

WIND-DRIVEN RAIN TEST  
OF  
"ROYALSTONE" AND REGULAR CONCRETE MASONRY WALL PANELS  
WITH AND WITHOUT  
"KORFIL" INSULATION INSERTS

Conducted for:  
R. Ducharme, Inc.  
451 McKinstry Avenue  
Chicopee, Massachusetts

by:  
National Concrete Masonry Association  
Research & Development Laboratories

Wind-Driven Rain Test of "Royalstone" and Regular Concrete Masonry Wall  
Panels With and Without "Korfill" Insulation Inserts

Introduction

This report covers four wind driven rain tests conducted for R. Ducharme, Incorporated by the National Concrete Masonry Association Research & Development Laboratory during the month of April, 1972.

The purpose of these tests was to: (1) Compare the wind-driven rain resistance of "Royalstone" block walls with regular lightweight block walls and: (2) Determine what resistance "Korfill" inserts would provide to wind-driven rain.

Test Results and Discussion

Leakage rates of "Royalstone" and regular block wall panels with and without "Korfill" inserts are shown in Table I. The data indicates that "Royalstone" concrete masonry walls have high resistance to wind-driven rain as compared to lightweight concrete masonry walls. Water did not move to the back face of either of the "Royalstone" panels for the severe eight hour test period. The lightweight aggregate block walls experienced a higher than usual leakage rate and would not be considered suitable for exterior use unless protected by a masonry coating.

Wall panels containing "Korfill" inserts had a much lower leakage rate than their companion no-insert wall panel. The leakage rate for the "Royalstone" wall panel was dramatically (over 10 times) reduced with the inserts and halved for the regular block wall panel. Difference in benefit provided by the insert was at least partially due to the fact that a better fit was obtained in the cores of the "Royalstone" block than in the cores of the regular block.

Table I Results of Wind Driven Rain Tests of "Royalstone" and Regular Concrete Masonry With and Without "Korfill" Insulation Inserts.

Type of Wall Panel	Equivalent Wind Velocity m.p.h.	Test Time in Hours	Dampened Area of Back Face in <sup>2</sup>	Leakage Rate lbs/ft <sup>2</sup> /hr.
"Royalstone" Block With "Korfill" Inserts.	45	1	0	0
	100	2	0	0.079
	100	3	0	0.057
	100	4	0	0.052
	100	8	0	0.048
"Royalstone" Block (no inserts)	45	1	0	0.076
	100	2	0	0.780
	100	3	0	0.850
	100	4	0	0.780
	100	8	0	0.650
Regular 8x8x16-in. Lt. Wt. Block with "Korfill" Inserts	45	1	0	0.205
	100	1 1/2	2	5.82
	100	3	-	4.90
	100	4	-	4.37
	100	8	63	5.94
Regular 8x8x16-in. Lt. Wt. Block (no inserts)	45	1	0	0.860
	100	1 1/2	4	12.36
	100	3	-	11.70
	100	4	-	11.93
	100	8	81	11.05