



## Modena by Bomanite Guideline Specification

SECTION 03920

INTERIOR CONCRETE RESURFACING

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. All labor, materials, equipment, and services necessary to complete Bomanite Modena System including primer, cementitious topping, field added aggregates, liquid hardeners and stain resistant finish.

#### 1.2 RELATED SECTIONS

- A. Related Work:
  - 1. Section 09620 Specialty Flooring
  - 3. Section 03300 Concrete

#### 1.3 SUBMITTALS

- A. Comply with pertinent provisions of Section 01600 – Product Requirements.
  - 1. Provide submittal information within 35 calendar days after the contractor has received the owner's notice to proceed.
- B. Product data:
  - 1. Submit special concrete finishes manufacturer's specifications, test data and other data required for each type of manufactured material and product indicated.
  - 2. Submit special concrete finishes technical bulletins giving manufacturer's name, product name, and product line number for the specified material proposed to be provided under this section.
  - 3. Submit special concrete finishes technical data sheet giving descriptive data, curing time, and application requirements.
  - 4. Submit special concrete finishes manufacturer's Material Safety Data Sheet (MSDS) and other safety requirements.

#### 1.4 QUALITY ASSURANCE

- A. The contractor for this work shall be a licensed Bomanite Custom Polishing Licensee Certified Applicator trained and equipped by:  
The Bomanite Company  
8777 Auburn Folsom Road  
Granite Bay, CA 95746  
Tel: (303) 369-1115  
Fax: (303) 291-0282  
Web site: [www.bomanite.com](http://www.bomanite.com)  
E-mail: [info@bomanite.com](mailto:info@bomanite.com)



8085 East Harvard Ave  
Denver, CO 80231  
Ph: (303) 750-8200

[www.coloradohardscapes.com](http://www.coloradohardscapes.com)

- B. The approved Bomanite project specific contractor is:  
Colorado Hardscapes  
Contact Jake Hanchey for project specific information including but not limited to product thickness, process information, slab design considerations such as control jointing, floor flatness and finish specific to Modena.
- C. Installer Qualifications:
1. Use an authorized Bomanite Custom Polishing Licensee and adequate number of skilled workmen who are thoroughly trained and experienced in the necessary craft
  2. Applicator shall be familiar with the specified requirements and the methods needed for proper performance of work of this section.
- D. Manufacturer's Certification:
1. Provide letter of certification from Bomanite Company stating that installer is a certified applicator of special concrete finishes and is familiar with proper procedures/installation requirements required by the manufacturer.
- E. Mock-ups:
1. Apply mock-ups of each type finish, to demonstrate typical joints, surface finish, color variation (if any), and standard of workmanship.
    - a. Build mock-ups approximately 100 square feet in the location indicated or if not indicated, as directed by the Architect or Owner Representative.
    - b. Notify Architect or Owner Representative seven days in advance of dates and times when mock-ups will be constructed.
    - c. Obtain from the Architect or Owner Representative approval of mock-ups before starting construction.
    - d. If the Architect or Owner Representative determines that mock-ups do not meet requirements, demolish, and remove them from the site and cast others until mock-ups are approved.
    - e. Maintain mock-ups in an undisturbed condition during construction as a standard for judging the completed work.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer labels indicating brand name and directions for storage, mixing with other components, and application.
- B. Store materials to comply with manufacturer's written instructions to prevent deterioration from moisture or other detrimental effects.
- C. Dispense special concrete finish material from factory numbered and sealed containers. Maintain record of container numbers.

#### 1.6 PROJECT CONDITIONS

- A. Environmental limitations:
1. Comply with manufacturer's written instructions for substrate temperature and moisture content, ambient temperature, humidity, ventilation, and other conditions affecting installation performance.
  2. Concrete must be cured a minimum of 28 days or as directed by the manufacturer before application of Bomanite Modena can begin.
- B. Close areas to traffic during and after floor application for time period recommended in writing by licensed installer.

### PART 2 PRODUCTS

#### **MATERIALS**

- A. Fast Setting, High Strength, Cementitious Polishable Overlay
- [1. Rapid Set® TRU PC: a pre-packaged, high-performance, fast-setting, high-flow, self-leveling cementitious, polishable overlay material mixed with water and decorative aggregate on site. Suitable for use interior and exterior, in wet and dry conditions, for flooring applications where high durability, rapid strength gain and polished aesthetics are desired. Ideal for fast-track projects Ready for foot traffic in 2 to 3 hours; coatings in 12 hours; grind and polish in 24 hours.

- B. Primer
  1. Rapid Set® TXP™ FAST: a high-performance, 100% solids, no VOC, fast-curing, moisture tolerant, interior epoxy primer designed for use with cementitious overlays. Provides high bond strength to ensure strong adhesion. Ready for overlay in 6 hours.
  - C. Additives and admixture materials must be approved for use by CTS Cement Manufacturing Corp. prior to use. (800-929-3030, www.CTScement.com)
  - D. Water: Clean, potable water free of deleterious amounts of silt and dissolved salts.

**2.2 MATERIAL PERFORMANCE**

- A. Fast Setting, High Strength, Non-Shrink Cementitious Polishable Overlay

1. Minimum performance requirements:

<b>Compressive Strength (ASTM C109 Modified*)</b>	4 hours	2,800 psi
	24 hours	5,000 psi
	28 days	7,000 psi
<b>Tensile Strength (ASTM C307 Modified*)</b>	7 Days	210 psi, minimum
	28 Days	365 psi, minimum

*\*Data obtained at flow consistency at 70°F (21°C)*

- B. Finished Sheen/Gloss Level

- [1. Polished Concrete Level 1 – Low Gloss: At a distance of 100 feet, the floor will reflect images from side lighting and achieve gloss meter readings of 30 to 40.
- [1. Polished Concrete Level 2 – Medium Gloss: At a distance of 30 to 50 feet, the floor will clearly reflect from side and overhead lighting and achieve gloss meter readings of 41 to 55.
- [1. Polished Concrete Level 3 – High Gloss: Looking straight down, the floor will clearly reflect overhead and side light, with the appearance of the floor looking wet and achieve gloss meter readings of 56 or higher.

- C. Floor Flatness and levelness requirements are:

1. FF = [\_\_\_\_], Specified Overall Value in [\_\_\_\_] areas as detailed on drawings]
2. FF = [\_\_\_\_], Minimum Local Value in [\_\_\_\_] areas as detailed on drawings]
1. FL = [\_\_\_\_], Specified Overall Value in [\_\_\_\_] areas as detailed on drawings]
2. FL = [\_\_\_\_], Minimum Local Value in [\_\_\_\_] areas as detailed on drawings]

Substrate floor flatness and levelness should be tested prior to installation of the overlay according to ASTM E1155 *Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers* by an independent testing agency experienced with the testing procedure and possessing the necessary equipment.

**3.1 PREPARATION**

- A. Mechanically roughen surfaces and remove all loose, unsound, contaminated material.
- B. Use appropriate mechanical means and methods to completely remove existing floor coverings, coatings, mastics, paints, adhesives and other floor materials that may inhibit bond.
- C. Bonding surfaces must be clean, sound, and free from any materials that may inhibit bond such as oil, dirt, asphalt, sealing compounds, acids, wax and loose dust and debris.
- D. Prevent damage to substrate during demolition and preparation.
- E. Correct conditions that are found to be out of compliance with the requirements of this section, to include substrate repair and pre-leveling, joint and crack treatment as required to achieve the specified finish.
- F. Mechanically prepare the substrate to an ICRI CSP 3.
- G. Where required, place divider/terrazzo strips. Level and set strips to appropriate heights prior to pouring the overlay.
- H. Pin or otherwise mark all existing joint locations to ensure they can be located and re-saw cut after placement of topping.
- I. Prime the prepared concrete in accordance with manufacturer's published procedures and recommendations.

- J. Immediately broadcast washed and kiln dried angular cut #20 - #30 grit silica sand onto epoxy primer ensuring complete coverage prior to initial set. Broadcast to refusal.
- K. After epoxy primer cures, remove all loose silica sand.

### **3.2 MIXING**

- A. Comply with manufacturer's printed instructions.
- B. Include careful monitoring of mix water volume being used, with allowance for the following special designs.
  - 1. Any decorative aggregates used and loading dosage as recommended and approved by the overlay manufacturer.
  - 2. Integral colorants. Must be approved by the overlay manufacturer and water volume per mix verified.
- C. Use CS Unitec (Hippo Mixer), batch mixers or equivalent to prepare overlay material. If barrel mixing, use a 1/2" heavy-duty drill (12 mm) with a minimum of 650 rpm.
- D. Clean barrels/mixers periodically to remove any unmixed and/or hardened material prior to placing the mixed overlay onto the floor.
- E. Verify proper flow using the Rapid Set® Self Leveling Products Field Flow Test.

### **3.3 APPLICATION**

- A. Comply with manufacturer's printed instructions and the following:
  - 1. Verify that all substrates and ambient temperatures are between 50°F (10°C) to 90°F (32°C) and will remain within range until the overlay has reached full cure. Ideal installation conditions are 60°F (15.6°C) to 80°F (26.7°C).
  - 2. To prevent pinholing and micro-crazing, eliminate air movement over the surface and do not apply overlay when relative humidity is below 30%.
  - 3. Have all required tools, equipment and materials organized and as close to the placement area as possible.
  - 4. Pour or pump overlay and spread in place with a gauge rake set at the appropriate thickness. Use the Rapid Set TRU PC Spiked Roller to coax the material into place. Use rounded metal spiked shoes to avoid damaging the primer. Contact the CTS Cement Technical Support (800.929.3030) if other tools are required. Use methods that avoid pinholes.
  - 5. Place overlay to grade levels required and to conform to drawing details.
  - 6. The minimum installation thickness must be 3/8" minimum. For high-load, rubber wheeled traffic areas, nominal thickness must be 1/2" minimum.
- B. Pre-Leveling: Use Rapid Set LevelFlor® from feathered edge to 1" (2.5 cm) thick and up to 5" (12.7 cm) thick when extended with aggregate. Mix and install according to manufacturer's published instructions. Allow the pre-leveling course to dry at least 12 to 16 hours before application of primer and overlay.

### **3.4 SEALING**

- A. Apply densifiers, sealers, guards or stain protectors per manufacturers' instructions.
- B. Achieve waterproofing, hardening, dust-proofing, and abrasion resistance of the surface without changing the designed aesthetics of the finish.

### **3.5 PROTECTION**

- A. Prevent damaged to overlay and protect from all traffic for at least 72 hours after final surface treatment.
- B. Do not allow standing water, rubber matting, or other non-breathable objects onto the polished surface.

- C. Protect the finished surfaces from damage, soiling and other construction activities.
- D. Provide suitable protective cover without damaging the polished surface.
- E. Follow maintenance guidelines as provided in Section 1.4 Submittals.

### 3.6 CLEAN-UP

- A. Remove and legally dispose of debris material from job site.
- B. Clean excess material from surrounding areas and all tools immediately, before material cures. If materials have cured, remove using mechanical methods that will not damage the substrate.
- C. Clean adjacent surfaces as needed using materials and methods recommended by the manufacturer of the material being cleaned. Remove and replace work that cannot be cleaned to the satisfaction of the Project Designer/Owner.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine the areas and conditions where polymerized cementitious flooring system is to be installed and notify the Architect and General Contractor of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected by the General Contractor in a manner acceptable to both the Architect and the Installer.
- B. Verify that concrete slab meets a minimum of 3000 psi of compressive strength. Consult American Concrete Institute ACI302.IR-89, Guide for Concrete Floor and Slab Construction requirements in Division 3 Section "Cast-In-Place Concrete," and Project Conditions.

END OF SECTION

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The logo for Colorado Hardscapes, featuring the word "COLORADO" in a bold, black, sans-serif font above a stylized mountain range graphic, and the word "HARDSCAPES" in a bold, black, sans-serif font below the graphic.

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