



TEST #3 "ABRASION & IMPACT STRENGTH TESTING"

# McKINNEY AND COMPANY

September 28, 1999

Mr. Vernon Talbot  
Advanced Floor Products  
PO BOX 50533  
Provo UT 84065

**RE: RetroPlate Evaluation  
Lowe's Store, Chapel Hill Boulevard  
Chapel Hill, North Carolina  
McKinney Project No.: 99483**

Dear Mr. Talbot,

At your request and authorization McKinney and Company conducted in-place testing of selected locations at the indicated Lowe's facility. The test methods used were *ASTM C 779* "Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces", *Procedure C* and *ASTM C805* "Standard Test Method for Rebound Number of Hardened Concrete". We understand the purpose for these tests were to evaluate the relative effects of the **RetroPlate** on concrete in an actual field situation.

We were informed that the test project was selected because of an extreme "dusting" problem resulting from difficulties encountered during finishing of the concrete slab on grade. We understand that the store has been in service for approximately one year.

## **FIELD TESTING**

*ATEM C779* provides simulated abrasion conditions that can be used to evaluate effects on curing or finishing of concrete. It may also be used for quality acceptance of products and surface exposed to wear. This method is not intended to provide a quantitative measurement of length of service. In the subject evaluation the test was used to determine the relative improvement if any to the concrete surface after the application of the **RetroPlate**.

**RetroPlate Evaluation**

Three locations were tested on the concrete slab; two were in the as constructed condition and one was after the application of the **RetroPlate**. Three individual tests were taken at each location. The specific results of these tests are enclosed and are summarized below:

<u>Location</u>	<u>Description</u>	<u>Wear Depth in.</u>	<u>Time, Sec.</u>
Isle 10	Resurfaced Area	0.113	1000
Isle 37	As Constructed Condition	0.117	200
Isle 41	As Constructed Condition	0.111	250

*ASTM C 805* is a test method that may be used to assess in-place uniformity of concrete; to delineate regions of poor quality and estimate in-place strength development. In this evaluation the rebound device was used in combination with the abrasion tests to determine consistency of the concrete at each test location. Two rebound tests were conducted at each location and the averages of the tests are listed below.

<u>Location</u>	<u>Average Rebound Value</u>
Isle 10	51
Isle 37	39
Isle 41	41

## **COMMENTS**

The abrasion tests indicate that the depth of wear is relatively consistent for the in-place concrete. The time period required to reach these wear depths varied significantly between the as constructed conditions and the treated location that suggests the **RetroPlate** improved the hardness of the concrete surface. This is also indicated by the higher rebound values recorded at the treated location. In addition, the treated area had a smoother, cleaner appearance than the untreated sections of the floor slab.

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We appreciate the opportunity to be of service on this project. If you have any questions or require additional information, please contact us at your convenience.

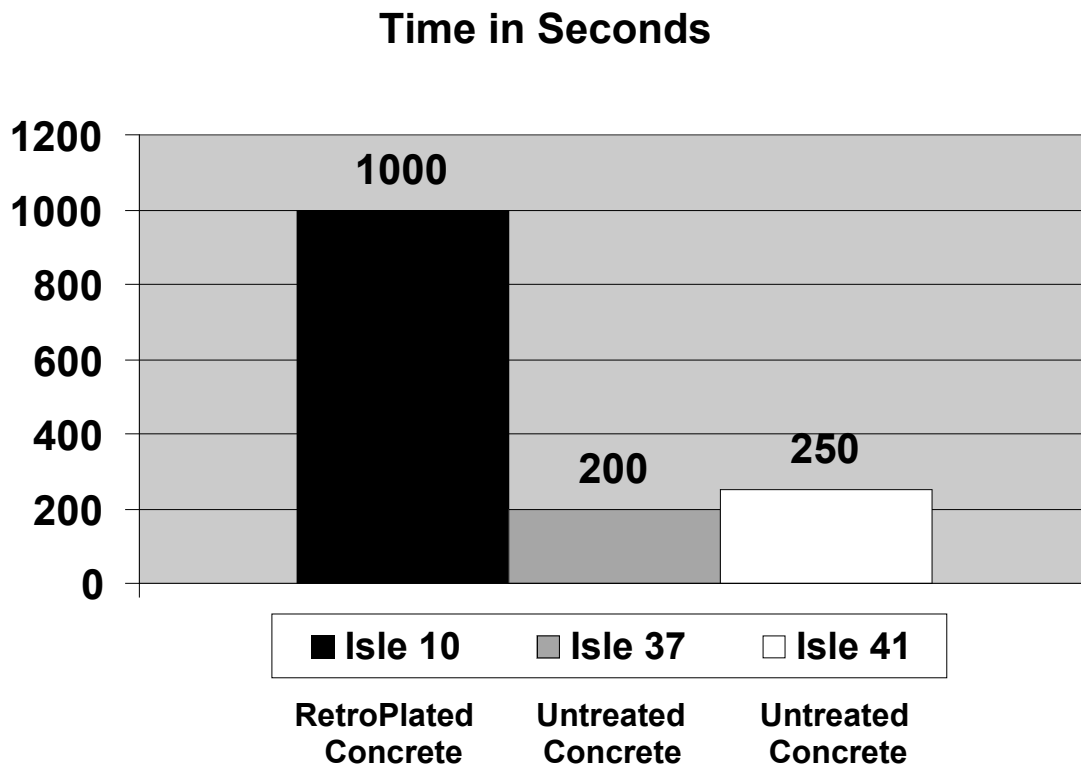
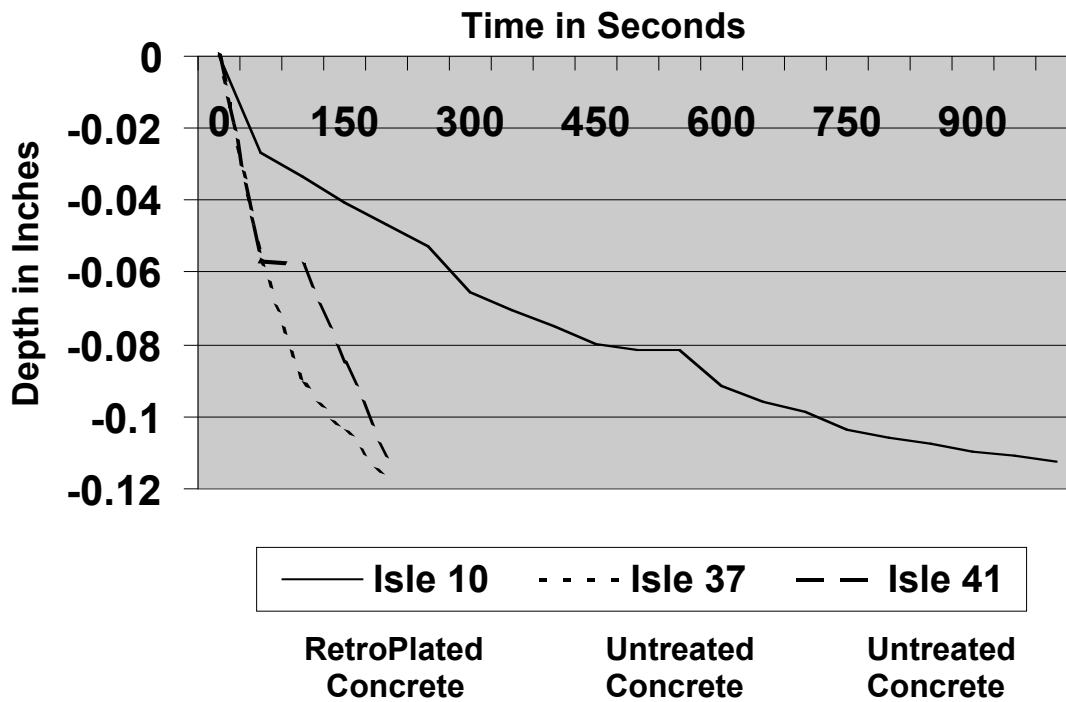
Respectfully,

McKinney and Company

C.F. Starnes  
Concrete Services Manager

Attachments: Abrasion Test/Graphs

# Abrasion Resistance



## Rebound Test

