

May 1, 2001

**Tennessee Department of Transportation
Division of Materials and Tests**

**Policy for Pre-cast /Pre-stressed Concrete Acceptance
(SOP 5-2)**

Purpose- The purpose of this document is to establish the TDOT policy for acceptance of pre-cast/pre stressed concrete beams and other pre-cast/pre-stressed concrete structural members. The requirements in the TDOT Standard Specifications and TDOT Sampling and Schedule are not waived and must also be achieved. This policy supplements the Construction Circular Letter 604.21-01, Evaluation of Low Strength Concrete.

Policy- The Contractor shall provide two 28-day acceptance cylinders to be tested at the Central Laboratory in Nashville. A back-up set of cylinders shall be stored at the fabricators facility in a specifically dedicated storage area for back up cylinders only. All acceptance and back-up cylinders shall have the contract number, date made, and cylinder number lightly scratched into the top of the cylinder. The acceptance cylinders will be tested, the results averaged and reported as the concrete's 28-day strength, as per the TDOT Sampling and Testing Schedule and Standard Specifications. If the compressive strength meets or exceeds the specified strength, the members will be accepted. If the compressive strength does not meet required strength, the back-up cylinders shall be delivered within 7 days for testing, and will become the strength of record. If the acceptance results do not meet the specified strength, the Contractor will have the option to request a structural evaluation to determine the minimum allowable compressive strength for acceptance at a reduced price or to core the structural members in question.

If the Contractor chooses to have the concrete cored for strength testing, the results of the cores' strength tests will become the strength of record, whether higher or lower than the cylinders. Cores for acceptance shall be taken from the pre-stressed structural members as follows:

BEAMS:

Two cores will be taken at each end (4 total) of all beams represented by the cylinders. The two cores from each end will be averaged and the lowest average will become the strength of record. Rejection, acceptance, or acceptance at a reduced cost will be determined from these core results. A beam may only be cored one time. If the core results also fail to meet the specified strength the Materials and Tests Division will complete an

analysis to determine their acceptability. If the beams are determined to be satisfactory, they may be accepted at a reduced cost in accordance with the Standard Specifications, if not, they will be rejected. The Contractor shall request acceptance at a reduced cost if applicable, or recast the beams.

DECK PANELS and PILES:

One pair of cores will be randomly taken from one of the structural members represented by the acceptance and/or back-up cylinders. If the core results meet specified strengths, then all members are considered acceptable. If the core results fail to meet the specified strengths, then that member will be rejected and two additional members shall be immediately cored. If both pairs meet the specified strengths, all remaining members will be considered acceptable, if either of the second set of core results fail to meet specified strengths, the Materials and Tests Division will complete an analysis to determine their acceptability. If the members are determined to be satisfactory, they may be accepted at a reduced cost in accordance with the Standard Specifications, if not, they will be rejected. The producer will have the option to core each member for individual acceptance.

If the Contractor chooses the core option, the Materials and Test Division must be notified at least two days prior to the core samples being taken. A TDOT inspector shall be on site to obtain immediate possession of the cores for shipment back to the Central laboratory. All coring shall take place while the members are in storage at the fabricators plant. The fabricator shall take all risks associated with delays to the construction project, cracking, and the development of excessive camber or warping which would warrant a member unacceptable, when coring is chosen and delayed. All core holes must be repaired with a non-shrink cementitious grout/epoxy/polymer type material approved in the TDOT Qualified Product List. Special precautions may be necessary if the core hole is located over a travel lane.

When members must be shipped or delivered to a project site before they are officially accepted, the fabricator may request the Nashville laboratory to test the 28-day acceptance cylinders early. If these cylinders obtain the specified strengths, the members will be considered acceptable at that time. If specified strengths are not obtained by the earlier cylinders, the back-up cylinders will be tested at 28-days for acceptance.