Test Report No. 8712253174-c

Customer details:

Customer name: Pazkar Ltd. – Attn. Dr. Nitza Galili
Address: Alon Tavor Ind. Est., Afula 18120, ISRAEL
Date of order: 07/10/2007 **following Your order** R6002668 **dated** 31/12/2006
The product was sampled by the: customer
and received in the Lab at: 11/03/2007 **(in the frame of order** 8712202369)

The test of:

Polymeric bitumenous sealing compound for drinking water supply and storage applications as follows[1]:

Model	Supplier	Manufacturer
ELASTOPAZ	Pazkar Ltd, ISRAEL	Pazkar Ltd, ISRAEL

Nature of the test:

Full test for use with drinking water according to the Israeli Standard SI 5452 (2004) "Testing of products for use in contact with drinking water" – testing according to the method of the Australian Standard AS/NZS 4020 (2002) for cold water use only (Up to 40° C).

Results:

See further pages.

Summary:

The product in the configuration tested complies for use in the cold drinking water systems with maximum exposure ratio of **1000** [2] mm^2/L.
This report is referencing to the test reports 8712202369-c and 8712236126-c.

The test report contains 8 pages and may be used only in full.	The test results in this document refer only to the item tested.
Any changes in the material formulation, the process of manufacture, the method of application, or the surface area-to-volume ratio in the end use, could affect the suitability of the product for use in contact with drinking water	

The name of the tester: E. Rosembloum
Position: Testing Engineer
Signature Date: _____

The name of the supervisor: Dr. R. Ardi
Position: Head of Food, Wine & Environmental Section
Signature Date: _____

Document printing date: 14/10/2007

[1] See the specification of the product at the page 2 of this document.
[2] See the description of these issues at the Appendix 1 attached to this document.

This is an abridged translation of the Hebrew original. In any case of discrepancy between the original Hebrew text and the English translation, the Hebrew version shall prevail.

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1. The specification of the product tested:

1.1 General Information:

Tested product labelling / Commercial Name	**ELASTOPAZ**
Product designation	Sealing for the cold drinking water storage application
Product general composition	Bitumen, Polychlorobutadiene, Turpentine
Manufacturing date	02/2007
Manufacturing LOT	272-519-027
Product specimen prepared by	Customer (appynig at 13/02/2007)
Product packaging manner	Silicon paper
Specimen status at the arrival to the laboratory	satisfactive
Laboratory storage conditions before the tests	Original packaging, room temperature, at the dark
Components of the products that come in contact with water	The whole product
Product family description:	The product has its one type only
Product model type for testing:	ELASTOPAZ

1.2 Speciment structure and exposing parameters:

Specimen configuration: structure	Plate casted from the material
Specimen configuration: sizes	110 x 185 mm, thickness 3.8 – 4.9 mm
Specimen appearance: color	Black
Specimen appearance: finishing	smooth
Specimen appearance: additional description	flexible compound
Exposure manner	immersion
Additional preparation procedures specified by the manufacturer:	n/a

1.3 Complex completed products:

The description of the article / test system	n/a

1.4 Applicative products:

Specimen preparation method	spraying
Component mixing ratio	See the manufacture product specification, edition 272/01- 05/06, attached to this document.
Application layers decription	
Specimen praparation site	
Curing conditions description	
Pretest condintioning details	21 day at 22±4°C and 50-80 RH

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2. Findings summary according to the standard`s clauses:

clause	The property	SI 5452 requirements	Test results
6	**Test Requirements.**		
6.2	**Taste of water extract.**	Whether product is tested in accordance with Appendix **C**, there shall not be a reportable taste detected by any member of the test panel in the first dilution of the chlorinated or unchlorinated extract from the first and/or sevent extraction or from the seventh retest extraction.	**Passed for Exposure Ratio 1000 (mm^2/liter)(1)**
6.3	**Appearance of water extract.**	Whether product is tested in accordance with Appendix **D**, the increase in true colour of the extract shall not be more than **5 HU (Hazen Units)** in first extraction or in the seventh retest extraction.	**Passed for Exposure Ratio 10000 (mm^2/liter)(1)**
		Whether product is tested in accordance with Appendix **D**, the increase in turbidity of the extract shall not be more than **0.5 NTU** in first extraction or in the seventh retest extraction	**Passed for Exposure Ratio 10000 (mm^2/liter)(1)**
6.4	**Growth of aquatic microorganisms.(2)**	Whether product is tested in accordance with Appendix **E**, the mean dissolved oxygen difference (MDOD) shall be less than or equal to **2.4 mg/l**.	**Passed for Exposure Ratio 1000 (mm^2/liter)(1)**
6.5	**Cytotoxic activity of water extract.(2)**	Whether product is tested in accordance with Appendix **F**, the extract shall not cause a cytotoxic response.	**No evidence of the Cytotoxic activity for Exposure Ratio 1000 (mm^2/liter)(1)**
6.6	**Mutagenic activity of water extract.(3),(2)**	Whether product is tested in accordance with Appendix **G**, the results shall be reported. There shall not be cause for genetic mutation factors in the extraction.	**No Mutagenic response caused for Exposure Ratio 10000 (mm^2/liter)(1)**
6.7	**Extraction of metals.**	Whether product is tested in accordance with Appendixes **H** to **J**, there shall not be in the first and/or seventh extraction content of Arsenic, Barium, Mercury, Chromium, Nickel, Selenium, Lead, Cadmium and Silver more than one-tenth of the values specified in the Public Health Law that in charge, and the content of Molybdenium, Antimony and Lithium more than specified in the Table 2 of this standard.	**Passed for Exposure Ratio 10000 (mm^2/liter)(1)**
7	**Hot water tests.**	Products that pass the test required in Appendix **I**, **J** or **K** meet the requirements for hot water exposure up to temperature used in the testing.	**n/a**

(1) See results detailed in the tables in the further of the document. (2) Accomplished in an external laboratory.
(3) For now the test is for data accumulation only. The test result should not at this time form the basis for overall failure of the sample.

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3. The details of the results according to the tests made on the product are as follows:

3.1 Taste of water extract:

- test parameters and findings are as follows:

Tested product labelling / Commercial Name	**Polymeric bitumen sealing system Elastopaz**	
Tested property / mentioned	*Test details for the abovementioned model*	
Exposure ratio of the product in the test (mm^2/liter)	1000	
Scaling Factor	7.500	
Testing the extration from the:	First (24 hours)	Final (9 days)
Taste panel composition:	7 tasters	- - -
The test conclusion for the unchlorinated extraction:	Passes the test	- - -
The test conclusion for the chlorinated extraction:	Passes the test	- - -

Test Result:	**Passes the requirements for the chlorinated and unchlorinated extraction**

3.2 Appearance of water extract :

- test parameters are as follows:

Tested product labelling / Commercial Name	**Polymeric bitumen sealing system Elastopaz**
Property	*Test details for the abovementioned model*
Exposure ratio of the product in the test (mm^2/liter)	10000
Scaling Factor	2.000
Number of speciment for the extraction	2

test findings are as follows:

Tested property	**Measuring Units**	**Method detection limit**	**Maximum Allowed Value**	**Report Result**	
				First Extract (24 hours)	**7th Extract (9 Days)**
Extraction water real color change	Hazen Units	1	5	**3**	n/a
Extract water turbidity growth	NTU	0.10	0.50	**0.10**	**Less than 0.10**

Test Conclusion:	**Passes the requirements for Color and Turbidity growth**

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3.3 Growth of aquatic microorganisms :

- test parameters were as follows:

Tested product labelling / Commercial Name	**Polymeric bitumen sealing system Elastopaz**
Tested property / information	*Test details for the abovementioned model*
Exposure ratio of the product in the test (mm^2/liter)	1000
Control sample: no releasing of organic matter	Tap water with glass plate system
Control sample: releasing of organic matter	Tap water with paraphine oil system having exposure ratio as above
Toxicity or inhibition on the test bacteria by the sample material	Not observed
Finishing incubation date	07/2007
Starting incubation	09/2007

- test results are as follows:

Sample Description	**Measuring units**	**D.O. content in extraction water**			**Average value**	**MDOD report value**
		Week 5	**Week 6**	**Week 7**		
Blank sample (negative control)	mg/l	7.10	7.43	7.09	7.21	n/a
Control sample: no releasing of organic matter	mg/l	7.12	7.40	7.03	7.18	0.03
Test sample – replicate 1	mg/l	6.70	6.93	6.70	6.78	**0.43**
Test sample – replicate 2	mg/l	6.80	6.55	6.14	6.49	**0.72**
Test sample – replicate 3	mg/l	6.75	6.28	6.40	6.48	**0.73**
Control sample: releasing of organic matter	mg/l	0.80	0.80	0.70	0.77	6.44
Control sample: Positive control: test sample with paraphine oil	mg/l	0.25	0.90	0.50	0.55	6.66

Test Conclusion:	**Passes the standards requirements for the abovementioned test configuration.**
Comment:	Maximum allowed MDOD value is 2.40 mg/L.

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3.4 Cytotoxic activity of water extract :

- test parameters were as follows:

Tested product labelling / Commercial Name	**Polymeric bitumen sealing system Elastopaz**
Tested property / mentioned	*Test details for the abovementioned model*
Exposure ratio of the product in the test (mm^2/liter)	1000
Incubation temperature (°C)	30
The description of the subatrate for the culture growth	VERO / M-199
Control sample description – Blank	Cell culture prepared with extraction water without sample
Control sample description Positive control	Cell culture prepared with extraction water without sample adding zinc sulphate with the concentration 8 microgram in litre
Culture growing waiting period	48 hours (1)

- test results are as follows:

Findings in the culture prepared based on the extract from the first extraction (24 hours)						
Tested property	**Findings type**	**Blank sample**	**Extration from the test sample**			**Positive control sample**
			Replicate 1	**Replicate 2**	**Replicate 3**	
Cell morphology	Microscopic evaluation	satisfactive	satisfactive	satisfactive	satisfactive	Cell death
Culture Medium	Medium color	OK	OK (red basic)	OK (red basic)	OK (red basic)	Not OK
Monolayer confluence	Microscopic evaluation	presents	presents	presents	presents	Does not present

Findings in the culture prepared based on the extract from the first extraction (48 hours)						
Tested property	**Findings type**	**Blank sample**	**Extration from the test sample**			**Positive control sample**
			Replicate 1	**Replicate 2**	**Replicate 3**	
Cell morphology	Microscopic evaluation	satisfactive	satisfactive	satisfactive	satisfactive	Cell death
Culture Medium	Medium color	OK	OK (red basic)	OK (red basic)	OK (red basic)	Not OK
Monolayer confluence	Microscopic evaluation	presents	presents	presents	presents	Does not present

Findings in the culture prepared based on the extract from the first extraction (72 hours)						
Tested property	**Findings type**	**Blank sample**	**Extration from the test sample**			**Positive control sample**
			Replicate 1	**Replicate 2**	**Replicate 3**	
Cell morphology	Microscopic evaluation	satisfactive	satisfactive	satisfactive	satisfactive	Cell death
Culture Medium	Medium color	OK	OK (red basic)	OK (red basic)	OK (red basic)	Not OK
Monolayer confluence	Microscopic evaluation	presents	presents	presents	presents	Does not present

(1) Waiting period mentioned in the test standard is a 24 hours maximum. The results reported are the findings for 48 hour period that take into account observations made at a 24 hour period point as well.

Test Conclusion:	**No evidence of the Cytotoxic activity**

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3.5 Mutagenic activity of water extract :

- test parameters are as follows:

Tested product labelling / Commercial Name	**Polymeric bitumen sealing system Elastopaz**
Tested property / information	*Test details for the abovementioned model*
Exposure ratio of the product in the test (mm^2/liter)	10000
Incubation temperature (°C)	30
Scaling Factor	1.000
Metabolic activator additive	Liver animal cell (rat, signed "S9")
Negative control sample (blank)	Untreated tap water system
Number of the bacteria chains tested	3

- test results without metabolic activator additive are as follows:

Bacteria strains tested	**Maximum allowed average number of the revertants in the species based on the negative control sample**	**Average number of the revertants in the species for the extraction water sample**
Salmonella typhimurium - TA 98	**20**	**11**
Salmonella typhimurium - TA 100	**183**	**98**
Salmonella typhimurium - TA 102	**185**	**108**

- test results with metabolic activator additive are as follows:

Bacteria strains tested	**Maximum allowed average number of the revertants in the species based on the negative control sample**	**Average number of the revertants in the species for the extraction water sample**
Salmonella typhimurium - TA 98	**55**	**35**
Salmonella typhimurium - TA 100	**151**	**115**
Salmonella typhimurium - TA 102	**228**	**205**

Summary:

The difference in the number of the revertants colonies (repeated mutations) between the negative control sample and extracted water sample does not exceed two standard deviation above the average number of the repeated mutations in the negative control sample with or without addition of S9 and therefore **there is no evidence of the mitagenic effect caused by the sample extraction process**.

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3.6 Extraction of Metals:

- test parameters are as follows:

Tested product labelling / Commercial Name	**Polymeric bitumen sealing system Elastopaz**
Tested property / mentioned	*Test details for the abovementioned model*
Exposure ratio of the product in the test (mm^2/liter)	10000
Scaling Factor	2.000
Number of speciment for the extraction	2
Determination methods according to	Standard Methods for the Examination of Water and Wastewater 21th edition (2005)
The detection limit value listed for each element is related only to the product tested by the above method	

- test results are as follows:

Tested element	**Detection method**	**Measuring units**	**Method Quantification limit**	**Maximum allowed migration value**	**Element migration from the sample to the extraction water**			
					First Extract (24 hours)		**7th Extract (9 Days)**	
					Blank Sample	**Product sample**	**Blank Sample**	**Product sample**
Lithium **(Li)**	SM3120	*mg/l*	0.01	2.5	Less than 0.01	Less than 0.01	n/a	n/a
Barium **(Ba)**	SM3120	*mg/l*	0.01	0.1	Less than 0.01	Less than 0.01	n/a	n/a
Molybdenium **(Mo)**	SM3120	*mg/l*	0.01	0.07	Less than 0.01	Less than 0.01	n/a	n/a
Chromium **(Cr)**	SM3113	*mg/l*	0.001	0.005	Less than 0.001	Less than 0.001	Less than 0.001	Less than 0.001
Nickel **(Ni)**	SM3113	*mg/l*	0.001	0.005	Less than 0.001	Less than 0.001	Less than 0.001	Less than 0.001
Antimony **(Sb)**	SM3113	*mg/l*	0.001	0.005	Less than 0.001	Less than 0.001	Less than 0.001	Less than 0.001
Arsenic **(As)**	SM3113	*mg/l*	0.001	0.005	Less than 0.001	Less than 0.001	Less than 0.001	Less than 0.001
Selenium **(Se)**	SM3113	*mg/l*	0.001	0.001	Less than 0.001	Less than 0.001	Less than 0.001	Less than 0.001
Lead **(Pb)**	SM3113	*mg/l*	0.001	0.001	Less than 0.001	Less than 0.001	Less than 0.001	Less than 0.001
Silver **(Ag)**	SM3113	*mg/l*	0.0005	0.001	Less than 0.0005	Less than 0.0005	Less than 0.0005	Less than 0.0005
Cadmium **(Cd)**	SM3113	*mg/l*	0.0001	0.0005	Less than 0.0001	Less than 0.0001	Less than 0.0001	Less than 0.0001
Mercury **(Hg)**	SM3112	*mg/l*	0.0001	0.0001	Less than 0.0001	Less than 0.0001	Less than 0.0001	Less than 0.0001

Test Conclusion:	**Passes the requirements for regulated elements migration**

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Detailing of the features concerned with the Exposion Ratio – Information for User / Planner.

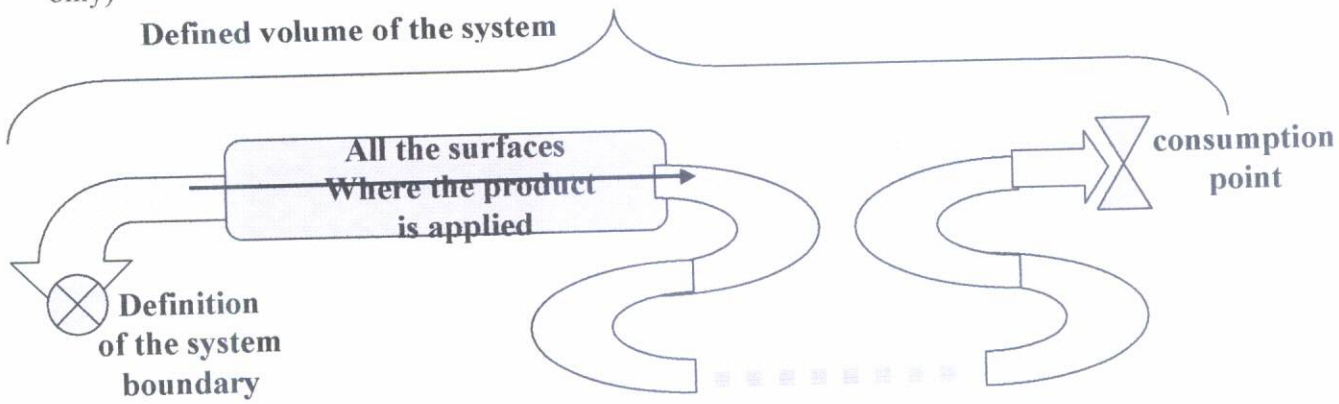
Finished product – article having final dimension and volume (partly or fully boundared)
Applicative product – article that is a compound to be applicated onto substrate or casted without defined volume value.
The system – defined environment or set where the tested product functions in its end use.

1. Declared End-Use surface-to-area Exposure Ratio (mm^2/L) – is the ratio declared by the manufacture of all product`s wetted area to its inside volume. Not applicable to coating, because it already applied.
2. According to the test findings - the product tested complies to the requirements of the abovementioned standard for the Exposure Ratio 1000 (mm^2/L). This statement is related for application of the product in the defined system. This value set the maximum ratio between all surface area in the system intended for the product application to the overall system volume. The amount of the substances extracted from the tested product into the volume of the system satisfies the requirements of the standard for this ratio.
3. The overall volume of the system (for the calculation of the exposure ratio) is the minimal denined volume in the product environment (whereas one side of the system is the "end point-of-use") where:

   - the edges of the coated area could be also treated as the system boundaries – under condition that there is no reverse flow in the system.
   - The "end point-of-use" of the system may be edge of the coated area or pouring point for user or start point of the next (consequent) system where the water of the initial system serves/functions as a "product-water".

   The determination of the system volume must be made according to the case and type of the system where product tested is to fuction. This document does not comes to determine the system. This obligation is the task of the user / planner.

4. Here is a schematic description of the system for applicative product functioning (for illustration only)



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