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ETAG 022

GUIDELINE FOR EUROPEAN TECHNICAL APPROVAL of

Watertight covering kits for wet room floors and or walls

Part 1 Liquid applied coverings with or without wearing surface

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(Note: this date will be replaced by month and year of EC endorsement of ETAG part)

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 authorized 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 harmonized 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 the Guideline.

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1 SCOPE OF THE ETAG

1.1. Definition of the construction product

A "kit" is a special form of a "construction product" in the sense of the CPD. It consists of several "components" which are

- Placed on the market with a common CE marking,
- Assembled on site, and
- Thus become an "assembled system" (to be) installed in the construction works.

Individual components of a kit may be separately available on the market. Such a component may itself, as a construction product in the sense of the CPD, bear the CE marking on its own right on the basis of a product hEN or ETA. Nevertheless, it may need to be assessed again as component of the kit.

The Guideline covers watertight covering kits for interior wet room floors and/or walls. The watertight covering is placed on the inner surface of the wet room floor or wall or beneath the floor screed or wall render, e.g. underneath ceramic tiles, which serve as wearing surface. The covering can also serve as both watertight layer and wearing surface. See also Commission Guidance paper C on kits and systems.

This part 1 of the Guideline covers kits, which can be supplied as single- or multi component liquid waterproofing membranes with possible associated adhesives, primers etc and jointless coverings such as paint systems, glass fibre reinforced polyester, polyurethane or epoxy.

The kits can be with or without a wearing surface.

Subsequent parts of the Guideline cover kits, which can be supplied as:

- Flexible sheets. The sheets can be in the form of resilient coverings, e.g. bituminous, elastomeric or plastic sheets (Part 2).
- Kits of inherently watertight boards including jointing bands (Part 3).

The kits include any associated components specified by the applicant such as reinforcement nets, mats or fibres used in the whole system or partially in the corners and penetrations, and welding bands and sealants for the joints and possible reinforcements for penetrations, gullies etc. If a wearing surface of tiles is foreseen the tile adhesive(s) shall be specified and subject to relevant tests.

Pipes and floor gullies themselves are not part of the kit.

Ceramic tiles and their jointing material, e.g. grouts are not part of the kit.

Sealing of penetrations can be executed with the actual watertight covering product, separate sealants, sealing strips or collars acting together with the waterproofing product.

In normal use conditions, the kit shall at least resist stresses caused by movements of construction elements acting as substrate and resist the influence of water, temperature variations, and alkalinity of concrete and ceramic tile mortars.

The exact composition of watertight coverings may vary with the type of use and with the type of substrate and wearing layer with which the covering must perform in a hygrothermally, mechanically and chemically satisfactory manner.

The components of the kit are manufactured in a factory and are assembled on site as a waterproofing system.

This Guideline does not cover swimming pools and industrial processes.

1.2 Intended use of the construction product

1.2.1 General

The intended uses of the coverings kits are:

Indoor applications, where the liquid applied kit is not exposed to temperatures (i.e. temperature of structure) below 5 ºC and above 40 ºC, in the following uses:

Floor and/or wall surfaces with only occasional direct exposure to water, e.g. at a good distance from shower or bathtub.

Floors and/or walls in shower areas or around bathtubs used for a few showers daily, e.g. in ordinary dwellings, multi-family houses and hotels

Floor and/or wall surfaces with exposure to water more frequent or of longer duration than normally anticipated in dwellings, e.g. public wet rooms, schools and sport facilities.

The various intended uses indicated above do not lead to different assessment criteria and the ETA will cover all intended uses. However, the use may be limited due to national legislation in the Member States.

1.2.2 Substrates

The actions on the assembled watertight covering system, which influence a durable watertight function, depend also on the function and type of substrate. The following table is not an exhaustive list of tests but only indicate the tests related to the type of substrate.

In general the substrates fall in different types:

Table 1: Different types of substrates and the corresponding system tests

	Substrates (usually "rigid"), homogenous but susceptible to cracking	**Substrates (usually "flexible") not susceptible to cracking but with jointing**[1]	**Substrates (usually "rigid") susceptible to cracking and with jointing**[1]
Moisture sensitive substrates	**Examples:** Gypsum blocks **Tests:** 2.4.4.2 Assessment Category 1, 2, 3 2.4.4.6, Assessment Category 1 or 2 with annex G 2.4.6.1, Assessment Category 1 or 2	**Examples:** Gypsum boards, Wood based materials **Tests:** 2.4.4.5, Assessment Category 1 or 2 2.4.4.6, Assessment Category 1 or 2 with annex A and F, or E 2.4.6.1, Assessment Category 1 or 2	None known
Non moisture sensitive substrates	**Examples:** In-situ concrete, masonry **Tests:** 2.4.4.2 Assessment Category 1, 2, 3 2.4.4.6, Assessment Category 1 or 2 with annex G 2.4.6.1 Assessment Category 1 or 2	**Examples:** Calcium silicate boards, fibre cement boards **Tests:** 2.4.4.5, Assessment Category 1 or 2 2.4.4.6, Assessment Category 1 or 2 with annex A and F, or E 2.4.6.1 Assessment Category 1 or 2	**Examples:** Concrete or aerated concrete elements **Tests:** 2.4.4.2 Assessment Category 1, 2, 3 2.4.4.5, Assessment Category 1 or 2 2.4.4.6, Assessment Category 1 or 2 with annex G 2.4.6.1 Assessment Category 1 or 2

The decision on whether to apply assessment category 1, 2 or 3 in 2.4.4.2 or assessment category 1 or 2 in 2.4.4.5, 2.4.4.6 and 2.4.6.1 depends on the national requirements. These can apply to the strength and stability of the substrate and to the security for the waterproofing system dependent on the nature of the substrate (moisture sensitive/not moisture sensitive).

[1] For substrates with un-reinforced filled jointing, the crack bridging ability test has to be performed according to 2.4.4.2

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 watertight covering kits for the intended use of 25 years, provided that the watertight coverings kit is subject to appropriate installation, use and maintenance (see 4). These provisions are based upon the current state of art and the available knowledge and experience.

"Assumed working life" means that it is expected 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[2].

The indications given as to the working life of a watertight covering kit cannot be interpreted as a guarantee given by the producer or the approval body. They should be regarded only as a means for choosing the appropriate criteria for watertight covering kits 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 ETAG

1.4.2.1 Wet room

Wet rooms are rooms where floor and possibly the walls are frequently exposed to water, e.g. bathrooms, sculleries or washing rooms.

1.4.2.2 Liquid applied watertight covering kit

A particular combination of a defined set of components (kit) to be installed in the works by application and/or incorporation and/or assembly of its components in conformity with particular design methods and/or particular execution procedures. The liquid applied watertight covering is usually a paste-like material or a combination of materials that can be poured, spread or sprayed. It is applied to the substrate by brush, roller or similar suitable applicator.

1.4.2.3 Manufacturer's technical dossier (MTD)

A document, or collection of documents, consisting of the Factory Production Control (setting out the specific quality practices, resources and sequence of activities), the design rules, the application methods (including procedures for quality control on site), build-up/composition of the kit, characteristics of a possible wearing surface and the directions concerning maintenance and repair of the assembled system, relevant to a particular product or a range of products.
Confidential information may be given in a confidential part of the MTD.

1.4.2.4 Batch

A limited amount of materials made in a single production process e.g. one mix of a waterproofing component.

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[2] 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 of this ETAG. Therefore, it cannot be excluded that in these cases in which the real working life of the product may also be shorter than the assumed working life.

1.4.2.5 Production sequence

Continuous period of time in which a single component is manufactured, e.g. the time in which 8 batches are produced.

1.4.2.6 Wearing surface

A protective layer applied in liquid or solid form used over a watertight covering in order to protect it from mechanical wear and allowing pedestrian access

1.4.2.7 Watertight

A property related to the characteristics of the assembled system meaning that no liquid water shall penetrate after exposure to water.

1.4.2.8 Tile

A rigid surface layer meant for protection of the substrate and/or for decorative purposes e.g. ceramic tiles in accordance with EN 14411.

1.4.2.9 Flexible sheet

A sheet in e.g. roll form forming a resilient watertight covering, e.g. bituminous, elastomeric or plastic sheet. The sheet can also constitute the wearing surface.

1.4.2.10 Paint system

Multi-layer watertight, decorative, possibly reinforced kit for walls with thin coats of paint applied by brush, roller or similar suitable applicator requiring increased maintenance due to a shorter assumed working life. Due to the nature and assumed working life of the kit special provisions apply for the assessment of these kits, which are covered by annex I of this part of the ETAG.

1.4.2.11 Watertight boards

Boards which in themselves or due to a factory applied surface treatment are inherently watertight.

1.4.2.12 Crack

A crack in the sense of this guideline is an unpredictable opening/gap in the substrate, e.g. cracks caused by shrinking of concrete. Cracks may occur in the material used to fill joints between elements, e.g. in mortar

1.4.2.13 Jointing

Jointing is a deliberate act of connecting two or more elements forming the substrate. Jointing can be unfilled, e.g. between two gypsum boards or can be filled e.g. with mortar between two concrete elements. Jointing in the substrate can be reinforced.

1.4.2.14 Joint

A joint is a discontinuity in the substrate. In the sense of this ETAG the phrase “joint” does not include movement joints, such as shrinkage joints, expansion joints and structural joints or mortar joints in masonry

1.4.2.15 Moisture sensitive

In the sense of this ETAG it means that the substrate will deteriorate under the continuous influence of moisture

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 wholly or partially applicable, or a particular aspect of a product and/or intended use to be assessed is not wholly or 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 apply with regard to the deviation or aspect concerned.

2 ASSESSMENT OF FITNESS FOR USE AND IDENTIFICATION

2.1 Meaning of "fitness for use"

"Fitness for use" or "fitness for the intended use" of a construction product means that the product has such characteristics that the works in which it is to be incorporated, assembled, applied or installed, can, if properly designed and built,

- Satisfy the Essential Requirements when and where such works are subject to regulations containing such requirements (CPD Art. 2.1) and
- 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 (CPD Annex I, Preamble).

In the case of kits, "fitness for (the intended) use" refers to

a) the assembled system (it must have "such characteristics that the works in which it is to be incorporated, assembled, applied or installed, can, if properly designed and built, satisfy the Essential Requirements when and where such works are subject to regulations containing such requirements")

b) The components of the assembled system, e.g. tiles and grouts (each of the components, including those which are not included in the kit, if any, must have such characteristics that the assembled system can, if properly assembled, be fit for the intended use in the sense of clause a above).

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 assembled system which are relevant to its fitness for use (and for which the NPD option is not applicable);
- The establishment of methods for the verification and assessment of the characteristics of the assembled system and the expression of the respective performances;
- The identification of 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 characteristics for which limit values (threshold values) have to be respected for technical reasons.

With regard to the determined legislation in the member states the assessment of the kit has to be done for the product- and/ or the system-characteristics to fulfil requirements for the performance of the product depending on the intended use of the product and the kind of substrate and aspects of security (consequences of water permeability for the works e.g. depending on moisture sensitive or not moisture sensitive substrates) (see para 1.2.2)
Not every characteristic has to be proven if it is not required in at least one of the member states (npd option). For fundamental characteristics for which limiting values have to be respected for technical reasons the npd option is not possible.

2.3 Relationship of requirements to the characteristics of the system and its components and methods of verification and assessment

The system and component characteristics, methods of verification and assessment criteria, which are relevant for the fitness of watertight coverings kits for the intended use(s) referred to in 1.2 are given in Table 2.

Table 2. Characteristics of the assembled system and methods of verification and assessment

Number	Product characteristic	Option "No Performance Determined"	Method of verification and assessment	Expression of test result *(value, class, NPD, criterion, etc)*
(1)	(2)	(3)	(4)	(5)
Essential Requirement 1 Mechanical resistance and stability				
	Not relevant			
Essential Requirement 2 Safety in case of fire				
1	Reaction to fire	Yes	2.4.1	Euroclass E – F or E_{fl} – F_{fl}
Essential Requirement 3 Hygiene, health and environment				
2	Release of dangerous substances	Yes	2.4.2	Statement by applicant
3	Vapour permeability	Yes	2.4.3	Declared value
4	Moisture resistance		2.4.4	
	Water tightness	No	2.4.4.1	Pass/fail (No penetration of water)
	Crack bridging ability**)	Substrates susceptible to cracks: No Substrates not susceptible to cracks: Yes	2.4.4.2	Pass/fail Assessment category 1 - 3
	Bond strength	No	2.4.4.3	Pass/fail Assessment category 1 (> 0.3 MPa) Assessment category 2 (≥ 0.5 MPa)
	Scratching resistance	Yes	2.4.4.4	Pass/fail (No visual penetration)
	Joint bridging ability**)	Substrates with joints: No Substrates without joints: Yes	2.4.4.5	Pass/fail Assessment category 1 or assessment category 2
	Water tightness around penetrations*)**)	No	2.4.4.6	Pass/fail Assessment category 1 or assessment category 2
Essential Requirement 4 Safety in use				
5	Slipperiness	Yes	2.4.5	Declared value
Essential Requirement 5 Protection against noise				
	Not relevant			
Essential Requirement 6 Energy economy and heat retention				
	Not relevant			
General aspects relating to fitness for use [1]				
6	Durability		2.4.6	
	Resistance to temperature **)	No	2.4.6.1	Pass/fail Assessment category 1 (> 0.3 MPa or ≥0.5 MPa depending on bond strength category) Assessment category 2 (> 0.3 MPa or ≥0.5 MPa depending on bond strength category and crack bridging ability acc. to 2.4.4.2.2)

	Resistance to water	No	2.4.6.2	Pass/fail Assessment category 1 (> 0.3 MPa) Assessment category 2 (≥ 0.5 MPa)
	Resistance to alkalinity	No	2.4.6.3	Pass/fail Assessment category 1 (> 0.3 MPa) Assessment category 2 (≥ 0.5 MPa)
	Resistance to chemical agents	Yes	2.4.6.4	Not relevant
	Resistance to biological agents	Yes	2.4.6.5	Not relevant
	Resistance to mechanical wear	Yes	2.4.6.6	Declared value
7	Serviceability		2.4.7	
	Cleanability	Yes	2.4.7.1	Declared value
	Reparability	Yes	2.4.7.2	Statement
	Thickness	No	2.4.7.3	Declared value
	Applicability	No	2.4.7.4	Declaration
1) Aspects of durability and economy of the works (see CPD Annex 1, sentence 1 and 2) **) This characteristic also relates to the durability of the kit* ***) The relevance of this test depends on the substrate covered by the intended use, see paragraph 1.2.2*				

Adaptation of the general test regime to a specified waterproofing system on the basis of national requirements

Under consideration of national requirements for the evaluation of the watertight covering kit (required characteristics and assessment categories depending on the kind of substrate, see 1.2.2) and on the basis of the general test regime above the test regime for the provided use and application conditions for a waterproofing system which shall be approved has to be specified. The characteristics linked with the npd option "NO" have to be proven in any case. The characteristics linked with the npd option "Yes" have to be proven only if there is a requirement in the member state to which the product shall be marketed.

It should be noted that some member states have prescriptive requirements for certain characteristics given in the ETA, e.g. for relative humidity in buildings and building elements or water vapour resistance. This should be investigated by the applicant and the approval body in relation to the intended market.

2.4 Characteristics of the assembled system, which are relevant for the fitness for use

2.4.1 Reaction to fire

2.4.1.1 Method of verification

Where required, the product shall be tested and classified in accordance with EN 13501-1:2002, Table 1.
When tested according to EN ISO 11925-2, the products shall be tested under conditions of surface flame attack.

NOTE It is currently considered that the Euroclasses Classification system at Classes D and above requires investigation to determine its appropriateness to the products covered by this document (the SBI test may be inappropriate for products covered by the standard). Pending results of such an investigation and discussions in the Fire Expert Group, products covered by this document are tested according to EN ISO 11925-2.

2.4.1.2 Method of assessing and judging

The part of the works or assembled system in which the watertight covering kit is intended to be incorporated, installed or applied shall be classified according to the appropriate Part of EN 13501-1:2002.

2.4.2 Release of dangerous substances

2.4.2.1 Method of verification

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

Compliance with the applicable regulations
If the product/kit 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).

2.4.2.2 Method of assessing and judging

The 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 on 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 not covered by the ETA, the NPD option (no performance determined) is applicable

2.4.3 Vapour permeability

2.4.3.1 Method of verification

The test is carried out in accordance with EN/ISO 12572 on a sample made of gypsum plasterboard with approximately 12,5 mm thickness and a density of approximately 720 kg/m^3. The test shall be performed as described in annex E of the standard and the substrate shall be tested in accordance with annex A. The tests shall be carried out with climatic conditions as described for option C in chapter 7 of the standard.

The application of the watertight covering kit shall be in accordance with the manufacturer's instructions – including primer etc. if so required.

If a primer is intended to have a significant additional function in limiting the water vapour permeability, testing shall be performed on the system including the primer, and it must be ensured by the manufacturer's installation procedures that it is possible to obtain a continuous layer of the primer on site, see para. 4.3. Otherwise the test of the water vapour permeability shall be carried out without the primer.

For kits that have been tested as basis for an ETA according to ETAG 005, further testing of this characteristic may not be necessary.

2.4.3.2 Method of assessing and judging

Declared value

2.4.4 Moisture resistance

2.4.4.1 Water tightness

2.4.4.1.1 Method of verification

The water tightness of the watertight covering kit is determined in accordance with

Paragraph A.7 in prEN 14891

The test applies for kits with or without a wearing surface, such as ceramic tiles etc. The test applies for both floor and wall applications.

Kits for whom the membrane and possible primer have been tested as basis for an ETA according to ETAG 005 and have been assessed to be watertight for other purposes can be regarded as watertight for use in wet rooms also.

2.4.4.1.2 Method of assessing and judging

Pass/fail

2.4.4.2 Crack bridging ability

2.4.4.2.1 Method of verification

The test is only carried out, when the intended use covers substrates susceptible to cracking, see para. 1.2.2. and footnote **) of table 2.

For substrates where a filled joint can be foreseen the test may also apply.

The test is carried out in accordance with the method described below:

Testing shall be carried out following the method C.2 of prEN 1062-7 with the following precisions. The substrates are reinforced concrete slabs, which are manufactured as described in chapter C.2.2 of the abovementioned standard. The watertight covering shall be applied onto three of these substrates.

Application of the waterproofing membrane

The application of the watertight covering shall take place in a strip of 150 mm over the entire length of the slab so that at the longitudinal edges 25 mm wide strips remain uncovered for observing the cracks in the substrate (surface length × width = 300 mm x 200 mm).

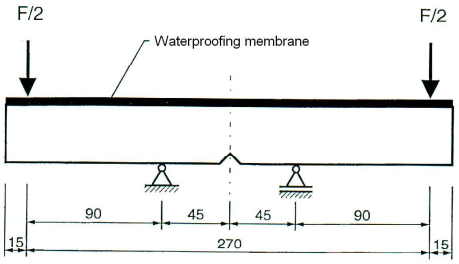
Storage of the prepared test specimen

28 days dry at standard atmosphere 23 ± 2 °C /50 ± 5 % RH.

Testing

After storage the test specimen shall be loaded in a bending test apparatus with way/distance control with the load arrangement as shown in figure 1.

Figure 1. Test set-up for generating cracks by bending of test specimen. Measurements in mm



Bending the test specimen shall be increased constantly by applying a force F until a crack appears on the uncovered sides of the concrete surface. The crack shall appear on both sides of the concrete, close to the edge of the watertight material. The velocity of the crack opening shall be 0.02 mm/min. from the point of time a crack is recognizable in the concrete (possible appearance of a light zone in the watertight material) until a crack width of 0,4 mm, 0,75 mm or 1,5 mm respectively (depending on the assessment category) is reached. The crack shall be measured – for example using a graduated magnifying glass. The crack has to be fixed. Each type of change during the following 24 h (incipient crack, tear or through crack) shall be stated in the test report.

Assessment category 1: Crack width in test: 0,4 mm

Assessment category 2: Crack width in test: 0,75 mm

Assessment category 3: Crack width in test: 1,5 mm

Kits that have been tested as basis for an ETA according to TR 0013 at a temperature of – 30 °C (± 2) and have been assessed to be have an adequate crack bridging ability for other purposes can be regarded as satisfying the requirements for use in wet rooms also. The assessment is only for the tested kit including the applied thickness.

2.4.4.2.2 Method of assessing and judging

For all assessment categories the test is passed, if 24 h after fixing the crack in the substrate no perforation or through crack (damage) has occurred in the watertight covering.

2.4.4.3 Bond strength

2.4.4.3.1 Method of verification

The bond strength of the watertight covering kit to the substrate is determined in accordance with

Paragraph A.6.2 in prEN 14891

For kits without a ceramic tile wearing surface the test is carried out without the tile and the tile adhesive, i.e. a square metal plate (50 × 50 mm) is glued with a suitable high strength adhesive, e.g. solvent free epoxy directly to the watertight covering kit. The test is performed according to prEN 14891 concerning the speed.

For kits that have been tested as basis for an ETA according to ETAG 005 or floor screeds that have been tested in accordance with EN 13813 and fulfil the requirement for class B 0.5, the test results may be used to assess the bond strength for assessment category 2 of the kit for use in wet rooms.

Other substrates may be used upon agreement if the manufacturer recommends the substrate for the watertight covering kit. To demonstrate compatibility with other optional substrates, the membrane shall be applied to the selected substrate in accordance with the initial adhesion test method (A 6.2) in prEN 14891. When a result of more or equal the threshold values according to 2.4.4.3.2 is achieved or cohesive failure occurs in the substrate, the requirement is considered satisfied.

If several tile adhesives are envisaged, then a bond strength test is carried out for each adhesive on a concrete substrate with the watertight covering. If more than one substrate is covered by the intended use, then bond strength tests are carried out on every substrate, but only with one adhesive.

2.4.4.3.2 Method of assessing and judging

Assessment category 1: The bond strength on concrete shall be higher than or equal to 0.30 MPa .

Assessment category 2: The bond strength on concrete shall be higher or equal to 0.5 MPa

2.4.4.4 Scratching resistance

2.4.4.4.1 Method of verification

The scratching resistance of the watertight covering kit is determined in accordance with annex C.

The test is only carried out on kits without an envisaged wearing surface. The test applies for both floor and wall applications.

2.4.4.4.2 Method of assessing and judging

Pass/fail

2.4.4.5 Joint bridging ability (in the mandate referred to as impermeability at sealings)

2.4.4.5.1 Method of verification

The test is only carried out when the intended use covers substrates susceptible to joint movements, see para. 1.2.2, i.e. joints in substrates that are not filled, such as between boards.

The joint bridging ability of watertight covering kit with and without wearing surface at joints subjected to movement of the substrate may be determined in one of two categories of assessment.

Assessment category 1: Judging by the approval body of the descriptions and drawings in the manufacturer's technical dossier (MTD) that sealings with the components of the kit may be established properly to fulfil the requirements on the assembled waterproofing system.

Assessment category 2: Additional to assessment category 1, a test is performed in accordance with annex B with a 2 mm gap.

2.4.4.5.2 Method of assessing and judging

Indication of assessment category.

2.4.4.6 Water tightness around penetrations

2.4.4.6.1 Method of verification

The water tightness of the watertight covering kit with and without wearing surface around penetrations, such as floor gullies; pipes and corners etc. may be determined in one of two categories of assessment.

Assessment category 1: Judging by the approval body of the descriptions and drawings in the manufacturer's technical dossier (MTD) that sealings with the components of the kit may be established properly to fulfil the requirements on the assembled waterproofing system.

Assessment category 2: Additional to assessment category 1 a test is performed for flexible substrates with joints in accordance with annex A and annex F in combination or for rigid substrates without joints in accordance with Annex G, see para 1.2.2.

Products tested according to annexes A and F for flexible substrates do not need to be further tested according to annex G to comply with the assessment criteria for rigid substrates without joints.

For kits only for use on floors, the assessment shall be carried out on the basis of test according to annex A or G depending on the substrate.

For kits only for use on walls, the assessment shall be carried out on the basis of test according to annex G or E. depending on the substrate.

2.4.4.6.2 Method of assessing and judging

Indication of assessment category

2.4.5 Slipperiness

2.4.5.1 Method of verification

This test is only relevant for the wearing surface. Verification of slip resistance of flooring materials shall be undertaken in accordance with the relevant EN-standards prepared by CEN/TC 339.

2.4.5.2 Method of assessing and judging

When this performance is determined the slip resistance of finished floorings shall be declared according to the relevant standard for the specified flooring product.

2.4.6 Durability

The following tests and assessments apply for kits with or without wearing surface as specified in the below text.

If the wearing surface is in the form of tiles and adhesive and if several tile adhesives are envisaged, then the assessments mentioned below are carried out for each adhesive on a concrete substrate with the watertight covering. This assessment will be valid for all substrates. However, if concrete is not considered to be an appropriate substrate, then an alternative can be agreed between the approval body and the applicant.

2.4.6.1 Resistance to temperature

2.4.6.1.1 Method of verification

The resistance to temperature of the watertight covering kits with or without a wearing surface may be determined in one of two categories of assessment.

Assessment category 1: According to paragraph A.6.4 in prEN 14891

Assessment category 2 (may only be applied for substrates susceptible to cracking): In addition to category 1, samples are conditioned according to paragraph A.6.4 in prEN 14891 and subsequently tested for crack bridging resistance according to paragraph 2.4.4.2 of this Guideline or for joint bridging ability according to paragraph 2.4.4.5 of this Guideline as relevant.

The test is carried out for all intended uses.

For kits without a ceramic tile wearing surface the test is carried out without the tile and the tile adhesive, i.e. the metal plate is glued with a suitable high strength adhesive, e.g. solvent free epoxy directly to the watertight covering kit.

2.4.6.1.2 Method of assessing and judging

Assessment category 1: After the test the bond strength criteria to the relevant assessment category mentioned in 2.4.4.3.2 shall be fulfilled.

Assessment category 2: In addition to assessment category 1 the requirements on crack bridging ability in 2.4.4.2.2 for the relevant assessment category or for the requirements on joint bridging ability in 2.4.4.5.2 as relevant shall be fulfilled.

2.4.6.2 Resistance to water

2.4.6.2.1 Method of verification

The resistance to water of watertight covering kits with or without a wearing surface is determined in accordance with

Paragraph A.6.3 in prEN 14891

For kits for which the watertight covering have been aged and subsequently subjected to a bond strength test as basis for an ETA according to ETAG 005, the test results can be used to assess the resistance to water of the kit for use in wet rooms.

The test is carried out for all intended uses.

For kits without a ceramic tile wearing surface the test is carried out without the tile and the tile adhesive, i.e. the metal plate is glued with a suitable high strength adhesive, e.g. solvent free epoxy directly to the watertight covering kit.

2.4.6.2.2 Method of assessing and judging

After the test the bond strength criteria to the relevant assessment category mentioned in 2.4.4.3.2 shall be fulfilled.

2.4.6.3 Resistance to alkalinity

2.4.6.3.1 Method of verification

The resistance to alkalinity of the watertight covering kit is determined in accordance with

Paragraph A.6.7 in prEN 14891

The test is carried out for all intended uses.

2.4.6.3.2 Method of assessing and judging

After the test the bond strength criteria to the relevant assessment category mentioned in 2.4.4.3.2 shall be fulfilled.

For kits without a ceramic tile wearing surface the test is carried out without the tile and the tile adhesive, i.e. the metal plate is glued with a suitable high strength adhesive, e.g. solvent free epoxy directly to the watertight covering kit.

2.4.6.4 Resistance to chemical agents

2.4.6.4.1 Method of verification

The test is not relevant

2.4.6.4.2 Method of assessing and judging

Not relevant

2.4.6.5 Resistance to biological agents

2.4.6.5.1 Method of verification

The test is not relevant

2.4.6.5.2 Method of assessing and judging

Not relevant

2.4.6.6 Resistance to mechanical wear

2.4.6.6.1 Method of verification

Only relevant for watertight covering kits without a wearing surface. The purpose of the test is to assess the resistance to wear

Verification of the resistance to mechanical wear of the possible wearing surface of the watertight covering kit shall be undertaken in accordance with the relevant EN-standards for the specified products, e.g. EN 13813, EN 660-1 and EN 660-2.

The test is carried out for all intended uses.

2.4.6.6.2 Method of assessing and judging

When this performance is determined the mechanical wear resistance of the products shall be declared according to the relevant standard for the specified flooring product.

2.4.7 Serviceability

2.4.7.1 Cleanability

2.4.7.1.1 Method of verification

Only relevant for watertight covering kits without a wearing surface.

The approval body based on experience and plausibility shall verify the information given by the manufacturer.

2.4.7.1.2 Method of assessing and judging

Statement by the approval body

2.4.7.2 Repairability

2.4.7.2.1 Method of verification

If the manufacturer claims certain provisions concerning repair of the membrane this shall be assessed as described below.

A sample of the liquid applied watertight covering kit is prepared according to article 2.4.4.3.

The sample is conditioned according to prEN 14891, section 6.3

A second layer of the liquid applied watertight covering kit is applied to the first layer according to the manufacturer’s recommendations.

The bond strength test according to 2.4.4.3 is carried out on the sample.

2.4.7.2.2 Method of assessing and judging

Statement by the approval body on the ability to perform repairs on the watertight covering kit. When a result equally to or exceeding the threshold values according to 2.4.4.3.2 is achieved or cohesive failure occurs in the substrate, the requirement is considered satisfied.

2.4.7.3 Thickness

2.4.7.3.1 Method of verification

The thickness of the watertight covering kit is determined in accordance with annex D

2.4.7.3.2 Method of assessing and judging

Declared value

2.4.7.4 Applicability

2.4.7.4.1 Method of verification

The applicability of the watertight covering kit is determined by a visual inspection, in connection with determining the thickness, see 2.4.7.3

2.4.7.4.2 Method of assessing and judging

The approval body makes a declaration of the applicability of the kit.

2.5 Components and their characteristics, which are relevant for the fitness for use

No tests on components with regard to the assessment of the fitness for use are relevant. However, certain component characteristics are used for identification purposes, see chapter 5.

3 EVALUATIONS and attestation of conformity and CE marking

3.1 Systems of conformity attestation

According to the decision 2003/655/EC, dated 2003-09-17 of the European Commission[3] the following systems of conformity attestation apply to the watertight covering kits:

Product	Intended use	Levels or classes	Attestation of conformity system
Watertight covering kits for wetroom floors and walls	For building works	-	2+

Table 3 System of attestation of conformity applicable to Watertight covering kits for wetroom floors and walls

Attestation of conformity concerning the product properties, which have an influence on the waterproofing function

System 2+:
Declaration of conformity of the product by the manufacturer on the basis of:
(See Annex III.2.(ii), first possibility, of the CPD):

(a) Tasks for the manufacturer:
- (1) Initial type–testing of the product;
- (2) Factory production control;
- (3) Testing of samples taken at the factory in accordance with a prescribed test plan.

(b) Tasks for the notified body:
- (4) Certification of factory production control on the basis of:
  - Initial inspection of factory and of factory production control;
  - Continuous surveillance, assessment and approval of factory production control.

If reaction to fire is relevant in addition, according to the decision 2003/655/EC, dated 2003-09-17 of the European Commission[1] the following systems of conformity attestation applies to watertight covering kits with regard to reaction to fire (the attestation of conformity system to be applied depends on the composition of the product):

Product(s)	Intended use(s)	Level(s) or class(es) *(reaction to fire)*	Attestation of conformity system(s)
Watertight covering kits for wet room floors and walls	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)

Table 4: Choice of the attestation of conformity system with respect to reaction to fire

[3] Official Journal of the European Communities L 231/12

Attestation of Conformity of the product properties which have an influence on the reaction to fire for products with in table 2 specified classes and footnotes:

System 1

Certification of the conformity of the product by a notified certification body on the basis of:
(See Annex III.2.(i),of the CPD without audit-testing of samples)

(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) Continuous surveillance, assessment and approval of factory production control.

System 3

Declaration of conformity of the product by the manufacturer on the basis of:
(See Annex III.2.(ii), Second possibility of the CPD)

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

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

System 4

Declaration of conformity of the product by the manufacturer on the basis of:
(Annex III.2. (ii), Third possibility of the CPD)

(a) Tasks for the manufacturer:
- (1) Initial type testing of the product;
- (2) Factory production control.

3.2 Tasks and responsibilities of manufacturer and notified bodies

In transposing the relevant systems of attestation of conformity to the approved product the approval body has to lay down the specific tasks of the manufacturer and the notified body (if relevant) in the process of attestation of conformity in control plans.
Both large and small companies produce these products and there is a wide variation in the materials and test methods used. Therefore a precise test plan can only be set up on a case-by-case basis.
In general it is not necessary to conduct tests on complete kits or applied systems. Indirect methods will normally be sufficient, e.g. control of raw materials, manufacturing processes and properties of components.

The following gives general cornerstones on how to write these control plans for the product family of this ETAG. They must be specified and filled in by the approval body for the approved product under consideration of the specified production process of the manufacturer.

It is assumed that the characteristics given in following control plans have a correlation to the properties of the products both for the water tightening function and the reaction to fire.

3.2.1 Tasks of the manufacturer (Control plan)

Table 5. Example of a control plan of the manufacturer

Type of control		**Test or control method**	**Minimum extent/frequency of control**
AoC element (acc. to CPD Annex III.1)	**Product, raw/constituent material, product component and characteristic concerned**		
Factory production control (For all systems including testing of samples in accordance with a prescribed test plan for systems 1 and 2+)	Identification of incoming materials	Depending on the nature of the materials	Every delivery
	Assembled system Reaction to fire	 2.4.1	 Once a year
	Membrane (liquid components): Viscosity Density Mixing sequence/time Curing time Dry content Ash content Infrared Spectrometry	 5.2.3.1 5.2.1.4 5.2.1.2 5.2.1.2 5.2.1.1	 Every batch Every batch Every batch Every batch Every batch Once a year Once a year
	Primer: Viscosity Density pH-value Infrared Spectrometry	 5.2.3.2 5.2.3.3 5.2.3.4 5.2.3.1	 Every batch Every batch Every batch Once a year
	Adhesive: According to the provisions for CE marking (EN 12004)		According to the provisions for CE marking (EN 12004)
	Reinforcement: Colour, thickness, weight build-up	 5.2.4	 Every production sequence/delivery
Initial type testing of the product for systems 2+ and 4*	No tests necessary when the test leading to an ETA are done on products coming from the production process which is related with the ETA	-	-
	Identification of components Vapour permeability Water tightness Bond strength	See chapter 5 2.4.3 2.4.4.1 2.4.4.3	When starting the production process or when starting a new production line

*) In case of system 4 there is no need for reaction to fire testing, see footnote *** of table 4 or class F

3.2.1.1 Factory production control (FPC)

The manufacturer shall exercise permanent internal control of production. Elements are controlling of the production process including testing of materials before during and at the end of that process. 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 (See chapter 4 MTD). This production control system shall ensure that the product is in conformity with the European Technical Approval (ETA).

Manufacturers having an FPC system which complies with EN ISO 9000 **and** which addresses the requirements of an ETA are recognised as satisfying the FPC requirements of the Directive.

3.2.1.2 Testing of samples taken at the factory

These tests refer to finished product coming out of the production process. When the requirements of the FPC are fulfilled it is not necessary to have any more tests on samples taken at the factory.

3.2.1.3 Initial Type Testing (ITT)

Approval tests will have been conducted by the approval body or under its responsibility (which may include a proportion conducted by a laboratory or by the manufacturer, witnessed by the approval body) in accordance with section 2 of this ETAG. The approval body will have assessed the results of these tests in accordance with section 2 of this ETAG, as part of the ETA issuing procedure.

These tests should be used for the purposes of Initial Type Testing[4] if they are done on samples coming from the current production process of the manufacturer which is referred to in the ETA. So further test are not necessary.
If the approval tests are done on samples e.g. of a prototype or if a new production line is started at the beginning of the of the new production process an additional ITT is necessary.

3.2.1.4 *Declaration of Conformity*

When all the criteria of the Conformity Attestation on the basis of the tasks of the manufacturer and the tasks of the notified body (Certification) are satisfied the manufacturer shall make a Declaration of Conformity and has to assign the product with the CE-mark (see Chapter 3.39)

[4] In this respect Approval Bodies shall be able to have open arrangements with relevant Notified Bodies to avoid duplication, respecting each others responsibilities.

3.2.2 Tasks of the notified body (control plan)

Table 6: Tasks of the notified body

Type of control		**Test or control method**	**Minimum extent/frequency of control**
AoC element (acc. to CPD Annex III.1)	**Product, raw/constituent material, product component and characteristic concerned**		
Initial type-testing of the product (for systems 1 and 3)	No tests necessary when the test leading to an ETA (see approval testing in chapter 2) are done on products coming from the production process which is related with the ETA	-	-
	Reaction to fire	2.4.1	When starting the production process or when starting a new production line
Initial inspection of factory and of factory production control (for systems 1 and 2+)	Inspection of the factory and the factory production control of the manufacturer as described in the MTD and the control plan	Control of devices and equipments and the documentation of the FPC	When starting the production process or when starting a new production line
Continuous surveillance, assessment and approval of the factory production control (for systems1 and 2+)	Surveillance, assessment and approval of the factory production control of the manufacturer as described in the MTD and the control plan	Control of the documentation of the FPC	Twice (once) a year

3.2.2.1 Initial Type Testing (ITT)

Approval tests will have been conducted by the approval body or under its responsibility (which may include a proportion conducted by a laboratory or by the manufacturer, witnessed by the approval body) in accordance with section 2 of this ETAG. The approval body will have assessed the results of these tests in accordance with section 2 of this ETAG, as part of the ETA issuing procedure.

These tests should be used for the purposes of Initial Type Testing[5] if they are done on samples coming from the current production process of the manufacturer, which is referred to in the ETA. So further test are not necessary.
If the approval test are done on samples e.g. of a prototype or if a new production line is started at the beginning of the of the new production process an additional ITT are necessary.

3.2.2.2 Assessment of the factory production control system - initial inspection and continuous surveillance

The Assessment of the factory production control system is the responsibility of the notified body.

[5] In this respect Approval Bodies shall be able to have open arrangements with relevant Notified Bodies to avoid duplication, respecting each others responsibilities.

The assessment must be carried out of each production unit to demonstrate that the factory production control is in conformity with the ETA and any subsidiary information. This assessment shall be based on an initial inspection of the factory.
Subsequently continuous surveillance of factory production control is necessary to ensure continuing conformity with the ETA.

It is recommended that surveillance inspections be conducted once a year but if necessary i.e. if the results of the first inspection is unsatisfactory it may be required to be done more often e.g. twice per year.

3.2.2.3 *Certification of product or Factory Production Control*

When the criteria of the assessment of the factory production control are fulfilled the notified body shall issue the Certification of the product (system 1) or the Certification of the Factory Production Control (system 2+).

3.3 CE marking and accompanying information

According to Council Directive 93/68/EEC[6] the CE marking consists of the letters "CE", followed by the identification number of the notified certification body, where applicable *(for AoC systems 1 and 2+)*.

The ETA shall indicate the information to accompany the CE marking, i.e.

- The name or identifying mark of the producer and the manufacturing plant,
- The last two digits of the year in which the CE marking was affixed,
- For AoC systems 1: the number of the EC certificate of conformity for the product, [7]
- For AoC systems 2+ : the number of the EC certificate for the FPC, [8]
- The number of the European technical approval,

Example of CE-Marking and accompanying information:

CE nnnn	**"CE"-symbol** Number of Notified Body *(for AoC systems 1 and 2+)*
Any Company Street 1 Country Plant 1 Yy nnnn-CPD-xxxx	Name and address of the ETA-holder or his representative established in the EEA and of the plant where the kit was manufactured Two last digits of year of affixing CE Marking Number of EC certificate of conformity *(for AoC systems 1)* or EC certificate for the FPC *(for AoC systems 2 and 2+)*
ETA-YY/WWWW ETAG 022	ETA Number ETAG Reference

[6] *Official Journal of the European Communities no L 220, 30/8/1993, p. 1.*

[7] *According to Guidance Paper D (this is not envisaged in the CPD itself)*

[8] *This is neither envisaged in the CPD itself nor in Guidance Paper D*

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

4.1 Manufacturing of the kit

The actual manufacturing of the kit is performed on site. The Manufacturers Technical Dossier will describe the manufacturing of the components constituting the kit.

4.2 Packaging, transport, storage of the kit

The components of the liquid watertight covering kit should be protected from damage and excessive exposure to harmful actions.

The components should be handled and stored with care and be protected from accidental damage.

The manufacturers installation guide should contain information on proper storage, e.g. storage temperature, way of storage.

4.3 Installation of the kit in the works

Since the application method of the kit is the e.g. spraying, rolling, spreading or brushing of liquid components, whether or not blended in advance, the incorporation into the works is in fact the manufacturing of the wet room waterproofing as an assembled system.

The works in which the liquid applied covering kits, is deemed to satisfy the Essential Requirements when that kit is assessed and declared fit for use and when the design and application rules specified by the applicant are fulfilled. In general the proper incorporation, assembly, application and installation therefore should be possible under practical circumstances.

The Manufacturers Technical Dossier should include at least the following information:

- Definition of acceptable surfaces
- Preparation of the substrate (cleaning, moisture content, flatness, texture, maximum allowed cracks etc.)
- Definition and coverage rate of suitable primer for each substrate
- Method of application, order of application
- Required minimum thickness and/or consumption of the various layers
- Period of time between the application of each of the components
- Total drying time
- Guidance on details, such as water tightness around pipe penetrations, floor gullies, inside and outside corners, connection between floor and wall, sealing over joints in the substrate etc.
- joints in the substrates
- Information on protection of watertight covering prior to installation of wearing surface and how work can be interrupted

The installation guide should describe how to obtain a continuous layer of the primer on different substrates, where the primer is intended to enhance the water vapour resistance. In case this guidance is not provided, the test according to sec. 2.4.3.1 should be carried out on the membrane only.

4.4 Use, maintenance, repair

Guidance for use, maintenance and possibly repair should be a part of the manufacturers installation guide and the assessment of the fitness for use is based on the assumption that normal maintenance of the watertight covering kit is performed.

For kits without a wearing surface the maintenance should include cleaning, as necessary, with normal cleaning agents compatible with the watertight covering kit followed by rinsing with water.

5 IDENTIFICATION OF THE CONSTRUCTION PRODUCT

5.1 Means of identification

The product kit and its components which are the subject of the technical approval shall be identified by:

- Testing of product characteristics of the system and/or components as laid down in the tables of this chapter.
- Fingerprinting.
- Formulation.
- Manufacturing process parameters.
- Calculations, details, drawings.

Even though all testing is performed on the kit, the identification of the kit is subject to the identification of the components of the kit.

There may be four main components of the liquid applied kit; membrane, primer, adhesive and reinforcement, which are dealt with in the following.

5.2 Product characteristics used for identification checking

5.2.1 Liquid applied membrane

Number	Characteristic	Verification method: Clause ...	Criteria for product identity:
(1)	(2)	(3)	(4)
5.2.1.1	Infrared spectrometry	5.2.1.1.1	5.2.1.1.2
5.2.1.2	Thermographic analysis	5.2.1.2.1	5.2.1.2.2
5.2.1.3	Viscosity	5.2.1.3.1	5.2.1.3.2
5.2.1.4	Density	5.2.1.4.1	5.2.1.4.2

Table 7 Product characteristics, methods of verification and criteria used for checking the product identity

5.2.1.1 Infrared spectrometry of membrane

5.2.1.1.1 Method of verification

The infrared spectrometry is carried out at a resolution of 4 cm^{-1} with a measuring range of 4000 - 400. 32 scannings are made.

5.2.1.1.2 Method of assessing and judging

The result of the analysis shall be reported in the form of an IR graph together with relevant parameters and description of the preparation of the samples.

5.2.1.2 Thermographic analysis

5.2.1.2.1 Method of verification

The analysis shall be carried out at air atmosphere, temperature increase rate 5 °C/min, maximum temperature 1000 °C.

On the basis of the thermographic analysis the ash content and dry extract are determined.

5.2.1.2.2 Method of assessing and judging

The result of the analysis shall be reported in the form of a TG graph together with relevant parameters and description of the preparation of the samples

Ash content and dry extract shall be given as declared value.

5.2.1.3 Viscosity

5.2.1.3.1 Method of verification

The viscosity shall be determined according to a method appropriate for the membrane composition

5.2.1.3.2 Method of assessing and judging

Declared value

5.2.1.4 Density

5.2.1.4.1 Method of verification

The density shall be determined according to a method appropriate for the membrane composition

5.2.1.4.2 Method of assessing and judging

Declared value

5.2.2 Adhesives

The adhesives shall be designated according to EN 12004.

For identification purposes the following test is performed on the adhesives covered by the ETA:

5.2.2.1 Thermographic analysis

5.2.2.2.1 Method of verification

The analysis shall be carried out at air atmosphere, temperature increase rate 5 °C/min, maximum temperature 1000 °C.

On the basis of the thermographic analysis the ash content and dry extract are determined.

5.2.2.2.2 Method of assessing and judging

The result of the analysis shall be reported in the form of a TG graph together with relevant parameters and description of the preparation of the samples.

Ash content and dry extract shall be given as declared value.

5.2.3 Primers

Number	Characteristic	Verification method: Clause ...	Criteria for product identity:
(1)	(2)	(3)	(4)
5.2.3.1	Infrared spectrometry	5.2.3.1.1	5.2.3.1.2
5.2.3.2	Viscosity	5.2.3.2.1	5.2.3.2.2
5.2.3.3	Density	5.2.3.3.1	5.2.3.3.2
5.2.3.4	pH-value	5.2.3.4.1	5.2.3.4.2

Table 8 Product characteristics, methods of verification and criteria used for checking the product identity

5.2.3.1 Infrared spectrometry of the primer

5.2.3.1.1 Method of verification

The infrared spectrometry is carried out at a resolution of 4 cm^{-1} with a measuring range of 4000 - 400. 32 scannings are made.

5.2.3.1.2 Method of assessing and judging

The result of the analysis shall be reported in the form of an IR graph together with relevant parameters and description of the preparation of the samples.

5.2.3.2 Viscosity

5.2.3.2.1 Method of verification

The viscosity shall be determined according to a method appropriate for the primer composition

5.2.3.2.2 Method of assessing and judging

Declared value

5.2.3.3 Density

5.2.3.3.1 Method of verification

The density shall be determined according to a method appropriate for the primer composition

5.2.3.3.2 Method of assessing and judging

Declared value

5.2.3.4 pH-Value

5.2.3.4.1 Method of verification

The pH-value shall be determined according to a method appropriate for the primer composition

5.2.3.4.2 Method of assessing and judging

Declared value

5.2.4 Reinforcements

The reinforcement is identified by a description of the colour, thickness, weight and build-up.

Where relevant the above-mentioned characteristics can be supplemented with the following test

5.2.4.1 Tensile strength and elongation

5.2.4.1.1 Method of verification

The tear strength and the elongation of the reinforcement are measured in the weft and warp directions on 10 samples respectively. The samples should measure 50 mm by at least 300 mm. They shall contain at minimum 5 threads within the width.

The clamps of the testing machine shall be covered with a suitable rubber surface and hold the whole width of the samples. They shall be sufficiently rigid to resist deformation during the test.
The sample shall be located perpendicular to the clamp of the tensile testing machine.
The free length of the sample between clamps should be 200 mm.
The tensile force is increased with a constant crosshead speed of (100 ± 5) mm/min until failure occurs.
Testing is done in the as-delivered state.
The strength in N at failure and the elongation are recorded.

Samples where the specimen is displaced within the clamps or where the failure occurs at the clamps shall be discarded.

Calculation is undertaken to determine:

- The individual values of the tensile strength calculated from the force (F) at failure in relation to the width (w) of the sample

$$\beta = \frac{F}{w} \text{ in } N/mm$$

- The individual values of elongation calculated from the change of the length $\Delta\ell$ at failure in relation to the length ℓ of the sample between the clamps $\varepsilon = \frac{\Delta\ell}{\ell}$ in %
- The mean values of tensile strength and elongation calculated from these individual values
- The residual value calculated from the mean tensile strength value after ageing in relation to the mean tensile strength value in the as-delivered state.

Testing in the as-delivered state

The test is conducted after conditioning the samples at (23 ± 2)°C and (50 ± 5) % RH for at least 24 hours.

5.2.4.1.2 Method of assessing and judging

Declared value

6 FORMAT OF ETAs ISSUED ON THE BASIS OF THE ETAG

European technical approvals issued on the basis of this ETAG/CUAP shall be in accordance with the ETA format given in the guidance documents to ETAG/CUAPwriters.

Specifically, the ETA shall include the test results of the harmonised characteristics or npd according to table 2 Particularly the ETA shall specify the intended use in relation to substrates and joints as described in paragraph 1.2.2 of the guideline.

7 REFERENCE DOCUMENTS

Commission Guidance Paper C	The treatment of kits and systems under the construction products directive
EN 13501-1:2002	Fire classification of construction products – Part 1: Classification using test data from reaction to fire tests
EN/ISO 12572: June 2001	Hygrothermal performance of building materials and products - Determination of water vapour transmission properties
ETAG 005: March 2001, revision March 2004	ETA Guideline for Liquid applied roof waterproofing kits
prEN 14891: February 2004	Liquid applied waterproofing membranes for use beneath ceramic tiling – Definitions, specifications and test methods
prEN 1062-7: July 2003	Paints and varnishes – coating materials and coating systems for exterior masonry and concrete – Part 7: Determination of crack bridging properties, test methods
EOTA Technical Report 0013: May 2004	Determination of crack bridging capability
EN 13813: October 2002	Screed material and floor screeds – Screed material – Properties and requirements
EN 660-1: 1999	Resilient floor coverings – Determination of wear resistance. Part 1: Stuttgart test
EN 660-2: 1999	Resilient floor coverings – Determination of wear resistance. Part 2: Frick-Taber test
EEC Decision 2003/655/EC	Mandate for Watertight covering kits for wet room floors and walls
EN 12004: March 2001	Adhesives for tiles – Definitions and specifications