

REPORT ON A FULL-SCALE TEST PROGRAM DESIGNED TO EVALUATE THE PERFORMANCE OF 2 $\frac{7}{8}$ " X 17 $\frac{7}{8}$ " X 4" PRECAST CONCRETE NARROW MODULAR PAVERS SUBJECTED TO LIGHT VEHICULAR TRAFFIC LOADING

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Scope of Program

This report describes and evaluates the conditions and performance of precast concrete Narrow Modular Pavers installed on a 1 inch mortar bed and subjected to vehicular traffic loading conditions.

Product Description

The product name is California Architectural Narrow Modular Pavers. Manufactured by Stepstone, LLC, Gardena, California. These high quality concrete pavers are manufactured in three standard sizes, utilizing High Early Type-III Portland Cement, resulting in a hard rock concrete mixture with a compressive strength of 5,000 PSI. The pavers can be used in both commercial and residential applications where full support for pedestrian and vehicular traffic is required.

Description of Installation Procedures

In order to simulate actual full-scale field installation conditions, a test bent was prepared with a concrete base for stability and mandatory perimeter containment curbing or side walls was placed in a prepared excavation designed to be level with the existing pavement surface of the producer's truck loading and parking area. See photo to right.

The installation of the pavers was conducted by an experienced tile setter familiar with this modular system. A one inch mortar bed was installed prior to placement of the Narrow Modular Paving units. Setting the pavers in mortar was followed by the mandatory placement of the joint sand and stabilizing material. The test area was then allowed to set for 48 hours.



Test Pavers

Description of full load Test Procedures

The experimental test slab was then submitted to an active loading mode of the plant's heavy truck loading and overnight parking area.

Summary and Comments

A detailed visual inspection of the test slab's wearing surface after a one week test period concluded that there was no indication of surface movement-laterally nor along the perimeter contained side walls. One month after initial installation, an inspection of the test area revealed a stable paving surface with no loose, cracked or misaligned pavers.



A precast slab with four-5" thick containment walls was placed in the asphalt parking lot. The paving area was 36½" x 54". The slab below the pavers was four inches thick.



The precast concrete 27/8" x 177/8" x 4" Narrow Modular Pavers were set in a 1" mortar bed. Pavers were cut to fit to provide a staggered bond joint pattern.

Comment

A mortar bed provides not only a full contact setting bed to resist vertically applied surface loads, it also provides a full tensile bond with the paver, which increases the resistance to lateral forces from vehicular tire treads acting on the pavers surface. The stabilized joint sand remained in place and provided additional resistance to lateral movement.

Summation

The outcome of the full scale test program described herein has substantiated the satisfactory performance of a mortar-set, sand joint Narrow Modular Paver system installation when subjected to light vehicular traffic loads.



Skid marks on top of pavers show evidence of deliberate attempts to disturb installation. The mortar-set Narrow Modular Pavers held fast and were not dislodged by vehicular traffic.