

SECTION 03 35 00
CONCRETE FINISHES

PART 1- GENERAL

1.01 SECTION INCLUDES

- A. The work in this Section shall be performed in accordance with the Drawings and the Provisions of Bid and Contract Documents, and with the applicable provisions of SSDPWSF, Section 800 - Portland Cement Concrete and Related Materials and Work, and as amended by the following Special Provision for the Irving Street Concrete Paving with Integral Color.

1.02 DESCRIPTION

- A. Work Included: Provide all material, labor, equipment and services necessary for the finishing concrete work, as shown on the Drawings and as specified herein. The work includes but is not limited to:
 - 1. Placement and finishing of concrete.
 - 2. Concrete curing.
 - 3. Patching and repair.

1.03 RELATED SECTIONS

- A. Section 32 13 13 - Concrete Work

1.04 QUALITY CONTROL

- A. Allowable Tolerance: All work shall be of the exact size, dimensions locations and lines shown on the plans unless otherwise specified herein. Permissible deviations shall be those shown in ACI 347.
 - 1. Maximum variation above or below a true plane shall be $\frac{1}{4}$ " in 10 feet for all finishes: as determined by a 10 foot straightedge placed anywhere on the plane surface, in any direction:
 - 2. All concrete and pavements shall be free of depressions; puddling will not be allowed to occur.
- B. Installers Qualifications: Qualified and competent workmen with a minimum five years work experience of same paving type installation, and placement of concrete shall work on the job.

1.05 REFERENCES

Comply with the applicable provisions of the following:

- A. American Concrete Institute, (ACI)
 - 1. ACI 347 - "Recommended Practice for Concrete Formwork"
 - 2. ACI 305R - "Hot Weather" and ACI 306R - "Cold Weather"
- B. Portland Cement Association (PCA)
 - 1. PCA publication, "Color, Texture in City Representative Concrete", published in 1980. Library of Congress catalog #80-56340.

- C. American Society of Testing Materials (ASTM)
 - 1. ASTM C156 - "Standard Test Method for Water Retention by Concrete Curing Materials"
 - 2. ASTM C494 - "Specifications for Chemical Admixtures for Concrete"

1.06 SUBMITTALS

- A. General: Submittals to be in accordance with the requirements of Section 01300, "Submittals," and SSDPWSF.
- B. Samples:
 - 1. General: Samples shall provide a full range of workmanship and texture proposed for the job to include: type of materials, retardants, curing compounds, and other finishing methods.
 - 2. Sample panels shall be prepared as many times as three times to obtain approval and acceptance from the City Representative. Prepare the following items for City Representative's approval:
 - a. Two 5'x5' concrete panels with specified color, finish, control and score joints
 - b. Panels to remain on site until removal is approved by City Representative.
- C. Product Data: Submit six copies of manufacturer's literature, specifications, applications, and installation instructions for:
 - 1. Joint materials and systems.
 - 2. Concrete Sealer

1.07 MAINTENANCE

- A. Contractor is to provide the following:
 - 1. Concrete design mix indicating proportions of aggregate, sand, water, and reinforcing.
 - 2. Product number and manufacturer's address and phone number for all concrete admixtures.

1.08 JOB CONDITIONS

- A. Hot weather: Comply with the recommended practice of ACI 305R and the requirements specified herein.
- B. Cold Weather: Comply with the recommended practice of ACI 306R and the requirements specified herein.

PART 2 - PRODUCTS

2.01 PRODUCTS

- A. Integral Color and Curing Compounds:
 - 1. Furnish proprietary materials in unopened manufacturer's standard containers with original labels showing: quantity, analysis where applicable, and name of manufacturer. Color admixture shall comply with the requirements of ASTM C-979-82. Calcium chloride shall not be permitted in the mix.

3. Integral color shall be pure, concentrated color pigments containing no fillers, adulterants or admixtures. Colors are manufactured Davis Colors or equal
 - a. Concrete Color:– Davis Colors: Mesquite 677 with broom finish
3. Curing compound shall be Color Seal II as manufactured by Davis Color (800)356-4848 or equal.
- B. Curing Compounds for non colored concrete:
 1. Type 1, clear water based resin type, free of wax, grease or other substances deleterious to materials applied to concrete in accordance with ASTM C309.
 2. Curing compound shall not discolor concrete or effect bonding or other finishes applied thereof.
 3. Curing compound shall restrict loss of water to not more than 0.500 grams per sq. cm. of surface when tested per ASTM C156.
- C. Expansion Joint Filler:
 1. Pre-molded bituminous material, non-extruding, conforming to ASTM D 944: thickness as shown on the Drawings.
 2. Color and type as selected and approved by City Representative.
 3. As manufactured by S.R. Meadows, Inc.; National Expansion Joint Co.; Celotex Corporation; or equal.
- D. Backer Rod:
 1. Extruded closed cell polyethylene foam rod.
 2. ICEL backer rod as manufactured by Industrial Systems Dept., Plastic Products Group of Hercules Inc., Middletown, Delaware; Ethafoma SB or as manufactured by Dow Chemical Co. or equal.
- E. Elastomeric Joint Sealant:
 1. Non-sag 1 part polyurethane
 2. Color of sealant to match color of the joint mortar.
 3. Lithoseal Trafficalk 3G as manufactured by L.M. Scolfield, (415) 255-2728 or Sikaflex 1a as manufactured by Sika Chemical Co. Lyndhurst, NJ or equal.
- F. Concrete Sealer:
 1. Davis 1000, Apply per manufacturer's directions

PART 3- EXECUTION

3.01 CONCRETE MIX

- A. General: In accordance with Sections 204.01 and 800 of SSDPWSF.
- B. Integral Color: In accordance to manufacturer's recommendations.

3.02 FINISHING CONCRETE

- A. All exposed concrete surfaces shall have Class 1 Surface Finish in accordance with SSDPWSF SECTION 210.06, 204.06, 411.10, and 411.11 similar with exceptions as noted herein:
 1. Slope. All exposed surfaces shall be sloped for drainage.

3.03 FINISHES

- A. General: Contractor is to produce finishes in accordance with Drawings, and as specified herein:
- B. Light Broom Finish: in accordance with SSDPWSF - SECTION 204.06.

3.04 JOINTS AND EDGES

- A. General:
 - 1. Construct joints in accordance with Drawings and approved shop drawings. See SSDPWSF SECTION 210.07, for reference only. Joint character shall match that of approved Mock-up.
 - 2. Joints shall be made complete as shown; crossing joints shall physically intersect, and joints extending to vertical surfaces shall be fully made. If portions of joints cannot be completely executed with use of customary tools, set strips of metal or sealed wood into plastic concrete, and carefully remove after concrete has hardened. Align manually made joints carefully with those portions made by inserts.
- B. Expansion Joints and Edging: Provide expansion joints at the location and intervals as shown on the approved shop Drawings, and at all locations where paving abuts any vertical surface such as: buildings, walls, and other structures.
 - 1. Place approved joint material with top edge 1/4 inch below the paved surface, and secure in place to prevent movement.
 - 2. Form joint and other edges in the fresh concrete using an edging tool to provide a smooth uniform impression.
 - 3. Strike all edges before and after finishing.
 - 4. After the curing period, clean expansion joints carefully and fill with approved joint compound, flush with the paved surface in such a manner as to avoid spilling onto paved surfaces.
- C. Control Joints and Score Lines:
 - 1. Construct for paved surfaces as shown on drawings and as herein specified.
 - 2. Tooled Joints: Form joints in fresh concrete by grooving top portion with recommended cutting tool and finishing edges with a jointer.

3.05 CURING AND PROTECTION

- A. In accordance with SSDPWSF SECTION 800.16 - PROTECTING AND CURING CONCRETE with exceptions noted herein. See product section - curing compound.

3.06 DEFECTIVE CONCRETE AND REPAIRS

- A. General: In accordance with SSDPWSF SECTION 800.18 - REPAIRING IMPERFECT CONCRETE. Concrete shall be considered defective for the following reasons:
 - 1. Failure of finished concrete profiles, and dimensional tolerances, to conform to the requirements and the allowable tolerances in this Section.
 - 2. Concrete showing cracks, rock pockets, voids, graffiti, spalls, or other visual defects.
 - 3. Failure of concrete finishes to match approved samples, as determined by the City Representative.

- B. All defective concrete shall be subject to removal and replacement by the Contractor, at his expense, unless it is determined by the CITY REPRESENTATIVE that it can be patched as specified below or that the location of this defective concrete is not detrimental to the function and the appearance of the project.
- C. Repairing and Patching: Immediately after removing forms, inspect all concrete surfaces and patch any pour joints, voids, rock pockets, toe holes, and other imperfections at once, but not until surfaces have first been examined by the CITY REPRESENTATIVE. Chip away defective areas to a depth of about one inch with the edges perpendicular to the surface. Use binding agent as required to ensure that patch will bond completely and permanently to concrete surface.
- D. Repair exterior exposed- formed concrete surfaces that contain defects, which adversely affect the appearance of the finish. Repaired surfaces must match adjacent concrete in form, texture, and color. Prepare test samples prior to repairing concrete for City Representative's approval. Remove and replace the concrete having defective surfaces if the defects cannot be repaired to the satisfaction of the CITY REPRESENTATIVE. Surface defects, as such include: color and texture irregularities, cracks, spalls, graffiti, air bubbles, honey comb, rock pockets and holes left by tie rods and bolts, fins and other discoloration's that cannot be removed by cleaning.

3.07 CLEANUP

- A. Clean up shall be performed as each portion of the work progresses. Refuse, excess dirt and sand shall be removed from the site, all walks and paving shall be broomed or washed down, and any damage sustained to the work of others shall be repaired and returned to its original new condition.

END OF SECTION