



Minnesota Department of Transportation

Memo

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October 3, 2007

To: Bridge Design Engineers

From: Kevin Western *Kevin Western*
Bridge Design Engineer

MEMO TO DESIGNERS (2007-02): Adhesive Anchors under Sustained Tensile Loads

Following the failure of adhesive anchors that held roof panels on the Boston Arterial Project, NTSB issued an advisory regarding the use of adhesive anchorages in sustained tensile overhead applications. There may be other installation orientations other than overhead where adhesive anchors are in sustained tension. Attached below is the MnDOT Memo prohibiting the use of adhesive anchors in a sustained tensile load installation. The NTSB advisory can be viewed at: <http://ntsb.gov/Publictn/2007/HAR-07-02.htm>

Until specifications are developed by ACI or AASHTO concerning long term creep characteristics in adhesive anchors, use of adhesive anchors in sustained tension is prohibited. Other applications utilizing adhesive anchors, such as metal rail attachment, in a non-direct tensile application is permitted.

cc: D. Dorgan
D. Dahlberg
M. Louis
E. Wolhowe / Design Consultants



Minnesota Department of Transportation

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September 24, 2007

TO: OPSDiv, PCMG, CMG, AMEs and Office Directors

FROM: Richard Arnebeck, Director 
Engineering Services Division

Robert Winter, Director 
Operations Division

SUBJECT: National Transportation Safety Board (NTSB) – Safety Recommendation
Adhesive Anchoring Systems in Highway Construction
NTSB Ref. Numbers: H-07-23 and H-07-24

The NTSB has completed its investigation of the July 10, 2006 ceiling collapse in the Interstate 90 Connector Tunnel in Boston, Massachusetts. As a result of the investigation, the NTSB has issued a Safety Recommendation concerning the use of Adhesive Anchoring Systems in Highway Construction:

The NTSB has made the following recommendations to the Minnesota Department of Transportation:

“Prohibit the use of adhesive anchors in sustained tensile-load overhead highway applications where failure of the adhesive would result in a risk to the public until testing standards and protocols have been developed and implemented that ensure the safety of these applications (H-07-23).”

“Review the use of adhesive anchors in highway construction within your jurisdiction and identify those sites where failure of the adhesive under sustained load could result in a risk to the public. Once those sites have been identified, implement an inspection and repair program to ensure that such failures do not occur (H-07-24).”

Effective immediately, Mn/DOT is prohibiting the use of adhesive anchors in all sustained tensile-load applications, until testing standards and protocols have been developed and implemented to ensure the safety of these applications.

Mn/DOT is currently in the process of reviewing and identifying all uses and applications of adhesive anchors under sustained loads within its jurisdiction. An inspection and repair program will be implemented once the full extent of the issue is known. We expect the implementation plan to be in place by November 3, 2007.

Please ensure that all your staff involved in this matter has a copy of this directive.

If you have any questions or concerns, please contact Mukhtar Thakur at 651/366-4691.
Thank you.