



TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.
Technical and Test Institute for Construction Prague

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Authorized Body 204 empowered by the Decision of COSMT No. 5/2017
Branch Office 0600 – Brno

in compliance with Act No. 22/1997 Coll. on Technical Requirements for Products and on Amendments to Some Acts as amended and Section 2 and 3 of Government Decree No. 163/2002 Coll., as amended by Government Decree No. 312/2005 Coll. and by the Government Decree No. 215/2016 Coll.

TECHNICAL APPROVAL

No. 060-047383

Product name:

**DAKOBET- composite (fibre-glass cement) segments
for pre-suspended claddings**

Type / variety:

G16, G18

manufacturer:

DAKO Brno, spol. s r.o.

INo: 634 92 792
Address: 664 58 Prace, Křenovská 333, Czech Republic
Plant: **DAKO Brno, spol. s r.o.**
Address: 664 58 Prace, Křenovská 333, Czech Republic
Order No.: Z060150141

The Authorized Body 204 confirms by this Technical Approval the technical characteristics of the product, their levels and procedures of determination in relation to the essential requirements specified in Annex No. 1 to the Government Decree No. 163/2002 Coll. as amended by the Government Decree No. 312/2005 Coll. and by the Government Decree No. 215/2016 Coll.

The technical Approval is a technical specification intended for assessing of conformity of the mentioned product.

Number of pages of the Technical Approval, including the title page: 3

This Technical Approval is compiled by:


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Lead Assessor

This Approval is valid until: September 30, 2021

Person responsible for correctness of this Technical Approval:

Brno, September 11, 2018




Ing. Miroslav Procházka
Deputy Head of the Authorized Body 204

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1. INFORMATION ABOUT THE PRODUCT AND ITS INTENDED USE:

DAKOBET composite segments are intended for suspended cladding both inside and outside buildings; therefore, they cannot be designed for load bearing structures. They are made of fibre-glass reinforced concrete along their outer circumference and if needed, the inner surface is reinforced with a circumference frame and bracing ribs, the dimensions of the segments vary based on the design. The pieces are produced exclusively to order. Anchoring of the cladding for the individual application is designed and assessed individually.

Segments are designed of fibre-glass reinforced concrete using alkali-resistant glass fibre, cement, sand and other additives. The material does not contain organic ingredients. The front surface of the segments can be aesthetically adjusted.

2. DETERMINATION OF OBSERVED CHARACTERISTICS AND METHODS OF VERIFICATION

Tab. 1 Requirements for observed properties of the product in relation to basic properties (typ G16)

| No. | Characteristic | Test method | No. of samples | | Required (P) / Declared value (D) | |
|-----|---|---|----------------|---|--|--|
| | | | C/T | D | G16 | G18 |
| 1. | Bending strength after 28 days of ageing | EN 1170-5 | 8 | 8 | D: $\sigma_{MOR} \geq 16 \text{ MPa}$ $\sigma_{LOP} \geq 7 \text{ MPa}$ | D: $\sigma_{MOR} \geq 18 \text{ MPa}$ $\sigma_{LOP} \geq 7 \text{ MPa}$ |
| 2. | Absorption of water | EN 1170-6 | 4 | - | D: $\leq 7 \% \text{ hm.}$ | |
| 4. | Dry density | EN 1170-6 | 4 | 4 | D: $\geq 1950 \text{ kg.m}^{-3}$ | |
| 5. | Cyclic weathering type test | EN 1170-8 | 8 | - | D: $L(\sigma_{MOR}) \geq 0,8$ | |
| 6. | Frost resistance | ČSN 73 1322 | 3 | 3 | D: T 100 Frost resistance coefficient $\geq 0,75$ | |
| 7. | Type and diameter determination of used fibre | x-ray diffraction analysis on powder test samples | 1 | 1 | D: Alkali-resistant fibre | |
| 8. | Index of mass activity of naturally occurring radionuclides | Decree No. 422/2016 Coll. | 1 | - | P: $I \leq 1,0$ | |
| 9. | Reaction to fire | EN 13501-1+A1 | - | - | D: Class A1 of reaction to fire | |

Note: C – product certification (§ 5 or § 10), T – verification of product conformity (§ 7),
S – surveillance over certified product (only § 5 or § 10)

Properties of change in length, resistance to absorbability chemicals, coefficient of sound absorption, sound-reduction index, non-flammability index, combustion heat, inflammability thermal effect of individual burning object are not relevant for the assessed product with regard to its application.

3. FACTORY PRODUCTION CONTROL

- General requirements of Factory Production Control are provided in Annex No. 3 of Government Decree No. 163/2002 Coll. as amended by Government Decree No. 312/2005 Coll. and Government Decree No. 215/2016 Coll.

4. DATA PROPOSED BY THE APPLICANT

- Application for Performance of Activity of Authorized body 204, issued 28. April 2015
- Technical paper on glass fibre
- Test Report No. 060-037420, issued by TZUS Praha, branch Brno, on 19. April 2013
- Test Report No. 040-048662, issued by TZUS Praha, branch Teplice, on 1.6.2015

5. LIST OF APPLIED TECHNICAL INSTRUCTIONS, STANDARDS AND OTHER DATA

- Act No. 22/1997 Coll. on Technical Requirements for Products and on Amendments
- Nuclear law No. 263/2016 Coll. as amended
- Decree on radiation protection and radionuclide source security No. 422/2016 Coll. as amended



- Government Decree No. 163/2002 Coll. for determination of technical requirements on building products, as amended by Government Decree No. 312/2005 Coll. and Government Decree No. 215/2016 Coll.
- ČSN 72 3000 Production and inspection of concrete prefabricated elements. Common regulations
- EN 13369 Common rules for precast concrete products (72 3001)
- EN 1170-5 Precast concrete products - Test method for glass-fibre reinforced cement - Part 5: Measuring bending strength, "Complete bending test" method (72 3410)
- EN 1170-6 Precast concrete products - Test method for glass-fibre reinforced cement - Part 6: Determination of the absorption of water by immersion and determination of the dry density
- EN 1170-8 Test method for glass-fibre reinforced cement - Part 8: Cyclic weathering type test (72 3410)
- EN 1169 Precast concrete products - General rules for factory production control of glass-fibre reinforced cement (72 3411)
- ČSN 73 1201 Design of concrete structures of buildings
- ČSN 73 1322 Determination of frost resistance of concrete
- ČSN 73 2030 Loading tests of building structures. Common regulations
- EN 15191 Precast concrete products - Classification of glassfibre reinforced concrete performance
- TN 11.04.08 boards and segments of glass-fibre reinforced cement

6. VERIFICATION TESTS

No verification tests have been performed in order to compile this Technical Approval.

7. SPECIFYING REQUIREMENTS FOR EVALUATION OF CONFORMITY

The composite fibre-glass reinforced cement segments for external and internal cladding are classified as products group No.11, items 4 pursuant to Annex 2 to Government Decree No. 163/2002 Coll. as amended, i.e. they are specified to verify conformity by the producer pursuant to Clause 7 thereof. Upon the application of the applicant, the procedure is followed under Clause 5 in accordance with provision of Clause 10

The producer shall be obliged to follow the Factory Production Control according to Clause 5 of the Government Decree No. 163/2002 Coll. as amended. Surveillance over the certified product shall be carried out once per 12 months.

