## TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.

#### Technical and Test Institute for Construction Prague

Accredited Testing Laboratory, Authorised Body, Notified Body, Technical Assessment Body, Certification Body, Inspection Body Prosecké 811/76a, 190 00 Praha 9

## Central Laboratory - Testing Department České Budějovice

Nemanická 441, 370 10 České Budějovice

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# TEST REPORT

issued by Testing Laboratory

No. 020-039987

# on Initial Type Testing according to EN 13963

- Adhesion to substrate
- Bending tensile strength
- Cracking
- Granularity
- Setting time
- Content of natural radionuclides

Manufacturer:

OOO «PAK«RieltInvest Ocenka»

Address:

Russian Federation, 352272, Krasnodarskii region,

Otradenskij rajon chutor Chloponin, Moskevska Str. 1

Company ID:

2345004377

Plant:

Russian Federation, 352272, Krasnodarskij region, Otradenskij rajon chutor Chloponin, Moskevska Str. 1

Test sample:

Gypsum putty No.21 T.M. "Power Plast"

Order No.:

Z020180162

Number of pages of the Test Report incl. title page: 3

Pages of annexes: 1

Prepared by:

Ing. Dana Pilařová

test technician - specialist

Approved by:

Print No.: 1

Number of prints: 2

BNIUS

Ing. Vilém Migl manager of the testing department

České Budějovice, on 16.11.2018

Declaration: 1) The test results in this Report relate only to the tested article and they do not substitute any other documents 2) The Test Report must be copied as a whole only otherwise a written consent of the testing laboratory is needed

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Account No.: 1501-931/0100 Entered in the Commercial Register maintained by Municipal Court in Preque, Section ALX, Insert 711, Comp. ID: 00015679, VAT: CZ00015679

#### 1. Sample data

Evidence Number:

VZ020182158

Sample:

Gypsum putty No. 21 "Power Plast"

Date of sample delivery:

04. 10. 2018

Sampling method

1 undamaged packaging

Method of the sample

According to the instructions in ČSN EN 13963. Water consumption: 600 g / 1000 g of dry mix

Test body maturing time: 7 days

Data on sampling conditions, plan and procedure of sampling and name of the person who performed sampling are stated in the Sampling Minutes that are stored in the Testing Department.

#### 2. Test method

EN 13963:2014

preparation:

Jointing materials for gypsum boards - Definitions, requirements and

test methods

Deviations from a standard procedure or the use of non-standardized methods were not applied.

#### 3. Test results

The test was carried out on:

17. 10. - 25. 10. 2018

The test was performed by:

Marie Kubešová

Data on the person who performed the test, test conditions and equipment used are listed in the Test Minutes. Apparatuses and measuring instruments that used have been certified pursuant to a valid plan of the Testing.

## 3.1 Adhesion to substrate according to ČSN EN 13963, Art. 5.5

Base body: plasterboard of type A (EN 520)

	Adhesion [MPa]	Type of body damage
Individual values	0.22	100% in plasterboard (C)
	0.18	100% in plasterboard (C)
	0.20	100% in plasterboard (C)
	0.19	100% in plasterboard (C)
	0.17	100% in plasterboard (C)
Average value	0.19	

#### 3.2 Bending tensile strength according to ČSN EN 13963, Art. 5.8.2

Individual values	Bending tensile strength [N]		
	116	115	115
	108	115	115
	110	105	116
	115	111	115
	113	117	111
Average value		116	

Type of body damage: 100% in plasterboard.

#### 3.3 Cracking according to ČSN EN 13963, Art. 5.3

The testing was carried out according to the instructions of the standard applicable to the testing type 2B sealants. A metal rod with a diameter of 2 mm was used.

There were no cracks developing on the entire surface of the test specimen.

#### 3.4 Granularity according to ČSN EN 13963, Art. 5.4

	Remainder on sieve [%]	
Sieve 200 µm	0.00	
Sieve 315 µm	0.00	

#### 3.5 Setting time according to ČSN EN 13963, Art. 5.2

Setting time of the joint sealing material: 430 min.

# 3.6 Determination of Content of natural radionuclides

The tests were performed by TZÚS Prague, Teplice Branch, Tolstého 447,4150 03 Teplice. The test results are stated in the Testing report No. 040-059543 date of 05.11.2018.

Natural radionuclide	Measured activity concentration "a" [Bq·kg <sup>-1</sup> ]		Activity concentration index "I" (calculation)	
Ra-226	a <sub>Ra</sub>	10 ± 4		
Th-228	a <sub>Th</sub>	< 1	<b>0.03</b> (for $a_K = 0$ ) <b>to 0.05</b> (for $a_K = 19$ )	
K-40	a <sub>K</sub>	< 42		

#### 4. Conclusion

Requirements for gypsum mortars according to EN 13963 Gypsum putty No. 21 T.M. "Power Plast" - class B2

	Requirement EN 13963	Test results	Evaluation
Flexural strength	no requirement	116 N	conformity
Setting time (long-setting jointing material)	> 180 min	430 min	conformity
Cracking	no cracks	no cracks	conformity
Remainder on sieve 200 µm Remainder on sieve 315 µm	< 1.0% 0.0 %	0.0 % 0.0 %	conformity
Adhesion to substrate	<ul> <li>Failure in the substrate</li> <li>≥ 0.25 MPa for the failure in between the substrate and the plaster</li> </ul>	0.19 MPa (Failure in the substrate)	conformity
Content of natural radionuclides: - Activity concentration index "I" - activity concentration "a" Ra-226	≤ 1.0 ≤ 150 Bq·kg <sup>-1</sup>	from 0.03 to 0.05 10 ± 4 Bq·kg <sup>-1</sup>	conformity

#### 5. Annexes

Testing report No. 040-059543 date of 05.11.2018 - TZÚS Teplice.

**END OF THE TEST REPORT** 





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

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# Centrální laboratoř - zkušebna Teplice

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# REPORT No. 040-059543

Measuring and evaluating the content of natural radionuclides in construction materials.

Basic data: Sample data: Client: 000 «PAK«RieltInvest Otsenka» Sample No .: VZ 040 18 2206 Address: Russian Federation, 352272, Krasnodar Sample: Gypsum putty No21 T.M. Power Plast Territory, Otradnensky District, Hutor Khloponin, Moskovskaya Street, No.1 Company Kind of material: Building products of concrete, gypsum, identification No .: cement and lime Production plant: OOO «PAC«RiseltInvestRating» Sampling site: Plant Address: Russian Federation, 352272, Krasnodar Sampling date: 05.10.2018 (delivered to the Czech Territory, Otradnensky District, Hutor Republic) Khloponin, Moskovskava Street, No. 1 Job No.: Z040 18 0256 Date received: 10.10.2018 Measurement 02.11.2018

Permission to measure and evaluate the content of natural radionuclides in construction materials was granted to Technický a zkušební ústav stavební Praha, s.p. - Teplice Branch by the decision of State Office for Nuclear Safety ref. No. SÚJB/OPZ/16533/ 2008 on 15 July 2008 with unlimited validity

date:

Result of the test:

Test: Measuring and evaluating the content of natural radionuclides in construction materials.

Test procedure The sample was measured in a standard Marinelli beaker after radioactive equilibrium was established by EMS-1 SH detection system, ser. No.: ÚJP 025, made by EMPOS, s. r. o. Praha (scintillation detector

NaJ/TI 50 × 50 mm, MCA 1256), verified pursuant to Act on Metrology No. 505/1990 Coll. - Verification Certificate ČMI No. 1054-PS-50031-17 of 29 December 2017, valid until 31 December 2019.

Mr. Lukáš Rulf (Decision of SÚJB to grant authorization ZOZ ref. No. SÚJB/OPR/14241/2018) Responsible worker: Sample taken by:

manufacturer's representative

Measured activity concentration "a" [Bq·kg <sup>-1</sup> ]	Activity concentration index "I" (calculation)
a <sub>Ra</sub> 10 ± 4	<b>0, 03</b> (for a $_{K}$ = 0) <b>až 0,05</b> (for a $_{K}$ = 42)
a <sub>Th</sub> < 1	$I = a_{K}/3000 \text{ Bq kg}^{-1} + a_{Ra}/300 \text{ Bq kg}^{-1} + a_{Th}/200 \text{ Bq kg}^{-1}$
a <sub>K</sub> < 42	(see Section 3 (h) of the SÚJB Decree No. 422/ 2016 Coll.)
	concentration "a" [Bq·kg <sup>-1</sup> ]  a <sub>Ra</sub> 10 ± 4  a <sub>Th</sub> < 1

- 1. The value of activity concentration a<sub>Ra226</sub> of the sample does not exceed the limited values specified for this material by SÚJB Decree No. 422/ 2016 Coll. as amended (see Section 96(1) and Table No. 1 of Appendix No. 10).
- 2. The value of activity concentration index "I" of the sample does not exceed any of the specified values determined according to the use of the material by SÚJB Decree No. 422/ 2016 Coll. as amended. (see Section 96(2) and Table No. 2 of Appendix No. 10).

**Testing equipment:** 

The used instruments and gauges are verified and calibrated according to the valid plan at the Teplice Testing Facility.

**Author:** 

Lukáš Rulf

author of this document

Approved by:

Ing. Pavel Bartoš testing facility manager deputy Teplice on 05.11.2018

Copy No .:

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