

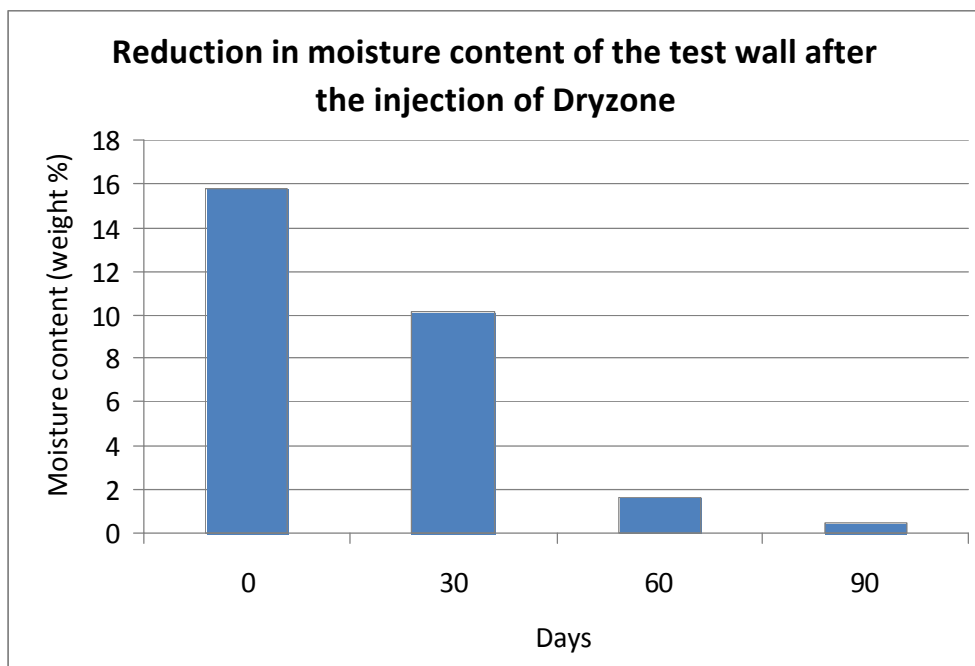
**Dryzone Warsaw Test Report Summary**

This report gives a short summary of the ITB Test Report No. LM02-0976/11/R12NM, which tested the efficacy of Dryzone. The test was carried out in accordance with ZURT-15/IV.21/2008, a Polish standard for assessing horizontal damp-proofing injection products.

The test was carried out on a 10” thick brick wall section constructed using lime mortar (1:1:6 Portland cement/lime/sand mix.) The section was then placed in 30 cm of tap water and left until it had a stabilised moisture content at 15%.

The damp-proofing treatment commenced by drilling 12 mm diameter holes at 12 cm intervals along the mortar course, at a height of 25 cm above the water line. The holes were then filled with Dryzone and the damp-proofing cream left to permeate the wall. Readings were taken from the wall section at the point of injection over the next two months.

The results demonstrate the efficacy of Dryzone by showing the rapidly decreasing moisture levels of the wall over time. These reduced from an initial 15% moisture content to 0.5% after 90 days. The following graph maps the progress of the moisture reduction over the 3 month period.



Dryzone contains a high level of active ingredient and is the most rigorously tested damp-proofing cream available for the treatment of rising damp. The solvent-free, high strength formulation has been proven to work in a wide range of conditions, including 95% saturation, low porosity, salt water and lime mortar. Test houses include the BBA, WTA, OFI, WTCB, ITB and the University of Portsmouth. More information on these tests is available from Safeguard Europe.

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27-6-2012

Translation



# **Instytut Techniki Budowlanej**

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**Tests on Stormdry® Suchy Mur Icopal and Dryzone® Suchy Mur Icopal products for  
Technical Recommendation purposes**

**Phase II – Dryzone® Suchy Mur Icopal**

**Work No.: 0976/11/R12NM (LM00-0976/11/R12NM)**

**Warsaw, February 2012**

Translation

## **INSTITUTE OF CONSTRUCTION TECHNOLOGY [ITB]**

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### **Construction Materials Centre**

Work title: Tests on Stormdry® Suchy Mur Icopal and Dryzone® Suchy Mur Icopal products for Technical Recommendation purposes. Phase II – Dryzone® Suchy Mur Icopal

Register No.: 0976/11/R12NM (LM00-0976/11/R12NM)

Customer: ICOPAL S.A.  
ul. Laska 169/197  
98-220 Zdunska Wola

Contractors:

Team Leader: Dr Barbara Francke, Dr Eng.

Scientific leaders:

Verification:

Work commenced: October 2011

Completed: February 2012

Produced in 3 copies

Annexes: Study report no. LM02-0976/11/R12NM

Copy no.

## **Tests on Stormdry® Suchy Mur Icopal and Dryzone® Suchy Mur Icopal products for Technical Recommendation purposes**

### **Phase II – Dryzone® Suchy Mur Icopal**

**0976/11/R12NM**

#### **1. Introduction**

##### **1.1. Formal basis for work**

The formal basis for the work was contract no. 0976/11/R12NM, concluded between ICOPAL S.A. of ul. Laska 169/197, Zdunska Wola, postcode 98-220, and the Institute of Construction Technology in Warsaw.

##### **1.2. Subject, objective and scope of work**

The subject of the work in phase II was the product Dryzone® Suchy Mur Icopal. The objective of the work was to test and evaluate selected properties of the above products for technical approval needs.

##### **1.3. Scope of phase II of the work**

The scope of the work covered:

- laboratory tests on the product as detailed in point 3,
- drafting of a test report.

#### **2. Samples for testing**

The samples for testing were produced from the product Dryzone® Suchy Mur Icopal and in line with the method supplied by the Customer. The product Dryzone® Suchy Mur Icopal was supplied by the Customer on 25.08.11 and accepted for testing under protocol LM02-0976/11/R12NM.

In the case in point, the sample for testing was an experimental wall 25 cm wide, which was built of class 150 full ceramic brick with cement-lime mortar (weight ratio of components: Portland cement : hydrated lime : sand 1:1:6). The wall was placed in a tin bath filled with tap water to a depth of 30 cm. The wall was impregnated with water to a moisture content of ca. 15.8%. Then steps were taken to saturate the wall with the product. This took place as follows:

- 12 mm diameter horizontal holes were drilled in the wall at 12 cm intervals. The holes were drilled in a single row, ca. 25 cm above the surface of the water, with a hole depth of ca. 23.5 cm,
- the holes were filled with the product

### **3. Scope of tests and methodology for phase II**

The phase II laboratory tests involved the following determinations:

- determining the external appearance of the product,
- apparent (volumetric) density,
- pH,
- surface drying time,
- effectiveness of membrane (injection efficacy and spread of product in the wall).

The tests were performed using the test methodology provided in report LM02-0976/11/R12NM, which is included in the annexes to this report.

### **4. Test results and technical evaluation of product**

The test results for the product Dryzone® Suchy Mur Icopal are given in report LM02-0976/11/R12NM, which is included in the annexes to this report.

The visible effects of the product's action were confirmed three months after performance of the injection.

Performance team:

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<b>ITB</b>	<b>INSTITUTE OF CONSTRUCTION TECHNOLOGY</b>
[accreditations]	<b>JOINT RESEARCH LABORATORIES</b> <b>accredited</b> <b>by the Polish Accreditation Centre</b>  accreditation certificate no. AB 023

**LM****TEST REPORT No. LM02-0976/11/R12NM****Page 1/2**

This test report contains the results of tests covered by the scope of accreditation and the results of non-accredited tests. Results outside the scope of accreditation have been marked "*beyond accreditation*".

**Construction Materials Laboratory****Address: ul. Filtrowa 1, Warsaw, tel. (22) 57 96 179****CUSTOMER: ICOPAL S.A., ul. Laska 169/197, 98-220 Zdunska Wola****Subject: DRYZONE SUCHY MUR ICOPAL****Accepted for testing 25.08.2011 under protocol no. LM02-0976/11/R12NM****In line with management procedure no. 18****tested during the period 25.09.2011 to 30.01.2012****TEST METHOD/PROCEDURE:** given in table below**TEST RESULTS:**

Item	Tested characteristics	Test result	Test methods
1	Appearance	White cream-like liquid, with no visible mechanical impurities	As described in 1 (beyond accreditation)
2	Bulk density of liquid ingredient, g/cm <sup>3</sup> : average	0.92; 0.93; 0.94	PN-B-30175:1974, item 5.4.9
		0.93 U*=0.02	
3	PH average	9.34; 9.46; 9.38; 9.32; 9.36	PN EN 12850:2011 ** (beyond accreditation)
		9.37 U* = 0.11	
4	Surface drying time, min average	60; 60; 60	PB LH-039/2/06-2008
		60	
5	Spreading of the product in brick wall in the cement-lime mortar at the height of 20 cm above the water level (upper row of holes), directly after injection	Saturation confirmed by product outflow from the holes	ZURT-15/IV.21/2008, i.e. according to description in point 2 (beyond accreditation)

6	<p>Efficiency of membrane: mass moisture in the line of injection holes in % (line of drilled holes 25 cm above water level):</p> <p>A/ initial moisture measurements:</p> <p>B/ 30 days after injection:</p> <p>C/ 60 days after injection:</p> <p>D/ 90 days after injection:</p>	<p>14.2; 18.4; 15.7; 17.0; 15.4; 18.0; 13.7; 14.3. Average: 15.8</p> <p>8.7; 11.2; 11.9; 11.7; 9.1; 10.4; 10.4; 7.2. Average: 10.1</p> <p>0.2; 0.9; 1.5; 1.4; 0.6; 3.4; 3.9; 0.9. Average: 1.6</p> <p>0.1; 0.5; 0.9; 0.4; 0.3; 0.9; 0.7; 0.5. Average: 0.5</p>	ZURT-15/IV.21/2008, i.e. according to description in point 3 (beyond accreditation)
<p><b>OTHER INFORMATION ON TESTING:</b></p> <p>*) extended uncertainty at 95% confidence level</p> <p>**) The ITB Joint Research Laboratories approached PCA for replacement of the old version of the standard PN EN 12850:2009 in the scope of the accreditation by the next edition from 2011. The 2009 edition is in the LM laboratory accreditation scope</p> <ol style="list-style-type: none"> <li>External appearance. Following mixing of the product, the colour and consistency were determined, plus any occurrence of mechanical impurities.</li> <li>An assessment of the spread of the product in the wall (in line with the description in point 3) was carried out visually, during performance of the injection.</li> <li>The test of the effectiveness of the horizontal membrane was carried out on an experimental wall.</li> </ol> <p>The experimental wall, 25 cm wide, was built of class 150 full ceramic brick with cement-lime mortar (weight ratio of components: Portland cement : hydrated lime : sand 1:1:6). The wall was placed in a tin bath filled with tap water to a depth of 30 cm. The wall was impregnated with water to a moisture content of ca. 15.8%. Then steps were taken to saturate the wall with the product. This took place as follows:</p> <ul style="list-style-type: none"> <li>12 mm diameter horizontal holes were drilled in the wall at 12 cm intervals. The holes were drilled in a single row, ca. 25 cm above the surface of the water, with a hole depth of ca. 23.5 cm,</li> <li>the holes were filled with the product</li> </ul>			
<p><b>Responsible for tests:</b> <b>Dr Barbara Francke, Dr Eng.</b> <b>Lecturer</b> [signature]</p>		<p><b>Authorisation issued by:</b> <b>Jolanta Sowinska, M. Eng.</b> [signature]</p>	
<p><b>Warsaw, 6.02.2012</b></p>			
<p><b>The Research Laboratory declares that the test results relate solely to the product/item tested. The report may not be duplicated in any partial way without written consent from the Research Laboratory. A test report is not a document that permits the marketing of a product/item or its general use in the construction industry.</b></p>			
<p><b>LM Laboratory Director</b> [signature] <b>Jadwiga Miklaszewska, M.Eng.</b></p>			