

DATE: March 11, 2008

TO: Region Engineers
Region Delivery Engineers
TSC Managers
Resident/Project Engineers
Region Construction Engineers

FROM: Larry E. Tibbits
Chief Operations Officer

John C. Friend
Engineer of Delivery

SUBJECT: Bureau of Highway Instructional Memorandum 2008-07
Moratorium on the use of Adhesive Anchors in Sustained
Tensile-Load-Only Overhead Applications

Effective immediately, a moratorium is being placed on the use of adhesive anchors in sustained, tensile-load-only overhead applications. This moratorium applies to all existing and future contracts until further notice. The moratorium stems from recommendations by the National Transportation Safety Board after concluding their investigation of the July 10, 2006, ceiling collapse in a portion of the Interstate 90 connector tunnel in Boston, Massachusetts. A major contributing cause of the ceiling collapse is believed to be creep of the adhesive used for anchoring rods that held the ceiling in place.

Sustained tensile-load-only overhead applications will typically occur when an adhesive anchor is placed vertically and an item is suspended from the anchor. The dead weight of the item continuously places load on the anchor, causing tension. A few possible applications of this type include suspending utilities and traffic signals from bridge decks. Existing contracts requiring this type of adhesive anchor may only use the non-shrink grout (which is cementitious) listed in the Qualified Products List for Subsection 712.03J. Using mechanical expansion anchors in place of adhesive anchors is not recommended. Problems with installation occurred in the past and they can pull out when subject to vibration.

Sign supports attached to structures using adhesive anchors in the horizontal and/or near horizontal position are exempt from the moratorium. The adhesive anchors are exempt from the moratorium because they passed creep testing, the sustained tensile load on the anchors is low, and the sustained tensile load on the anchor is combined with a sustained shear load (load perpendicular to the anchor). Recent laboratory testing confirmed adequacy of the use of adhesive anchors for this application.

Technical questions regarding the moratorium on the use of adhesive anchors in sustained tensile-load-only overhead applications should be directed to Roger Till at 517-322-5682 or tillr@michigan.gov.

Chief Operations Officer

Engineer of Delivery

BOHD:C/T:RDT:kab

Index: Structures

cc: C & T Division Staff
J. Polasek
M. DeLong
M. Van Port Fleet
J. Reincke
J. Culp
B. O'Brien
P. Collins
C. Rademacher
P. Sebenick
G. Moore
K. Reincke
T. Fudaly, FHWA
ACEC
APAM
CRAM
MAA
MCA
MCPA
MITA
MML