

IDENTIFICATION OF TEST REPORT	
NUMBER	01B
COST CENTER	2.3.8.001.5008
TEST REQUEST	190.664
PAGE	01/04

(ID: 1000010099)

<b>TITLE</b>	:	Water test
<b>INTERESTED PARTY</b>	:	Tironi & Furtuoso Hydrofugantes de Cimento Ltda. – State Highway SC-414, km 19 - Vila Nova – Luiz Alves – SC
<b>REFERENCE</b>	:	n/a
<b>NATURE OF THE JOB</b>	<b>LHO</b> :	Determination of water drinkability after contact with test body with the addition of the product Rebotec Hydrofugante Nanotécnico.

**IMPORTANT NOTE**

THE RESULTS OF THIS TEST HAVE A RESTRICTED MEANING,  
THEY APPLY ONLY TO THE SAMPLE DELIVERED BY THE  
INTERESTED PARTY

## 1 - OBJECTIVE

Determination of the drinkability of water sample submitted to contact with specimens with addition of waterproofing product.

## 2 - SAMPLE

Waterproofing / Rebotec Hidrofugante Nanotécnico, area of application: plaster in general, produced by: Tironi & Furtoso Hidrofugantes de Cimento Ltda EPP. CNPJ: 27.568.755/0001-43. SC. Collected and delivered to our laboratory on 07/30/2018. NF.: 000641.

Note: Portland cement and the average sand used in the trace were made available by the laboratory, according to the request of the interested party, and deionized water was used for the mixture of materials.

Samples tested from 11/01/2018 to 12/26/2018.

## 3 - METHODOLOGY

The samples were tested according to the methodology prescribed by the following norms and ordinances:

ABNT NBR 12170:2017: Waterproofing materials - Determination of water drinkability after contact.

Standard Methods for the Examination of Water and Wastewater – APHA, AWWA, WPCF – 22<sup>nd</sup> edition

The tests in the water in contact with the specimens with the addition of the product Rebotec Hidrofugante Nanotécnico were carried out at the external provider Digimed, whose results were presented in the reports identified as: A8213/18, A8213-1/18, A8213-2/18, A8214/18.

### 3.1 - Product specifications

MASS	UNIT	TRACE (DRY MATERIALS)
CEMENT		MEDIUM SAND
1,000		6,000
		A/C
		1,34

Note: Addition of 8.0 % additive rebotec impermeabilizante s.m.c.

### 3.2 – Molding and curing of specimens

The molding and curing of the specimens were carried out in an air-conditioned environment: Temperature (23 ± 2) °C and Relative humidity (60 ± 4) %.

## 4 - RESULTS OBTAINED

PARAMETERS – DRINKABILITY STANDARD TABLE FOR CHEMICALS THAT POSE A HEALTH RISK	findings		
	Tap water in contact with molded test sample with addition of the product	Tap water supply (white sample)	Maximum value allowed
Antimony (mg/L)	< 0.005	< 0.005	<b>0.005</b>
Arsenic (mg/L)	< 0.01	< 0.01	<b>0.01</b>
Barium (mg/L)	< 0.5	< 0.5	<b>0.7</b>
Cadmium (mg/L)	< 0.005	< 0.005	<b>0.005</b>
Lead (mg/L)	< 0.01	< 0.01	<b>0.01</b>
Cyanide (mg/L)	< 0.01	< 0.01	<b>0.07</b>
Copper (mg/L)	< 0.02	0,0260	<b>2</b>
Chromium (mg/L)	< 0.05	< 0.05	<b>0.05</b>
Fluoride (mg/L)	0,77	0,61	<b>1.5</b>
Mercury (mg/L)	< 0.0001	< 0.0001	<b>0.001</b>
Nickel (mg/L)	< 0.7	< 0.7	<b>0.07</b>
Nitrate (as N) mg/L	0.655	0,786	<b>10</b>
Nitrite (as N) mg/L	< 0.152	< 0.152	<b>1</b>
Selenium (mg/L)	< 0.01	< 0.01	<b>0.01</b>
Uranium (mg/L)	< 0.001	< 0.001	<b>0.03</b>
Acrylamide (µg/L)	< 0.5	< 0.5	<b>0.5</b>

PARAMETERS - DRINKABILITY STANDARD TABLE FOR CHEMICALS THAT POSE A HEALTH RISK	findings		
	Tap water in contact with molded test sample with addition of the product	Tap water supply (white sample)	Maximum value allowed
Benzene (µg/L)	< 3.1	< 3.1	5
Benzo Pyrene (µg/L)	< 0.1	< 0.1	0.7
Vinyl Chloride (µg/L)	< 2	< 2	2
1.2 Dichloroethane (µg/L)	< 5	< 5	10
1.1 Dichloroethene (µg/L)	< 3	< 3	30
1.2 Dichloroethene (cis+trans) (µg/L)	< 15	< 15	50
Dichloromethane (µg/L)	< 13	< 13	20
Di (2 - ethylhexil)phthaate(µg/L)	< 0.28	< 0.28	8
Styrene (µg/L)	< 8.2	< 8.2	20
Pentachlorophenol (µg/L)	< 0.5	< 0.5	9
Carbon tetrachloride (µg/L)	< 2	< 2	4
Tetrachloroethene (µg/L)	< 7	< 7	40
Trichlorobenzenes (µg/L)	< 5.2	< 5.2	20
Trichloroethene (µg/L)	< 3	< 3	20
<b>Pesticides</b>			
2.4 D - 2.4.5 T (µg/L)	< 30	< 30	30
Alaclor (µg/L)	< 0.106	< 0.106	20
Aldicarbe + Aldicarbesulfone + Aldicarbesuloxide (µg/L)	< 5	< 5	10
Aldrin + Dieldrin (µg/L)	< 0.022	< 0.022	0,03
Atrazine (µg/L)	< 0.053	< 0.053	2
Carbendazim + benomyl (µg/L)	< 50	< 50	120
Carbofuran (µg/L)	< 5	< 5	7
Chlorpyrifos + chlorpyrifos oxon (µg/L)	< 30	< 30	30
DT (p,p' DDT+p,p'DDD +p,p'DDE) (µg/L)	< 0.12	< 0.12	1
Diuron (µg/L)	< 2.5	< 2.5	90
Endosulfan (a+b+sulfate) (µg/L)	< 9.4	< 9.4	20
Endrin (µg/L)	< 0.11	< 0.11	0,6
Glyphosate + AMPA (µg/L)	< 5	< 5	500
Lindano (HCH range) <sup>d</sup> (µg/L)	< 0.03	< 0.03	2
Mancozebe((µg/L)	< 100	< 100	180
Metamidophos (µg/L)	< 12	< 12	12
Metallochlorine (µg/L)	< 0.13	< 0.13	10
Molinato (µg/L)	< 0.026	< 0.026	6
Parathiona Methyl (µg/L)	< 0.09	< 0.09	9
Pendimentalin (µg/L)	< 20	< 20	20
Permethrin (µg/L)	< 2.2	< 2.2	20
Prophenophus (µg/L)	< 50	< 50	60
Simana (µg/L)	< 0.015	< 0.015	2
Tebuconazole (µg/L)	< 50	< 50	180
Terbuphos (µg/L)	< 0.017	< 0.017	1,2
Trifluralina (µg/L)	< 0.094	< 0.094	20

Disinfectants and secondary disinfection products			
Total halo-acetic acids (mg/L)	< 0.05	< 0.05	<b>0.08</b>
Bromate (mg/L)	< 0.01	< 0.01	<b>0.01</b>
Chlorite (mg/L)	< 0.05	< 0.05	<b>1</b>
Free residual chlorine (mg/L)	< 0.10	< 0.10	<b>0.20 to 5.0*</b>
Total chloraniline (mg/L)	< 0.10	< 0.10	<b>4</b>
2,4,6 Trichlorophenol (µg/L)	< 0.81	< 0.81	<b>200</b>
Trihalomethanes (mg/L)	0.056	0.0226	<b>0.1</b>
PARAMETERS - ORGANOLEPTIC DRINKABILITY STANDARD TABLE	RESULTS		
	Tap water in contact with molded test sample with product addition	Tap water supply (white sample)	Maximum value allowed
Aluminum (mg/L)	< 0.06	< 0.06	<b>0.2</b>
Ammonia (as NH <sub>3</sub> ) (mg/L)	0.095	< 0.05	<b>1.5</b>
Chloride (mg/L)	23.6	26,2	<b>250</b>
Apparent color (uH)	< 3.2	< 3.2	<b>15</b>
1.2 dichlorobenzene (mg/L)	< 0.01	< 0.01	<b>0.01</b>
1.4 dichlorobenzene (mg/L)	< 0.01	< 0.01	<b>0.03</b>
Total hardness (mg/L)	45,0	50,1	<b>500</b>
Ethylbenzene (mg/L)	< 0.003	< 0.003	<b>0.2</b>
Iron (mg/L)	< 0.2	< 0.2	<b>0.3</b>
Taste and odor (intensity)	3	1	<b>6</b>
Manganese (mg/L)	< 0.08	< 0.08	<b>0.1</b>
Mono-chlorobenzene (mg/L)	< 0.006	< 0.006	<b>0.12</b>
Sodium (mg/L)	21,19	15,0	<b>200</b>
Total dissolved solids (mg/L)	205	115	<b>1000</b>
Sulfates (mg/L)	< 10	< 10	<b>250</b>
Hydrogen sulfides (mg/L)	< 0.002	< 0.002	<b>0.1</b>
Surfactants (such as LAS) (mg/L)	< 0.2	< 0.2	<b>0.5</b>
Toluene (mg/L)	< 0.002	< 0.002	<b>0.17</b>
Turbidity (uT)	< 0.1	< 0.1	<b>5</b>
Zinc (mg/L)	< 0.25	< 0.25	<b>5</b>
Xylenes (mg/L)	< 0.0077	< 0.0077	<b>0.3</b>
pH ( U pH)	9.48	7.96	<b>6.0 to 9.5</b>

\* RC MS parameter 05/17. Consolidation Ordinance N<sup>o</sup>. 5 of 09/27/2017 – MS – Annex XX.

## 5 - ANALYSIS OF THE RESULTS

SAMPLE	ANALYSIS OF THE RESULTS
Tap water in contact with molded test sample with addition of the product.	The sample analyzed does not meet the drinkability parameters, according to ABNT NBR 12170:2017, regarding the free residual chlorine content.
Tap water supply (white sample)	The sample analyzed does not meet the drinkability parameters, according to ABNT NBR 12170:2017, regarding the free residual chlorine content.

The value of free residual chlorine was not influenced by the application of the product.

The information of sampling, collection, identification of the sample, and place of application, were provided by the interested party, being the responsibility of the same.

São Paulo, January 3, 2019.

(Shows Illegible Signature)

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Concremat Engineering and Technology

This report cancels and replaces the one previously issued on 12/27/18, this is the supplement of RE 01A, due to the correction related to spelling (from Aldri to Aldrin), free residual chlorine parameter (from 5 to 0.20 to 5.0) and unit of measurement of 2,4,6 Trichlorophenol (from mg/L to µg/L).