

SECTION 03 01 80 - CAST-IN-PLACE CONCRETE SLAB CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Cutting and patching of cast-in-place exposed and polished concrete floors.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture, provide proportion mixes by either laboratory trial batch or field experience method, complying with ACI 301. Include all admixtures to be used in the concrete. Include field test data from at least 10 tests or a three-point curve generated using trial mixtures.
- C. Material Test Reports: From a qualified testing agency, indicating and interpreting test results for compliance of the materials, and admixtures with requirements indicated, for all materials utilized in the concrete.

1.3 QUALITY ASSURANCE

- A. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- B. Installer Qualifications: An experienced installer who has completed concrete work similar in material, design and extent to that indicated for this project on a minimum of five similar projects, and whose work has resulted in construction with a record of successful in-service performance.

PART 2 - PRODUCTS

2.1 STEEL REINFORCEMENT

- A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), plain-steel bars, cut true to length with ends square and free of burrs.

2.2 CONCRETE MATERIALS

A. Bag Concrete:

1. Minimum Compressive Strength: 5000 psi (34.5 MPa).
2. Slump Limit: 3 inches (76 mm).
3. Add 10 percent, by weight, Type I Portland cement to the mix.
4. Add 3 percent, by weight, liquid pigment to the mix.

a. Products:

- 1) Davis Colors; Hudrotint; West: 800-356-4848, East: 800-638-4444.
- 2) L.M. Scofield Company; Chromix L; 800-800-9900.
- 3) Solomon Colors; ColorFlo; 800-624-0261.

b. Color: C-26, Antique Cork.

B. Ready Mix Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.

1. Minimum Compressive Strength: 5000 psi (34.5 MPa).
2. Slump Limit: 3 inches (76 mm).
3. Add 3 percent dry pigment, by weight, to the mix, either at the batch plant or on the job.

a. Manufacturers:

- 1) Davis Colors.
- 2) L.M. Scofield company.
- 3) Solomon Colors.

b. Color: To match adjacent concrete.

2.3 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth or cotton mats.

B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

C. Water: Potable.

2.4 ACCESSORY MATERIALS

A. Joint Filler: Two component, 1:1 ratio, polyurea elastomer joint filler of 100 percent solids, Shore 65-67 A hardness, rapid curing self leveling, semi-flexible sealant and UV resistant.

1. Products: Specify store number and address when ordering.

- a. Euclid Chemical Company; QWIKjoint UVR 65.
- b. HI-TECH Systems; HT-PE65 Flexible Control Joint Filler.
- c. Metzger/McGuire Co.; Spal-Pro RS-65.

- d. No substitutions allowed.
- 2. Color: Match adjacent concrete.

PART 3 - EXECUTION

3.1 DEMOLITION

- A. Drill through entire slab section at each inside corner with 1/2 inch (13 mm) hammer drill bit.
- B. Saw cut the concrete a minimum of 1-1/2 inch (38 mm) or 1/3 of the slab, whichever is greater. Do not saw all the way through the slab.
- C. Trench Width: Minimum 12 inches (305 mm).
- D. Do not cross cut slab, either at mid sections or ends.
- E. Break out remaining concrete with drop hammer.
- F. Do not damage trench edges or ends at top surface plane. If edge or end is damaged in any way, saw cut that edge again after the work in the trench is done.
- G. Lower floor clean-outs by coring around them with a 12 inch (305 mm) bit.

3.2 STEEL REINFORCEMENT INSTALLATION

- A. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- B. Follow structural engineer's direction. If no direction given, dowel patch to adjacent slab with #3 deformed steel reinforcing bars, 12 inches (305 mm) o.c. a minimum of 4 inches (102 mm) embedment with epoxy. Place bars at mid-point of slab. Insert 6x6x 6 gauge w.w.f. in upper 1/3 of slab.

3.3 CONCRETE FINISHING

- A. Leave top of patch 1/16 inch (1.6 mm) high.
- B. Work top of slab with jitterbug to bring fines to the surface.
- C. Steel trowel to close any pinholes or eliminate minor blemishes, bringing the surface to a dense, smooth, polished finish.
- D. Achieve Face Numbers method minimum local value flatness of $F_t=20$ and levelness of $F_l=15$.
- E. Finish trench edges with 1/4 inch (6 mm) radius edger.

- 1. Product: Goldblatt Tool Company; #GO6235

3.4 CURING

- A. Cure for seven days before polishing.
- B. Do not apply any curing compound.

3.5 POLISHING AND DYEING

- A. Stain or dye the slab patch to match or be slightly darker than the adjoining surfaces.
- B. After patching, rout joints and fill with joint filler.

END OF SECTION 03 01 80