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European Technical Assessment

ETA-16/0715
of 19.12.2016

General part

Technical Assessment Body issuing the European Technical Assessment

Österreichisches Institut für Bautechnik (OIB)
Austrian Institute of Construction Engineering

Trade name of the construction product

„FLAXISOL“

Product family to which the construction product belongs

Thermal and/or acoustic insulation board made of flax fibres

Manufacturer

IGRA-TEKHNICA LLC
Demiana Bednogo Str., d2 kor. 3
123308 Moscow
Russian Federation

Manufacturing plant

Plant 1

This European Technical Assessment contains

8 pages

This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of

European Assessment Document (EAD) "Factory-made thermal and/or acoustic insulation products made of vegetable or animal fibres",
No 040005-00-1201

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Specific part

1 Technical description of the product

1.1 Definition of the construction product

This European technical assessment applies to insulation materials with the designation:

“FLAXISOL”

This product is manufactured in the form of boards with the following dimensions:

Nominal thickness: from 40 mm to 160 mm
Nominal length: from 650 mm to 1250 mm
Nominal width: from 500 mm to 700 mm

The dimensions correspond to the delivery program of the manufacturer.

This flame retardant modified product consists of flax fibres with an extra added content of hemp fibres < 20 % and a content of potato starch binder of approx. 10 %

The insulation material is not coated.

1.2 Manufacturing

The flax and hemp fibres used in the manufacturing process have to fulfill the following quality criteria:

Level of retting

3-8

The European Technical Assessment is issued for the product on the basis of agreed data/information, deposited with the Österreichisches Institut für Bautechnik, which identifies the product that has been assessed and judged.

Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to the Österreichisches Institut für Bautechnik before the changes are introduced.

The Österreichisches Institut für Bautechnik will decide whether or not such changes affect the European Technical Assessment and consequently the validity of the CE marking on the basis of the European Technical Assessment and if so whether further assessment or alterations to the European Technical Assessment, shall be necessary.

2 Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

2.1 Intended use

The flexible, shape keeping flax fibre board not exposed to compression loads can be mainly used as:

Area of application for walls

- Insulation material for external walls in light wood constructions (nogging piece construction, timber frame construction) and loghouses
- Solid construction with external insulating system (external fixed wooden load-bearing system with intermediate insulating wool and panelling)
- Partition-insulation as thermal insulation

Area of application for roofs

- Pitched roofs with ventilation
- Pitched roofs without ventilation (full rafter insulation)
- Flat roof with upper covering ($\mu.d \leq 0,2m$) and ventilated cavity under the waterproofing
- Pitched roof construction with insulation under the load bearing rafters.

Area of application for ceilings / floors

- Ceilings with thermal insulation between or above the load-bearing structure
- Insulation material between floor-joists under floor constructions
- Acoustic and thermal insulation material in intermediate ceilings

2.2 General assumptions

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.

The insulation products shall not be used in structures where it will be exposed to wetting or weathering and in such with direct contact to soil.

Concerning the application of the insulation material also the respective national regulations shall be observed.

In case of use of the product as airborne sound insulation it is necessary to determine the airborne sound insulation for the specific construction work in question in accordance with the relevant technical rules in force.

The design value of the thermal conductivity shall be laid down according to relevant national provisions.

When calculating the thermal resistance, the nominal thickness of the insulation materials shall be applied.

The construction shall be designed and installed in such a way that no harmful condensation occurs within the works

The release of dangerous substances of the insulation product has not been determined. An additional assessment of the product according to national or European provisions in this respect might be necessary.

The corrosion developing capacity of the insulation product has not been determined. Suitable measures might be necessary to avoid corrosion of metal parts of the construction in contact.

A European method of testing glowing combustion behavior does not exist. An additional assessment of the product according to national provisions might be necessary until the existing European classification system has been completed.

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.

3 Performance of the product and references to the methods used for its assessment

The performance of the product only applies if the insulation material is installed according to the manufacture's installation instructions and if they are protected from precipitation, wetting or weathering in built-in state and during transport, storage and installation.

For sampling, conditioning and testing the provisions of the EAD No 040005-00-1201 "Factory made thermal and/or acoustic insulation products made of vegetable or animal fibres" apply.

Basic requirements for construction works	Essential characteristics	Method of verification	Performance
BWR 2	Reaction to fire	EN 13501-1:2009	Clause 3.1.1 of the ETA
BWR 3	Biological resistance	EAD "Factory-made thermal and/or acoustic insulation products made of vegetable or animal fibres", annex B	Clause 3.2.1 of the ETA
BWR 4	Corrosion developing capacity	No performance assessed	
BWR 5	Specific airflow resistivity	EN 29 053:1993, method A	Clause 3.4.1 of the ETA
BWR 6	Thermal conductivity	EN 12667:2001	Clause 3.5.1 of the ETA
	Water vapour diffusion resistance	EAD "Factory-made thermal and/or acoustic insulation products made of vegetable or animal fibres", clause 2.2.10, last paragraph	Clause 3.5.2 of the ETA
	Water absorption	EN 1609:1997, method A	Clause 3.5.3 of the ETA
	Geometry	EN 822:1995 EN 823:1995	Clause 3.5.4 of the ETA
	Density	EN 1602:2013	Clause 3.5.5 of the ETA
	Dimensional stability	EN 1604:2013	Clause 3.5.6 of the ETA
	Tensile strength (parallel)	EN 1608:2013	Clause 3.5.7 of the ETA

3.1 Safety in case of fire (BWR 2)

3.1.1 Reaction to fire

The reaction to fire of the product is classified according to EN 13501-1.

	Class according to EN 13501-1
„FLAXISOL“	E

3.2 Hygiene, health and the environment (BWR 3)

3.2.1 Biological resistance

The test and the assessment of the resistance to growth of mould fungus has been verified according to the EOTA testing procedure (Annex B of EAD “Factory-made thermal and/or acoustic insulation product made of vegetable or animal fibres”; edition June 2015). The reached level of the product is **0**.

3.3 Safety and accessibility in use (BWR 4)

3.3.1 Corrosion developing capacity

No performance assessed.

3.4 Protection against noise (BWR 5)

3.4.1 Specific airflow resistivity

The airflow resistance of the product is determined according to European standard EN 29 053, method A. The mean longitudinal airflow resistance at a mean density of 43,6 kg/m³ is **≤ 10,92 kPa·s/m²**.

3.5 Energy economy and heat retention (BWR 6)

3.5.1 Thermal conductivity

The thermal conductivity of the product is determined according to EN 12667. The declared value of thermal conductivity is determined according to EN 10 456.

The fractile value of thermal conductivity for the density range of 40 kg/m³ - 55 kg/m³ is $\lambda_{(10, \text{dry}, 90/90)} = \mathbf{0,0366 \text{ W/(m}\cdot\text{K)}}$ representing at least 90 % of the production with a confidence limit of 90%

The declared value of thermal conductivity for the density range of 40 kg/m³ - 55 kg/m³ is $\lambda_{D(23,50)} = \mathbf{0,038 \text{ W/(m}\cdot\text{K)}}$ determined by conversion of the $\lambda_{(10, \text{dry}, 90/90)}$ value.

For conversion of humidity the following applies:

- the mass related moisture content at 23 °C/50 % relative humidity:

$$u_{23,50} = \mathbf{0,053 \text{ kg/kg}}$$

- the mass related moisture content at 23 °C/80 % relative humidity:

$$u_{23,80} = \mathbf{0,133 \text{ kg/kg}}$$

- the mass related moisture conversion coefficient:

$$f_{u1(\text{dry} - 23/50)} = \mathbf{0,62 \text{ kg/kg}^1}$$

$$f_{u2(23/50 - 23/80)} = \mathbf{0,12 \text{ kg/kg}^1}$$

- the moisture conversion factor dry to 23 °C/50 % relative humidity

¹ A negative mass related moisture conversion coefficient means, that the insulation material in wet conditions has a lower thermal conductivity than in dry conditions

$$F_{m1} = 1,033$$

- the moisture conversion factor 23 °C/50 % relative humidity to 23 °C/80 % relative humidity

$$F_{m2} = 1,010$$

3.5.2 Water vapour diffusion resistance

The water vapour diffusion resistance factor μ is **4**.

3.5.3 Water absorption

The water absorption of the product is determined according to European standard EN 1609, method A. The mean short term water absorption by partial immersion at a mean density of 44,4kg/m² is **≤ 2,1 kg/m²**.

3.5.4 Geometry

The **thickness** of the product is determined according to European standard EN 823. The test is carried out with a load of 50 Pa.

The deviation from nominal thickness does not exceed:

- 5 mm
- + 15 % or + 15 mm.

The reached class of the product is **T2** according to EN 13171:2015.

The **length** of the products is determined according to European standard EN 822. The deviation from nominal length does not exceed **± 2 %**.

The **width** of the products is determined according to European standards EN 822. The deviation from nominal width does not exceed **± 1,5 %**.

The **squareness** of the boards is determined according to European standard EN 824. The deviation from squareness on length and width does not exceed **5 mm/m**.

The **flatness** of the products is determined according to European standards EN 825. No deviation from flatness could be determined.

3.5.5 Density

The density of the product is determined according to European standard EN 1602. The density is at least 40 kg/m³ and does not exceed 55 kg/m³.

The nominal density is **45 kg/m³**

3.5.6 Dimensional stability under specified temperature and humidity

The dimensional stability of the product is determined according to European standard EN 1604. The test is carried out after conditioning at a temperature of (70 ± 2)°C and (90 ± 5) % relative humidity for 48 h.

Change of dimensions in length:	DS(70,90)1
Change of dimensions in width:	DS(70,90)1
Change of dimensions in thickness:	DS(70,90)1

3.5.7 Tensile strength parallel to faces

The tensile strength parallel to faces of the product is determined according to European standard EN 1608:2013.

The requested minimum tensile strength parallel to faces of **10 kg/m²** was reached.

4 Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

According to the Decision 1999/91/EC², as amended, the system of assessment and verification of constancy of performance (according to Annex V of Regulation (EU) No 305/2011) is 3.

5 Technical details necessary for the implementation of the AVCP system, as provided for the applicable European Assessment Document

At the manufacturing plant the manufacturer has to implement and continuously maintain a factory production control system.

All elements, requirements and provisions adopted by the manufacturer in this respect are documented in a systematic manner in the form of written policies and procedures.

The records shall be kept at least for ten years and presented to Österreichisches Institut für Bautechnik on request.

The factory production control system ensures that the performance of the product is in conformity with the European Technical Assessment.

If test results are unsatisfactory, the manufacturer shall immediately implement measures to eliminate the defects. Construction products not in conformity with the requirements shall not be CE marked.

Technical details of the actions to be undertaken by the manufacturer in relation to the factory production control are laid down in the control plan deposited at Österreichisches Institut für Bautechnik.

When all criteria of the assessment and verification of constancy of performance are met, the manufacturer shall issue a declaration of performance.

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² Official Journal of the European Communities no. L 178, 14.7.1999, p. 52