
TECHNICAL REPORT

WATERPROOFING MATERIALS EVALUATION

EVALUATION OF XYPEX CRYSTALLINE

PRODUCTS TO BLOCK PORES AND SEAL CRACKS


Prepared for:

Xypex Chemical Corporation
13731 Mayfield Place
Richmond, B.C., V6V 2G9
Canada

Prepared by:

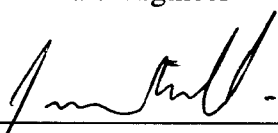
James Neill and Associates Ltd.
4379 Ruth Crescent
North Vancouver, B.C., V7K 2N1
Canada

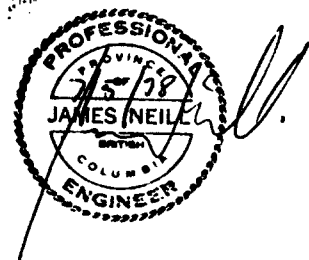
Report Author:


Patrick F. McGrath, Ph.D., P.Eng.
Senior Materials Engineer



Review by:


Jim Neill, C.Eng., M.I.C.E., P.Eng.
Principal



Proj Ref: 240
May 7, 1998

Company Profile:

James Neill and Associates Limited provides consulting engineering and testing services to the building construction industry. Mr. Jim Neill, P.Eng., the company owner and principal, has 22 years of building materials experience specializing in evaluation and design of water-proofing systems for all types of structures. Dr. Patrick F. McGrath, P.Eng. completed a doctorate in the field of chloride diffusion and water permeability of concrete based products. Dr. McGrath has 13 years of experience in the field of materials evaluation and testing.

-
1. The test results contained in this Test Report refer exclusively to the described testing material(s) as submitted to James Neill and Associates Ltd.
 2. The test results contained in this Test Report refer exclusively to methods of sample preparation and curing as described in this Test Report.
 3. Any information regarding the content of this Test Report can only be given to a third party after receipt of written authorization from Xypex Chemical Corporation.
 4. Reproduction of portions or extract from this Test Report shall require the previous permission in writing of James Neill and Associates Limited.

TABLE OF CONTENTS

	Page Number
1.0 INTRODUCTION	1
2.0 PROCEDURE.....	1
3.0 TEST RESULTS	2
4.0 CONCLUSIONS.....	4

1.0 INTRODUCTION

The objective of the test program was to determine the waterproofing ability of the Xypex products. More specifically the objective of the study was to determine how the Xypex waterproofing products behave with respect to capillary pore blocking and crack sealing. This pore blocking results from the release and reaction of chemical substances into the concrete substrate that become insoluble and block the penetration of liquids.

The cracked slab test was developed to determine the effectiveness of a coating to reseal a non moving crack that occurs after the coating is applied i.e. the crack penetrates through the coating. This test is meant to distinguish between waterproof coatings that simply act as a barrier and those that release chemicals in order to accomplish waterproofing.

2.0 PROCEDURE

The test basically involves coating a concrete paving stone with a two coat system of Xypex (Concentrate and Modified). The treated slab was then cracked in half. The two halves are set back together and a dam is created around the top so that water can be ponded over the crack. The time required for the lower surface to dry up (if it does at all) is an indication of the crack sealing ability of the waterproofing. Application and curing procedures were performed as per manufacturers' written instruction.

The test configuration is shown in Figure 1. Example of the Xypex coated sample is shown in Photograph 1.

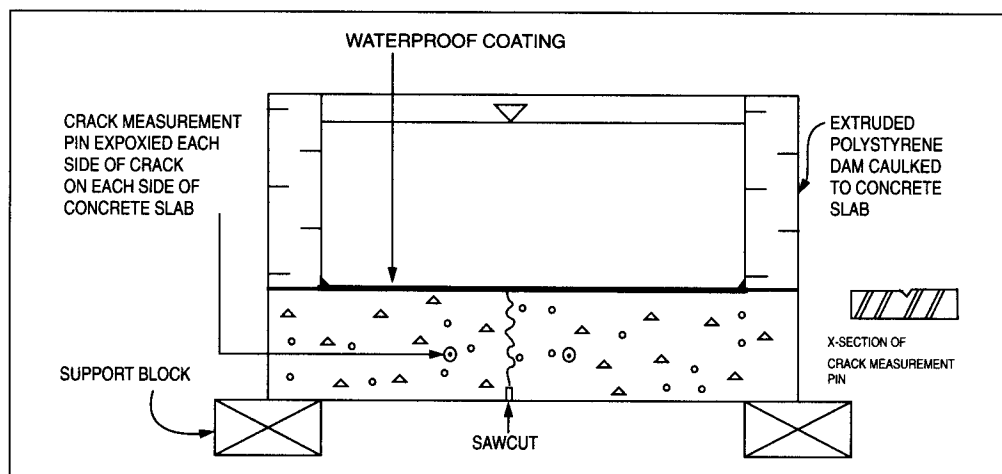
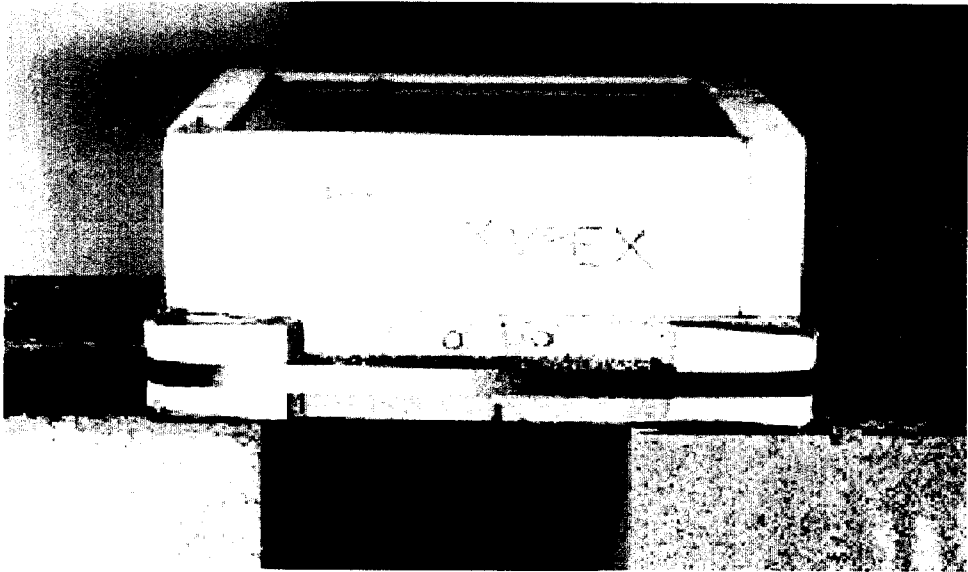


Figure 1: Cracked Slab Test Apparatus



Photograph 1: Cracked slab test specimen coated with Xypex.

3.0 TEST RESULTS

Two series of tests were completed using the cracked slab test procedure. Samples were coated with Xypex. The two series were prepared in a similar manner except Series 1 & 2 had different initial crack widths. The results of the testing are shown in Table 1.

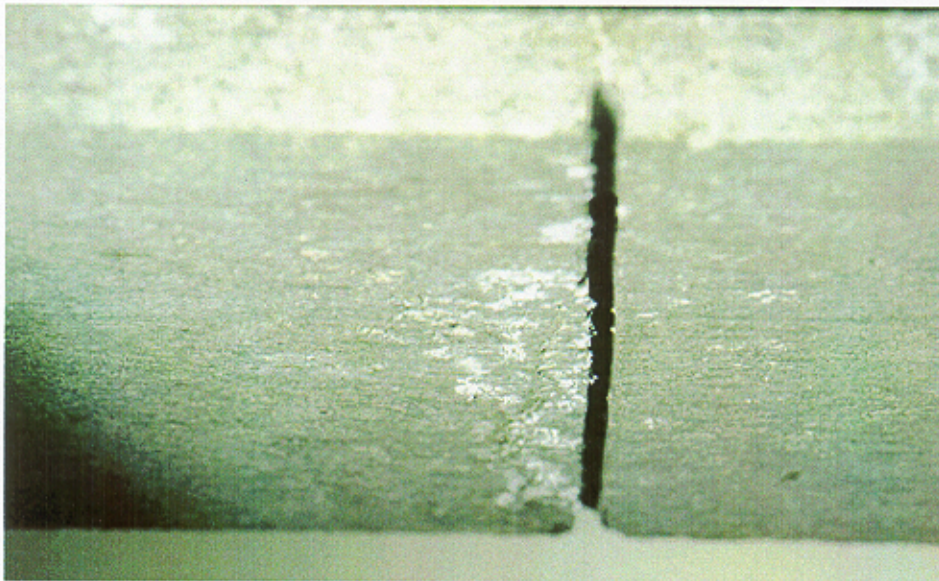
Table 1: Results of Cracked Slab Test

Sample Series	Materials	Crack Width (mm)	Initial Flow Rate (mm/min)	Time to Stop Leak (days)
Series 1	Xypex	0.2	0.25	35 (see Photo 2)
Series 2	Xypex	1.0	3.50	70 (see Photo 3)
Testing Completed By: _____ Patrick F. McGrath, Ph.D. P.Eng.				

The test specimens for Series 1 are shown after 100 days of water ponding in Photographs 2 and 3. The Xypex coated samples are completely dry after 100 days of ponding (see Photographs 2 and 3).



Photograph 2: Xypex Series 1 sample after 100 days.



Photograph 3: Xypex Series 2 sample after 100 days.

4.0 CONCLUSIONS

Two series of “cracked slab” tests were conducted on samples of Xypex applied to a concrete paving stone substrate. The Xypex system was a two coat application of Xypex Concentrate and Modified.

The Xypex coated samples exhibited the ability to reseal an existing stationary crack.

Results are based on two samples of each waterproofing system. Additional testing would be beneficial to verify the observed trends.

END OF REPORT
