

Architectural Concrete The Shaw and Sons Way

SECTION A CONCRETE PLACEMENT AND FINISHING

Without the proper execution of Zones A and B, architectural concrete paving will be substandard. Shaw & Sons prides itself as a leader in constructing high-quality architectural concrete paving. Some, but not all, of the steps Shaw & Sons implements in this zone are as follows:

- Thorough understanding of the design intent by the Owner, Designer and General Contractor before starting project.
- Joint creation of a concrete mix design for each paving type on the project.
- Verification of approved mix design for each truckload delivered to the job site.
- Adherence to "sole source" batch materials, i.e. sand, rock and cement, throughout the duration of the project. Variations in batch material sources will lead to unsightly "checkerboard" pours.
- Strict adherence to quality concrete mix design principles by Shaw & Sons which include, same-source batch plant materials, 6-7 sack cement content, 4" slump (+/- 1"), 2,500 min. PSI strength, a water cement (W/C) ratio between .62 and .67, use of admixtures such as shrinkage reducers, integral colors, and synthetic fibers.
- When installing Lithocrete®, incorporate Lithocrete's three patented concrete additives: Lithocrete® Conditioner, Lithocrete® Etch-Retarder and Lithoseal™.
- Placement, finishing and curing of concrete under strict adherence to ACI standards, 2001 edition. Contraction and construction joints are precisely laid out and sawcut straight and true to line and grade.
- After Lithocrete® is installed, a final cleanup and a minimum of three coats of clear, penetrating Lithoseal™ paving sealer is applied to the surface to reduce surface staining and ASR (alkali-silica reaction).

SECTION B FORMWORK AND REINFORCEMENT

Without proper formwork and reinforcing, concrete will not achieve its full architectural and structural properties which designers demand today. Some, but not all, of the steps Shaw & Sons implements during construction of Zone B – Formwork and Reinforcement are as follows:

- Layout, line and grades are checked and rechecked prior to beginning construction.
- Layout is provided with digital equipment to an accuracy of $\pm 1/8^{\text{th}}$ of an inch.
- Construction joints laid out to occur at predetermined locations placed typically at 12-feet o.c.e.w. not to exceed 20-feet o.c.e.w.
- Placement of polystyrene foam isolation joint material at vertical surfaces, i.e. walls, columns, steps, utilities lids, etc.
- Placement of steel rebar (not wire mesh) with proper clearances from adjacent formwork, subgrade, and paving finish surfaces. Rebar is typically installed as #4's at 18" o.c.e.w. Rebar minimizes slab cracking and significantly reduces vertical displacement should a crack occur.
- Adobe blocks are used to support rebar to the center of the slab.
- Form lumber is new, Grade #2 S4S Douglas Fir or better.
- Steel stakes are used in-lieu of wood.
- Installation of "Speed Dowel's™", spaced typically at 18" o.c. or match rebar schedule.

SECTION C SUBGRADE PREPARATION

On every project, Shaw & Sons ensures that proper subgrade procedures have been executed prior to beginning their work. Poor subgrade preparation often leads to paving failure. Some, but not all, of the steps Shaw & Sons implements during Section C - Subgrade Preparation are as follows:

- Placement of a minimum of 2-inches of a washed concrete sand base over subgrade. Sand provides a "slip plane" for paving and allows for even concrete hydration, which minimizes paving surface discoloration.
- Verification of precise and complete subgrade elevations. Inaccurate or incomplete elevations lead to paving "bird-baths" and awkward cross slopes which may eventually lead to an unattractive paving product.
- Verification that utilities, i.e. sleeves and pipes, have been placed below the sand base and that the utilities have been backfilled to proper compaction standards. Utilities encased in concrete paving lead to stress cracks on the paving surface and should be avoided at all times.
- Review of the Project Soils Report related to adequate compaction, base materials and doweling/rebar requirements.
- Placement of geotextile fabric or aggregate base, if required, in the Project Soils Report.

SECTION A

SECTION B

SECTION C