Jefferson County School District, R-1
Support Services

TECHNICAL GUIDELINES

DIVISION 03 – CONCRETE

AUGUST 2022

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DIVISION 03 - CONCRETE

03 06 00 Schedules for Concrete – October 2010

- For most projects, a Concrete Schedule is strongly recommended, containing the following minimum information for both design and as tested conditions:
  1. Label
  2. Application/location
  3. Cement type
  4. Mix Design
  5. Water/Cement Ratio (maximum)
  6. Air Entrainment %
  7. Maximum aggregate size
  8. Slump (range or maximum)
  9. 28 day strength (psi)

END SECTION 03 06 00

03 10 00 Concrete Forming and Accessories – October 2010

- Work in this section is open to any product or material meeting the requirements of this Technical Guideline.
- Permanent Void Forms
  1. Prefabricated, preassembled or KD void forms are recommended
  2. Provide Seam and end caps to prevent concrete flow into voids.
- Cast-in metal stair treads and nosings are prohibited at stairs and steps exposed to weather.
- Jefferson County School District, R-1 reserves the right to have a licensed structural engineer inspect and accept formwork in advance of the concrete pour.
- A 45° 1-inch chamfer form is required at exposed exterior corners of both structural and architectural cast-in-place concrete.
- Inserts and Anchors:
  1. Stainless steel.
  2. Plastic is prohibited.

END SECTION 03 10 00

03 20 00 Concrete Reinforcing – October 2010

- Work in this section is open to any product or material meeting the requirements of this Technical Guideline.
- In the absence of other information, standards of the following organizations apply:
  1. Concrete Reinforcing Steel Institute (CRSI)
- Submittals
  1. Shop Drawings:
     a. Required for structural concrete reinforcement

2. Closeout:
    a. Submittals listed above, updated to as-built status.
- Fibrous Reinforcing:
    1. Permitted only in exterior concrete slabs-on-grade and other exterior structures.
- Structural Engineer inspects and accepts concrete reinforcement in advance of concrete pour.

END SECTION 03 20 00

03 30 00 Cast-in-Place Concrete – August 2018

- Work in this section is open to any product or material meeting the requirements of this Technical Guideline, except as otherwise noted.
- Exposed interior concrete walls and floors require sealer
    1. See Division 07.
- In the absence of other information, standards of the following organizations apply:
    1. American Concrete Institute (ACI)
    2. Portland Cement Association (PCA)
    3. Colorado Ready Mixed Concrete Association (CRMCA)
- Submittals
    1. Samples:
        a. Required
    2. Test Reports:
        a. Required
    3. Closeout:
        a. Test reports
- Restrictions
    1. Exposed heavy/rough texture finish concrete (over ¼" surface variation) is prohibited for any interior finish.
    2. Coloring of concrete in the field during mixing or curing is prohibited.
- Concrete Type:
    1. Per geotechnical report and Structural Engineer of record.
- Floor Slab
    1. Mix:
        a. Requirements established by Structural Engineer to meet project specific conditions and geotechnical report recommendations.
        b. Reinforcement as recommended by Structural Engineer.
    2. Placement conditions
        a. 85°F maximum ambient temperature
        b. Cold weather placement procedures per ACI or Structural Engineer recommendations.
    3. Control Joints
        a. 2'-0" maximum joint separation per inch of slab thickness (4 inch slab = 8'-0" joint separation)
        b. Minimum depth: 10% of slab thickness
    4. Finishing

a. Float
b. Float finish plus sealer/hardener where no finished flooring is scheduled
c. Polished Concrete: Apply durable surface protection immediately after cure to protect surface during construction.

5. General Detailing:
   a. Pin concrete slabs-on-grade to adjacent construction with rebar or dowels:
      (1) Where patching occurs
      (2) Exterior sidewalks and aprons adjacent to buildings
6. Prohibited:
   a. Calcium chloride
   b. Waterproofing admixtures, silane, siloxane
   c. Acid wash unless fully extracted
   d. Non-dissipating curing/sealing compound
7. Sustainability considerations shall be made by the Design Team, which may include:
   a. Use of recycled concrete as under slab base course
   b. Percentage of fly ash which is acceptable for performance of finished concrete.
8. Under-Slab Vapor Barrier
   a. Puncture resistant virgin material
   b. Minimum thickness:
      (1) 15 mil
   c. Detail all termination and penetration conditions.
      (1) Pourable sealer is acceptable in lieu of tape closure.
   d. Design Team is responsible for specifying use, type and installation method of under-slab vapor barrier, based upon site specific conditions.

- Options for concrete floor slabs on grade to receive adhered finished flooring:
  1. Use of higher strength concrete.
  2. Controlled curing environment per ACI requirements.
  3. Vapor Emission and Alkalinity Testing
     a. Quantitative and qualitative 72 hour anhydrous calcium chloride moisture tests per ASTM
     b. Test for alkalinity before and during finish flooring installation
     c. Finish flooring work is prohibited when pH exceeds 8.45.
  4. Admixtures and treatments
     a. CreteSeal
     b. FloorSeal
     c. Sinak
  5. Scarification
     a. Shotblast slab prior to installation of flooring
  6. A combination of above items may be required.
     a. Design Team to specify based upon site conditions.
- Field Quality Control:
  1. The Owner will procure the services of a testing agency to perform recommended tests.
  2. Minimum testing as required by Codes
  3. Additional and special tests as recommended by the Structural Engineer

END SECTION 03 30 00

03 38 00 Post-Tensioned Concrete – August 2015

- Work in this section is open to any product and material meeting the requirements of this guideline.
- For use at new Tennis Courts
- Comply with requirements of:
  - Post-tension Institute (PTI) for Post-tensioned slab-on-grade design and construction recommendations
  - USTA
  - ASBA
- Certification: Installers shall be certified by PTI

03 40 00 Precast Concrete – October 2010

- Work in this section is open to any product or material
- In the absence of other information, standards of the following organizations apply:
  1. American Concrete Institute (ACI)
  2. Portland Cement Association (PCA)
  3. Colorado Ready Mixed Concrete Association (CRMCA)
- Exposed aggregate precast concrete
  1. Use top surface retarder.
     a. Do not use brush with water spray until concrete has cured.
  2. Detail smooth surface (no aggregate) at fenestration and other locations where sealant is to be applied

END SECTION 03 40 00

03 50 00 Cast Decks and Underlayment – October 2010

- Work in this section is open to any product or material.
- Cementitious Roof Deck:
  1. Cementitious Wood Fiber Plank:
     a. Prohibited for structural applications
  2. Gypsum Concrete Roof Deck:
     a. Prohibited

END SECTION 03 50 00

03 60 00 Grouting – October 2010

- Work in this section is open to any product or material meeting the requirements of this Guideline
- Non-staining, non-shrink grout

END SECTION 03 60 00

03 80 00 Concrete Cutting and Boring – August 2015

- Work in this section is open to any product or material
- Concrete cutting or boring at structural concrete components shall require x-raying or other means to identify locations of reinforcing, etc. prior to cutting or coring.
  1. If reinforcing is identified, a structural engineer shall evaluate and provide direction prior to cutting.

END SECTION 03 80 00