

**COST CALCULATIONS on MRL-related provisions
of DOSH Elevator Code updates**

March 16, 2015

Requiring a control room/space outside the hoistway

Provisions with this cost impact: 3147.2207(c), (d), (h), (i), (k), (m) and 3147.2226(b-d)

\$50k-\$100k incremental cost to utilize a “traditional” design instead of a standard MRL product

WHY:

- Going backwards would require engineered/redesigned products
- Previous designs no longer exist (geared traction, etc.)
- Current variances do not require comparable product modifications

EXAMPLE:

Using a traction elevator as an example = \$75,000 per unit average incremental cost added

If applied to just 1000 new units per year (conservative estimate) = **\$75M annual cost impact**

Additional space requirements for new control room – minimum size estimate for one hydraulic elevator

6’x10’ machine room = 60 sq ft

\$35 per sq ft (average across high and low markets in CA) = \$2100 per month in lost rent

Per year = \$25,200 (\$2100 x 12) per hydraulic elevator

EXAMPLE, based on single unit installations. Multi-unit buildings increase size of the machine room and would impact this number accordingly.

\$25,200 x 1000 new units per year = **\$25.2M cost impact**

Additional Costs

Construction materials – general contractor estimates \$50k (simplex) - \$100k (multiplex)
(HVAC, electrical, materials, etc.)

Energy costs - variable

Eliminating Hydraulic MRLs

Provisions with this cost impact: 3147.2307, 3147.2319(a-d), 3147. 2324

Costs \$10,000 - \$30,000 for a hydraulic elevator machine room in a building basement.

- walls construction, fire rated doors, remote, piping, remote electricity, additional lighting, etc.

Additional space requirements for new control room – minimum size estimate for one hydraulic elevator

6’x10’ machine room = 60 sq ft

\$35 per sq ft (average across high and low markets in CA) = \$2100 per month in lost rent

Per year = \$25,200 (\$2100 x 12) per hydraulic elevator

*traction elevators are more expensive.

EXAMPLE, based on single unit installations. Multi-unit buildings increase size of the machine room and would impact this number accordingly.

\$25,200 x 1000 new units per year = **\$25.2M cost impact**

3147.2202(b)

At a minimum, will require purchase of a different ladder = \$100 each for material
Universe of impacted units unknown.
Redesign costs additional

Resulting in larger cars

Provisions with this cost impact: 3147.2202(b), 3147.2214(e)

Requirements could preclude installation of 2100 lb and/or 2500 lb cars and require a larger car (3000 lb) be used instead.

\$5K - \$10K difference for larger elevator

Applied to just 1000 elevators = **\$10M cost impact estimate**

Resulting in a larger hoistway

Provisions with this cost impact: 3147.2207(f), (g), (k); 3147.2202(b); 3147.2203; 3147.2204(a), (b), (b)a, (b)b; 3147.2214(e)

Larger hoistway = lost space of per floor

EXAMPLE:

9 sq ft. per floor

\$35 per sq ft of rentable space per floor x 9 = \$315 per floor in lost rentable space

Per year = \$3780 (\$315 x 12) per year per floor.

Applied to 1000 as the universe of impacted units = \$3.78M per floor impacted.

Average building CA has 4 floors = **\$15.12M cost impact estimate**

Additional Labor Costs & Signage Costs “only”

Provisions with this cost impact: 3147.2214(d)

Striping = Additional labor time of X at Y per hour = \$125 per car

To stripe every car x 2700 (number of new installations in 2013, excluding LA) = \$337,500.

New signage = \$50 per sign x 2700 = \$135,000

Costs for Undertaking Variance Process

40 hours of burden per variance per company. Hours increase with variance complexity.

\$150 per hour x 40 = \$6000 of company resources per variance

3000 variances per year = **\$18M cost impact estimate**

Redesigning current configurations

\$100,000 - \$200,000 per elevator

3147.2220(c)

This provision proposed code change has the potential of costing millions of dollars per company, but we are unable to quantify because the cost impact depends on numerous factors. And, there is no guarantee that the cost impact will yield an approved “device” that will be allowed in CA. Potential costs include: research and development, patents, materials, staff time, engineering, etc.