

Quality Assurance Specification

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This presentation is about quality assurance for pavement concrete. Quality assurance is a new packaging of a statistically based, end result specification concept with the added differentiation of quality control testing and quality acceptance testing. With quality assurance, the contractor will be in charge of the quality control aspects of the concrete and concrete components. The Indiana Department of Highways (IDOH) will conduct the quality acceptance testing.

GOAL

The goal is to develop a specification that will allow concrete pavement to be built in the most expedient and economic manner, while maintaining its durability and longevity.

OBJECTIVES

The objectives of implementing a quality assurance specification for pavement concrete are to:

- 1) reduce the state's involvement in testing, while refocusing the state's testing on critical and result criteria; and
- 2) allow the contractor greater flexibility relative to controlling the concrete mix design and concrete production.

This allows the contractors to tailor their concrete production to optimize their placement equipment's capabilities.

KEY ELEMENTS OF QUALITY ASSURANCE SPECIFICATIONS

The key elements of the specifications are to:

- 1) require the contractor to develop a quality control plan with which the contractor can manage the production of concrete;
- 2) set realistically attainable concrete requirements with acceptable deviation limits; and
- 3) establish a rational basis for penalizing unacceptable variations and, perhaps, rewarding value-added characteristics.

Rather than dwell on the specifics of the preliminary quality assurance specifications that have been developed, I would like to present the general accomplishments to date and the plans for future assignments.

In the fall of 1988, the Special Studies group conducted an extensive number of basic concrete tests on one contract, namely R-17105. The contractor for this project is Moellering Construction and the project engineer is Dave Field. The purpose of this testing was to establish a data base for statistical criteria to evaluate the central tendency and variability of various concrete parameters. Using this data and other IDOH quality assurance specifications for guidelines, a draft quality assurance specification was outlined.

A Quality Assurance Committee for pavement concrete was assembled, consisting of contractors, material producers, concrete experts, and IDOH. After several committee meetings and discussions with the contractors, the draft quality assurance specifications were refined into a preliminary quality assurance specification.

At this time, IDOH is discussing the details of using the quality assurance approach on two or three contracts this year in order to further refine the preliminary quality assurance specifications and to acquire a much greater data base. The testing requirements on these experimental contracts will be at a much greater frequency than would normally be anticipated. Thus, additional personnel may be required on the contracts that are selected.

After these experimental contracts are completed and the data analyzed, a finalized quality assurance specification for pavement concrete will be developed. At this time, it is anticipated that the finalized quality assurance specification will be implemented on several contracts in 1990.