TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.
Technical and Test Institute for Constructions Prague
pobočka / branch České Budějovice
Akreditovaná zkušební laboratoř • Autorizovaná osoba • Certifikační orgán • Inspekční orgán
Accredited Test Laboratory • Authorised Body • Certification Body • Inspection Body

REPORT

No. Z 020-039450

on Initial Type Testing according to EN 13279-1

- **Adhesion to substrate**
- **Flexural and compressive strength**
- **Setting time**
- **Content of natural radionuclides**
- **Gypsum binder content**

Manufacturer:	**OOO «PAK«RieltInvest Ocenka»**
Address:	Russian Federation, 352272, Krasnodarskij 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 plaster light „T.M.Power Plast"
Order No.:	Z020180162

Number of pages of the report including tittle-page: 4 Number of Annexes: 1

Prepared by:

Ing. Dana Pilařová
specialist

Approved by:

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Ing. Vilém Migl
manager of the testing department

Print No.: 1
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České Budějovice, on 14.08.2018

Stamp of Branch

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.

1. Sample data

Evidence Number:	VZ020181046
Sample:	Gypsum plaster light „T.M.Power Plast"
Date of sample delivery:	27. 6. 2018
Sampling method	1 undamaged packaging
Method of the sample preparation:	According to the instructions in ČSN EN 13279-2. Water consumption: 520 g / 1000 g of dry mix Test body maturing time: 7 days

Data of sampling conditions, plan and sampling procedure, if necessary, the name of the person performing the sampling are listed in the minutes of sampling, which is stored in the testing department

2. Test methods

EN 13279-1:2008	Gypsum binders and gypsum plaster - Part 1: Definitions and requirements.
EN 13279-2:2014	Gypsum binders and gypsum plaster - Part 2: Test methods.

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

3. Test results

The tests were carried out on: 9. 7. - 16. 7. 2018

The tests were performed by: Marie Kubešová

Date about person performing the test, testing equipment and about test conditions are listed in test minutes. All measurement and test equipment are calibrated according to valid plan of the testing department.

3.1 Determination of adhesion to substrate according to EN 13279-2, Art. 4.6

	Determined value [MPa]		Type of body damage
	individual	average	
plasterboard	0.18	**0.19**	100% in substrate (c)
	0.19		100% in substrate (c)
	0.20		100% in substrate (c)
	0.19		100% in substrate (c)
	0.18		100% in substrate (c)
concrete	1.12	**1.17**	100% in gypsum plaster (b)
	1.18		100% in gypsum plaster (b)
	1.19		100% in gypsum plaster (b)
	1.19		100% in gypsum plaster (b)
	1.18		100% in gypsum plaster (b)
porous concrete	0.41	**0.39**	100% in substrate (c)
	0.36		100% in substrate (c)
	0.38		100% in substrate (c)
	0.40		100% in substrate (c)
	0.39		100% in substrate (c)

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3.2 Determination of flexural and compressive strength according to EN 13279-2, Art. 4.5.4 and 4.5.5

	Determined value [MPa]	
	individual	average
Flexural strength	2.20 2.28 2.07	2.18
Compressive strength	6.70 6.92 6.43 6.83 6.91 7.24	6.84

3.3 Determination of setting time according to EN 13279-2, Art. 4.4.2 Vicat cone test method

Beginning of the hardening: **360 min**.

3.4 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. 040-058633 date of 27.07.2018.

Natural radionuclide	Measured activity concentration "a" [Bq·kg^{-1}]		Activity concentration index "I" (calculation)
Ra-226	a_{Ra}	9 ± 3	**0.03** (for $a_K = 0$) **to 0.05** (for $a_K = 19$)
Th-228	a_{Th}	< 3	$I = a_K / 3000$ Bq·kg^{-1} + $a_{Ra} / 300$ Bq·kg^{-1} + $a_{Th} / 200$ Bq·kg^{-1}
K-40	a_K	< 19	(see Section 3 (h) of the SÚJB Decree No. 307/ 2002 Coll.)

3.5 Content of the gypsum binder

Manufacturer´s technical requirements TY 23.64.10-001-48456123-2018 – manufacturer declares 95% content of the gypsum binder.

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4. Conclusion

Requirements for gypsum mortars according to EN 13279-1
Gypsum plaster light „T.M.Power Plast" - class B4

	Requirement EN 13279-1	Test results	Evaluation
Content of the gypsum binder	≥ 50%	95%	conformity
Beginning of hardening	> 20 min	360 min	conformity
Flexural strength	≥ 1.0 MPa	2.18 MPa	conformity
Compressive strength	≥ 2.0 MPa	6.84 MPa	conformity
Adhesion to substrate	• Failure in the plaster • Failure in the substrate • ≥ 0.1 MPa for the failure in between the substrate and the plaster	1.17 MPa	conformity
Content of natural radionuclides: - Activity concentration index "I" (calculation) - activity concentration „a" Ra-226	≤ 1.0 ≤ 150 $Bq \cdot kg^{-1}$	- from 0.03 to 0.05 - 9 ± 3 $Bq \cdot kg^{-1}$	conformity

5. Annexes

Testing report No. 040-058633 date of 27.07.2018 – TZÚS Teplice.

END OF THE REPORT

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Laboratoř radionuklidů č. m.: 113

L 1018.3

REPORT No. 040-058633

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

Basic data:		**Sample data:**	
Client:	**OOO «PAK«RieltInvest Otsenka»**	Sample No.:	VZ 040 18 1449
Address:	Russian Federation, 352272, Krasnodar Territory, Otradnensky District, Hutor Khloponin, Moskovskaya Street, No.1	Sample:	Gypsum plaster light „T.M.Power Plast
Company identification No.:	---	Kind of material:	Building products of concrete, plaster, cement and lime
Production plant:	**OOO «PAC«RiseltInvestRating»**	Sampling site:	plant
Address:	Russian Federation, 352272, Krasnodar Territory, Otradnensky District, Hutor Khloponin, Moskovskaya Street, No. 1	Sampling date:	27.06.2018 (delivered to the Czech Republic)
Job No.:	Z040 18 0183	Date received:	26.07.2018
		Measurement date:	27.07.2018

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

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/Tl 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.
Responsible worker:	Mr. Lukáš Rulf (Decision of SÚJB to grant authorization ZOZ ref. No. SÚJB/OPZ/14967/2008)
Sample taken by:	manufacturer's representative

Natural radionuclide	Measured activity concentration "a" [Bq·kg^{-1}]		Activity concentration index "I" (calculation)
Ra-226	a_{Ra}	9 ± 3	**0, 03** (for a_K = 0) **až 0,05** (for a_K = 19)
Th-228	a_{Th}	< 3	$I = a_K / 3000$ Bq·kg^{-1} + $a_{Ra} / 300$ Bq·kg^{-1} + $a_{Th} / 200$ Bq·kg^{-1}
K-40	a_K	< 19	(see Section 3 (h) of the SÚJB Decree No. 307/ 2002 Coll.)

Test evaluation:

1. The value of activity concentration a_{Ra226} of the sample does not exceed **the limited values** specified for this material by SÚJB Decree No. 307/ 2002 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. 307/ 2002 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 27.07.2018

Copy No.:

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Statement: The test results presented in this Report apply only to the tested object and do not substitute any other documents.
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