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Code Requirements For Load Testing Of Existing Concrete Structures And Commentary

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ACI Committee 437 - Strength Evaluation of Concrete Structures

CODE REQUIREMENTS FOR LOAD TESTING OF EXISTING CONCRETE STRUCTURES AND COMMENTARY

REPORTED BY ACI COMMITTEE 437

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This standard provides requirements for test load magnitudes, test protocols, and acceptance criteria for conducting a load test as a means of evaluating the safety and serviceability of concrete structural members and systems for existing buildings. A load test may be conducted as part of a structural evaluation to determine whether an existing building requires repair and rehabilitation, or to verify the adequacy of repair and rehabilitation measures applied to an existing building, or both. The standard contains provisions for both a cyclic load test and a monotonic load test procedure.

Keywords: acceptance criteria; cyclic loading; load test; monotonic loading; test load magnitude; test protocol

CHAPTER 1—GENERAL

1.1—Scope

1.1.1 The scope, purpose, applicability, limitations, interpretation principles, and units of measure of "ACI Code Requirements and Commentary for Load Testing of Existing Concrete Structures," hereafter referred to as the "Code" are defined in this Chapter.

1.1.2 The "General Building Code" refers to the building code adopted in each jurisdiction. This Code supplements and is part of the General Building Code through reference.

1.1.3 The requirements of this Code shall govern for the evaluation of safety and serviceability of members in existing concrete structures by load testing, except as modified by the General Building Code.

1.1.4 In jurisdictions without a General Building Code, this Code provides minimum acceptable requirements for the evaluation of safety and serviceability of existing concrete structures by load testing.

1.1.5 The requirements of this Code shall apply to reinforced concrete with prestressed or non-prestressed reinforcement or both.

1.1.6 Procedures and requirements provided in this Code are not applicable to existing structures having concretes with compressive strengths above 8000 psi unless permitted by the licensed design professional.

1.2 — Purpose