



Concrete Craftsman Series
Placing and Finishing
Decorative Concrete Flatwork



CCS-5(16)



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INTRODUCTION

Concrete contractors place and finish concrete for a variety of applications. Proper placing and finishing of decorative concrete requires specialized skills using decorative concrete products and techniques not required for most concrete placements. These skills are in addition to the proper placing, finishing, and curing skills needed for routine concrete placements that are covered by existing flatwork finisher resources and programs.

The decorative concrete industry is growing fast. As a result, there is a need for education and information from credible sources. The standards of quality for this growing industry must be maintained and increased. This document was produced with the intent of raising the quality of education for the decorative concrete industry. Quality of construction will progress by continually improving the level of craftsmanship.

Many of the skills associated with decorative concrete flatwork are not presently covered in existing concrete flatwork resources. This document supplements existing resources by providing knowledge of the materials, equipment, and techniques required to successfully install decorative concrete flatwork. Knowledge of traditional concrete flatwork techniques is recommended for full understanding of this document. Decorative concrete topics covered herein include:

- Mixture design for decorative concrete mixtures;
- The use of integral color and dry shake color hardeners;
- The identification and uses of decorative finishing tools and equipment (such as stamping mats and stencils);
- The use of surface retarders and set-retarding admixtures to produce exposed aggregate surfaces;
- Stamping and texturing concrete;
- Seeding fresh concrete surfaces with decorative aggregate;
- Decorative treatments for stair treads and risers; and
- Cleaning and sealing methods for decorative concrete.

This document also covers topics that are universal to concrete flatwork construction:

- Jobsite and personal safety;
- Ensuring the design adheres to Americans with Disabilities Act (ADA) guidelines;
- Preplacement site preparation; and

- Identification and uses of concrete finishing tools.
Additionally, two chapters of texture samples and project examples are included. Architectural cast-in-place walls, chemical stains, decorative overlays, decorative scoring, and other topical finishes are not included in this document.

CHAPTER 1: SAFETY

A well-conceived and well-executed safety program is necessary to keep everyone at the jobsite aware of and protected against possible hazards. Failure to follow safety regulations and to use personal protective equipment (PPE) can lead to injuries. In addition to concern for the injured person, accidents can disrupt the flow and quality of work, further impacting the project. Every contracting company should have a written safety policy that sets out clear lines of authority for training and retraining personnel in safety regulations and procedures related to their construction specialty.

While many safety rules are the same for all types of concrete work, decorative concrete work presents special situations. In addition to the minimum requirements of the Occupational Safety and Health Administration (OSHA) Standards for the Construction Industry 29 CFR 1926,¹ these basic rules should always be followed:

- Minimum safety equipment (Fig. 1.1) for all concrete work includes hard hats, safety glasses, safety vests, full-length pants, long-sleeved shirts, sturdy leather footwear (boots or shoes, no sandals), and ear protection. Additional PPE is necessary for specific tasks and activities.
- When working with wet concrete, impervious gloves, impervious boots, and safety glasses should be worn. Fresh concrete can cause chemical burns and eye injuries.
- Hard hats should be worn when any overhead danger is present.
- Safety glasses and face shields should be worn when operating concrete cutting or chipping tools and equipment such as grinders, saws, and chipping hammers.
- Approved respirators should be worn when handling dust-, mist-, or fume-producing products or performing dust-, mist-, or fume-producing operations such as cutting, grinding, or buffing concrete or applying coatings, sprays, colorants, or similar products that may be toxic.
- Hearing protection should be worn when operations or equipment create noise levels that prevent normal conversation at a distance of 3 ft (1 m).
- Portable electric tools should be in good condition and equipped with the appropriate guards. In addition, portable electric tools should be of the double insulated type or protected by a ground fault circuit interrupter. Ground prongs should not be removed.



Fig. 1.1—Hard hat, eye protection, safety vest, long-sleeved shirt, long pants, boots, and ear protection are minimum safety equipment for decorative concrete work. Dust masks should be worn when necessary.