



## POSITION ON METHODS OF CONCRETE STRENGTH EVALUATION FOR PAVEMENT ACCEPTANCE OF THE AMERICAN CONCRETE PAVEMENT ASSOCIATION

The American Concrete Pavement Association (ACPA) has adopted this position to reflect the views of its members on the appropriate use of concrete strength tests for the acceptance of concrete pavement. The focus is on the common practices most currently in use (state-of-the-practice). For strength testing related to Performance Related Specifications (PRS), refer to ACPA Position Paper on PRS dated July 2006.

### *State-of-the-Practice*

- The most common methods for determining the strength of concrete pavement for acceptance are:
  - ASTM C39 "Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens."
  - ASTM C78 "Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third Point Loading)."
- These two test methods require that specimens are made in accordance with ASTM C31 "Practice for Making and Curing Concrete Test Specimens in the Field".
- The specifying agency or its agent usually fabricates and tests the specimens with no involvement by the contractor.
- Contractors often fabricate and test specimens for process control.
- Contractor process control tests are used for acceptance by some agencies.

### *Referee Testing*

- When acceptance test specimens have been fabricated or tested in a questionable manner or results are inconsistent between the contractor and agency, referee testing should be employed to determine or ensure the strength of the concrete is adequate.
- Referee testing should be done on the in-situ concrete.
- Contract provisions should clearly include referee testing provisions, including what and how the referee testing will be done.

### *Improvements in the Quality of Concrete Strength Testing*

- Every effort should be made to improve the quality of testing, including education, certification and periodic evaluation of field and laboratory technicians and equipment of both contractor and agency-engaged personnel and facilities.
- Specific attention should be focused on improving the quality of flexural testing.
- Research, evaluation and education of nondestructive procedures for determining concrete strength is strongly encouraged.

### *Partnering to Avoid Conflict*

- **The contractor and agency should actively partner in conducting strength acceptance testing, including jointly fabricating and testing specimens.**