

# New Jersey Department of Transportation CORRECTIVE ACTION NOTICE

## QUALITY MANAGEMENT SERVICES

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CAN No. CAN009

Approved: Brian Strizki

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**Bureau(s) Affected:** All CPM Units. All Operations Units

### Description of Problem(s):

The Advanced Dynamic Impact Extension Module (ADIEM) is an energy absorption attenuator which is made of lightly reinforced, ultra-low-strength Perlite concrete modules. The low strength concrete is highly porous and thus will absorb water, and if that water freezes, the concrete will gradually deteriorate. Therefore, the concrete is protected by an impermeable coating to prevent water intrusion.

A recent field investigation of several sites where permanent ADIEM attenuators have been installed within the last 2 years shows that the modules are apparently deteriorating quickly. The deterioration consists of tears, cracks and bubbles in the protective covering on the modules. The tears and cracks may allow moisture to adversely affect the lightweight concrete, reinforcement and wire mesh thus raising concerns as to the operation of the modules and the cost effectiveness of the installations. Also, a concern is knowing when a cell should be replaced as well as the degree of maintenance required to the system.

### Corrective Action Plan:

Based on the above findings, in no case shall ADIEM attenuators be used in permanent applications on projects under design and shall be removed from projects where the design has been completed but have not yet been advertised. Currently, the approved alternate system is the QuadGuard attenuator. The responsibility of each unit to ensure that this is carried out shall be as follows:

- BUREAU OF QUALITY MANAGEMENT SERVICES  
Configuration Management Section  
This office shall be responsible for evaluating changes proposed by the manufacturer to improve the performance of the ADIEM attenuator.
- DIVISION OF PROJECT MANAGEMENT  
Project Managers shall be responsible for ensuring that **no** ADIEM attenuators are used in permanent applications on projects under design and projects where the design has been completed but have not yet been advertised. For projects under construction, it is at the discretion of the Project Manager to negotiate a change of plan to substitute the QuadGuard attenuator in place of the ADIEM attenuator.
- BUREAU OF DESIGN & ENGINEERING SUPPORT  
Traffic Signal & Safety Engineering/Technical Specifications Units  
These offices shall also be responsible for ensuring that **no** ADIEM attenuators are used in permanent applications on projects under design and future projects. In addition, these offices shall be responsible for specifying QuadGuard attenuators in lieu of ADIEM attenuators.
- DIVISION OF OPERATIONS  
Maintenance  
This office shall monitor the condition of the existing modules and initiate a replacement program if necessary.

The specifications for the Quadguard attenuator will be included in the supplement to the 1996 Standard Specifications which is scheduled to be released in June 1998. Currently, these specifications are available upon request from the Configuration Management Section and the Technical Specifications Unit. Design guidelines for Quadguard attenuators will soon be released by means of a Baseline Document Change.

**Implementation: IMMEDIATELY**



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