically)? How is the documentation organised?
07	Has traceability of kit components and constituents been assured? Is an inspection of the incoming material carried out, and if yes, how and at what intervals?
08	Are the manner, extent and frequency of factory production control in accordance with the provisions of the ETA and the documented system? What are the test methods and equipment used? Have any changes been made concerning test methods and/or testing equipment? If so, have appropriate comparable measurements been performed and documented? Is the testing equipment correctly maintained and calibrated on a continuous basis to ensure consistent accuracy of the tests performed during factory production control and its surveillance?