



INFORMATION BULLETIN / PUBLIC - BUILDING CODE

REFERENCE NO.: Mech Code 601

Effective: 2-07-79

DOCUMENT NO. P/BC 2002-018

Revised: 9-25-03

Previously Issued As: RGA 2-79, MGD101

INSTALLATION OF ACCESS FLOOR SYSTEMS IN GENERAL OFFICE AREA AND COMPUTER ROOM

This Information establishes the minimum requirements for installation of access floor systems in general office area and computer room. For the purpose of this document, an access floor shall be defined as an assembly consisting of panels mounted on pedestals to provide an under floor space for the installation of electrical, communications, or mechanical systems.

This Information Bulletin contains two sections:

Section 1 outlines the general requirements for the installation of access floor systems.

Section 2 provides the additional requirements for the use of the under floor space as an air plenum.

SECTION 1: GENERAL REQUIREMENTS FOR THE INSTALLATION OF ACCESS FLOOR SYSTEMS

The use of access floors in general office areas and computer room will be allowed in the City, provided the following conditions are met:

- a. Permits - A Building permit will be required for the installation of any access floor. Mechanical, Electrical, Fire and Plumbing permits will be required for the installation of any electrical wiring, telephone cabling, electronic communication or data cabling systems, fire protection systems, HVAC systems or other equipment within a new or existing access floor.
- b. Plans - Architectural and structural plans shall be submitted to and approved by the Department prior to obtaining a permit for an access floor. Where an access floor is intended to be used for electrical wiring, telephone cabling, electronic communication or data cabling systems, fire protection systems, HVAC systems, appropriate electrical, mechanical and fire sprinkler plans shall be submitted to and approved by the Department prior to obtaining a permit.
- c. Access floors shall be constructed of noncombustible materials. Floor panels shall not exceed 24" x 24" in size. Floor panels shall be attached to the supporting frame work in a positive manner with devices such as screws or bolts. The maximum height of an access floor shall be 24". An access floor may only be covered by resilient tile or carpet squares no larger than 24" x 24" in size which may be easily removed by the Los Angeles City Fire Department.
- d. Access floors shall be designed to support their own dead load, a minimum uniformly distributed

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities. For efficient handling of information internally and in the internet, conversion to this new format of code related and administrative information bulletins including MGD and RGA that were previously issued will allow flexibility and timely distribution of information to the public.

live load of 50 lbs. per square ft. (for office spaces), plus a minimum uniformly distributed partition load of 10 lbs. per square ft. In addition, an access floor shall be designed to support a 2,000 lb. concentrated load placed upon any space greater than 2-1/2 sq. ft. in area whenever this load upon an otherwise unloaded floor would produce stresses greater than those caused by the required uniform live load.

$$F_p = \frac{a_p C_a I_p}{R_p} (1 + 3 \frac{h_x}{h_r}) W_p \quad (F_p \text{ shall not be less than } 0.7 C_a I_p W_p)$$

F_p = Lateral seismic force on the access floor in the direction under consideration.

C_a = Seismic Coefficient (See Table 16Q of the Los Angeles City Building Code.)

I_p = Occupancy Importance Factor (See Table 16K of the Los Angeles City Building Code.)

W_p = Dead load for the access floor system plus 25% of the floor live load and a 10 p.s.f. partition load.

h_x = The element attachment elevation with respect to grade. h_x shall not be taken less than 0.0.

h_r = The structure roof elevation with respect to grade.

a_p = The in-structure Component Amplification Factor (1.0).

R_p = The Component Response Modification Fraction (3.0).

- e. Required fire-rated walls (corridor walls, occupancy separation walls, etc.) Shall extend unbroken through the access floor to a fire-rated floor below. Penetrations of these walls below the raised floor shall be protected as required by code for openings in such wall.
- f. Areas below access floor shall be separated into maximum 5,000 sq. ft. areas by use of non-combustible draft stops. The draft stops shall consist of minimum ½ inch gypsum board or minimum 22 gauge ferrous metal and shall be installed in a manner satisfactory to the Department. Penetrations of the draft stops shall be allowed without protection but shall be reasonably tight fitting.
- g. Access floor shall comply with applicable handicapped access regulations.
- h. When a building contains raised access floors, signs containing the words “Raised Access Floors” in 1-inch block letters with ¼ inch stroke shall be posted as follows:
 - i. Mounted adjacent to the stairway numbering sign on floors where the entire floor level contains access floors.

- ii. Where the entire floor level does not contain access floors, signs shall be mounted adjacent to the entrances to the rooms or areas containing the access floors.
- i. Areas below access floors shall not be used for storage purpose.
- j. All fully enclosed rooms or areas, including corridors, containing access floors shall be protected by a smoke detection system, located within the rooms, areas or corridors.

EXCEPTION: Fully sprinklered buildings need not be protected with a smoke detection system.

- k. Smoke detection systems shall comply with the following:
 - i. Smoke detectors shall be installed in accordance with the more restrictive of their listing, manufacturers recommendations, or the National Fire Protection Association (NFPA) Standards.
 - ii. Smoke detection systems shall have visual and audible annunciation at the building fire control station where provided. Where there is no fire control station, a fire alarm control panel and annunciator shall be provided in a location acceptable to the Los Angeles City Fire Department.
 - iii. Smoke detection systems shall comply with the Los Angeles City Electrical and Fire Code requirements for automatic fire protective signaling systems.
 - iv. Sufficient smoke detector horns, bells, or speakers, providing both audible and visual (strobes) warning, shall be installed in all areas having access floors, and shall provide a sound level of 10 dbA above ambient noise level measured four feet above the floor throughout the area. A minimum of one speaker shall be required for each 5,000 sq. ft. of access floor area or fraction of 5,000 sq. ft.
 - v. Except for corridors, access floor system shall have 1% smoke relief openings on the perimeter of each 5,000 sq. ft. separated area or fraction thereof. These openings shall not present a tripping or personnel walking hazard.
 - vi. Smoke detection systems are subject to approval of the Los Angeles City Fire Department.

- l. Air conditioning ducts located below access floors shall be constructed of approved materials and

be installed in accordance with the Los Angeles City Mechanical Code.

- m. Electrical wiring methods permitted beneath the access floor shall be rigid metal conduit, IMC, EMT, metal wireway and surface metal raceway with removable covers, flexible metal conduit and Type AC or MC cable.

Their installation shall conform to the requirements of the Los Angeles City Electrical code.

EXCEPTION: Class 2 or Class 3 power limited wiring using cables approved for plenums may be used in the access floor space, and shall not be required to be one of the wiring methods noted above. Examples are data and video transmission cables, telephone cables, and communication cables. Where installed below corridor floors, these cables shall be contained in one of the metal conduit or cable systems noted above, and shall be effectively sealed or plugged at each end by approved means, when entering or leaving the corridor.

- n. Insert cavity modules used for electrical outlets or for providing access to data and telephone cables shall be permitted under the following conditions:
 - i. Metal utility boxes shall only be installed with approved access lids not permanently part of the utility box and designed not to damage cables. The lids may be constructed of plastic, but, shall not collapse when subjected to an impact load such as a person walking over the lid, or furniture being set on or moved over the lid.
 - ii. The utility boxes shall be permanently connected with one or more wiring methods noted as above. Modular cable connectors shall not be used.
 - iii. The utility boxes shall be secured to the access floor panel in a permanent manner.
 - iv. The cavity of electrical utility access boxes shall be designed and approved so that the cavity is as small as possible to preclude power and communications cable storage below the lids. A box containing a usable volume of 100 cubic inches or less shall be acceptable.
 - v. When installing cables as permitted by the Code, the entry holes (knock outs) in the utility boxes shall be provided with bushings or grommets to protect the cables from abrasion. All unused openings shall be closed.

- p. The power receptacles shall be mounted in the electrical utility access box in a vertical or diagonal

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities. For efficient handling of information internally and in the internet, conversion to this new format of code related and administrative information bulletins including MGD and RGA that were previously issued will allow flexibility and timely distribution of information to the public.

manner a minimum of ½" above the base of the box. The wiring to the receptacle outlets shall be accessible from the inside of the box.

NOTE: Installation of cables and conduits shall conform to the requirements of the National Electrical Code.

- q. Flush mounted or pedestal mounted receptacles shall also be permitted to be installed in or on access floor panels. They shall be mounted in outlet boxes specifically listed for this application.

SECTION 2: ADDITIONAL REQUIREMENTS FOR THE USE OF THE UNDER FLOOR SPACE AS AN AIR PLENUM

This section clarifies the requirements for the installation of listed processing wiring and communication wiring within an access floor that is used as an air plenum.

These requirements are intended to clarify Section 601 of the City of Los Angeles Mechanical Code and Section 645-2 of the City of Los Angeles Electrical Code.

- A. Rooms having raised floor plenums where total plenum area is less than 5000 square feet:
 - 1. Only listed wiring that is permitted by Article 645 of the City of Los Angeles Electrical Code and listed communication cable associated with the computer equipment shall be located within the raised floor plenum.
 - 2. Ventilation, comfort heating or air conditioning duct systems serving the computer room shall not serve any other portion of the building.

EXCEPTION: This requirement shall not apply if:

The raised floor plenum area has a fire suppression system that is approved by the City of Los Angeles Fire Department, or

All air duct inlets and outlets serving the computer room are provided with smoke control dampers to isolate the computer room from other areas. Listed combustion products type smoke detectors shall be installed in the computer room ceiling at spacings not exceeding 30 feet, or accessible listed duct type products of combustion smoke detectors shall be installed in the exhaust or return air ducts when smoke is detected, the smoke control dampers shall automatically close and the air handling units serving the raised computer room floor shall stop.

Note: If the duct system serving the computer room is used as a required emergency smoke control system, it shall comply with Sections 608 and 609 of the Los Angeles City Mechanical

Code.

- B. Rooms having raised floor plenums where the total plenum area exceeds 5000 square feet but not more than 10,000 square feet:
1. Comply with the requirements specified in item A1 above.
 2. Listed combustion products type smoke detectors shall be installed in the raised floor plenum area at spacings not exceeding 30 feet. This detector system shall be so arranged that when products of combustion are detected, it will activate an audible alarm in the computer room and shut off the air handling units serving the raised computer room floor.
 3. Any room with the under floor space used as an air plenum shall be separated from any other portion of the building by a minimum of one-hour fire-resistive construction with all openings in such separation protected by a fire assembly or fire damper having a minimum of one-hour fire-resistive rating.

EXCEPTION: These requirements shall not apply if the raised floor plenum area has a fire suppression system that is approved by the City of Los Angeles Fire Department.

- C. Rooms, having raised floor plenums where the total plenum area exceeds 10,000 square feet, shall be provided with a fire suppression system that is approved by the City of Los Angeles Fire Department.