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REPORT OF: **Archatrak Pedestal Load Testing**

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TABLE OF CONTENTS **PAGE**

1.0 Introduction 1
1.1 Purpose 1
1.2 Scope of Testing 1
1.3 Sample Description 1
2.0 Test Setup and Loading Procedure 2
2.1 Uniform Load Test 2
2.2 Point Load Test 3
3.0 Test Results 4
3.1 Uniform Load Test 4
3.2 Point Load Test 4
4.0 Findings and Closure 7
4.1 Findings 7
4.2 Closure 7

Appendix A
Photographs 8
Appendix B
Test Graphs 10

1.0 INTRODUCTION

1.1 Purpose

The purpose of our testing was to determine the Grey Porcelain Pavers and Wood Tiles performance under Uniform and Point loads.

1.2 Scope of Testing

The general scope of this testing program includes performing:

1. Three (3) Uniform load tests on (24" x 24" x 0.75") Grey Porcelain Paver according to AC300.
2. Three (3) Uniform load tests on (24" x 24" x 1.25") Grey Porcelain Paver according to AC300.
3. Three (3) Uniform load tests on (24" x 24" x 1 11/16") Wood Tile according to AC300.
4. Three (3) Point load tests on (24" x 24" x 0.75") Grey Porcelain Paver according to AC300.
5. Three (3) Point load tests on (24" x 24" x 1.25") Grey Porcelain Paver according to AC300.
6. Three (3) Point load tests on (24" x 24" x 1 11/16") Wood Tile according to AC300.
7. Issue a final report detailing the test description, results, and our findings.

The tests were performed in Smith Emery Los Angeles facility Laboratory from July 26 to August 2, 2024. The test setups and results are summarized in Sections 2 and 3, respectively.

1.3 Sample Description

(24" x 24" x 0.75") Porcelain Pavers, (24" x 24" x 1.25") Porcelain Pavers and (24" x 24" x 1 11/16") Wood Tiles were submitted by the client.

2.0 TEST SETUP AND LOADING PROCEDURE

2.1 Point Load Test

2.1.1 Test Setup and Loading Procedure

The tile specimens were subject to concentrate load test in general accordance with the ASTM E2322-03 "*Standard Test Method for Conducting Traverse and Concentrated Load Tests on Panels used in Floor and Roof Construction*" specification. Each sample was conditioned and placed on a Archatrak Prime Adjustable Pedestal Support System at each of the four sample corners according to the provided installation manual shown in Appendix C.

For load testing a Hydraulic Ram and Load Cell with 20 Kip load capacity was used. The samples were loaded at the center of the tile as showed below in Figure 1. A Point load with a rate ranged from 50 to 100 lbs. per second was perpendicular applied on center (critical point) of the specimen using a 1" diameter steel rod until failure occurs. A wire transducer was utilized to measure the middle vertical displacement of the system. The measurements were averaged for each specimen group and results are included in Section 3.1. A general sketch is showed in Figure 1 and photos are included in Appendix A.

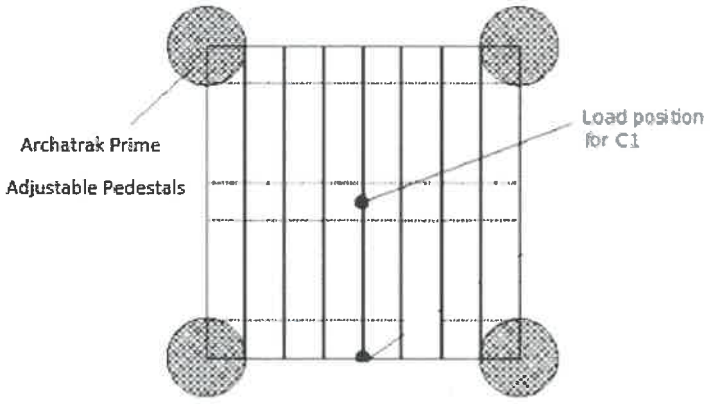


Figure 1. Point Load Test Setup

2.2 Uniform Load Test

2.2.1 Test Setup and Loading Procedure

The tile samples were subject to uniform load test in general accordance with the ASTM E2322-03 "*Standard Test Method for Conducting Traverse and Concentrated Load Tests on Panels used in Floor and Roof Construction*" specification. Each sample was conditioned and placed on a Archatrak Prime Adjustable Pedestal Support System at each of the four sample corners according to the provided manual shown in Appendix C.

For load testing a Hydraulic Ram and Load Cell with 20 Kip load capacity was used. Load was applied through a 24-in by 24-in by ¾-in metal plate supported by an air-bag to equally distribute the force at a rate ranged from 50 to 100 lbs. per second until failure. A wire transducer was utilized to measure the middle vertical displacement of the system. The measurements were averaged for each material group tested and results are tabulated in Section 3.2. A general sketch is showed in Figure 2 and photos are included in Appendix A.

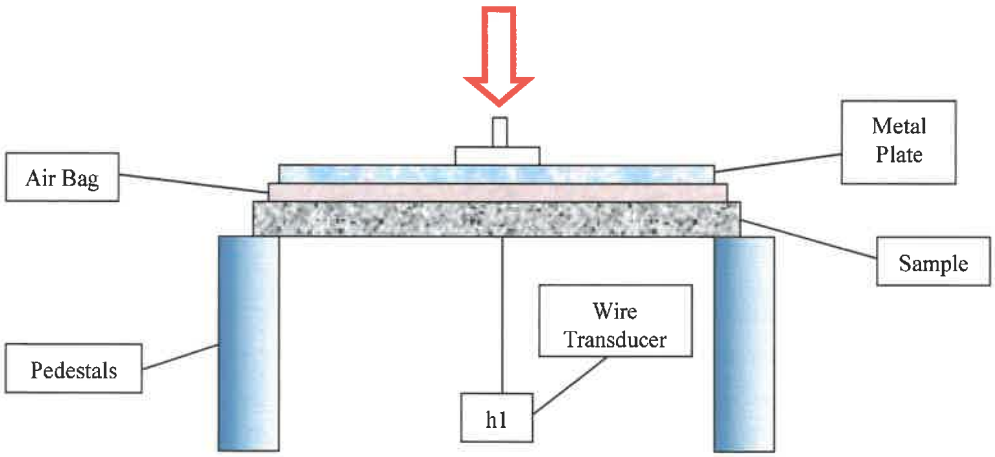


Figure 2. Uniform Load Test Setup

3.0 TEST RESULTS

3.1 Uniform Load Test

A total of three samples were tested for each tile specimen group provided. The results are tabulated below.

Table 1 – Summary of Uniform Load Test Results (0.75" thk Porcelain Paver)

Test ID	Maximum load (lb.)	Maximum Deflection (in)	Remarks
0.75" thk Porcelain Paver #1	1603	0.07	Specimen broke - can't hold more load
0.75" thk Porcelain Paver #2	1706	0.08	Specimen broke - can't hold more load
0.75" thk Porcelain Paver #3	1463	0.07	Specimen broke - can't hold more load
Average	1591	0.07	

Table 2 – Summary of Uniform Load Test Results (1.25" thk Porcelain Paver)

Test ID	Maximum load (lb.)	Maximum Deflection (in)	Remarks
1.25" thk Porcelain Paver #1	3102	0.12	Specimen broke - can't hold more load
1.25" thk Porcelain Paver #2	1520	0.04	Specimen broke - can't hold more load
1.25" thk Porcelain Paver #3	1626	0.02	Specimen broke - can't hold more load
Average	2083	0.06	

Table 3 – Summary of Uniform Load Test Results (1 11/16" thk Wood Tile)

Test ID	Maximum load (lb.)	Maximum Deflection (in)	Remarks
1 11/16" thk Wood Tile #1	2822	0.05	Specimen broke - can't hold more load
1 11/16" thk Wood Tile #2	3011	0.05	Specimen broke - can't hold more load
1 11/16" thk Wood Tile #3	2870	0.05	Specimen broke - can't hold more load
Average	2901	0.05	

3.2 Point Load Test

A total of three samples were tested for each tile specimen group provided. The results are tabulated below.

Table 4 – Summary of Point Load Test Results (0.75" thk Porcelain Paver)

Test ID	Maximum load (lb.)	Maximum Deflection (in)	Remarks
0.75" thk Porcelain Paver #1	5034	0.26	Specimen broke - can't hold more load
0.75" thk Porcelain Paver #2	1725	0.14	Specimen broke - can't hold more load
0.75" thk Porcelain Paver #3	1845	0.14	Specimen broke - can't hold more load
Average	2868	0.18	

Table 5 – Summary of Point Load Test Results (1.25" thk Porcelain Paver)

Test ID	Maximum load (lb.)	Maximum Deflection (in)	Remarks
1.25" thk Porcelain Paver #1	6257	0.19	Specimen broke - can't hold more load
1.25" thk Porcelain Paver #2	3336	0.09	Specimen broke - can't hold more load
1.25" thk Porcelain Paver #3	3657	0.12	Specimen broke - can't hold more load
Average	4417	0.13	

Table 6 – Summary of Point Load Test Results (1 11/16" thk Wood Tile)

Test ID	Maximum load (lb.)	Maximum Deflection (in)	Remarks
1 11/16" thk Wood Tile #1	4944	0.39	Specimen broke - can't hold more load
1 11/16" thk Wood Tile #2	2627	0.76	Specimen broke - can't hold more load
1 11/16" thk Wood Tile #3	2975	0.91	Specimen broke - can't hold more load
Average	3515	0.69	

4.0 FINDINGS AND CLOSURE

4.1 Findings

All findings noted in this report were prepared in accordance with generally accepted material engineering and testing principles and practices. No other warranty, either expressed or implied, is made.

4.2 Closure

This report has been prepared for **Archatrak** to be use for product evaluation and/or design purposes only. The use of this report for any other purpose shall be at the users' own discretion, based on their own interpretation of the results contained within.

Respectfully Submitted,

Nick Dela Cruz Jr.
Asst. Project Manager

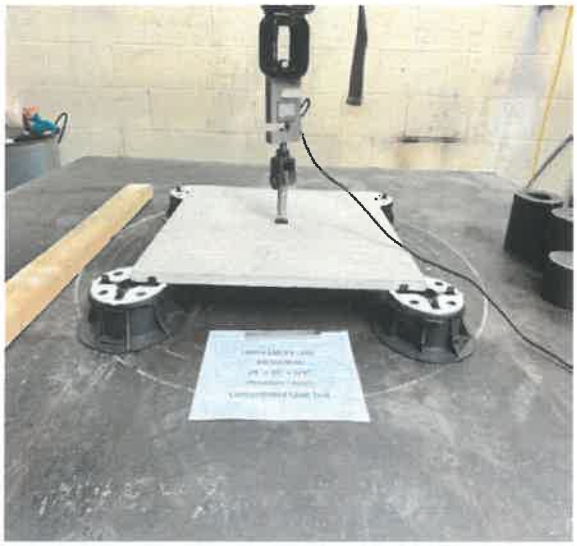
James E. Partridge
Registered Civil Engineer No.: C25270

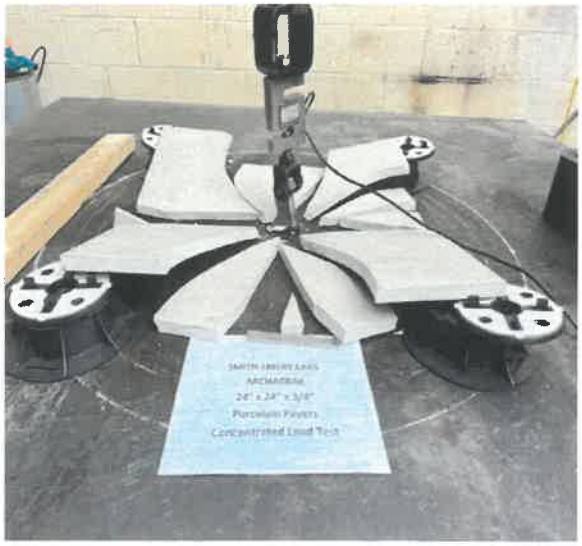
Appendix A

PHOTOS:

Uniform Load Before and After

Point Load Before and After





Appendix B

TEST GRAPHS: