



## EUROPEAN ASSESSMENT DOCUMENT

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# GLASS FIBRE JOINT TAPE FOR GYPSUM PLASTERBOARDS

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# 1 SCOPE OF THE EAD

## 1.1 Description of the construction product

Glass fibre joint tape for gypsum plasterboards as they are defined in EN 520 and modified products, made of gypsum plasterboards and gypsum boards reinforced by fibres.

The product is made of glass fibres which may be

- a) stranded and consequently weaved
- or
- b) dispersed and conglomerated by binder

The back side of tape can be equipped by a layer providing sufficient self-adhesion of tape to gypsum plasterboard.

The product is designed to give an appropriate reinforcement for various gypsum jointing materials used for gypsum plasterboards.

The product is delivered as ready to use tape rolls in variants of widths and lengths.

The product exists in two types according to way of application:

- a) **self-adhesive tape** – glass fibre mesh with equipped with an adhesive layer based on synthetic polymers resin at the back side. To provide resistance to alkali conditions, the fibre mesh is coated by an organic layer. At first, this type is bonded to boards and consequently the jointing material is applied. The self-adhesion ability of tape and penetration of jointing material through tape is to be proved by tests.
- b) **non-adhesive tape** – a tape made as thin felt of glass fibres, and not equipped with an adhesive layer. At first, the joints are filled by jointing material and consequently the tape is laid and levelled by jointing material.

The type of the glass fibres shall be stated in the ETA (E-glass, C-glass, etc.) – see EN ISO 2078.

The product is not covered by a harmonised European standard (hEN).

Concerning product packaging, transport, storage, maintenance, replacement and repair it is the responsibility of the manufacturer to undertake the appropriate measures and to advise his clients on the transport, storage, maintenance, replacement and repair of the product as he 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 product is intended to use as a complementary product for jointing of gypsum plasterboards. It does not contribute directly to the stability of the boards on which it is installed. Mechanical stability of gypsum plasterboards is provided by installation on support framework, which is not the subject of this EAD.

The product is used with jointing materials according to EN 13963, types 1A, 1B, 3A, 3B. It shall be assured that cooperation of the tape and jointing material leads to reduction of cracks.

This product is intended to use in interiors and at temperatures above 0 °C.

Manufacturer declares in his technical documentation that the distance between detached end of tape and board surface after 24 hour of conditioning (for self-adhesive tape) according to 2.2.4 does not exceed 5 mm.

### 1.2.2 Working life/Durability

When assessing the product, 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 works<sup>2</sup>.

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.

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<sup>2</sup> 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 glass fibre joint tape for gypsum plasterboards is assessed in relation to the essential characteristics.

**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 <i>(level, class, description)</i>
<b>Basic Works Requirement 2: Safety in case of fire</b>			
1	Reaction to fire	see clause 2.2.1	Reaction to fire class according to Commission Delegated Regulation (EU) 2016/364)
<b>Basic Works Requirement 4: Safety and accessibility in use</b>			
2	Tensile strength	see clause 2.2.2	Level Characteristic value [ <i>N/mm</i> ]
3	Resistance to dampness	see clause 2.2.3	Level Characteristic value of the tensile strength [ <i>N/mm</i> ],  Decrease of the characteristic tensile strength after storage in distilled water [%]
4	Self-adhesion ability (only for self-adhesive tape)	see clause 2.2.4	Description
5	Jointing material penetration ability (only for self-adhesive tape)	see clause 2.2.5	Level characteristic value of maximal load [ <i>N</i> ]

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

If statistical characteristics are applied according to ISO 12491, Art. 7.4, they are declared as the characteristic value for  $\sigma$  as unknown giving 75 % confidence that 95 % of test results will be higher than this value (see Annex A of this EAD).

### 2.2.1 Reaction to fire

The glass fibre joint tape for gypsum plasterboards shall be tested, using the test method(s) relevant for the corresponding reaction to fire class, in order to be classified according to Commission Delegated Regulation (EU) 2016/364.

Note: The range of classes is limited to classes A1 and E due to inappropriateness resp. infeasibility of the test according to EN 13823 on the product.

The Euroclass of reaction to fire of the product is stated in the ETA.

### 2.2.2 Tensile strength

The tensile strength is to be measured on 10 samples only in traverse direction. The dimensions of samples should be: width 50 mm and length as the widest variant of the tape if the wide of the tape is up to 200 mm. If the widest variant of the tape is higher than 200 mm, the length between the clamps of the testing machine should be 150 mm. The tested dimensions are to be mentioned in the ETA.

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 test samples shall be conditioned in standard conditions according to ISO 187, Art. 5. Applied conditions shall be stated in the ETA.

The sample shall be located perpendicular to the clamp of the tensile testing machine. The tensile force is increased with a constant crosshead speed of  $(20 \pm 5)$  mm/min until failure occurs.

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

Test report shall contain apart from common entries minimally followings records: individual values of tensile strength, characteristic value of tensile strength, dimensions of samples, temperature and humidity conditions, surface density of sample and any deviations from this procedure.

Considering any other test conditions, not mentioned in this chapter, the standard EN ISO 1924-2 should be respected.

Characteristic value [ $N/mm$ ] is stated in the ETA.

### 2.2.3 Resistance to dampness

The test according to clause 2.2.2 is performed on samples conditioned in distilled water. The samples are totally immersed in distilled water for 28 days without contact with each other in temperature  $(20,0 \pm 1,0)$  °C).

After 28 days of conditioning the samples are removed and dried at 23 °C, 50 % RH until constant weight (1 % change between 24 hours). Consequently, the tensile strength according to clause 2.2.2 is performed.

Characteristic value of tensile strength [ $N/mm$ ] after conditioning is stated in ETA.

The decrease of characteristic tensile strength after storage in distilled water in percentage [%] is stated in the ETA.

### 2.2.4 Self-adhesion ability

This performance shall be tested in case of product type “**self-adhesive tape**” (chapter 1.1 of this EAD).

For this test, the self-adhesive tape is applied on gypsum plasterboard using steel roller as defined below: Steel roller is true cylinder-shaped void of any concave and convex deviations. It measures 5 cm in width, and it is covered by rubber. The mass of the roller shall be about  $(2 \pm 0,1)$  kg.

30 cm of unwinded tape is laid on gypsum plasterboard of type A according to EN 520 without touching the adhesive side. Then the tape is rolled lengthwise once in each direction using steel roller at a speed of 30 cm per 15 seconds. Two sets of 3 samples shall be prepared and stored in vertical position according to two following procedures:

- 1) low temperature conditioning at -10 °C for 24 hours
- 2) high temperature conditioning at 70 °C for 24 hours, relative humidity (50±5)%

After 24 hours of conditioning, the samples are observed for peeling and any other defects.

Test report shall contain apart from common entries minimally following records: temperature conditions, description of samples at the end of test, measurement of the peeled area (if possible) with an accuracy of 1 mm.

Self-adhesion ability is described in the ETA.

### 2.2.5 Jointing material penetration ability

This performance shall be tested in case of product type “**self-adhesive tape**” (chapter 1.1 of this EAD).

This test shall be performed according to EN 13963, clause 5.8.2, considering these provisions:

For the purpose of the test, the gypsum plasterboard type A according to EN 520 with the right edge is used. Used jointing material shall be classified as type 1A, 1B, 3A or 3B according to EN 13963. It is not necessary to record value of load when first crack occurs.

Test report shall contain apart from common entries minimally following records: individual values of maximal load, characteristic value of maximal load, temperature and humidity conditions, detailed description of rupture and any deviations from this procedure.

The jointing material penetration ability is stated in the ETA as characteristic value of maximal load [N].



### 3 ASSESSMENT AND VERIFICATION OF CONSTANCY OF PERFORMANCE

#### 3.1 System(s) 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 1995/467/EC<sup>3</sup> as amended by Decision 2001/596/EC, 2002/595/EC and 2010/679/EU.

The system is: **3**

In addition, with regard to reaction to fire for products covered by this EAD the applicable European legal act is: Decision 1995/467/EC<sup>4</sup> as amended by Decision 2001/596/EC, 2002/595/EC and 2010/679/EU.

The systems are: **1, 3, 4**

The system 1 is applicable only for reaction to fire class A, B, C<sup>5</sup> according to Commission Delegated Regulation (EU) 2016/364 and for the essential characteristic "reaction to fire" only.

#### 3.2 Tasks of the manufacturer

The cornerstones of the actions to be undertaken by the manufacturer of the product in the procedure of verification of constancy of performance are laid down in Table 2.

The control plan for the manufacturer depends on the individual manufacturing process and has to be established between notified body and manufacturer. In case of discontinuous production these minimum frequencies should be adapted to an equivalent frequency.

**Table 2 Control plan for the manufacturer; cornerstones**

No	Subject/type of control	Test or control method	Criteria, if any	Minimum number of samples	Minimum frequency of control
<b>Factory production control (FPC)</b>					
1	<b>Identification of incoming materials</b>	depending on the nature of the materials		according to test method	every delivery
2	<b>Mechanical properties of final product</b>				
	Tensile test	see cl. 2.2.2	control plan	according to test method	once per month
	Peel test or Self-adhesion ability test	manufacturer's method; see cl. 2.2.4	control plan	according to test method	once per month
	<b>Indirect testing of reaction to fire</b>				

<sup>3</sup> Official Journal of the European Communities/Union L 268 of 10.11.1995, p. 29

<sup>4</sup> Official Journal of the European Communities/Union L 268 of 10.11.1995, p. 29

<sup>5</sup> Products under class A, B or C for which the reaction to fire performance is susceptible to change during the production process (in general, those made with combustible raw materials) or has been altered by means of incorporating certain agents, like fire retarders.

No	Subject/type of control	Test or control method	Criteria, if any	Minimum number of samples	Minimum frequency of control
3	Mass per unit test	ETAG 004, cl. C.3.1	control plan	according to test method	each batch
	Ash content test	ETAG 004, cl. C.3.2	control plan	according to test method	each batch
	Type of surface formation	manufacturer's method;	acceptable	according to test method	each batch
	Lamination	manufacturer's method;	acceptable	according to test method	each batch
	Ignitability for Euroclass E	EN ISO 11925-2	acceptable for Euroclass E	according to test method	once per month
	Non-combustibility (for Euroclass A1)	EN ISO 1182	acceptable for Euroclass A1	according to test method	once per year
	Calorific value (for Euroclass A1)	EN ISO 1716	acceptable for Euroclass A1	according to test method	once per year
4	<b>Direct testing of reaction to fire</b>				
	Ignitability for Euroclass E	EN ISO 11925-2	acceptable for Euroclass E	according to test method	once per week or each batch
	Non-combustibility (for Euroclass A1)	EN ISO 1182	acceptable for Euroclass A1	according to test method	twice per year
	Calorific value (for Euroclass A1)	EN ISO 1716	acceptable for Euroclass A1	according to test method	twice per year

### 3.3 Tasks of the notified body

The corner stones of the actions to be undertaken by the notified body in the procedure of assessment and verification of constancy of performance for glass fibre joint tape for gypsum plasterboards are laid down in Table 3.

The tasks of the Notified Body foreseen in Table 3 are to be undertaken by the Notified Body only if the conditions foreseen in the applicable AVCP Decisions for system 1 are satisfied. These tasks are limited to the essential characteristics "reaction to fire" only.

**Table 3 Control plan for the notified body; cornerstones**

No	Subject/type of control	Test or control method	Criteria, if any	Minimum number of samples	Minimum frequency of control
<b>Initial inspection of the manufacturing plant and of factory production control</b> <i>(for system 1 only)</i>					
1	The notified body shall verify the ability of the manufacturer for a continuous and orderly manufacturing of the product according to the European Technical Assessment. In particular the following items shall be appropriately considered				1/year
					<ul style="list-style-type: none"> <li>– personnel and equipment</li> <li>– the suitability of the factory production control established by the manufacturer</li> <li>– full implementation of the prescribed test plan</li> </ul>
2	Reaction to fire	Presence of suitable test equipment			1/year
		Presence of trained personnel			1/year
		Presence of an appropriate quality assurance system and the necessary stipulations			1/year
<b>Continuous surveillance, assessment and evaluation of factory production control</b> <i>(for system 1 only)</i>					
3	It shall be verified that the system of factory production control and the specified manufacturing process are maintained taking account of the control plan.				1/year
4	Reaction to fire	Presence of suitable test equipment			1/year
		Presence of trained personnel			1/year
		Presence of an appropriate quality assurance system and the necessary stipulations			1/year

## 4 REFERENCE DOCUMENTS

As far as no edition date is given in the list of standards thereafter, the standard in its current version at the time of issuing the European Technical Assessment, is of relevance.

EN 520	Gypsum plasterboards - Definitions, requirements and test methods
EN ISO 1182	Reaction to fire tests for products - Non-combustibility test
EN ISO 1716	Reaction to fire tests for products - Determination of the cross heat of combustion (calorific value)
EN ISO 1924-2	Paper and board - Determination of tensile properties - Part 2: Constant rate of elongation method (20 mm/min)
EN ISO 2078	Textile glass – Yarns – Designation
EN ISO 11925-2	Reaction to fire tests - Ignitability of building products subjected to direct impingement of flame - Part 2: Single-flame source test
EN 13823	Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item
EN 13963	Jointing materials for gypsum plasterboards - Definitions, requirements and test methods
ISO 197	Paper, board and pulps. Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples
ETAG 004	External Thermal Insulation Composite Systems (ETICS) with Rendering

## ANNEX A GENERAL TEST RESULTS STATISTICAL INTERPRETATION

Manufacturer declares characteristic values according to ISO 12491, cl. 7.4 as statistical values for  $\sigma$  as unknown giving 75% confidence that 95% of test results will be higher than this value.

$$F_{u,5} = F_{mean} - k_n \cdot S$$

$$\Delta F_{mean} = F_{mean,c} / F_{mean,n}$$

where

- $F_{u,5}$  = the characteristic breaking load giving 75% confidence that 95% of the test results will be higher than this value, with accuracy in integer
- $F_{mean}$  = the mean breaking load, either under tension or shear load
- $\Delta F_{mean}$  = change of mean value (or characteristic value if required), with accuracy on 0,01
- $F_{mean,n}$  = the mean breaking load, either under tension or shear loads in the initial condition
- $F_{mean,c}$  = the mean breaking load, either under tension or shear loads after conditioning or weathering
- $k_n$  = the eccentricity of 5 % with 75 % confidence (see Table A.1)
- $S$  = the standard deviation of series under consideration

Table A.1: The variable  $k_n$  as a function of the number of test specimens  
(see ISO 12491, Table 6,  $\gamma = 0,75$ ,  $p = 0,95$ )

Number of specimens	3	4	5	6	7	8	10	20	30	$\infty$
Variable $k_n$	3,15	2,68	2,46	2,34	2,25	2,19	2,10	1,93	1,87	1,64