Subchapter 7. General Industry Safety Orders
Group 1. General Physical Conditions and Structures Orders
Article 6. Powered Platforms and Equipment for Building Maintenance

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§3294. Powered Platform Installations--Affected Parts of Buildings.

(a) General Requirements.

The following requirements apply to affected parts of buildings which utilize working platforms for building maintenance:

(1) Structural supports, tie-downs, tie-in guides, anchoring devices and any affected parts of the building included in the installation shall be designed by or under the direction of a professional engineer currently registered in State of California and experienced in such design;

(2) Exterior installations shall be capable of withstanding prevailing climatic conditions;

(3) The building installation shall provide safe access to, and egress from, the equipment and sufficient space to conduct necessary maintenance of the equipment;

(4) The affected parts of the buildings shall have the capability of sustaining all the loads imposed by the equipment; and,

(5) The affected parts of the buildings shall be designed so as to allow the equipment to be used without exposing employees to a hazardous condition.

(b) Tie-in Guides.

(1) The exterior of each building shall be provided with tie-in guides unless the conditions in subsection (b)(2) or (b)(3) of this section are met.

Note: See Figure 1 in Appendix B of this Article for a description of a typical continuous stabilization system utilizing tie-in guides.

(2) If angulated roping is employed, tie-in guides required in subsection (b)(1) of this section may be eliminated for not more than 75 feet of the uppermost elevation of the building, if infeasible due to exterior building design, provided an angulation force of at least 10 pounds is maintained under all conditions of loading.

(3) Tie-in guides required in subsection(b)(1) of this section may be eliminated if one of the guide systems in subsection (b)(3)(A), (b)(3)(B) or (b)(3)(C) of this section is provided, or an equivalent.

(A) Intermittent Stabilization System. The system shall keep the equipment in continuous contact with the building facade, and shall prevent sudden horizontal movement of the platform. The system may be used together with continuous positive building guide systems using tie-in guides on the same building, provided the requirements for each system are met.

1. The maximum vertical interval between building anchors shall be three floors or 50 feet, whichever is less.

2. Building anchors shall be located vertically so that attachment of the stabilizer ties will not cause the platform suspension ropes to angulate the platform horizontally across the face of the building. The anchors shall be positioned horizontally on the building face so as to be symmetrical about the platform suspension ropes.

3. Building anchors shall be easily visible to employees and shall allow a stabilizer tie attachment for each of the platform suspension ropes at each vertical interval. If more than two suspension ropes are used on a platform, only the two building-side suspension ropes at the platform ends shall require a stabilizer attachment.

4. Building anchors which extend beyond the face of the building shall be free of sharp edges or points. Where cables, suspension wire ropes and safety lines may be in contact with the building face, external building anchors shall not interfere with their handling or operation.

5. The intermittent stabilization system building anchors and components shall be capable of sustaining without failure at least four times the maximum anticipated load applied or transmitted to the components and anchors. The design wind load for each anchor shall be 600 pounds.

6. The building anchors and stabilizer ties shall be capable of sustaining anticipated horizontal and vertical loads from winds specified for roof storage design which may act on the platform and wire ropes if the platform is stranded on a building face. If the building anchors have different spacing than the suspension wire ropes or if the building requires different suspension spacings on one platform, each building anchor and stabilizer tie shall be capable of sustaining the wind loads.

Note: See Figure 2 in Appendix B of this article for a description of a typical intermittent stabilization system.

(B) Button Guide Stabilization System.

1. Guide buttons shall be coordinated with platform mounted equipment as specified in Section 3295(e)(6).

2. Guide buttons shall be located horizontally on the building face so as to allow engagement of each of the guide tracks mounted on the platform.

3. Guide buttons shall be located in vertical rows on the building face for proper engagement of the guide tracks mounted on the platform.

4. Two guide buttons shall engage each guide track at all times except for the initial engagement.

5. Guide buttons which extend beyond the face of the building shall be free of sharp edges or points. Where cables, ropes and safety lines may be in contact with the building face, guide buttons shall not interfere with their handling or operation.

6. Guide buttons, connections and seals shall be capable of sustaining without damage at least the weight of the platform, or provision shall be made in the guide tracks or guide track connectors to prevent the platform and its attachments from transmitting the weight of the platform to the guide buttons, connections and seals. In either case, the design load shall be 600 pounds per building anchor.

Note: 1. See Section 3295(e)(6) for relevant equipment provisions.

2. See Figure 3 in Appendix B of this article for a description of a typical button guide stabilization system.

(C) System utilizing angulated roping and building face rollers. The system shall keep the equipment in continuous contact with the building facade, and shall prevent sudden horizontal movement of the platform. This system is acceptable only where the suspended portion of the equipment in use does not exceed 130 feet above a safe surface or ground level, and where the platform maintains no less than 10 pounds angulation force on the building facade.

(4) Tie-in guides for building interiors (atriums) may be eliminated when a professional engineer currently registered in the State of California determines that an alternative stabilization system, including systems in Section 3294(b)(3)(A), (B) and (C) or a platform tie-off at each work station will provide equivalent safety.

(c) Roof Guarding.

(1) Buildings or structures shall be provided with a perimeter guard consisting of a parapet or guardrail system meeting the requirements of Section 3209 located above the adjacent horizontal surface on which portable equipment such as davits and outriggers beams are used to support suspended equipment or which provides access to or from such equipment.

(2) All parapet and guardrail systems installed on structures serviced by equipment meeting Article 6 requirements that is transported on a trackless-type roof car shall be designed and installed to withstand a minimum lateral force of 200 pounds per linear foot applied at 21 inches above the surface supporting the roof car. All other installations shall be designed and installed to withstand a minimum lateral force of 50 pounds per linear foot applied at the top of the standard height guardrail or parapet.

(3) The perimeter guard shall not be more than 6 inches inboard of the inside face of a barrier, i.e., the parapet wall or roof edge curb of the building being serviced; however, the perimeter guard location shall not exceed an 18-inch set-back from the building face.

(4) Where building features such as parapets or guardrails are required to support workers' safety lines, they shall be designed to withstand the combined vector component loads imposed without causing damage to such building features.

(5) Parapets exceeding 6 feet in height above the building area roof surface requiring roof-rigged transportable suspended scaffold or similar equipment shall have a suitable peripheral walkway located 42 inches below the parapet on all areas using the exterior maintenance system. Rolling scaffolds or ladders shall not be used unless they, the roof and exterior maintenance systems are designed to be compatible with their use.

(6) A specifically designed fall protection system shall be provided and used on surfaces such as sloping roof areas where workers' duties require that they gain access to or work from such areas.

(A) The fall protection system shall support a 5,000 pound safety line loading and enable the worker to ascend and descend the sloping surface in a controlled manner using a primary and secondary support line secured to a fall protection system at the upper end and to the safety line at the lower end.

(B) Access shall not be permitted on surfaces such as glazed roofs, vaults, or skylights unless an engineer currently registered in the State of California has certified that the surface will support all anticipated loads.

(d) Equipment Stops. Operational areas for trackless type equipment shall be provided with structural stops, such as curbs, to prevent equipment from traveling outside its intended travel areas and to prevent a crushing or shearing hazard.

(e) Maintenance Access. Means shall be provided to traverse all carriages and their suspended equipment to a safe area for maintenance and storage.

(f) Elevated Track.

(1) An elevated track system which is located four feet or more above a safe surface, and traversed by carriage supported equipment, shall be provided with a walkway and guardrail system; or

(2) The working platform shall be capable of being lowered, as part of its normal operation, to the lower safe surface for access and egress of the personnel and shall be provided with a safe means of access and egress to the lower safe surface.

(g) Tie-down Anchors. Imbedded tie-down anchors, fasteners, and affected structures shall be corrosion resistant.

(h) Cable Stabilization.

(1) Hanging safety lines and all cables not in tension shall be stabilized at each 200 foot interval of vertical travel of the working platform beyond an initial 200 foot distance.

(2) Hanging cables, other than suspended wire ropes, which are in constant tension shall be stabilized when the vertical travel exceeds an initial 600 foot distance, and at further intervals of 600 feet or less.

(i) Emergency Planning. A written emergency action plan shall be developed and implemented for each kind of working platform operation in conjunction with the emergency procedures plan required of the building owner by Section 3292(d)(1). This plan shall explain the emergency procedures which are to be followed in the event of a power failure, equipment failure or other emergencies which may be encountered. The plan shall also explain that employees inform themselves about the building emergency escape routes, procedures and alarm systems before operating a platform. Upon initial assignment and whenever the plan is changed, the employer shall review with each employee those parts of the plan which the employee must know to protect himself or herself in the event of an emergency.

(j) Building Maintenance. Repairs or major maintenance of those building portions that provide primary support for the suspended equipment shall not affect the capability of the building to meet the requirements of this standard.

(k) Electrical Requirements. The following electrical requirements apply to buildings which utilize working platforms for building maintenance:

(1) General building electrical installations shall comply with the Electrical Safety Orders, unless otherwise specified in this article;

(2) Building electrical wiring shall be of such capacity that when full load is applied to the equipment power circuit, not more than a five percent drop from building service-vault voltage shall occur at any power circuit outlet used by equipment regulated by this article;

(3) The equipment power circuit shall be an independent electrical circuit that shall remain separate from all other equipment within or on the building, other than power circuits used for hand tools that will be used in conjunction with the equipment. If the building is provided with an emergency power system, the equipment power circuit may also be connected to this system;

(4) The power circuit shall be provided with a disconnect switch that can be locked in the “OFF” and “ON” positions. The switch shall be conveniently located with respect to the primary operating area of the equipment to allow the operators of the equipment access to the switch;

(5) The disconnect switch for the power circuit shall be locked in the “ON” position when the equipment is in use; and

(6) An effective two-way voice communication system shall be provided between the equipment operators and persons stationed within the building being serviced. The communications facility shall be operable and shall be manned at all times by persons stationed within the building whenever the platform is being used. (Title 24, Part 2, 2-8521)

NOTE

Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code; and Section 18943(b), Health and Safety Code

HISTORY

1. Repealer and and new section filed 3-9-93; operative 4-8-93 (Register 93, No. 11). For prior history, see Register 85, No. 40.

2. Editorial correction of subsection (c)(6)(B) (Register 95, No. 24).

3. Amendment of subsection (i) and amendment of Note filed 4-27-2000; operative 5-27-2000 (Register 2000, No. 17).

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