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**BUILDING RESEARCH INSTITUTE**

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Series: TECHNICAL APPROVALS

**ITB TECHNICAL APPROVAL**  
**AT-15-8779/2016**

On the basis of the Regulation of the Minister of Infrastructure of 8 November 2004 regarding technical approvals and organizational units authorized to issue them (consolidated text: Dz. U. (Journal of Laws) of 2014, item 1040), as a result of approval procedures carried out at the Building Research Institute in Warsaw, at the request of the company:

**Sistem Metal Yapi Reklam Malzemeleri ve Insaat San. Tic. A.S.**  
**Hatip Mah. Ali Osman Celebi Bulvari No: 140 Corlu-TEKIRDAG, Turkey**

it has been stated that the products under the name:

**Composite panels**  
**ALBOND 9000 A2 and ALBOND 9000 FR**

are suitable for use in construction, in the scope and on terms specified in the Appendix, which is an integral part of this ITB Technical Approval.

Validity period:  
29 Dec 2021.

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DIRECTOR  
of the Building Research Institute  
/Signature/  
Eng. Dr. Marcin M. Kruk

Appendix:  
General and technical provisions

Warsaw, 29 Dec 2016.

ITB Technical Approval AT-15-8779/2016 is an amendment of ITB Technical Approval AT-15-8779/2011. The document of ITB Technical Approval AT-15-8779/2016 contains 12 pages. The text of this document may be reproduced only as a whole document. Publication or distribution of fragments of the text of the Technical Approval in any other form requires written approval from the Building Research Institute.



### **1. SUBJECT OF APPROVAL**

The subject of this ITB Technical Approval are composite panels under trade names ALBOND A2 9000 and ALBOND 9000 FR, manufactured by Sistem Metal Yapi Malzemeleri ve Insaat San. Tic. A. S., Hatip Mah. Ali Osman Celebi Bulvari No: 140 Corlu - TEKIRDAG, Turkey that is legally represented in Poland by Robert Truszkowski, ul. Różana 31, Obora, 59-335 Lubin.

The approval includes the following panels:

- ALBOND 9000 A2- consists of bilateral lining of aluminium sheet and mineral core with inorganic fillers,
- ALBOND 9000 FR - consists of bilateral plates of aluminium sheet and core of composition of low-density polyethylene with mineral filler.

Panel lining is a sheet of aluminium of 0.5 mm thickness, made of aluminium alloy EN AW-3005 or EN AW-3105 in accordance with PN-EN 573-3:2014, state H42, H44 or H46 in accordance with PN-EN 485-2:2009.

Aluminium sheets on the outer (front) side of panels are coated with a protective layer of organic PVDF with a minimum thickness of 22 µm. On the inner side, aluminium sheets are covered with protective epoxy coating with a minimum thickness of 5 µm.

Panels are 4 mm thick, 1000, 1250 or 1500 mm wide and 2000 ÷ 6800 mm long. Panels can be supplied in different lengths and widths upon request.

Required technical specifications of the products covered by the Approval are indicated in paragraph 3.

### **2. INTENDED USE, SCOPE AND CONDITIONS OF APPLICATION**

Composite panels ALBOND 9000 A2 and ALBOND 9000 FR are designed for making:

- external and internal lining of walls and ceilings, column cladding,
- facade layers of light fillers of curtain walls of skeleton construction,
- non-structural fillers of balcony balustrades,
- facade layers of insulation of external walls, executed in a light, dry manner, in newly-built, modernized or repaired buildings.

Linings can be made of flat panels or extruded in the form of a cassette.

Panels ALBOND 9000 A2 have been classified in Class A2-s1, d0 reaction to fire as per PN-EN 13501-1+A1:2010 and the Regulation of the Minister of Infrastructure dated 12 April 2002 regarding technical conditions which must be met by buildings and their location (consolidated text: Dz. U. (Journal of Laws) of 2015, item 1422) as non-flammable and non-fire-spreading (NRO) products when exposed to fire from the side of premises, provided that there is a fixture with at least 40 mm of air void, to the liner of a minimum thickness of 12 mm, a minimum density of 680 kg/m<sup>3</sup> and conforming to the requirements at least of the D-s2 class, d0 reaction to fire as per PN-EN 13501-1+A1:2010.



Table 1 (continued)

Item	Characteristics	Requirements		Research methods
		ALBOND 9000 A2	ALBOND 9000 FR	
1	2	3	4	5
6	Adhesion of core to cladding, defined by the method of pulling off, average in the perpendicular and parallel direction, N/mm: - in the air-dried state - after 1 cycle of exposure to thermal and humidity conditions - after 5 cycles of exposure to thermal and humidity conditions	≥ 4.0 ≥ 3.5 ≥ 3.0	≥ 10.0 ≥ 10.0 ≥ 10.0	p. 5.6.4
7	Classification in the scope of reaction to fire	A2-s1, d0	B-s1, d0	PN-EN 13501+A1:2010
8	Classification in the scope of fire spreading through walls when exposed to fire from the side of facade	-	Non-fire-spreading (NRO)	PN-90/B-02867

Table 2

Item	Characteristics	Requirements	Research methods
1	2	3	4
<b>1</b>	<b>Properties of the organic PVDF coating</b>		
1.1	Appearance (surface condition)	No visible defects or damage	PN-EN ISO 12944-7:2001
1.2	Thickness, µm	≥ 22	PN-EN ISO 2360:2006 or PN-EN ISO 2808:2008
1.3	Adhesion determined by the test of pulling off the base surface by cross-cut method, degree	0	PN-EN ISO 2409:2013
1.4	Pencil hardness	≥ HB	PN-EN ISO 15184:2013
1.5	Elasticity of the coating - bending test	No cracks in the coating at T ≤ 4	PN-EN 13523-7:2014 PN-EN ISO 1519:2012
<b>2</b>	<b>Corrosion resistance to environments over time</b>		
2.1	Resistance to acid salt spray, h	500	PN-EN 1396:2015 PN-EN ISO 9227:2012 PN-EN ISO 6270-1:2002
2.2	Resistance to humidity (continuous condensation of water vapour), h	1000	

#### 4. PACKAGING, STORAGE AND TRANSPORTATION

The products covered by the Approval must be supplied in original packages of the Manufacturer and stored and transported in accordance with the Manufacturer's instructions so that the permanence of their technical properties would be ensured.

Each delivery must include the information containing at least the following data:

- the name and address of the Manufacturer,
- dimensions of the panels,



- additional testing of the finished products (samples) taken at the production factory, carried out by the Manufacturer in accordance with the established plan of research, including testing as per 5.4.3.

b) tasks of the approved units:

- initial type testing,
- initial inspection of production plant and of the factory production,
- continuous surveillance, assessment and approval of the factory production control.

## 5.2. Initial type testing

Initial type test is a test proving the required technical and operational properties, carried out before the introduction of products into circulation.

Initial type testing includes:

- resistance to bending,
- modulus of elasticity in bending,
- adhesion of the core to the cladding,
- classification in the scope of reaction to fire,
- classification in the scope of degree of fire spreading through walls when exposed to fire from the side of façade,
- adhesion of the organic PVDF coating determined by the test of pulling off the base surface by cross-cut method,
- pencil hardness of the organic PVDF coating,
- elasticity of the organic PVDF coating - bending test,
- corrosion resistance of the organic PVDF coating.

The tests, which were the basis for determining the technical and operational properties of the products in the approval procedure, represent the initial type testing in conformity assessment.

## 5.3. Factory production control

Factory production control includes:

1. specification and verification of raw materials and consumables,
2. control and testing during the production process and testing of finished products (p. 5.4.2) carried out by the manufacturer in accordance with the established research plan and according to the rules of procedures specified in the documentation of the factory production control, adapted to the production technology intended to produce goods with the required properties.

Production control must ensure that the products conform to the ITB Technical Approval AT-15-8779/2016. Production control results must be recorded systematically. The records must confirm that the products meet the criteria of conformity assessment. Individual products or batches of products and related manufacturing details must be entirely possible to identify and reproduce.



**5.6.3. Testing the surface weight.** The sample prepared for testing must be weighed accurate to 10 g and then its length and width must be measured accurate to 1 mm. The surface weight is calculated by dividing the weight of the sample by its surface. The arithmetic mean of the five measurements is taken as a result rounded to 0.1 kg/m<sup>2</sup>.

**5.6.4. Testing the adhesion of core to cladding.** Adhesion of the core to cladding is tested as per ASTM D 903:2004(10) by identifying the resistance to pulling the cladding off the core. Testing is carried out on samples of the shapes and dimensions specified in Fig. 1a and according to the scheme indicated in the Fig. 1b, at a speed of 152 mm/min.

1 - external cladding  
2 - the seam between the cladding and the core

1 - the jaws of the testing machine  
2 - tested sample  
3 - hard plate that holds the sample during the tests

Fig. 1a. The shape and size of the sample

Fig. 1b. Scheme of pulling off

The tests are carried out on three sets of samples:

- in the air-dried state (reference samples, without exposure),  
- after 1 cycle of exposure No. D11 as per PN-EN ISO 9142:2005, consisting of the following operations:

- 72 h of water immersion, at room temperature,
- 24 h of cooling at a temperature of -20°C,
- 72 h heating at a temperature of +70°C.

- after 5 cycles of exposure No. D11 as per PN-EN ISO 9142:2005, consisting of the operations as indicated above.

After the above mentioned exposures and 2 hours of seasoning in laboratory conditions, samples are subjected to the pulling-off force in the testing machine.

### 5.7. Collecting test samples

Samples for testing must be collected randomly as per the standard PN-N-03010:1983.



The validity period of the ITB Technical Approval can be extended for further periods, if the Applicant or a formal successor will apply to the Building Research Institute on this matter with the appropriate application no later than 3 months before the expiry of this document.

**THE END**

### ADDITIONAL INFORMATION

The norms and documents associated

PN-EN 485-2:2009	<i>Aluminium and aluminium alloys. Plastically processed products. Designation of states</i>
PN-EN 573-3:2014	<i>Aluminium and aluminium alloys. Chemical composition and types of plastically processed products. Part 3: chemical composition and kinds of products</i>
PN-EN 13523-7:2014	<i>Metals coated by continuous process. Research methods. Part 7: Resistance to cracking during the bending test (bending in T)</i>
PN-EN ISO 178:2011	<i>Plastic. Determination of flexural properties</i>
PN-EN ISO 845:2010	<i>Porous plastic and rubber. Determination of apparent density</i>
PN-EN ISO 1519:2012	<i>Paints and varnishes. Bend test (cylindrical pin)</i>
PN-EN ISO 2360:2006	<i>Non-conductive coatings on non-magnetic conductive substrates. Measurement of coating thickness. Amplitude method of eddy currents</i>
PN-EN ISO 2409:2013	<i>Paints and varnishes. Testing by cross-cut method</i>
PN-EN ISO 2808:2008	<i>Paints and varnishes. Determination of film thickness</i>
PN-EN ISO 12944-7:2001	<i>Paints and varnishes. Corrosion protection of steel structures through the use of painting methods. Part 7: Carrying out and supervision of painting works</i>
PN-EN ISO 9142:2005	<i>Adhesives. Guidelines for the selection of standardized aging laboratory conditions for testing adhesive joints</i>
PN-EN ISO 9223:2012	<i>Corrosion of metals and alloys. Atmospheric corrosiveness. Classification, definition, and assessment</i>
PN-EN ISO 9227:2012	<i>Corrosion tests in artificial atmospheres. Salt spray tests</i>
PN-EN ISO 12944-2:2001	<i>Paints and varnishes. Corrosion protection of steel structures through the use of painting methods. Part 2: Classification of environments</i>
PN-EN ISO 15184:2013	<i>Paints and varnishes. Determination of coating hardness by the pencil method</i>
PN-N-03010:1983	<i>Statistical quality control. Random selection of production units for testing</i>
ASTM D 903:2004(10)	<i>Standard test method for peel or stripping strength of adhesive bonds</i>
PN-EN ISO 6270-1:2002	<i>Paints and varnishes. Determination of resistance to moisture. Part 1: Continuous condensation</i>



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**CERTIFICATE OF CONFORMITY**  
**ITB-2514/W**

Hereby it is confirmed that

**COMPOSITE PANELS**  
**ALBOND 9000 A2 and ALBOND 9000 FR**

listed in cl. 1 AT-15-8779/2016  
on the intended use, scope and conditions of application in accordance with cl. 2 AT-15-8779/2016  
on the technical characteristics specified in cl. 3 AT-15-8779/2016

manufactured by:

**SİSTEM METAL YAPI REKLAM MALZEMELERİ VE İNŞAAT SAN. TIC. A.S.**  
**Hatip Mah. Ali Osman Celebi Bulvari No:140**  
**Corlu-Tekirdag, Turkey**

in the production plant:

**SİSTEM METAL YAPI REKLAM MALZEMELERİ VE İNŞAAT SAN. TIC. A.S.**  
**Hatip Mah. Ali Osman Celebi Bulvari No:140**  
**Corlu-Tekirdag, Turkey**

meet the requirements specified in:

**Technical Approval No AT-15-8779/2016**

The manufacturer has implemented the system of factory production control and carries out testing of product samples taken at the factory in accordance with the research plan.

The ITB Certification Center has conducted initial type testing and initial inspection of production factory and of factory production control and performs continuous surveillance, assessment and approval of the factory production control.

This certificate is a document required in the conformity assessment system 1, in accordance with the Regulation of the Minister of Infrastructure of 11 August 2004 *regarding the methods of declaring the conformity of construction products and method of marking them with the construction mark* (Dz. U. (Journal of Laws) No. 198, item 2041 as amended).

Certificate of conformity No ITB-2514/W was released for the first time on 31.12.2016. This certificate can be applied only in relation to products meeting the requirements indicated in the technical specification and is valid until 29.12.2021, if the technical specification remains valid and the product type, conditions and place of production or the system of factory production control have not undergone significant changes.

HEAD  
of Certification Center  
/Signature/

M.Sc. Katarzyna Hatowska

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DIRECTOR  
of the Building Research Institute  
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Eng. Dr. Marcin M. Kruk

Warsaw, 31.12.2016



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**CERTIFICATION MARK**

The company

**SİSTEM METAL YAPI REKLAM MALZEMELERİ VE İNŞAAT SAN. TIC. A.Ş.**  
**Hatip Mah. Ali Osman Celebi Bulvari No:140**  
**Corlu-Tekirdag, Turkey**

which is the manufacturer of

**COMPOSITE PANELS**  
**ALBOND 9000 A2 and ALBOND 9000 FR**

is authorized to use the certification mark ITB "CONSTRUCTION PRODUCT" ("WYRÓB BUDOWLANY")  
during the period of validity of the certificate No. ITB-2514/W



**ITB-2514/W**

HEAD  
of Certification Center

*/Signature/*  
M.Sc. Katarzyna Hatowska

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Eng. Dr. Marcin M. Kruk

Warsaw, 31.12.2016

