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This Manu-Spec® utilizes the Construction Specifications Institute (CSI) *Project Resource Manual* (PRM), including *MasterFormat™*, *SectionFormat™* and *PageFormat™*. A Manu-Spec is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets []; delete optional text in final copy of specification. Specifier Notes precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate product model numbers, styles and types are used in Specifier Notes and in the specification text Article titled "Acceptable Material." Metric conversion, where used, is soft metric conversion.

This Manu-Spec specifies a decorative architectural concrete finishing system through texture finish, colour and installation.

SECTION 03 35 33

STAMPED CONCRETE FINISHING

PART 1 GENERAL

1.1 SUMMARY

- .1 Section Includes: This Section specifies decorative architectural concrete finishing through texture, colour and installation.

Specifier Note: Revise Paragraph below to suit project requirements. Add section numbers and titles per CSI MasterFormat and specifiers practice.

- .2 Related Requirements:

Specifier Note: Include in this Paragraph only those sections and documents that directly affect the work of this section. If a reader of this section could reasonably expect to find a product or component specified in this section, but it is actually specified elsewhere, the related section number(s) should be listed below. Do not include Division 00 documents or Division 01 sections, as it is assumed all technical sections are related to all project Division 00 and Division 01 sections to some degree. Refer to other documents with caution, as referencing them may cause them to be considered part of the Contract.

- .1 Section [03 30 00 - Cast-in-Place Concrete].
 .2 Section [___].

1.2 REFERENCES

Specifier Note: Paragraph below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain References Paragraph when specifying products and installation by an industry reference standard. List retained standard(s) referenced in this section alphabetically. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced and update as applicable. Contract Conditions Section 01 42 00 - References may be used to establish the edition date of standards. This Paragraph does not require compliance with standard(s). It is a listing of all references used in this section. Only include here standards that are referenced in the body of the specification in PARTS 1, 2 and/or 3. Do not include references to building codes at any level.

A. Reference Standards:

- .1 American Concrete Institute (ACI).
 - .1 ACI 301 Specifications for Structural Steel.
 - .2 ACI 306 Guide to Cold Weather Concreting.
- .2 ASTM International (ASTM).
 - .1 ASTM A185/A185M Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
 - .2 ASTM A615/A615M Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
 - .3 ASTM C33/C33M Standard Specification for Concrete Aggregates.
 - .4 ASTM C150/C150M Standard Specification for Portland Cement.
 - .5 ASTM C260 Standard Specification for Air-Entraining Admixtures for Concrete.
 - .6 ASTM C494/C494 Standard Specification for Chemical Admixtures for Concrete.
- .3 CSA International (CSA).
 - .1 CSA A23.1/ A23.2 Concrete materials and methods of concrete construction/test methods and standard practices for concrete, Includes Update No. 1 (2015).
- .4 US Green Building Council (USGBC).
 - .1 LEED NC Version 2.2 LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.

Specifier Note: Article below includes submittal of relevant data to be furnished by contractor before, during or after construction. Coordinate this article with Consultant's and contractor's duties and responsibilities in Contract Conditions and Section 01 33 00 - Submittal Procedures.

1.3 ADMINISTRATIVE REQUIREMENTS

- .1 Coordination: Coordinate work of this Section with Section [03 30 00 - Cast-in-Place Concrete] to ensure that stamped concrete subcontractor's concrete mix design and installation practices are incorporated for the concrete which will be stamped.
- .2 Preinstallation Meeting: Convene preinstallation meeting after Award of Contract and one week prior to commencing work of this Section to verify project requirements, substrate conditions and coordination with other building subtrades and to review manufacturer's recommendations.
 - .1 Comply with Section [01 31 19 Project Meetings] and co-ordinate with other similar preinstallation meetings.
 - .2 Notify attendees 2 weeks prior to meeting and ensure meeting attendees include as minimum:
 - .1 Owner.
 - .2 Consultant.
 - .3 Stamped concrete finishing subcontractor.
 - .4 Manufacturer's technical representative.
 - .3 Ensure meeting agenda includes review of methods and procedures related to stamped concrete finishing installation including co-ordination with related work.
 - .4 Record meeting proceedings including corrective measures and other actions required to ensure successful completion of work and distribute to each attendee within 1 week of meeting.

1.4 SUBMITTALS

- .1 Product Data: Manufacturer's standard specifications and descriptive literature, including:
 - .1 Product characteristics.
 - .2 Performance criteria.
 - .3 Safety Data Sheets (SDS).
 - .1 Ensure rate of VOC is included.

Specifier Note: Specify submittals intended to document manufacturer storage, installation and other instructions.

- .2 Shop Drawings: Submit drawings showing layout and pattern.
- .3 Manufacturer's instructions, including:
 - .1 Delivery, storage and handling recommendations.
 - .2 Preparation and application recommendations.
- .4 Samples: Submit 600 x 600 mm sample showing pattern, texture and colour as selected by Consultant from manufacturer's standard range.
 - .1 Submit sample on 13 mm minimum thick plywood.
 - .2 Ensure concrete on plywood is 13 mm minimum thick to adequately show pattern and texture.
- .5 Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
- .6 Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .7 Manufacturer's Field Reports: Submit manufacturer's field reports within [3] days of each manufacturer representative's site visit and inspection.

Specifier Note: Coordinate Article below with Contract Conditions and with Section 01 78 36 - Warranties.

- .8 Subcontractor's Qualifications: Submit verification of license permitting subcontractor to do work of this Section.
- .9 Warranty: Fully executed, issued in [Owner's] name and registered with manufacturer, including:
 - .1 Manufacturer's [1 year] warranty from date of substantial completion, covering defects in materials.

Specifier Note: Retain the following only if specifying for a LEED project. Specify only the technical submittal requirements necessary to achieve the credits desired for this Project.

- .10 Sustainable Design (LEED) Submittals:
 - .1 LEED Submittals: In accordance with Section [01 35 21 – LEED Requirements].
 - .2 Submit verification for items when appropriate as follows:
 - .1 MR 5 - Regional Materials.

1.5 QUALITY ASSURANCE

- .1 Subcontractor's Qualifications: Licensed by Patterned Concrete Industries, Ltd.

1.6 DELIVERY, STORAGE & HANDLING

- .1 Deliver materials in accordance with manufacturer's instructions.
 - .1 Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact and product name and manufacturer clearly visible, and sizes to suit project.
- .2 Store materials protected from exposure to harmful environmental conditions, clean, dry, frost-free and at recommended temperature and humidity levels.
 - .1 Ensure materials are stored at temperatures greater than 40 degrees F.

1.7 WARRANTY

- .1 Project Warranty: Refer to Contract Conditions for project warranty provisions.
- .2 Manufacturer's warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official.
 - .1 Manufacturer's warranty is in addition to and not intended to limit other rights Owner may have under Contract Conditions.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method of specification. Add product attributes for performance characteristics, material standards and descriptions in other articles as applicable. Use of such phrases as or equal, approved equal or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining or equal products.

2.1 MANUFACTURER

- .1 Patterned Concrete Industries, Ltd.
- .2 Contact Information: 249 Supertest Road, Toronto, Ontario, Canada, M3J 2M4; Phone: (800) 252-4619; Email: specs@patternedconcrete.com; Website: www.patternedconcrete.com.

Specifier Note: Edit the following Article to suit project requirements. Coordinate the Article with the Section that specifies the cast-in-place concrete, typically Section 03 30 00 - Cast-in-Place Concrete. Include only those Paragraphs which are not addressed in the cast-in-place concrete Section. Delete the Article in its entirety if concrete performance characteristics are adequately addressed in the cast-in-place concrete Section.

2.2 PERFORMANCE REQUIREMENTS

- .1 Concrete:
 - .1 Steel wire reinforcing: To ASTM A185.
 - .2 Steel bar reinforcing: To ASTM A615.
 - .3 Concrete aggregates: To ASTM C33.
 - .4 Portland cement: To ASTM C150.
 - .5 Air-entraining admixtures: To ASTM C260.
 - .6 Chemical admixtures: To ASTM C494.

2.3 DESCRIPTION

- .1 Decorative architectural concrete finishing in selected pattern, texture and colour.

Specifier Note: Retain and edit the following Paragraph to meet project requirements. The patterns shown are for example only. Many other patterns as well as custom patterns are available. Contact Patterned Concrete Industries, Ltd. directly for further information on available patterns or download the company brochure at www.patternedconcrete.com.

- .1 Pattern Series: [Ardesia] [Origins] [Quarry] [Custom] [as indicated] [as selected by Consultant from Patterned Concrete Industries' standard range] [as shown on submitted shop drawings].

Specifier Note: Retain and edit the following Paragraph to meet the project requirements. Standard and custom colours are available. Contact Patterned Concrete Industries, Ltd. directly for further information on available colours.

- .2 Colour: [] [Integral] [as indicated] [as selected by Consultant from Patterned Concrete Industries' range of pattern series] [as shown on drawings].
- .3 Acceptable Material: Decorative Architectural Concrete Finishing by Patterned Concrete Industries, Ltd.

2.4 MATERIALS

- .1 Concrete: In accordance with Section [03 30 00 - Cast-in-Place Concrete].

2.5 ACCESSORIES

- .1 Concrete Hardener: Proprietary concrete hardener specifically for use with Patterned Concrete Industries' stamped concrete finishes.
 - .1 Acceptable material: Concrete Hardener by Patterned Concrete Industries.

- .2 Sealer: Proprietary blend concrete sealer for finish selected by Consultant from manufacturer's standard range.
 - .1 Acceptable material: Concrete Sealer by Patterned Concrete Industries.
- .3 Release Agent: Proprietary blend release agent selected by Consultant from manufacturer's standard range.
 - .1 Acceptable material: Release Agent by Patterned Concrete Industries.

PART 3 EXECUTION

3.1 STAMPED CONCRETE SUBCONTRACTOR

- .1 Use only subcontractor, licensed, tooled and trained by Patterned Concrete Industries, Ltd.

3.2 EXAMINATION

- .1 Verification of Conditions: Verify that conditions of substrate previously installed under other Sections or Contracts are in accordance with manufacturer's recommendations.
 - .1 Inform Consultant of unacceptable conditions immediately upon discovery.
 - .2 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.
 - .3 Starting application of stamped concrete finishing implies substrate conditions are acceptable for Work of this Section.

3.3 PREPARATION

- .1 Ensure cast-in-place concrete is wood floated to uniform surface before starting stamped concrete finishing work.
- .2 Work hardener into concrete slab finish before starting stamped concrete finishing work.

3.4 APPLICATION

Specifier Note: Retain and edit the following Paragraph to suit project requirements. Choose ACI 301 for standard structural concrete and choose ACI 306 for cold weather concreting.

- .1 Do stamped concrete finishing to [ACI 301] [ACI 306] [CSA A23.1/A23.2] and in accordance with Patterned Concrete Industries' recommendations.
 - .1 Imprint concrete by rigid stamping with layout, pattern colour and texture [as indicated] [as shown on shop drawings].
 - .2 Seal finished work in accordance with Patterned Concrete Industries' recommendations.

3.5 FIELD QUALITY CONTROL

- .1 Field Inspection: Coordinate field inspection in accordance with Section [01 45 00 Quality Control].

Specifier Note: Specify requirements if manufacturers are to provide field quality control with onsite personnel for instruction or supervision of product installation, application, erection or construction. Manufacturer field reports are included under PART 1, Submittals.

- .2 Manufacturer's Services:

Specifier Note: Use the following Paragraphs only when manufacturer's field services are provided and are required to verify the quality of the installed components. Establish the number and duration of periodic site visits required by manufacturer and specify below. Contact Patterned Concrete Industries, Ltd. to determine any costs associated with technical representatives providing manufacturer's field services. Delete if field services are not required.

- .1 Coordinate manufacturer's services with Section [01 45 00 - Quality Control].

Specifier Note: Delete the following paragraph if no costs are associated with manufacturer's services.

- .2 Arrange for payment for manufacturer's services.

- .3 Have manufacturer review work involved in handling, application, protection and cleaning of stamped concrete finishing, and submit written reports in acceptable format to verify compliance of Work with Contract conditions.
- .4 Manufacturer's Field Services: Provide manufacturer's field services consisting of product use recommendations and periodic site visits for product installation review in accordance with manufacturer's instructions.
- .5 Report any inconsistencies from manufacturer's recommendations immediately to Consultant.

Specifier Note: Edit the following Paragraph to meet project requirements. Coordinate site visits with manufacturer or delete the Paragraph and all of its subparagraphs if site visits are not required.

- .6 Schedule site visits to review work at stages listed:
 - .1 After delivery and storage of stamped concrete finishing, and when preparatory work on which Work of this Section depends is complete, but before application begins.
 - .2 During progress of work.
 - .3 Upon completion of work, after cleaning is carried out.
 - .4 Obtain reports within three days of review and submit immediately to Consultant.

3.6 CLEANING

- .1 Perform daily progress cleaning.
 - .1 Leave work area clean at end of each day.
- .2 Upon completion, remove surplus materials, rubbish, tools and equipment.
- .3 Collect recyclable waste and dispose of in accordance with manufacturer's recommendations and at appropriate recycling facilities.

Specifier Note: Specify protection methods completed after installation, but prior to acceptance by the owner. Include only statements unique to this Section. Coordinate the following Article with Section 01 76 00 - Protecting Installed Construction.

3.7 PROTECTION

- .1 Protect applied stamped concrete finishing from damage during construction.
 - .1 Place temporary wood planking over finished stamped concrete finishing work [at traffic areas] [as directed by [Consultant]].
- .2 Repair or replace adjacent materials damaged by application of stamped concrete finishing.

END OF SECTION