**Concrete Standards**

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**Acronyms And Abbreviations**

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<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>ADA</td>
<td>Americans with Disabilities Act</td>
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<tr>
<td>PCI</td>
<td>Precast/Prestressed Concrete Institute</td>
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<tr>
<td>psi</td>
<td>pounds per square inch</td>
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BASIS OF DESIGN

This section applies to Division 3, Concrete.

CONCRETE — GENERAL PROVISIONS

Parking garages shall be designed to have a minimum of 7 feet, 0 inches clear height throughout; no exception. Signage, piping, ductwork, and other objects shall not be below 7 feet, 0 inches above the floor.

Parking spaces in garages shall be 8 feet, 6 inches wide for stalls at 90 degrees. Parking spaces designated for the handicapped shall comply with Americans with Disabilities Act (ADA) guidelines.

CAST-IN-PLACE CONCRETE

On-Site Construction Administration: The Associate shall have a representative visit the site at appropriate intervals to observe the Work. The Associate shall visit the site to determine in general whether the Work will be in accordance with the Contract Documents. The Associate shall keep the Owner informed and will endeavor to guard against defective Work.

Test Reports: Concrete test reports shall be furnished to the Associate and to the University Project Manager.

Curing, Sealing, and Hardening Products: Specify only non-staining types that are compatible with the flooring material. Take necessary precautions to prevent odors from entering adjacent occupied buildings.

Miscellaneous Requirements:

1. Strengths: Provide a minimum compressive strength of 3,000 psi at 28 days for general use. For slabs on grade and paving, use 4,000 psi minimum. See microsilica requirements for parking structures.
2. Air-entrained concrete: An air-entraining admixture shall be used for all flatwork concrete exposed to weather to achieve 5 ½ percent ± 1 ½ percent.
3. Treads of concrete steps shall be provided with a non-slip surface. Do not use reinforcing bars near nosings (concern for premature cracking).
4. Non-slip surfacing: Ramps, treads, and platforms of stairs shall have a non-metallic, non-slip surface when not covered with finish flooring materials.
5. Structural slabs for parking garages and other concrete that will be subjected to deicing salts shall include microsilica, W.R. Grace’s DCI corrosion inhibitor, and epoxy-coated reinforcing steel.
6. The ready-mix supplier and the admixture supplier shall cooperate in formulating Microsilica concrete. Performance of mix design shall be determined by a laboratory. Microsilica shall contain 85 percent amorphous silicon dioxide. Mix design shall be based on 6,000 psi compressive strength, 580 pounds of cement per cubic yard, 0.40 water/cement ratio, and 5 ½ percent ± 1 ½ percent air entrainment. Broom-finish concrete in vehicular traffic areas. Microsilicon concrete shall be moisture cured.

7. Post-tensioned cables and end conditions shall be totally encapsulated.

8. Do not use metallic shake hardeners.

ARCHITECTURAL CONCRETE

A vertical sample panel shall be placed at the site when cast-in-place architectural concrete is used. The panel shall be reviewed, approved, and left in place so that other concrete placed can be made to match the color and texture. Approval shall be through the University Project Manager.

STRUCTURAL PRECAST CONCRETE

Structural precast concrete frames are prohibited for parking garage structures.

ARCHITECTURAL PRECAST CONCRETE

A vertical sample panel shall be placed at the site when precast concrete is used. The panel shall be reviewed and approved and left in place such that other concrete placed will match the color and texture. Approval shall be through the University Project Manager.

Fabricator Qualifications

Engage a firm experienced in producing architectural precast concrete units similar to those indicated for the Project. The fabricator should have a record of successful in-service performance, as well as sufficient production capacity to produce required units without delaying the Work.

- The fabricator must participate in the Precast/Prestressed Concrete Institute’s (PCI) Plant Certification Program and be designated a PCI certified Plant for Group A1 – Architectural Concrete at the time the Project is bid.

END