



# ALABAMA DEPARTMENT OF TRANSPORTATION

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## Bureau of Materials and Tests

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### TECHNICAL ADVISORY 1-18

TO: All Region Engineers

FROM: Scott W. George, P.E.  
Materials & Tests Engineer

RE: **Protocol for Low Compressive Strength Cylinder Breaks**

The purpose of this Technical Advisory is to provide guidance on appropriate notification of failing compressive strength acceptance cylinders to ensure resolution of the low break investigation in a timely manner.

Although the Department only accepts or rejects concrete based on 28-day compressive strengths ( $f_c$ ), the 7-day strengths provide a good indication of whether the 28-day strengths will meet specification requirements. Theoretically, concrete should reach at least 70% of  $f_c$  by 7 days of age. Therefore, the Area Materials Office should notify the Contractor, Ready Mix Producer, and Project Manager if the 7-day cylinder break fails to achieve 70% of  $f_c$  for a given class of concrete. The State Concrete Engineer should also be notified, if the break in question is for a structural member. Prompt notification is important so that concrete coring may be scheduled in a timely manner if 28-day cylinders fail to meet  $f_c$ . However, under no circumstances will cores be extracted from the structure prior to 28-days of age. It is the recommendation of this office that the Contractor not be permitted to build on top of any concrete that has not met the 70% threshold at 7 days of age.

If the 28-day acceptance cylinders fail to meet  $f_c$ , the Area Materials Office should immediately notify the Contractor, Ready Mix Producer, Project Manager and State Concrete Engineer in writing. Upon receipt of notification of low 28-day breaks, the Project Manager should begin collecting any applicable information and documentation about the pour (including but not limited to BMT-122s, Inspector Diaries/DWRs, cylinder curing box temperature recordings, test reports for any Contractor or Producer companion cylinders, etc.). This information should be provided to the Area Materials Engineer no later than 7 days after notification of low cylinder breaks.

The CAMMS Development Team is presently working on adding this notification functionality to the program under a future update. We hope this effort will streamline the process for all parties.

CC: Mr. George Conner, P.E.  
Area Operations Engineers  
Area Materials Engineers  
Area Construction Engineers  
Mr. John Sorrell (Alabama Concrete Industries Association)  
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