

DESIGN CRITERIA

1. Related Sections: See Division 03 Sections Cast-In-Place Concrete and Precast Architectural Concrete.
 - A. Where the casting slab is the building's permanent concrete slab-on-grade insure that the depth of floor brace anchors or the length of drilled-in anchors do not puncture the vapor retarder under the slab-on-grade; insure that the strength and thickness of the slab-on-grade will withstand temporary bracing loads and the combined weight of the crane and the lifted tilt-up panel; consider the effect of contraction joints and isolation joints on finishes; verify the compatibility of curing compounds with bondbreakers; and verify the suitability of the slab-on-grade finish.
2. This Section specifies tilt-up concrete wall panels that are cast, finished, and tilted into place on-site. This Section also specifies related formwork, reinforcement, concrete materials and admixtures, concrete mixture requirements, placement, as-cast and conventional form-liner and abrasive-blast exposed-aggregate finishes, bondbreakers, curing, repairs, and field quality control.
 - A. This Section does not specify cast-in-place architectural concrete or precast architectural concrete.
3. Codes and Standards:
 - A. ACI 301 is incorporated by reference and applies to tilt-up load bearing-concrete construction.
 - B. ACI 551.1R and 551.2R Tilt up construction guides provides further information for the A/E.
 - C. ASTM standards are referenced throughout to establish appropriate requirements for specifications, test methods, practices, classifications, and terminology.
 - D. Testing and Inspection: Although the IBC requires special inspections be performed by special inspectors who are engaged by the owner or the design professional, this Section specifies the Contractor shall engage the special inspectors.
4. Design Considerations:
 1. The primary structural design of tilt-up panels is with the A/E. This includes a review of design analyses, building stability, structural systems, and permanent connections.
 2. The tilt-up concrete fabricator is specified in this Section to assume engineering responsibility of lifting inserts and devices, provide professional engineering services and take design responsibility for tilting and erection stresses; and also determines insert locations, selects lifting devices, and develops bracing designs for the tilt-up panels.
 3. Slabs to receive polished concrete finish shall not be used as casting bed for tilt-up concrete.

END OF SECTION