



DEPARTMENT OF
GENERAL SERVICES

DIVISION OF ENGINEERING AND BUILDINGS

Serving Government. Serving Virginians.

DEB Notice 051811

(Effective: 5/18/2011)

Machine-Room-Less (MRL) Elevators in State-Owned Buildings

Machine-Room-Less (MRL) elevators have been installed, or are proposed to be installed, in state-owned buildings. Some MRL elevators are designed to use alternate suspension means including steel suspension ropes less than 9.5 millimeters in diameter. Steel suspension ropes less than 9.5 millimeters do not comply with the current or recent past editions of the Virginia Uniform Statewide Building Code and the referenced ASME A17.1, *The Safety Code for Elevators and Escalators*. Rational engineering analyses have been presented to the State Building Official in support of a request for a code modification, and code modifications have been granted for specific installations. Code compliance or a code modification is required for each specific installation of elevators.

Owners shall not install MRL elevators with a non-compliant suspension means. Owners shall inspect all MRL elevator suspension systems under their control immediately. The following action shall be taken, and information shall be submitted to the State Building Official within 48 hours of this notice:

- 1) For elevators found to have steel suspension ropes less than 9.5 millimeters in diameter, the Owner shall calculate and submit the safety factor based on the equation in Section 2.20.3, ASME A17.1 and compare the result to the required Minimum Factor of Safety for Suspension Wire Ropes, Table 2.20.3, ASME A17.1. If the calculated safety factor is greater than the required safety factor then the Owner shall have sixty days to either replace the rope with a code compliant rope or submit a code modification request for the use of alternate suspension means;
- 2) For elevators found to have steel suspension ropes less than 9.5 millimeters in diameter, the Owner shall calculate and submit the safety factor based on the equation in Section 2.20.3, ASME A17.1 and compare the result to the required Minimum Factor of Safety for Suspension Wire Ropes, Table 2.20.3, ASME A17.1. If the calculated safety factor is less than the required safety factor then the Owner shall take the elevator out of service immediately and develop a corrective action plan;
- 3) For elevators that are found to have other than steel rope suspension means; the Owner shall take the elevator out of service immediately and develop a corrective action plan.

Although the rope inspection, maintenance, and replacement procedures may vary, based on past experience, the requirement to meet the minimum safety factor is typically achievable when an 8 millimeter high quality manufactured steel rope is used as part of the elevator suspension design.

Contact Steve Matsko (804-371-7548) or Les Harcum (804-786-4541) if you need assistance in complying with this notice.