

EUROPEAN ASSESSMENT DOCUMENT

EAD 030436-00-0503

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WATERTIGHT COVERING KITS BASED ON FLEXIBLE SHEETS FOR WET ROOM FLOORS AND OR WALLS

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This European Assessment Document (EAD) has been developed taking into account up-to-date technical and scientific knowledge at the time of issue and is published in accordance with the relevant provisions of Regulation (EU) No 305/2011 as a basis for the preparation and issuing of European Technical Assessments (ETA).

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1 SCOPE OF THE EAD

1.1 Description of the construction product

This EAD covers an assessment of a watertight covering kit based on flexible sheets for wet room floors and or walls (in the following referred to as "watertight covering kit").

This EAD 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. A screed or render may be installed over the flexible sheet which may itself form the wearing layer of the installed system or which may be covered by another product, e.g. ceramic tiles. This possible wearing layer is not part of the kit.

The sheets may be partly or fully bonded or loose laid.

The sheets can be with or without a reinforcement and/or surface treatment to facilitate adherence to substrate and/or other additional components, e.g. ceramic tiles. Furthermore, the sheets can have a smooth surface or be made with different types of profiling.

The joints between the sheets are made by welding, adhering etc.

The kits include any associated components specified by the applicant such as glues, 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 assessment.

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.

The kits include any associated components specified by the manufacturer such as reinforcement nets, mats or fibres used in the whole kit, in the corners, penetrations etc.

This EAD does not cover swimming pools, outdoor applications and industrial processes.

The watertight covering kit based on flexible sheets for wet room floors and or walls is not covered by a harmonized European standard, since EN 13707:2013 and EN 13956:2013 does not cover the intended use included in this EAD.

This EAD covers watertight covering kits based on flexible sheets for wet room floors and or walls, whereas EAD 030352-00-0503 covers liquid applied covering kit for wet room floors and or walls, with or without wearing surface, and EAD 030437-00-0503 is for watertight covering kits based on inherently watertight boards for wet room floors and or walls

Concerning product packaging, transport, storage, maintenance, replacement and repair it is the responsibility of the manufacturer to undertake the appropriate measures and to advise their clients on the transport, storage, maintenance, replacement and repair of the product, as the manufacturer considers necessary.

It is assumed that the product will be installed according to the manufacturer's instructions or (in absence of such instructions) according to the usual practice of the building professionals.

Relevant manufacturer's stipulations having influence on the performance of the product covered by this European Assessment Document, shall be considered for the determination of the performance and detailed in the ETA.

1.2 Information on the intended use(s) of the construction product

1.2.1 Intended use(s)

The intended uses of the watertight covering kits are:

Indoor applications, where the kit is not exposed to temperatures (i.e. temperature of structure) below 5 °C and above 40 °C, 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, multifamily 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.

The actions on the assembled watertight covering kit, 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:

	Substrates (usually “rigid”), homogenous but susceptible to cracking	Substrates (usually “flexible”) not susceptible to cracking but with jointing¹	Substrates (usually “rigid”) susceptible to cracking and with jointing
Moisture sensitive substrates	Examples: Gypsum blocks Tests: 2.2.5; Assessment Category 1,2,3 2.2.9; Assessment Category 1 or 2 with annex G*	Examples: Gypsum boards, Wood based materials Tests: 2.2.8; Assessment Category 1 or 2 2.2.9; Assessment Category 1 or 2 with annex A and F, or E*	None known
Non moisture sensitive substrates	Examples: In-situ concrete, masonry Tests: 2.2.5; Assessment Category 1,2,3 2.2.9; Assessment Category 1 or 2 with annex G*	Examples: Calcium silicate boards, fibre cement boards Tests: 2.2.8; Assessment Category 1 or 2 2.2.9; Assessment Category 1 or 2 with annex A and F, or E*	Examples: Concrete or aerated concrete elements Tests: 2.2.5; Assessment Category 1,2,3 2.2.8; Assessment Category 1 or 2 2.2.9; Assessment Category 1 or 2 with annex G*

*The annex'es in the table above are with reference to EAD 030352-00-0503

¹ For substrates with un-reinforced filled jointing, the crack bridging ability test must be performed according to 2.2.5

1.2.2 Working life/Durability

The assessment methods included or referred to in this EAD have been written based on the manufacturer's request to consider a working life of the watertight covering kits in general for the intended use of 25 years when installed in the works (provided that the watertight covering kit for wet room floors and or walls is subject to appropriate installation (see 1.1)) These provisions are based upon the current state of the art and the available knowledge and experience.

When assessing the product by the intended use as foreseen by the manufacturer shall be taken into account. The real working life may be, in normal use conditions, considerably longer without major degradation affecting the basic requirements for works².

The indications given as to the working life of the construction product cannot be interpreted as a guarantee neither given by the product manufacturer or his representative nor by EOTA when drafting this EAD nor by the Technical Assessment Body issuing an ETA based on this EAD, but are regarded only as a means for expressing the expected economically reasonable working life of the product.

² The real working life of a product incorporated in a specific works depends on the environmental conditions to which that works is subject, as well as on the particular conditions of the design, execution, use and maintenance of that works. Therefore, it cannot be excluded that in certain cases the real working life of the product may also be shorter than referred to above.

2 ESSENTIAL CHARACTERISTICS AND RELEVANT ASSESSMENT METHODS AND CRITERIA

2.1 Essential characteristics of the product

Table 1 shows how the performance of watertight covering kits based on flexible sheets for wet room floors and/or walls are assessed in relation to the essential characteristics.

Note. All undated references to standards or to EAD's in this chapter are to be understood as references to the dated versions listed in clause 4.

Table 1 Essential characteristics of the product and methods and criteria for assessing the performance of the product in relation to those essential characteristics

No	Essential characteristic	Assessment method	Type of expression of product performance (level, class, description)
Basic Works Requirement 2: Safety in case of fire			
1	Reaction to fire	2.2.1	Class
Basic Works Requirement 3: Hygiene, health and the environment			
2	Content, emission and/or release of dangerous substances	2.2.2	Description
3	Vapour permeability	2.2.3	Level
4	Water tightness	2.2.4	Level
5	Crack bridging ability ^{*)}	2.2.5	Description
6	Bond strength	2.2.6	Description
7	Scratching resistance	2.2.7	Level
8	Joint bridging ability	2.2.8	Level
9	Water tightness around penetrations	2.2.9	Level
10	Resistance to temperature	2.2.10	Description
11	Resistance to water	2.2.11	Description
12	Resistance to alkalinity	2.2.12	Description
13	Resistance to mechanical wear	2.2.13	Level
14	Joint strength	2.2.14	Level
15	Flexibility	2.2.15	Description
Basic Works Requirement 4: Safety in use			
16	Slipperiness	2.2.16	Level
17	Cleanability	2.2.17	Description
18	Thickness	2.2.18	Level

^{*)} The relevance of this test depends on the substrate covered by the intended use see paragraph 1.2.1

2.2 Methods and criteria for assessing the performance of the product in relation to essential characteristics of the product³

Testing will be limited only to the essential characteristics of the kit which the manufacturer intends to declare. In addition, if for any component covered by a harmonised standard or a European Technical Assessment the manufacturer of that component has included the performance regarding the relevant characteristics in the Declaration of Performance retesting that component for issuing an ETA under the current EAD is not required.

This chapter is intended to provide instructions for TABs. Therefore, the use of wordings such as “shall be stated in the ETA” or “it has to be given in the ETA” shall be understood only as such instructions for TABs on how results of assessments shall be presented in the ETA. Such wordings do not impose any obligations for the manufacturer and the TAB shall not carry out the assessment of the performance in relation to a given essential characteristic when the manufacturer does not wish to declare this performance in the Declaration of Performance.

2.2.1 Reaction to fire

The watertight covering kit for wet room floors and or walls shall be tested, using the test method(s) according to EN 13501-1, which is(are) relevant for the corresponding reaction to fire class, and classified according to Delegated Regulation (EU) 2016/364 in connection with EN 13501-1.

The classification shall be stated in the ETA.

2.2.2 Content, emission and/or release of dangerous substances.

The performance of the product related to the emissions and/or release and, where appropriate, the content of dangerous substances will be assessed on the basis of the information provided by the manufacturer⁴ after identifying the release scenarios (in accordance with EOTA TR 034) taking into account the intended use of the product and the Member States where the manufacturer intends his product to be made available on the market.

The identified intended release scenarios for this product and intended use with respect to dangerous substances are:

IA1: Product with direct contact to indoor air

IA2: Product with indirect contact to indoor air (e.g. covered products) but possible impact on indoor air

SVOC and VOC

For the intended use covered by the release scenario IA1 and/or IA2 semi-volatile organic compounds (SVOC) and volatile organic compounds (VOC) shall be determined in accordance with EN 16516.

The following loading factors are applicable:

³ Unless otherwise specified, the threshold values and assessment categories formally established in ETAG 022-2 - Version November 2010 - are the source of those in this EAD.

⁴ The manufacturer may be asked to provide to the TAB the REACH related information which he must accompany the DoP with (cf. Article 6(5) of Regulation (EU) No 305/2011).

The manufacturer is **not** obliged:

- to provide the chemical constitution and composition of the product (or of constituents of the product) to the TAB, or
- to provide a written declaration to the TAB stating whether the product (or constituents of the product) contain(s) substances which are classified as dangerous according to Directive 67/548/EEC and Regulation (EC) No 1272/2008 and listed in the "Indicative list on dangerous substances" of the SGDS.

Any information provided by the manufacturer regarding the chemical composition of the products may not be distributed to EOTA or to TABs.

Table 2 Loading factor L, depending on the product type (in accordance with EN 16516)

Intended use	Loading factor [m ² /m ³]
Walls	1,0
Floor, ceiling	0,4

The preparation of the test specimen is performed by using a sample of the product - installed in accordance with the manufacturer's product installation instructions or in absence of such instructions the usual practice of the product installation - on an inert substrate (e.g. glass or stainless steel).

For the test specimen all parts of the product including associated components which are specified by the manufacturer such as reinforcement nets, mats or fibres used in the whole kit or partially in the corners and penetrations, and welding bands and sealants for the joints and possible reinforcements for penetrations, gullies etc.- have to be considered proportional. Only products which are used in accommodation areas have to be tested.

Tile adhesives covered by EN 12004 or other adhesives already covered by a harmonized specification are not included in the test specimens.

Once the test specimen has been produced, as described above, it should immediately be placed in the emission test chamber. This time is considered the starting time of the emission test.

The test results have to be reported for the relevant parameters (e.g. chamber size, temperature and relative humidity, air exchange rate, loading factor, size of test specimen, conditioning, production date, arrival date, test period, test result) after 3 and/or 28 days testing.

The product performance shall be expressed in [$\mu\text{g}/\text{m}^3$ or mg/m^3] and stated in the ETA.

2.2.3 Vapour permeability

The test is carried out in accordance with EN ISO 12572 The test shall be performed as described in annex C of the standard. The tests shall be carried out with climatic conditions as described for option C in chapter 7 of the standard.

If a primer or adhesive etc. is claimed to have an influence on the water vapour permeability, the test shall be carried out on a sample made of gypsum plasterboard with approximately 12,5 mm thickness and a density of approximately 720 kg/m³ including both watertight covering and primer/adhesive.

The application of the watertight covering kit shall be in accordance with the manufacturer's instructions. A possible wearing surface shall not be included in the sample.

The level shall be stated in the ETA together with the climatic conditions at which the performance was determined.

2.2.4 Water tightness

For bituminous or polymeric sheets, the test is carried out in accordance with EN 1928 method A. For resilient floor and wall coverings of polyvinyl chloride the water tightness of the watertight covering kit is assessed in accordance with EN 13553.

Testing shall be performed with a pressure as indicated in the relevant corresponding harmonised standard.

It shall be stated in the ETA if the watertight covering kit for wet room floors and or walls is watertight.

2.2.5 Crack bridging ability

The test is only carried out, when the intended use covers substrates susceptible to cracking, see footnote of table 1. The ETA shall state, along with results of assessment, an information on whether or not joints in the substrate were reinforced.

In order to avoid unnecessary testing, the test is only necessary for fully or partially bonded sheets where special precautions for bridging joints in the substrate are prescribed for the kit, e.g. reinforcement, or for substrates where joint bridging test is not performed, see 2.2.8. In all other cases the crack bridging ability is considered to be covered by the assessment of the joint bridging ability and the consequent assessment category for crack bridging will be 3.

For loose laid or mechanically attached sheets this test is not relevant.

For substrates not susceptible to cracks but where a filled joint can be foreseen, and this joint could lead to cracks in the substrate, the test shall also apply.

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 is to be carried out following the method C.2 of EN 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 is only to be applied onto three of these substrates.

Application of the waterproofing membrane

The application of the watertight covering must 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 \times width = 300 mm \times 200 mm).

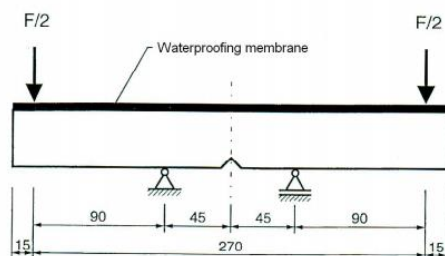
Storage of the prepared test specimen

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

Testing

After storage the test specimen must 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 is to be increased constantly by applying a force F until a crack appears on the uncovered sides of the concrete surface. The crack must appear on both sides of the concrete, close to the edge of the watertight material. The velocity of the crack opening is to 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 must be measured – for example using a graduated magnifying glass. The crack width shall be maintained. Each type of change during the following 24 h (incipient crack, tear or through crack) is to be stated in the test report.

It shall be stated in the ETA if 24 h after fixing the crack in the substrate no perforation or through crack (damage) has occurred in the watertight covering

Assessment category 0: The test is irrelevant (loose laid sheets etc.)

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

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 flexible sheet.

The assessment category shall be stated in the ETA, together with the crack width.

2.2.6 Bond strength

The bond strength of the watertight covering kit to the substrate is assessed in accordance with Paragraph A.6.2 in EN 14891. The number of samples are as described in paragraph A.6.1 in EN 14891. The test is only applicable for fully or partially bonded sheets.

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 EN 14891 concerning the speed.

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 EN 14891. When a result of more or equal the threshold values according to the assessment method 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.

The bond strength is to be assessed according to:

Assessment category 0: The test is irrelevant (loose laid sheets etc.)

Assessment category 1: The bond strength on concrete is \geq to 0.20 MPa

Assessment category 2: The bond strength on concrete is \geq to 0.30 MPa

Assessment category 3: The bond strength on concrete is \geq to 0.50 MPa

The assessment category shall be stated in the ETA.

2.2.7 Scratching resistance

The scratching resistance of the watertight covering kit is assessed in accordance with annex C in EAD 030352-00-0503.

The test is only carried out on kits without an envisaged wearing surface. One sample is prepared and subjected to the test regime in annex C.

The test applies for both floor and wall applications.

It shall be stated in the ETA if the watertight covering kit is scratching resistant.

2.2.8 Joint bridging ability

The test is only carried out when the intended use covers substrates susceptible to joint movements, see para. 1.2.1, i.e. joints in substrates that are not filled, such as between boards.

Loose laid or mechanically fixed sheets need not to be tested.

The joint bridging ability of watertight covering kit with and without wearing surface at joints subjected to movement of the substrate is tested in accordance with annex B, in EAD 030352-00-0503, with a 2-mm gap.

It is stated in the ETA if the kit can or cannot bridge joints.

2.2.9 Water tightness around penetrations

Note: The annex'es referred in the text below are with reference to EAD 030352-00-0503.

The water tightness of the flexible sheets for both floors and/or walls with and without wearing surface around penetrations, such as floor gullies; pipes and corners etc. is tested in accordance with annex A and annex F in combination or for rigid substrates without joints in accordance with Annex G, see para 1.2.1.

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 based on test according to annex A or G depending on the substrate.

For kits only for use on walls, the assessment shall be carried out based on test according to annex E without applying the loading on the fixtures or G depending on the substrate.

It shall be stated in the ETA if the kit is watertight or not.

If the manufacturer claims certain provisions concerning repair of the sheet this shall be assessed based on the tests by including a repaired section of the kit in the test sample.

It is stated in the ETA if it is possible to repair the kit.

2.2.10 Resistance to temperature

The resistance to temperature of the watertight covering kits with or without a wearing surface is assessed in accordance with the following procedure:

Exposure to heat ageing performed in accordance with EN 1296.

The exposure period is 4 weeks (at 70° C).

The tensile strength and elongation is assessed on exposed and unexposed materials respectively according to EN 12311-1 for bituminous materials, EN 12311-2 for unreinforced and EN 13859-1 for reinforced polymeric materials.

The tensile strength and elongation after exposure shall be stated in the ETA.

2.2.11 Resistance to water

The resistance to water of watertight covering kits with a wearing surface and a (tile)adhesive, is assessed in accordance with Paragraph A.6.3 in EN 14891, for all adhesives specified by the applicant.

In all other cases the resistance to water is covered by the test according to Annex A, F, G or E in EAD 030352-00-0503.

The bond strength assessment category after testing shall be stated in the ETA.
Bond strength categories are mentioned in 2.2.6

2.2.12 Resistance to alkalinity

The resistance to alkalinity of the watertight covering kit is assessed in one of three categories in accordance with the following procedure:

Assessment category 1: Ageing of the sample according to EN 1847 at 80 °C for 4 weeks.

Assessment category 2: Ageing of the sample according to EN 1847 at 50 °C for 16 weeks.

Assessment category 3: Ageing of the sample according to EN 1847 at 23 °C for 16 weeks.

The tensile strength and elongation is assessed according to EN 12311-2 for unreinforced and EN 13859-1 for reinforced polymeric materials.

The test is only relevant for products used with an alkaline screed or tile adhesive applied over the sheet. The test is not relevant for bituminous materials.

The tensile strength category after testing shall be stated in the ETA.

Bond strength categories are mentioned in 2.2.6.

2.2.13 Resistance to mechanical wear

This assessment method is only relevant for watertight covering kits without a wearing surface.

The 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 and EN 660-2.

The resistance to mechanical wear shall be stated in the ETA, depending on the type of the wearing surface.

2.2.14 Joint strength

For resilient floor and wall coverings of polyvinyl chloride the joint strength of the watertight covering kit is assessed in accordance with EN 684.

For bituminous and polymeric sheets for both floors and/or walls the test is carried out in accordance with EN 12317-1 for bituminous sheets and EN 12317-2 for polymeric sheets (shear resistance).

The joint strength shall be stated in the ETA in accordance with the above-mentioned standards.

2.2.15 Flexibility

The test is only relevant if the applicant describes solutions requiring bending of the sheet, e.g. in the detail floor/wall.

The assessment is carried out for kits both with and without a wearing surface. For flexible sheets for both floors and/or walls the test is carried out in accordance with EN ISO 24344.

When bent around a mandrel of 10 mm diameter, no cracking or other surface deterioration shall be visible with the naked eye. The result is stated in the ETA.

2.2.16 Slipperiness

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 depending on the composition of the wearing surface.

When this performance is assessed the slip resistance of finished floorings shall be stated in the ETA according to the relevant standard for the specified flooring product.

2.2.17 Cleanability

Only relevant for watertight covering kits without a wearing surface, i.e. those kits where the watertight covering is also the wearing surface

The test shall be carried out in accordance with the following procedure:

The test is carried out on two samples. The samples are prepared on two wood fibre boards with dimensions 430 mm long, 165 mm wide and 5 mm thick. The brightest colour of the covering shall be chosen, and where available, white shall be used.

The samples are conditioned for 30 days at standard atmosphere 23 ± 2 °C / 50 ± 5 % RH.

To simulate the soil a solution made from 9 g of (mild hand) soap, 1 g of carbon black and 600 g of tap water is mixed.

1 ml of the soil solution is applied to the samples with a pipette to form one spot of approx. 35 mm in diameter. The soil spot shall air dry at ambient temperature for three days.

One of the samples is not cleaned and left for reference.

The other is cleaned according to the following procedure:

The sample is cleaned with a brush made with 20 000 – 25 000 evenly cut pigs hairs with a free length of 18 – 20 mm and a diameter of 0,10 – 0,15 mm. The brush size shall be 80 mm x 30 mm and the mass shall be $450 \text{ g} \pm 10 \text{ g}$.

The brush is fixed in an apparatus so that it is moved over the sample 330 mm back and forth at a speed equal to 33 – 45 cycles per minute. One cycle is 660 mm. The number of cycles shall be recorded.

The cleaning is performed in three steps:

Step 1: The sample is washed down for 1 minute with lukewarm tap water $30 - 35$ °C with a water amount of 6 - 7 l/m at a distance from the tap of approx. 50 mm and at an angle of 45° . The soil spot shall not be touched and left to dry for 15 minutes. Any change compared to the reference sample is recorded.

Step 2: The sample is fixed in the cleaning apparatus with the covering system facing up and in a manner so that the brush can travel in the longitudinal direction of the sample. The brush is dipped in water and placed in the apparatus and set in motion over the sample. After 20 cycles the cleaning is stopped and the sample is cleaned according to step 1. After 15 minutes drying the remaining soil spot is assessed against the grey scale.

Step 3: The sample is cleaned according to step 2, but the water is replaced with a cleaning agent made from 10 % cat ion active tenside (surfactant) with 4 % metasilicate/water 1:10 or the cleaning agent specified by the ETA applicant. The procedure in this step is repeated twice.

After 15 minutes drying the remaining soil spot is assessed against the grey scale.

Classification	Classification according to NCS colour code system	Cleaning degree
100/70 %	6.500	0
100/60 %	5.750	1
100/50 %	5.000	2
100/40 %	4.500	3
100/30 %	3.000	4
100/20 %	2.500	5
100/10 %	1.500	6
100/0 %		7

Table 3: Grey scale classification

A description by the TAB, based on each step of the grey scale category, will be stated in the ETA.

2.2.18 Thickness

The thickness of the resilient coverings of e.g. polyvinyl chloride for walls and for bituminous and polymeric sheets for both floors and/or walls with and without wearing surface is assessed in accordance with relevant standards e. g. EN ISO 24346, EN ISO 24340, EN 1849-1 and EN 1849-2 respectively.

The thickness shall be stated in the ETA.

3 ASSESSMENT AND VERIFICATION OF CONSTANCY OF PERFORMANCE

3.1 Systems of assessment and verification of constancy of performance to be applied

For the products covered by this EAD the applicable European legal act is: Decision 2003/655/EC.

The applicable AVCP system is 2+ except for uses subject to regulations on reaction to fire.

For uses subject to regulations on reaction to fire the applicable AVCP systems regarding reaction to fire are 1, or 3, or 4 depending on the conditions defined in the said Decision.

3.2 Tasks of the manufacturer

The cornerstones of the actions to be undertaken by the manufacturer of the product in the procedure of assessment and verification of constancy of performance are laid down in Table 4.

Table 4 Control plan for the manufacturer; cornerstones

Subject/type of control	Test or control method (refer to 2.2)	Criteria, if any	Minimum number of samples	Minimum frequency of control
Factory production control (FPC)				
Check of incoming materials				Every delivery
Assembled system				
Reaction to fire	EN ISO 11925-2	As defined in the control plan	As defined in the control plan	According to the control plan
Sheet	annex B of EN 13707, EN 13967, EN 13969, EN 13956 and EN 14041	As defined in the control plan	As defined in the control plan	As defined in EN 13707, EN 13967, EN 13969, EN 13956, and EN 14041
Adhesive	EN 12004 or other relevant standards	As defined in the control plan	As defined in the control plan	As defined in EN 12004
Reinforcement				
Colour, thickness, weight build-up	As defined in the control plan	As defined in the control plan	As defined in the control plan	Every batch

3.3 Tasks of the notified body

The cornerstones of the actions to be undertaken by the notified body in the procedure of assessment and verification of constancy of performance for the watertight covering kits based on flexible sheets for wet room floors and or walls are laid down in Table 5.

In this case of AVCP system 2+ applies the cornerstones of the tasks to be undertaken by the notified body are laid down in Table 5

Table 5 Control plan for the notified body under AVCP system 2+; corner stones

Subject/type of control (<i>product, raw/constituent material, component - indicating characteristic concerned</i>)	Test or control method	Criteria, if any	Minimum number of samples	Minimum frequency of control
Initial inspection of the manufacturing plant and of factory production control				
Initial inspection of the manufacturing plant and of factory production control carried out by the manufacturer regarding the constancy of performance of the watertight covering kits based on flexible sheets for wet room floors and or walls defined in the control plan (except reaction to fire).	As defined in control plan	As defined in control plan	As defined in control plan	Once every year
Continuous surveillance, assessment and evaluation of factory production control				
Continuous surveillance, assessment and evaluation of the factory production control carried out by the manufacturer regarding the constancy of performance of the watertight covering kits based on flexible sheets for wet room floors and or walls defined in the control plan (except reaction to fire).	As defined in control plan	As defined in control plan	As defined in control plan	Once every year

Regarding reaction to fire the involvement of the notified body is required only under the conditions defined in 99/90/EC amended by 2001/596/EC – in case of reaction to fire class A1, A2, B, C of the product for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an additional of fire retardants or a limiting of organic material).

In this case the cornerstones of the tasks to be undertaken by the notified body under AVCP system 1 are laid down in table 6.

Table 5 Control plan for the notified body under AVCP system 1; corner stones

Subject/type of control (<i>product, raw/constituent material, component - indicating characteristic concerned</i>)	Test or control method	Criteria, if any	Minimum number of samples	Minimum frequency of control
Initial inspection of the manufacturing plant and of factory production control				
Initial inspection of the manufacturing plant and of factory production control carried out by the manufacturer regarding the constancy of performance related to reaction to fire and taking into account a limiting of organic material and/or the addition of fire retardants.	As defined in control plan	As defined in control plan	As defined in control plan	Once every year
Continuous surveillance, assessment and evaluation of factory production control				
Continuous surveillance, assessment and evaluation of the factory production control carried out by the manufacturer regarding the constancy of performance related to reaction to fire and taking into account a limiting of organic material and/or the addition of fire retardants.	As defined in control plan	As defined in control plan	As defined in control plan	Once every year

4 REFERENCE DOCUMENTS

EN 13501-1:2018	Fire classification of construction products and building elements – Part 1: Classification using data from reaction to fire tests.
EN ISO 12572:2016	Hygrothermal performance of building materials and products – Determination of water vapour transmission properties – Cup method.
EN 14891:2017	Liquid applied water impermeable products for use beneath ceramic tiling bonded with adhesives – Requirements, test methods, assessment and verification of constancy of performance, classification and marking.
EN 16516:2017	Construction products: Assessment of release of dangerous substances – Determination of emissions into indoor air
EN 1062-7:2004	Paints and varnishes – Coating materials and coating systems for exterior masonry and concrete – Part 7: Determination of crack bridging properties
EN 13813:2003	Screed material and floor screeds – Screed material – Properties and requirements
EN 660-2/A1:2003	Resilient floor coverings – Determination of wear resistance – Part 2: Frick-Taber Test
EN 12004:2008	Adhesives for ceramic tiles – Part 1: Requirements, assessment and verification of constancy of performance classification and marking
EN 14041:2018	Resilient, textile, laminate and modular multilayer floor coverings – Essential characteristics
EN 13707:2013	Flexible sheets for waterproofing – Reinforced bitumen sheets for roof waterproofing – Definitions and characteristics
EN 13956:2013	Flexible sheets for waterproofing – Plastic and rubber sheets for roof waterproofing – Definitions and characteristics
EN 13967:2012 +A1:2017	Flexible sheets for waterproofing – Plastic and rubber damp proof sheets including plastic and rubber basement tanking sheet – Definitions and characteristics
EN 13969:2006	Flexible sheets for waterproofing – Bitumen damp proof sheets including bitumen basement tanking sheets – Definitions and characteristics
EN 14411:2016	Ceramic tiles – Definition, classification, characteristics, assessment and verification of constancy of performance and marking
EN ISO 11925-2:2010	Reaction to fire tests – ignitability of products subjected to direct impingement of flame – Part 2: Single-flame source test
EN 13553:2017	Resilient floor coverings – Polyvinyl chloride floor coverings for use in special wet areas - Specification
EN 1931:2000	Flexible sheets for waterproofing – Bitumen, plastic and rubber sheets for roof waterproofing – Determination of water vapour transmission properties
EN 1928:2000	Flexible sheets for waterproofing – Bitumen, plastic and rubber sheets for roof waterproofing – Determination of watertightness
EN 684:1996	Resilient floor coverings – Determination of seam strength

EN 12317-1:1999	Flexible sheets for waterproofing – Part 1: Bitumen sheets for roof waterproofing – Determination of shear resistance of joints.
EN 12317-2:2010	Flexible sheets for waterproofing – Determination of shear resistance of joints – Part 2: Plastic and rubber sheets for roof waterproofing
EN 1107-1:1999	Flexible sheets for waterproofing – Part 1: Bitumen sheets for roof waterproofing – Determination of dimensional stability
EN 1107-2:2001	Flexible sheets for waterproofing – Determination of dimensional stability – Part 2: Plastic and rubber sheets for roof waterproofing
EN 1296:2001	Flexible sheets for waterproofing – Bitumen, plastic and rubber sheets for roofing – Method of artificial ageing by long term exposure to elevated temperature
EN 12311-1:1999	Flexible sheets for waterproofing – Part 1: Bitumen sheets for roof waterproofing – Determination of tensile properties
EN 12311-2:2013	Flexible sheets for waterproofing – Determination of tensile properties – Part 2: Plastic and rubber sheets for roof waterproofing
EN 1847:2010	Flexible sheets for waterproofing – Plastics and rubber sheets for roof waterproofing – Methods for exposure to liquid chemicals, including water
EN 13859-1:2014	Flexible sheets for waterproofing – Definitions and characteristics of underlays – Part 1: Underlays for discontinuous roofing
EN 1849-1:1999	Flexible sheets for waterproofing – Determination of thickness and mass per unit area – Part 1: Bitumen sheets for roof waterproofing
EN 1849-2:2010	Flexible sheets for waterproofing – Determination of thickness and mass per unit area – Part 2: Plastic and rubber sheets.
EN ISO 24344:2012	Resilient floor coverings – Determination of flexibility and deflection
EN ISO 24346:2012	Resilient floor coverings – Determination of overall thickness
EN ISO 24340:2012	Resilient floor coverings – Determination of thickness of layers

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Annex A: Water tightness around penetrations and other details in wet room floors with flexible substrate
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Annex B: Impermeability when subject to movement of the underlaying material - Tensile and shear loading

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Annex C: Test for scratching resistance

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Annex D: Thickness of membrane

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Annex E: Water tightness and resistance to water and moisture of walls with flexible substrate

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Annex F: Water tightness around penetrations and other details in wet room walls with flexible substrate

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Annex G: Water tightness around penetrations and other details in wet room walls and floors with rigid substrates