



Instytut Techniki Budowlanej

Member of EOTA



European Technical Assessment

**ETA-14/0332
z 30/09/2014**

EKOSPAN DACH/EKOSPAN ROOF

**Self-supporting composite panel
for use in roofs and ceilings**

*Kompozytowe płyty warstwowe
do stosowania w przekryciach dachowych
i sufitach*



Europejska Organizacja ds. Aprobatach Technicznych
European Organisation for Technical Approvals

Europejska ocena techniczna została opracowana
w Zakładzie Aprobat Technicznych
przez dr inż. Agnieszkę FLESZAR

Projekt okładki: Ewa Kossakowska

GW II

Kopiowanie aprobaty technicznej
jest dozwolone jedynie w całości

Wykonano z oryginałów bez opracowania wydawniczego

© Copyright by Instytut Techniki Budowlanej
Warszawa 2015

ISBN 978-83-249-8233-2

 Instytut Techniki Budowlanej

Dział Upowszechniania Wiedzy

02-656 Warszawa, ul. Ksawerów 21, tel.: 22 843 35 19

Format: pdf wydano w czerwcu 2015 r. zam. 270/2015



INSTYTUT TECHNIKI BUDOWLANEJ
PL 00-611 WARSZAWA
ul. Filtrowa 1
tel.: (+48 22) 825-04-71
(+48 22) 825-76-55
fax: (+48 22) 825-52-86
www.itb.pl



Member of



www.eota.eu

European Technical Assessment

**ETA-14/0332
of 30/09/2014**

General Part

Technical Assessment Body issuing the European Technical Assessment

Instytut Techniki Budowlanej

Trade name of the construction product

EKOSPAN DACH/EKOSPAN ROOF

Product family to which the construction product belongs

Self-supporting composite panel for use in roofs and ceilings

Manufacturer

EKOSPAN Sp. z o.o.
Janówek, ul. Modrzewiowa 52
05-555 Tarczyn, Poland

Manufacturing plant(s)

EKOSPAN Sp. z o.o.
Janówek, ul. Modrzewiowa 52
05-555 Tarczyn, Poland

This European Technical Assessment contains

10 pages including 2 Annexes which form an integral part of this Assessment

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

Guideline for European Technical Approval ETAG 016 edition November 2003, Part 1: General, Part 2: Specific aspects relating to self-supporting composite lightweight panels for use in roofs, Part 4: Specific aspects relating to self-supporting composite lightweight panels for use in internal walls and ceilings, used as European Assessment Document (EAD)

This European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may be made, with the written consent of the issuing Technical Assessment Body. Any partial reproduction has to be identified as such.

Specific Part

1 Technical description of the product

EKOSPAN DACH/EKOSPAN ROOF is a self-supporting composite lightweight panel consisting of covering inner and upper layers made of OSB/3 board of 15 mm thickness and polyurethane rigid foam insulating core of 122 mm thickness.

The thickness of panel is 152 ± 4 mm. The width of panel is 1250 ± 5 mm. The length of panel is 3000 ± 5 mm.

Properties of the EKOSPAN DACH/EKOSPAN ROOF panel are given in Annex A.

This ETA applies to EKOSPAN DACH/EKOSPAN ROOF panel. All other ancillary components of the roof or ceiling, which are necessary to fix panels and seal joints, are not part of the product covered by this ETA.

2 Specification of the intended use in accordance with the applicable EAD

The EKOSPAN DACH/EKOSPAN ROOF panel is intended to be used as a self-supporting composite lightweight panel for roofs and ceilings. The prefabricated panel does not contribute to the loadbearing capacity of the works. Panel always requires external finishing layers to provide waterproofing. The sections of joint of EKOSPAN DACH/EKOSPAN ROOF panels and fixing are given in Annex B.

The performances given in this European Technical Assessment are based on an assumed working life of the product of 25 years, provided that the product is subjected to appropriate installation, use and maintenance. The indications given on the working life cannot be interpreted as a guarantee given by the producer or Technical Assessment Body, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

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

3.1 Performance of the product

3.1.1 Mechanical resistance and stability (BWR 1)

The EKOSPAN DACH/EKOSPAN ROOF panel is no load - bearing part of works. Mechanical resistance is considered under BWR 4 Safety in use.

3.1.2 Safety in case of fire (BWR 2)

The EKOSPAN DACH/EKOSPAN ROOF panels are classified in class E of reaction to fire in accordance with EN 13501-1, if the side edges and other uncovered PU core surfaces of the boards are protected by OSB/3 boards, solid wood elements or other products of A1 or A2 reaction to fire class.

3.1.3 Hygiene, health and the environment (BWR 3)

3.1.3.1 Water permeability

The water permeability of EKOSPAN DACH/EKOSPAN ROOF panel has not been determined (NPD), since it does not have waterproofing function. The panel need a suitable waterproofing system over it.

3.1.3.2 Vapour permeability

No performance determined (NPD).

3.1.3.3 Content and/or release of dangerous substances

According to the manufacturer's declaration the EKOSPAN DACH/EKOSPAN ROOF panel does not contain dangerous substances according to Directive 67/548/EEC and Regulation (EC) No 1272/2008. In accordance with EN 300, the OSB/3 board meet the requirements od Class E1 with regard to extractable formaldehyde content according to EN 300.

In addition to the specific clauses relating to dangerous substances contained in this ETA, there may be other requirements applicable to the product falling within its scope (e.g. transported European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Regulation No 305/2011, these requirements need also to be complied with, when and where they apply.

3.1.3.4 Dimensional variations

The dimensional behaviour of EKOSPAN DACH/EKOSPAN ROOF panel has not been determined (NPD), since panel is never the outer layer.

3.1.4 Safety in use (BWR 4)

3.1.4.1 Mechanical resistance

3.1.4.2 Mechanical resistance of panels subjected to positive loads

Bending tests of one and two span configuration of EKOSPAN DACH/EKOSPAN ROOF panels were performed in accordance with ETAG 016. The characteristic ultimate load using 1,5 m span in two span configuration is equal 13,0 kN/m² and in one span configuration (3,0 m) is equal 4,2 kN/m².

3.1.4.3 Mechanical resistance of panels subjected to negative loads

The resistance of the panel on its supports, subjected to negative loads (wind suction loads) is limited by the pull through resistance of the panel, i.e. the local resistance of the panel around the fixings. The mechanical resistance of panels subjected to negative loads were performed in accordance with ETAG 016. The fixing elements 220 x 8,0 mm were spaced at least 30 cm, four fixing elements per panel width. The characteristic ultimate load per fixing point is 1,7 kN. There are no damages of panel and the head of screw does not break the layer of the panel.

3.1.4.4 Thermal effect

Thermal effect of EKOSPAN DACH/EKOSPAN ROOF panel has not been determined (NPD), since panel is never the outer layer.

3.1.4.5 Impact resistance

Hard and soft body impact resistance and walkability test results of EKOSPAN DACH/EKOSPAN ROOF panel according to ETAG 016 classification are given below.

Level of accessibility	Impact resistance		Walkability	Use category
	Hard body impact	Soft body impact		
Roofs accessible without protective measures	1 x 10 J	1 x 1200 J	pass	A4

Category A4 means: If no protective measures are foreseen, the roof panels should be favourably assessed with reference to walkability. However, access on roof panels should always be limited to a single person, taking due care.

3.1.4.6 Resistance to fixings

The resistance of the panel as a base to suspend lightweight elements is satisfactory. The sheathing supports without any damages the 3 x 100 N load fixed on the panel through fixing with 4 x 54 mm fasteners.

3.1.4.7 Walkability

For the walkability, the panel withstands 1,2 kN point load applied (10 x 10 cm) with no permanent visible damages.

According to the test results the walkability resistance the EKOSPAN DACH/EKOSPAN ROOF panel is classified as A4 use category.

3.1.5 Protection against noise (BWR 5)

No performance determined.

3.1.6 Energy, economy and heat retention (BWR 6)

No performance determined.

3.1.7 Sustainable use of natural resources (BRW 7)

No performance determined.

3.1.8 Aspects of durability, serviceability and identification

3.1.8.1 Durability

3.1.8.1.1 Creep

The results are given below (for 3,0 m span).

Type of panel	Creep coefficient φ_t
EKOSPAN DACH/EKOSPAN ROOF panel after:	
– 200 h	$\leq 0,3$
– 500 h	$\leq 0,4$
– 1000 h	$\leq 0,5$
– 2000 h	$\leq 0,6$

3.1.8.1.2 Thermal agents

3.1.8.1.2.1 Climate cycles

The EKOSPAN DACH/EKOSPAN ROOF panel requires placement of a finishing covering systems that provides waterproofing on the outer face, so the panel will not be in contact with water. For this reason climatic testing cycles are considered as not relevant.

3.1.8.1.2.2 Thermal shock

The EKOSPAN DACH/EKOSPAN ROOF panel has been submitted to 15 cycles of thermal shock following ETAG 016. The mechanical bending strenght of the panel after thermal shock does not decrease more than 20 %.

3.1.8.1.3 Biological agents

Due to a possibility of biological attack (for example geographical location, high risk of insects, proximity or contact with wood which has suffered xylophages attacks, etc), it might be necessary to apply exclusive treatment against these risks to panel components. The panels described in this ETA are exempt from protection against these attacks.

3.1.8.2 Serviceability

3.1.8.2.1 Resistance to hard body impact

The resistance to hard body impact of EKOSPAN DACH/EKOSPAN ROOF panel has been tested and it is satisfactory, damages have not occurred (no cracks, no indentation, etc).

3.1.8.2.2 Resistance to soft body impact

The resistance to soft body impact of EKOSPAN DACH/EKOSPAN ROOF panel has been tested and it is satisfactory, damages have not occurred (no cracks, no indentation, etc).

3.2 Methods used for the assessment

The assessment of fitness of the self-supporting composite panels for declared intended use in roofs and ceilings has been made in accordance with the ETAG 016 edition November 2003, Part 1: *General*, Part 2: *Specific aspects relating to self-supporting composite lightweight panels for use in roofs*, Part 4: *Specific aspects relating to self-supporting composite lightweight panels for use in internal walls and ceilings*.

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

According to the Decision 2000/447/EC of the European Commission the systems of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following table apply.

Product	Intended use	Level or class	System
Self-supporting composite lightweight panels	For uses contributing to stiffening the structure	–	3
	For uses subject to reaction to fire regulations	A ⁽¹⁾ , B ⁽¹⁾ , C ⁽¹⁾	1
		A ⁽²⁾ , B ⁽²⁾ , C ⁽²⁾	3
		A ⁽³⁾ , D, E, F	4

⁽¹⁾ 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)

⁽²⁾ Products/materials not covered by footnote ⁽¹⁾

⁽³⁾ Products/materials that do not require to be tested for reaction to fire (e.g. products/materials of Class A according to Commission Decision 96/603/EC)

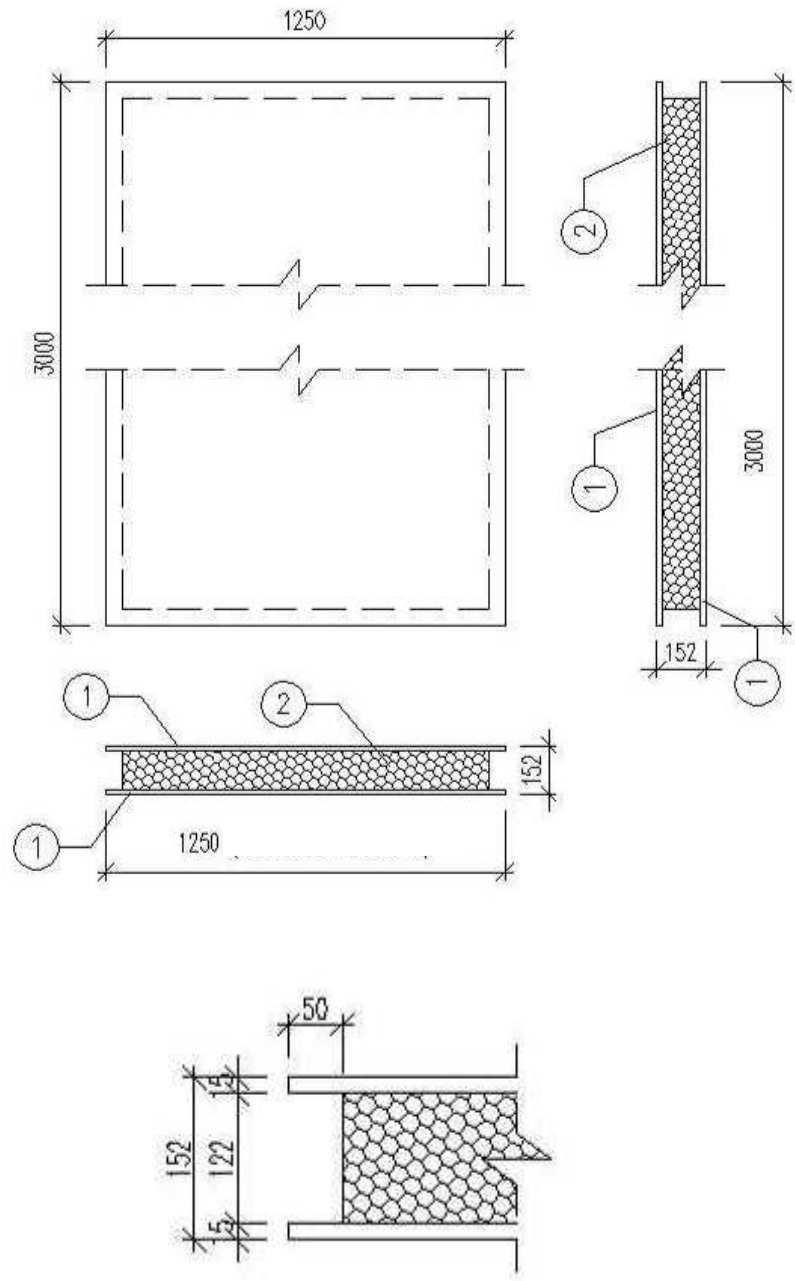
5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at Instytut Techniki Budowlanej.

For type testing the results of the tests performed as part of the assessment for the European Technical Assessment shall be used unless there are changes in the production line or plant. In such cases the necessary type testing has to be agreed between Instytut Techniki Budowlanej and the notified body.

Issued in Warsaw on 30/09/2014 by Instytut Techniki Budowlanej

Michał Wójtowicz
Head of ITB



EKOSPAN DACH/EKOSPAN ROOF composite lightweight panel
 1 - OSB/3 board, 2 - polyurethane rigid foam insulating core

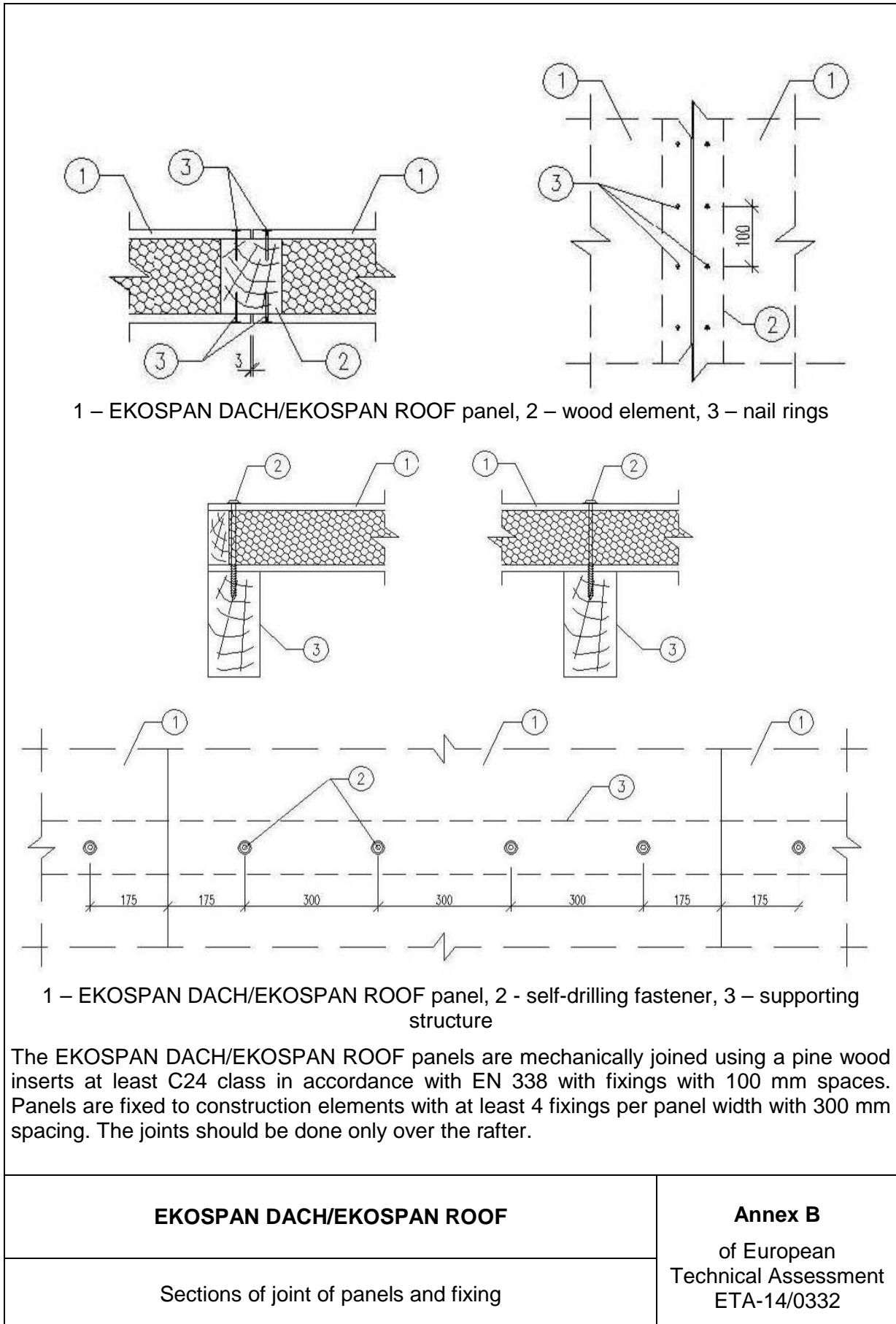
EKOSPAN DACH/EKOSPAN ROOF	Annex A1
Dimensions	of European Technical Assessment ETA-14/0332

Table 1. Properties of the EKOSPAN DACH/EKOSPAN ROOF panel

Density of polyurethane rigid foam insulating core, kg/m ³	≥ 32	EN 1602
Surface mass of panel, kg/m ²	≥ 22	EN ISO 23997
Compressive strength of the panel, kPa	≥ 150	EN 826
Compressive modulus of the panel, MPa	≥ 5	

The OSB/3 particle board is in accordance with EN 13986.

EKOSPAN DACH/EKOSPAN ROOF	Annex A2 of European Technical Assessment ETA-14/0332
Properties of the product	





Instytut Techniki Budowlanej

ISBN 978-83-249-8233-2