

**ACI 550.3-13**

**Design Specification  
for Unbonded Post-Tensioned  
Precast Concrete Special Moment  
Frames Satisfying ACI 374.1  
(ACI 550.3-13) and Commentary**

An ACI Standard

Reported by Joint ACI-ASCE Committee 550



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*This Standard defines requirements that may be used to design special hybrid moment frames composed of discretely jointed precast concrete beams post-tensioned to concrete columns. After a major earthquake, these hybrid moment frames should exhibit minimal damage in beam-column regions and negligible permanent displacements. Hybrid moment frames do not satisfy the prescriptive requirements of Chapter 21 of ACI 318-11 for frames of monolithic construction. According to 21.1.1.8 of ACI 318-11, their acceptance requires demonstration by experimental evidence and analysis that the frames have strength and toughness equal to or exceeding those provided by comparable monolithic reinforced concrete frames that satisfy the prescriptive requirements of Chapter 21. This Standard describes the requirements that the licensed design professional may use to demonstrate, through analysis, that such frames have strength and toughness at least equal to those of comparable monolithic frames. This Standard is a revision of the ACI T1.2 Standard.*

*In this Standard, consistent with the format of ACI 318, the word "Section" is not included before a reference to a section of ACI 318. To more clearly designate a section of this Standard, however, the word "Section" is used before any reference to a section of this Standard. Consistent with the format of ASCE/SEI 7, the word "Section" is also included before a reference to a section of ASCE/SEI 7.*

**Keywords:** drift ratio; earthquake-resistant design; energy dissipation; moment frame; post-tensioning; precast concrete; prestressed concrete; test module; toughness.

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