



CASE STUDY

CARLYLE FLOOR SLAB LEVELING

Owner: New Pacific Realty Corp

Project Engineer/Designer: Vandorp Chou Associates, Inc.

Contractor: Turner & Son

BUILDING TRUST



Background

The Carlyle in Irvine, CA is a new construction project featuring residential units alongside of a parking garage. The original construction started a few years back and included the parking structure and podium slab for the housing units covering approximately 60,000 square feet. The project was temporarily discontinued and then taken back up by a new contractor in 2012. After reviewing the condition of the existing structures, it was determined that the top surface of the slab was out of level by as much as 2" in some places. Because of this, frame work could not commence for the residential units. The material needed to provide a bonded topping material to create the necessary elevations and flatness, and that would also allow the framing to commence almost immediately. The topping material had to become integral with the original slab.



The Sika Solution



The recommended product, SikaLevel®-315, is a one-component, fast track cementitious underlayment for interior concrete, cementitious, wood and tile substrates prior to final floor finish. The entire area was shot blasted to a clean, sound, rough surface in accordance to the ACI guide for surface preparation (CSP 3). Sikadur® 32 Hi-Mod, a multi-purpose, 2-component, 100% solids, moisture-tolerant structural epoxy adhesive, was applied to the prepared floor and broadcasted with 20-40 grit sand to refusal before the underlayment was pumped into place. This epoxy adhesive was chosen due to the shrinkage cracks visible on the existing slab. The areas being pumped as well as any penetrations in the slab were framed in foam.

The large slab area was broken into smaller, more manageable pumping areas using foam as well. Plastic height markers were put in place and a laser guided machine measured and cut them to the correct heights to be used as guides for pumping. The SikaLevel®-315 was brought on site and pumped into place. A sock was used on the end of the pump hose to catch any debris that may have gotten into the mixer. Any areas more than 1" in depth used preplaced, prewashed, 3/8" pea gravel to extend the underlayment. Approximately 60,000 square feet was filled in 10 working days consuming about 10,000 bags of SikaLevel®-315. The foam perimeter was removed only 2 hours after placement and the building framework erection began only 2 days after placement. The underlayment was drilled into and cored with no disturbance to the overlay.



Sikadur® 32, Hi-mod – a multi-purpose, 2-component, 100% solids, moisture-tolerant structural epoxy adhesive. It conforms to the current ASTM C-881, Types I, II, and V, Grade-2, Class C and AASHTO M-235 specifications.

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