

These guidelines are updated periodically. Users of the guidelines are encouraged to check this site as needed to be sure of having the most current edition. Comments and suggestions concerning improvements to this section of the guidelines may be submitted to: m_takacs@uncg.edu.

03300. CAST-IN-PLACE CONCRETE

1. MIX DESIGNS shall be submitted by the Contractor to the engineer for approval well before they are needed for construction.
2. PROPER TRANSPORTING, CONVEYING, DEPOSITING AND CURING methods shall be clearly defined by the Designer.
3. HOT AND COLD WEATHER requirements shall be defined or clearly referenced.
4. ADMIXTURES
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 - 4.1. Calcium chloride or admixtures containing chloride shall not be used.
 - 4.2. An approved air-entraining admixture shall be used for all concrete exposed to weather.
 - 4.3. Colored concrete shall be avoided. If desired by the Designer for some reason, it shall be discussed with FDC before specifying.
 - 4.4. **The use of fly-ash is encouraged when specifying concrete mix designs. The engineer shall evaluate the properties and the potential contributions in meeting the sustainable goals of the project.**
 - 4.5. When fly ash is specified, it shall be with tight tolerances on carbon. This is especially important when fly ash is used with air-entraining admixtures.
5. ALUMINUM CONDUITS AND PIPES shall not be embedded in any concrete.
6. CONTROL JOINTS, EXPANSION JOINTS AND CONSTRUCTION JOINTS shall be clearly defined using appropriate details. Control and expansion joints shall be coordinated with interior partition walls where possible.
7. METAL NOSINGS with non-slip surfaces shall be provided on all concrete steps.
8. COMPRESSION TESTS and related laboratory analyses shall be performed by a qualified independent laboratory (conforming to American Society for Testing and Materials standards) selected and paid for by the Owner in accordance with the North Carolina Construction Manual. The University solicits proposals for the testing laboratory shortly after the receipt

of construction bids. The Designer should contact the University prior to this time and provide the scope of work for testing as per the North Carolina Construction Manual and any other specific requirements for the proposal request.

9. REPAIR of defective concrete must meet the approval of both the structural engineer and Owner before the Designer gives approval for the repair. Durability, maintenance and aesthetics are factors to be considered.

03350. CONCRETE FINISH

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1. A SAMPLE PANEL for exposed concrete may be required at the site prior to beginning production. The panel shall show all of the various finishing techniques required in the structure, i.e. joints, texture, color, workmanship, sandblasting, etc. The concrete used shall be provided from the project supplier and shall represent the approved project mix in all aspects. Panel shall be protected from construction operations, but shall be left exposed to the elements and left in place until all architectural concrete has been approved. Special attention shall be given to areas that routinely have caused concern in concrete construction such as:
 - 1.1. Adequate cover over reinforcing steel.
 - 1.2. Sealing and waterproofing.
 - 1.3. Proper drainage.
 - 1.4. Joints and connections.
 - 1.5. Protection of in-place work during construction, especially protection from vandalism. Both drawings and specifications shall note that the Contractor is responsible to protect the work and take whatever precautions necessary to assure the work is not vandalized (i.e. writing in flatwork). Vandalized work is not acceptable to the Owner.
 - 1.6. Proper dimension and sizing for embedded items.
 - 1.7. Coordination of the electrical and mechanical requirements for penetrations and across expansion joints.
2. INTERIOR CONCRETE FLOORS shall receive a durable finish to minimize staining and maintenance. Mechanical and electrical rooms are noted in particular. Any admixtures, hardeners or curing compounds shall be compatible with finish and adhesives or mastics used with the flooring system. **All adhesives and sealants used on the interior of the building must comply with the VOC requirements of South Coast Air Quality Management District Rule 1168.**

03400. PRECAST CONCRETE

1. **QUALITY ASSURANCE:** Precast manufacturing plants shall be certified by the Prestressed Concrete Institute's Plant Certification Program or meet equal qualifications. Visits to the precast plant by the Designer and Owner may be applicable to inspect the work process and quality. All welded connections shall be made by a certified welder.
2. **TESTING:** Precast manufacturers shall employ their own testing services with the Designer specifying frequency of testing.