

EC Declaration of Conformity

Producer:	ZORKA KERAMIKA D.O.O.
Address:	Jovana Đorđevića 2, 21000 Novi Sad , Serbia
Company ID:	17550829
Based in:	ZORKA KERAMIKA D.O.O. , Jovana Đorđevića 2, 21000 Novi Sad , Serbia
Product:	Ceramic tiles – dry - pressed floor tiles EN 14411 with water absorption ($E \leq 0,5 \%$), appendix G, group B la
A harmonized technical specifications survey which the product is conformed with	
Labeling	Name
EN 14411	Ceramic tiles – Definitions, classification, characteristics and marking
Notified person:	Technický a zkušební ústav stavební Praha, s.p., Notified person no.1020 , Prosecká 811/76a, Praha, IČ: 00015679

The mentioned product conforms to the Appendix ZA.1, ZA.2, ZA.3, ZA.4 stated technical specifications. The appendixes with the CE specification are an integral part of this Declaration.

The authorized person to confirm the EU Declaration of Conformity

In _____ of the day

In Sabac 10th February 2010



General manager / authorized person



Corresponding standard: EN 14411, appendix G
Type of ceramic tiles: dry-pressed
 group Bla
Style to use: interior and exterior floors and walls

Name and address of manufacturer: ZORKA KERAMIKA D.O.O.,
 Jovana Đorđevića 2, 21000 Novi Sad , Serbia

Summary of properties

Property	Declared value and or class	Number of protocol
Reaction to fire	class A1 _{fl} without testing	(resolution 96/603 EHS)
Breaking strength Modulus of rupture	-breaking strength: > 700 N(for thickness < 7,5 mm) >1300 N(for thickness ≥7,5 mm) -modulus of rupture R average: min. 35 N/mm ² individual:: min. 32 N/mm ² EN ISO 10545-4	Protocol No. 1020-CPD-030042315
Release of regulated dangerous substances -release of cadmium - release of lead	max. 0,07 mg/dm ² max. 0,8 mg/dm ² EN ISO 10545-15 **	Protocol No. 1020-CPD-030042315
Coefficient of friction (slipperiness)	Values of slipperiness by methods A,B,C and D according declaration*	Protocol 030_042316
Frost resistance	Required EN ISO 10545-12	Protocol 030_042316
Bond strength/adhesion	- for cementitious adhesives: ≥ 0,5 N/mm ² - for dispersion adhesives: ≥ 1,0 N/mm ² - for reaction resin adhesives: ≥ 2,0N/mm ²	Protocol 030_042316
Classification of capacity of natural radionuclides	max. index specific activity 1,0 Law Nr. 13/2002 a Notice SÚJB ČR Nr. 307/2002 ***	Protocol No. 902224S2

Note:

* ČSN 72 5191: 2003 Ceramic tiles Determination of slipperiness

** Decree 38/2001 Coll. Ministry of Health of the Czech Republic

*** Act No. 13/2002 Coll. § 6 and detailed SONS Decree No. 307/2002 in § 96



TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.

Technical and Test Institute for Construction Prague

Akreditovaná zkušební laboratoř, Autorizovaná osoba, Notifikovaná osoba, Certifikační orgán, Inspekční orgán
Accredited Test Laboratory, Authorised Body, Notified Body, Certification Body, Inspection Body
Prosecká 811/76a, 190 00 Praha 9, Czech Republic

Authorised Body 204

Notified Body 1020

Branch 0300 – Plzeň

REPORT

on the initial type test

pursuant to Article 5 Clause 1 b) of the Czech Republic Government Decree No. 190/2002 Coll. (system of conformity assessment 3), and in compliance with Direction 89/106/EEC of the Council of the European Communities (Construction Products Direction-CPD), as amended by Direction 93/68/EEC of the Council of the European Communities

No. 1020 – CPD – 030042315

Trade name:

Dry – pressed ceramic tiles with low water absorption ($E \leq 0,5 \%$) declared according to ČSN EN 14411, Group B la Annex G

Manufacturer:

ZORKA KERAMIKA D.O.O.

IČ:

address: Jovana Đorđevića 2, 21000 Novi Sad, Serbia

Production

plant:

ZORKA KERAMIKA D.O.O.

IČ:

address

Hajduk Veljkova 1 Šabac, Serbia


Order no.:

Z030100003

Number of pages of the Protocol incl. a title page: 3

Number of pages of Appendixes: 0


The person taking responsibility for the content of this report:


Ing. Hana Kotorová
Head Assessor

The person taking responsibility for correctness of this report:

Plzeň 5. February 2010


Stamp of Notified Body 1020


Ing. Alexander Trinner
Deputy Manager of Notified Body

Warning: Without written approval of Authorized Body Assistant Manager, this Protocol may be reproduced only as the entire document

Technický a zkušební ústav stavební Praha, s. p., Pobočka 0300 - Plzeň,
☎: 377 243 331, ☎: 377 430 345, Fax: +420 377 430 347, Internat.: +420 377 244 158,
Bankovní spojení (Bank): KB Praha 1 Czech Republic, ú.č.: 1501-931/0100

Zahradní 15, 326 00 Plzeň, Česká republika
✉ e-mail: tzus03@quick.cz, www.tzus.cz
IČ: 000 15679 DIČ/VAT: CZ00015679

1 Specification of test sample

Specification of sample:	Dry – pressed ceramic tiles with low water absorption ($E \leq 0,5 \%$) declared according EN 14411, Group B la Annex G
Technical specification	EN 14411 – Ceramic tiles – Definitions, classification, characteristics and marking
Producer:	ZORKA KERAMIKA D.O.O: Jovana Đorđevića 2, 21000 Novi Sad , Serbia
Production plant:	ZORKA KERAMIKA D.O.O. Hajduk Veljkova 1 Šabac, Serbia
Description and determination:	For exterior and interior use on floors and walls
Date of test termination	2010-01-25

2 Sampling

Date of sampling::	2009-05-21
Place of sampling:	dispatch store of the delegate of producer
Sampled by:	the delegate of producer
Method of sampling:	random selection
Method of transport:	by a vehicle of the delegate of producer
Date of take-over:	2009-05-11
Date of test termination:	09-0534

3 Test Results

3.1 Determination of modulus of rupture and breaking strength

The determination was carried out in compliance with the following testing method:	EN ISO 10545-4 Ceramic tiles – Part 4: Determination of modulus of rupture and breaking strength
The test carried:	J. Parvonič
Other test data:	-



Test results:

no. sample 09-0534 representative: 30/30 cm Jelena

Determination of modulus of rupture and breaking strength					EN ISO 10545-4
Distance of support edges L [mm]:		280			
Mean of cutting edge d [mm]:		20			
Distance between edge of ceramic tiles and cutting edge l [mm]:		10			
Thickness of rubber t [mm]:		5,0			
no.	Width of test sample b [mm]	The least width h [mm]	Tensile strength F [N]	Modulus rupture S [N]	Breaking strength R [MPa]
1	295,7	7,4	2000	1894	51,9
2	295,7	7,4	2220	2102	57,6
3	295,8	7,3	2170	2054	57,8
4	295,8	7,4	2190	2073	56,8
5	295,7	7,3	2200	2083	58,6
6	295,8	7,4	2010	1903	52,1
7	295,8	7,3	2200	2082	58,6
Average:				2027	56,2

3.2 Determination of lead and cadmium given off by glazed tiles

The determination was carried out in compliance with the following testing method:	EN ISO 10545-15 Ceramic tiles. Determination of lead and cadmium given off by glazed tiles
The test carried:	ing. Vladimíra Štenglová
Other test data:	

Test results:

no. sample 09_0534 representative: 30/30 cm Jelena

Determination of lead and cadmium given						EN ISO 10545-15
no.	Testing area [dm ²]	Volume acetatic acid [ml]	Fixed concentration		Surface concentration	
			Pb [mg/l]	Cd [mg/l]	Pb [mg/dm ²]	Cd [mg/dm ²]
1	9,00	150	0,080	0,002	0,0013	0,0000
2	9,00	150	0,050	0,002	0,0008	0,0000
3	9,00	150	0,050	0,000	0,0008	0,0000
Average			0,060	0,001	0,0010	0,0000

4 Appendixes

END OF THE PROTOCOL





PROTOCOL

no. 030 – 042316

on determination of tests according the annex ZA.1, ZA.2, ZA.3, ZA.4 ČSN EN 14411
of ceramic tiles dry – pressed

with water absorption ($E \leq 0,5\%$) declared according ČSN EN 14411, Gr. Bla Annex G

Order Party: ZORKA KERAMIKA D.O.O.

Jovana Đorđevića 2,
21000 Novi Sad , Serbia

Order no.: Application

dated March 12, 2009

Work no.: Z030100003

Appendixes: test of radioactivity, photo

This Report was drawn up in duplicate. The first original counterpart belongs to the Customer, the other one is filed along with other documents in TZÚS Plzeň.

Person responsible for the content of the Protocol:

Protocol drawn up by
ing. Hana Kotorová

Person responsible for the accuracy of the Protocol:

Plzeň January 25, 2010



Stamp of Accredited Testing Laboratory

Vít Ruml
Head of Testing Laboratory

Statement:

- 1) The test results apply to the test subjects (samples) only.
- 2) Without written approval of the Testing Laboratory, the Protocol may be reproduced only as the entire document.

Technical and Test Institute for Constructions Prague (Technický a zkušební ústav stavební Praha), s. p., Branch 0300 - Plzeň,
Zahradní 15, 326 00 Plzeň, Česká republika

☎: 019 724 33 31, ☎: 019 743 03 45, Fax: +420 19 743 03 47, Internat.: +420 19 724 41 58, ✉ e-mail: atrinner@tzus.cz, www.tzus.cz
Bankovní spojení (Bank): KB Praha 1 Czech Republic, Acc.no.: 1501-931/0100 IČ: 000 15679 DIČ: 009-00015679

1 Specification of test subject (sample)

- ◆ Execution of tests of product properties according the annex ZA.1, ZA.2, ZA.3, ZA.4 EN 14411.
- ◆ Specification of the sample: Ceramic tiles Dry – pressed ceramic tiles with water absorption ($E \leq 0,5\%$) declared according EN 14411, Group B la Annex G
- ◆ Tests were completed on January 25, 2010

2 Sampling

Date of sampling: 2009-05-21
Place of sampling: dispatch store of the delegate of producer
Sampled by: the delegate of producer
Method of sampling: random selection
Method of transport: by a vehicle of the delegate of producer
Date of take-over: 2009-05-21
File no. of sample: 09-0534

3 Test Results

3.1 Determination of resistance to thermal shock

The determination was carried out in compliance with the following testing method:
EN ISO 10545-9 Ceramic tiles. Determination of resistance to thermal shock

no. sample 09-0534 representative 30/30 cm

Resistance to thermal shock			EN ISO 10545-9
No.	Water absorption [%]	Visual damage	
1		without damage	
2		without damage	
3	0,3	without damage	
4		without damage	
5		without damage	



3.2 Determination of frost resistance

The determination was carried out in compliance with the following testing method:
 ČSN EN ISO 10545-12 Ceramic tiles. Determination of frost resistance

no. sample 09-0534, design Jelena

Frost resistance								ČSN EN ISO 10545-12	
no.	Mass of sample [g]				Water absorption		Description of defects		
	before		after		[%]		before	after	
	freezing		freezing		before	after	freezing	freezing	
	dry	saturat.	dry	saturat.	freezing				
1	1520,44	1524,86	1520,45	1524,86	0,29	0,29	0	0	
2	1519,34	1523,71	1519,35	1523,72	0,29	0,29	0	0	
3	1520,85	1524,99	1520,85	1524,99	0,27	0,27	0	0	
4	1520,45	1524,89	1520,47	1524,89	0,29	0,29	0	0	
5	1520,12	1524,54	1520,13	1524,55	0,29	0,29	0	0	
6	700,28	703,12	700,29	703,12	0,41	0,40	0	0	
7	718,47	720,24	718,50	720,45	0,25	0,27	0	0	
8	1520,12	1524,28	1520,13	1524,29	0,27	0,27	0	0	
9	1515,65	1519,34	1515,68	1519,35	0,24	0,24	0	0	
10	750,32	753,85	750,33	753,86	0,47	0,47	0	0	
Numer of the involved samples after 100 cycles:									-

3.3 Determination of tensile adhesion strength

The determination was carried out in compliance with the following testing method:
 ČSN EN 1348 Adhesives for tiles – Determination of tensile adhesion strength for cementitious adhesives

Requirement ČSN EN 12004 Adhesives for tiles – Definitions and specifications: opening of tensile adhesion strength opening $\geq 0,5 \text{ N/mm}^2$

Determination of tensile adhesion strength for cementitious adhesives:

cementitious adhesives: Kerabond s addition Isolastic
 producer: Mapei
 contact area: 2500 mm^2
 placing time: 28 days



no. sample 09-0534, design Jelena

Sample no.	Tensile strength	Adhesion	Remark
	N	N/mm ²	
1	3050	1,2	separation in grout
2	4910	2,0	separation in grout
3	4750	1,9	separation in grout
4	4420	1,8	separation in grout
5	4650	1,9	separation in grout
6	4850	1,9	separation in grout
7	4560	1,8	separation in grout
8	4460	1,8	separation in grout
9	4390	1,8	separation in grout
10	4580	1,8	separation in grout
average		1,8	

The determination was carried out in compliance with the following testing method:
 ČSN EN 1324 Adhesives for tiles – Determination of shear adhesion strength of dispersion adhesives

Requirement ČSN EN 12004 Adhesives for tiles – Definitions and specifications: opening of tensile adhesion strength opening $\geq 1,0$ N/mm²

Determination of shear adhesion strength of dispersion adhesives:

Dispersion adhesives: Okamul NK

výrobce: Kiesel

dobu uložení: 14 dní

kontaktní plocha: 5480 mm²

no. sample 09-0534, design Jelena

Sample no.	shear strength	adhesion	Remark
	N	N/mm ²	
1	>4530	>0,8	crush of tiles
2	7730	1,4	shear
3	8250	1,5	shear
4	>5010	>0,9	crush of tiles
5	7980	1,5	shear
6	7650	1,5	shear
7	7960	1,5	shear
8	8010	1,5	shear
9	8270	1,5	shear
10	7690	1,4	shear
average		>1,4	



The determination was carried out in compliance with the following testing method:
ČSN EN 12003 – Determination of shear strength of reaction resin adhesives

Požadavek ČSN EN 12004 Requirement ČSN EN 12004 Adhesives for tiles –
Definitions and specifications: počáteční of tensile adhesion strenght opening $\geq 2,0 \text{ N/mm}^2$

Determination of shear strength of reaction resin adhesives:

reaction resin adhesives: Okapox F/K

producer:Kiesel

contact area: 1660 mm^2

placing time:7 days

no. sample 09-0534, design Jelena

Sample no.	shear strength	adhesion	Remark
	N	N/mm ²	
1	10800	6,5	shear
2	>8110	>4,9	crush of tiles
3	10520	6,3	shear
4	9870	5,9	shear
5	10230	6,2	shear
6	9870	5,9	shear
7	9850	5,9	shear
8	>9710	>5,8	crush of tiles
9	9460	5,7	shear
10	8960	5,4	shear
average		>5,9	



3.4 Determination of coefficient of friction

The determination was carried out in compliance with the following testing method:

prEN 13552 Ceramic tiles – Determination of coefficient of friction

(ISO 10545-17)

ČSN 72 5191 Ceramic tiles – Determination of friction

Determination of static slider

no. sample 09-0534 representative 30/30 cm Jelena

Sample no.	Coefficient of static friction – dry surface	Coefficient of static friction – wet surface
1	0,65	0,54
2	0,65	0,53
3	0,64	0,55
average	0,65	0,54

Determination of dynamic slider

no. sample 09-0534 representative 30/30 cm Jelena

Sample no.	Coefficient of dynamic friction – dry surface	Coefficient of dynamic friction – wet surface
1	0,55	0,50
2	0,55	0,51
3	0,56	0,53
average	0,55	0,51

Determination of friction – Method of inclined platform – test shoes

no. sample 09-0534 representative 30/30 cm Jelena

Testing samples	Critical angle of slip classification according ČSN 725191
09_0534	18,1 ° class of slip resistant R10

Determination of friction – Method pendulum

no. sample 09-0534 representative 30/30 cm Jelena

Sample no.	Deviation of pendulum dry surfaces	Deviation of pendulum wet surfaces
1	65 67 65	40 37 39
2	66 65 65	39 42 40
3	65 67 65	40 40 40
average	66	40

END OF THE PROTOCOL



NUKLID, sdružení podnikatelů

radonový průzkum, měření radioaktivity, výpočty veličin ionizujícího záření

Kralovická 59, 323 00 Plzeň, tel./fax: 377 527 073, mobil: 777 666 380

e-mail: nuklid@nuklid.cz, www.nuklid.cz

Měření obsahu přírodních radionuklidů ve stavebních materiálech protokol č. 90224S2

Zákazník: Technický a zkušební ústav stavební, Zahradní 15, 326 00 Plzeň

Vzorek: č. vzorku 09_0534 - keramické obkladové prvky reprezentant. 30/30 cm EN 14411, Blá, příl 6, v expedičním skladu odebral 11.5.2009 výrobce

Výrobce: Zorka Keramika d.o.o., Novi Sad, Srbsko

Výsledky měření: V dodaném vzorku byla změřena hmotnostní aktivita radionuklidů K40 - a_K , Ra226 - a_{Ra} , Th228 - a_{Th} . V posledním sloupci je uveden index hmotnostní aktivity I, který je vypočten podle vztahu: $I = a_K / 3000 \text{ Bq.kg}^{-1} + a_{Ra} / 300 \text{ Bq.kg}^{-1} + a_{Th} / 200 \text{ Bq.kg}^{-1}$

Vzorek	a_K [Bq/kg]	a_{Ra} [Bq/kg]	a_{Th} [Bq/kg]	I
č. 09_0534	915 (90)	69 (7)	67 (7)	0,87 (0,05)

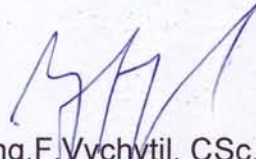
V závorce je uvedena kombinovaná standardní nejistota.

Měření bylo provedeno NaI(Tl) detektorem v detekční sondě NKG 312, výr.č.1103 a mnohokanálovým analyzátozem MC 2256, výr.č.9915, výpočet byl proveden metodou inverzní matice. Měření a výpočet provedl 3.6.2009 v Plzni, Kralovická 59 Ing. F.Vychytil, CSc.. Aparatura byla ověřena Českým metrologickým institutem v Praze. Ověřovací list z 2.1. 2008 má č. 9011-OL-U5599-08. Měření a vyhodnocení bylo provedeno podle metodiky schválené SÚJB. Pro uvedený druh měření získal Ing.F.Vychytil, CSc. na dobu neurčitou povolení SÚJB s č.j. 40587/2006 ze dne 11.5.2006.

Závěr, doporučení: Zákonem č.18/1997 Sb. §6 a prováděcí vyhláškou č.307/2002 Sb. §96 v platném znění je usměrňován obsah přírodních radionuklidů ve stavebních materiálech. Pro výše uvedený materiál (tzv. ostatní stavební materiál) určený k použití ve stavbách s obytnými nebo pobytovými místnostmi je stanovena směrná hodnota pro index hmotnostní aktivity 1,0. Při překročení směrné hodnoty lze stavební materiál uvádět do oběhu jen ve zdůvodněných případech, kdy náklady spojené se zásahem ke snížení obsahu radionuklidů (změna suroviny, změna původu surovin, třídění surovin, změna technologie, nebo jiný vhodný zásah), by byly prokazatelně vyšší než rizika zdravotní újmy. V materiálu reprezentovaném dodaným vzorkem je index hmotnostní aktivity nižší než 1,0. Materiál reprezentovaný dodaným vzorkem lze uvádět do oběhu bez omezení.

Příloha: Záznam o odběru vzorku

V Plzni 4.6.2009


Ing.F.Vychytil, CSc.
člen sdružení Nuklid

Ing. F. VYCHYTL, CSc.
Měření a výpočty veličin
ionizujícího záření
IČO: 663 79 326

NUKLID, sdružení podnikatelů (NUKLID, business association)

(Subsoil radon exploration, radioactivity measurement, calculation of the characteristics relating to ionizing radiation)

Kralovická 59, 323 00 Plzeň; Phone/Fax: ++ 420 377 527 073; Mobile: ++420 777 666 380;
e-mail: nuklid@nuklid.cz, www.nuklid.cz

Measurement of the content of natural radioactive nuclides in construction materials

Report No. 902240S2

Customer: Technický a zkušební ústav stavební (*Technical and Testing Building Institute*),
Zahradní 15, 326 00 Plzeň

Sample: Z030100003, no. sample 09_0534 – ceramic tiles representative 30/30 cm,
EN 14411, Bla, appendix G
the sample was withdrawn by the producer's representative on 11 May 2009

Producer: ZORKA KERAMIKA D.O.O., Jovana Đorđevića 2, 21000 Novi Sad , Serbia

Measurement results: For the supplied sample, weight activity has been measured for the following radioactive nuclides: K40 – a_k , Ra226 – a_{Ra} , Th228 – a_{Th} . In the last column is included the weight activity index I, which has been calculated according to the following formula:

$$I = a_k/3000 \text{ Bq.kg}^{-1} + a_{Ra}/300 \text{ Bq.kg}^{-1} + a_{Th}/200 \text{ Bq.kg}^{-1}$$

Sample	a_k [Bq/kg]	a_{Ra} [Bq/kg]	a_{Th} [Bq/kg]	I
Z030100003, no. 09_0534	915 (90)	69 (7)	67 (7)	0,87 (0,05)

The combined standard uncertainty is included in the parentheses.

The measurement has been carried out by using the NaI(Tl) detector within the NKG 312 detection probe, serial number 1103, by means of the MC 2256 multichannel analyzer, serial number 9915. The calculation has been performed using the inverse matrix method. Both the measurement and the calculation were performed by Ing. F. Vychytil, CSc. (*Doctor of Engineering*) in Plzeň, Kralovická 59, on 2 June 2009. The apparatus has been verified by the Czech Metrology Institute based in Prague, as documented by the Verification Sheet No. 9011-OL-U5599-08, of 2 January 2008. The measurement and evaluation have been performed according to the methodology approved by the Czech Republic's State Office for Nuclear Safety. *For the above-mentioned measurement type, Ing. F. Vychytil, CSc., holds a licence, reference number 40587/2006, dated 11 May 2006, granted by the State Office for Nuclear Safety for an indeterminate period of time.*

Conclusion, recommendation: Section 6 of Act No. 18/1997, Coll. of the Czech Republic, and Section 96 of Executive Regulation No. 307/2002 Coll. of the Czech Republic, as amended, stipulate the limits for the content of natural radioactive nuclides in construction materials. For the above mentioned material (of the category of 'other construction materials'), which is intended for utilization within buildings with dwelling rooms or with other rooms in which persons will be staying (e.g., offices, workshops, surgeries, classrooms, halls, etc.), the guiding limit value of the weight activity index, as stipulated, equals 1.0. In the event that this guiding limit value has been exceeded, the respective construction material may only be released for distribution in properly substantiated cases, in which the costs related to the measures aimed at reducing the content of the radioactive nuclides (i.e., replacement of the raw material, raw materials supplied from a different deposit or locality, sorting of the raw material, change in the technology, or other appropriate measure) would, in a provable manner, exceed the related risks to health.

For the material represented by the supplied sample, the weight activity index is less than 1.0. This material may be utilized without limitation for a building with space within which persons will be staying.

Annex: Sample withdrawal report

Plzeň, dated 4 June 2009

Signature illegible
Ing. F. Vychytil, CSc.
Member of the Nuklid association
Stamp, text illegible

JELENA

EN14411 B1a