SECTION 142851 - ELEVATOR SAFETY EQUIPMENT

1. GENERAL
   * + 1. DEFINITIONS
          1. Elevator Safety Equipment: The equipment which brings the elevator car and counterweight to a stop in the event of overspeed in the down direction, free fall or if the hoisting ropes are slackened.
2. PRODUCTS

Use article below when only car safety devices are required.

* + - 1. CAR SAFETY DEVICES
         1. Function: Governor actuated safety devices grip car guide rails and bring car and counterweight to stop in the event the car attains excessive speed in descending.

Use article below when car and counterweight safety devices are required (when space under pit is accessible).

* + - 1. CAR AND COUNTERWEIGHT SAFETY DEVICES
         1. Function: Governor actuated safety devices grip car guide rails and counterweight guide rails and brings car and counterweight to stop in the event the car or counterweight attains excessive descending speed.
         2. Types and Use:

Use one of the 3 subparagraphs below as required. Type Aa or type Bb safeties are most commonly used. Type Cc not normally used.

Type A (As defined by the ASME Code): For elevators having a rated speed of 100’ per minute or less.

Type B (As defined by ASME Code): For elevators having a rated speed exceeding 100’ per minute.

Type C (As defined by the ASME Code): For elevators having a rated speed less than 500’ per minute with safety devices of the combination instantaneous and oil buffer safety, and the required devices to prevent operation of the elevator in the event of buffer compression or low buffer oil.

* + - * 1. Operation:

When actuated by speed governor, the safety devices grip both sides of each guide rail with substantially the same force and stop and hold the car with rated load.

Safety devices are applied mechanically. Springs may be used in the operation of the safety devices.

Setting the safety devices (with car symmetrically loaded) causes the car not to be out of level more than 3/8 inches per foot between guide rails.

Decreasing tension of governor rope or motion of car in the down direction does not release safety devices, but safety devices may be released by motion of car in up direction.

* + - 1. SPEED GOVERNOR
         1. Function: Operates safety devices in the event of overspeed in descending.
         2. Operation:

Governors trip at overspeeds in accordance with ASME Code.

Elevators having a rated speed of over 150 feet per minute causes a switch operated by the overspeed of governor to open circuit to the driving machine motor, and apply the brake before or at the time of application of safety. Switch shall open in each direction of travel. Set switch in accordance with ASME Code.

Where governors are used with counterweight safeties, set the governor to trip at a speed greater than that of the car governor but no more than 10 percent greater than the car governor.

Jawless type governors are unacceptable.

* + - 1. EMERGENCY BRAKE
         1. Function: Protects against ascending car overspeed and unintended car movement.
         2. Operation:

When device detects ascending car overspeed or unintended car movement, friction is applied to hoist ropes and car motion is stopped.

* + - * 1. Design: Hollister-Whitney Elevator Corp. “Rope-Gripper” and pumping unit or approved equal.

Attach to existing machine beams utilizing structural steel angles and/or channels.

Mount pumping unit installed adjacent to the elevator machine.

Integrate with control equipment for required operation.

* + - * 1. Installation Drawing: Furnish to the Director’s Representative a scaled drawing of the installed emergency brake with all attachment points, structural elements and associated reactions sealed by a licensed New York State Professional Engineer.

1. EXECUTION
   * + 1. INSTALLATION
          1. Install car safety devices on underside of car platform securely bolted to car safety plank, in position so that clearances are in conformance with ASME Code.
          2. Install counterweight safety devices on counterweight frame, in position so that clearances are in conformance with ASME Code.
          3. Speed Governor:

Delete subparagraph below if counterweight safety is not required.

Install separate governors for car and counterweight safety devices.

Install governor for actuation of safety devices in elevator machine room overhead or fasten to overhead sheave beams when machine room is located below.

* + - 1. FIELD QUALITY CONTROL
         1. Inspection:

Examine governor actuated safety devices to make sure they are fastened securely.

Check for proper clearance between gripping jaws and guide rails (minimum 1/16 inch).

Examine sheaves for correct seating of cables.

Inspect speed governor, check to see if properly tagged.

END OF SECTION 142851