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REPUBLIC OF TURKEY
ESKİŞEHİR TECHNICAL UNIVERSITY
PRESIDENT'S OFFICE

No. : 48731804-663.02
Subject : Test Report

KORAMİC YAPI KİMYASALLARI SAN. VE TİC. A.Ş.
Bozüyük Organize Sanayi Bölgesi, 10 Cad. No.:7, Bozüyük/BİLECİK

Ref. : a) Your Test Order Form of 31.01.2020
b) Our Test Order Evaluation Form No. 1 of 31.01.2020

Please find attached the test report for the samples of cement-based waterproof material brought by you on the date of 13.02.2020 as referred to in your letter above.
We kindly inform you for action and wish you success with your works.

e-signed
Prof Dr. Eftade Emine GAGA
Manager

Annex: Test Report (3 pages)

10/03/2020, Office Personnel : Kevser YILMAZLARDAN

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Eskişehir Technical University
Application and Research Centre for Environmental Issues

Eskişehir Technical University, İki Eylül Campus
Çevre Sorunları Uyg. Ve Arş. Mrk. 26555 ESKİŞEHİR

Test Report

Customer name / address : Koramic Yapı Kimyasalları San. ve Tic. A.Ş.
Bozüyük Organize Sanayi Bölgesi, 10 Cad. No.:7,
Bozüyük/BİLECİK

Order No. : Your Test Order Form of 31.01.2020
Our Test Order Evaluation Form No. 1 of 31.01.2020

Name and Identity of Test Sample : Cement-based waterproof material titled Cermiproof FF
Plus

The date of collecting of test item : 13.02.2020

The date of receipt of test sample : 13.02.2020

Remarks : Samples were delivered by Yasemin Karel, employee of
the company, to our Centre.

Number of pages of the report : 3

The testing and/or measurement results, the uncertainties (if applicable) with confident probability and test methods are given on the following pages which are part of this report.

Seal	Date	Technical Manager	Head of Testing Laboratory
	10.03.2020	Academic Member-Dr. Zehra YİĞİT AVDAN	Prof Dr Eftade E.GAGA
		Signed	Signed

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Test Conditions : Humidity 50% ±20 Temperature: 20°C±5°C

Ambient Conditions : Humidity 50% ±20 Temperature: 20°C±5°C

Date of Test : 24.02.2020 14:30 – 24.02.2020 16:30

Test Results : In case of contact of the product named Cermiproof FF Plus with the drinking and utility water, suitability of the water for human consumption are evaluated according to the elements and limit values given in “Regulation on Waters for Human Consumption, ANNEX1-b/c” No. 25730 of 17.02.2005 and Standard BS 6920-1: 2014 “Suitability of non-metallic materials and products for use in contact with water intended for human consumption with regard to their effect on the quality of the water. Specification”, Table 1.

Samples of distilled water and tap water Nos. 2020-1 vend 2020-2 were used as reference. Cement-based waterproof material, “Cermiproof FF Plus”, having surface area of 150 cm² was kept in contact with 1 litre of drinking water and utility water for 1 day and 7 days as per the Standard BS 6920-1:2014 “Suitability of non-metallic materials and products for use in contact with water intended for human consumption with regard to their effect on the quality of the water. Specification Part 2”. Effects of the material on the water quality after the contact were studied for the samples Nos. 2020-1, 2020-2, 2020-3, 2020-4 were determined and studies according to the concentration of the elements, Matching Polar Plasma-Mass Spectrometer (ICP-MS/MS Agilent 8800).

Water samples Nos. 2020-1, 2020-2, 2020-3, 2020-4 were filtered with Teflon filter 0.45µm prior to ICP-MS/MS analysis. for determination of the concentration of the elements B, Al, Mn, Fe, Ni, Cu, As, Se, Br, Cd, Sb, Ba and Pb as per the standard EPA 6020a 2007-02, they were calibrated with the certificated calibration mix standard (Agilent), 8 points (0 µg/L, 25 µg/L, 50 µg/L, 75 µg/L, 100 µg/L, 200 µg/L, 400 µg/L and 1000 µg/L). For Hg element, they were calibrated according to TS EN ISO 12846 with singular certificated calibration standard (Agilent) and 8-point calibration solutions (0 µg/L, 2.5 µg/L, 5.0 µg/L, 7.5 µg/L, 10.0 µg/L, 20.0 µg/L, 40.0 µg/L and 100.0 µg/L). Accuracy of the calibration of the elements given in Table 1 were verified with the intermediate standard and certificated reference solution (TMRAIN-04 Environment Canada). Repeated analysis was conducted 3 times for each element and their concentration in µg/L together with the extended standard errors are given in Table 1.

The resulting concentration for the specified elements were compared with the limit values given in “Regulation on Waters for Human Consumption, ANNEX 1, b/c” and BS 6920-1:2014, Table 1.

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Table 1: Effects of water samples in contact with Cement-based waterproof material, “Cermiproof FF Plus” according to the reference samples

Element	Reference Code				Sample Code				Limit Value		Method of Analysis (ICP-MS)
	Witness 1 (distilled water) 2020-1		Witness 2 (distilled water) 2020-2		Water after contact for 1 day 2020-3		Water after contact for 7 days 2020-4		*ANNEX 1 – b/c limit value	** Table 1 limit value	
	Concentration µg/L	±σ	Concentration µg/L	±σ	Concentration µg/L	±σ	Concentration µg/L	±σ			
11 B (No Gas)	132.80	3.83	286.92	34.43	209.70	56.62	259.34	33.71	1 mg/L	1 mg/L	EPA 6020A 2007-02
27 Al (No Gas)	3.85	0.29	<DL***	NA	29.21	1.75	40.85	4.98	200 µg/L	200 µg/L	EPA 6020A 2007-02
55 Mn (No Gas)	0.25	0.01	0.16	0.06	0.43	0.02	0.50	0.03	50 µg/L	50 µg/L	EPA 6020A 2007-02
56 Fe (No Gas)	1.01	0.17	2.66	0.53	4.47	0.62	4.49	0.25	200 µg/L	200 µg/L	EPA 6020A 2007-02
60 Ni (No Gas)	0.39	0.09	0.41	0.05	0.61	0.20	0.64	0.48	20 µg/L	20 µg/L	EPA 6020A 2007-02
63 Cu (No Gas)	1.76	0.15	2.00	0.12	3.35	0.15	2,31	0.40	2 mg/L	-	EPA 6020A 2007-02
75 As (No Gas)	0.06	0.01	7.45	0.08	5.14	0.95	6.12	0.65	10 µg/L	10 µg/L	EPA 6020A 2007-02
77 Se (No Gas)	<DL***	NA	<DL***	NA	0.76	0.08	1.12	0.07	10 µg/L	10 µg/L	EPA 6020A 2007-02
79 Br (No Gas)	ND	ND	ND	ND	ND	ND	ND	ND	0.01 µg/L	-	EPA 6020A 2007-02
111 Cd (No Gas)	<DL***	NA	<DL***	NA	<DL***	NA	<DL***	NA	5 µg/L	5 µg/L	EPA 6020A 2007-02
121 Sb (No Gas)	0.90	0.04	0.15	0.01	0.17	0.03	0.25	0.03	5 µg/L	5 µg/L	EPA 6020A 2007-02
137 Ba (No Gas)	0.26	0.00	22.63	2.01	16.29	0.75	3.26	0.35	-	1 mg/L	EPA 6020A 2007-02
201 Hg (No Gas)	<DL***	NA	<DL***	NA	<DL***	NA	<DL***	NA	1 µg/L	1 µg/L	TS EN ISO 12846
208 Pb (He)	0.033	0.009	<DL***	NA	0.009	0.004	0.06	0.001	10 µg/L	25 µg/L	EPA 6020A 2007-02

*Regulation on Waters for Human Consumption, ANNEX 1, b/c limit values

** Suitability of non-metallic materials and products for use in contact with water intended for human consumption with regard to their effect on the quality of the water. Specification”, Table 1. Limit values

***Below detection limit.

NA: Not calculated because it is under detection limit.

ND: Not detected.

Comment: It is determined that when Cermiproof FF Plus cement-based waterproof material is kept in the drinking and utility water, it is below the limit values according to the standard BS6920-1:2014 and Regulation on Waters for Human Consumption No. 25730 of 17.02.2005.

It is determined that there is no harm for use of the tested Cermiproof FF Plus cement-based waterproof material for human consumption for the elements given in the table.

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Testing reports without signature and seal are not valid.

These test results are valid for the sample mentioned in this report.

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