



**PLAN CHECK CORRECTION SHEET  
NFPA 13 2022-AUTOMATED MECHANICAL  
PARKING LIFTS (CAR STACKERS)**

This is intended to provide uniform application of the codes by the plan check staff and to help the public apply the codes correctly.

**Section: Mechanical Plan Check**

**Plan Check/PCIS Application No.:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Job Address:** \_\_\_\_\_

**Applicant Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

**City/State/Zip:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

**Plan Check Engineer:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_ **E-mail:** *firstname.lastname@lacity.org*

Your feedback is important; please visit our website to complete a Customer Survey at [www.ladbs.org/LADBSWeb/customer-survey.jsf](http://www.ladbs.org/LADBSWeb/customer-survey.jsf).

**If you have any questions or need clarification on any plan check matters, please contact a plan check supervisor or call our Customer Hotline at (213) 482-0056.**

Your plans have been examined and the issuance of a permit is withheld for the reasons set forth. The approval of plans and specifications does not permit the violation of any section of the Code, or other local ordinance or state law.

**INSTRUCTIONS:**

- Corrections with circled item numbers apply to this plan check.
- Additional corrections are at the end of the list.
- Incomplete or non-legible drawings or calculations will not be accepted.
- Incorporate all comments as marked on the checked set of plans and calculations and this correction sheet.
- For each correction indicate the sheet number and detail or note number on the plans where the corrections are made.
- **WHEN YOU HAVE COMPLIED WITH ALL CORRECTIONS, CALL OR EMAIL THE PLAN CHECK ENGINEER TO MAKE AN APPOINTMENT FOR VERIFICATION**
- **PLEASE BRING THE MARKED UP PLANS AND THE CORRECTIONS SHEET TO THE VERIFICATION APPOINTMENT**

**SEE MARKED UP PLANS FOR CLARIFICATIONS OF CORRECTIONS.**

## **GENERAL**

1. Indicate on the plans the area of automated parking. (LAPC 103.2.2; NFPA 13 Sec. 28.1.3(15)).
2. The minimum meter size shall be \_\_\_\_\_ based on the design flow. (LADWP Requirement)
3. Install a listed double check valve backflow prevention assembly at the meter. (LADWP Rule 16D Sec. 7.2)
4. The approved backflow prevention assembly shall have at least the same cross-sectional area as the meter. (LADWP Rule 16D Sec. 8.6)
5. Provide product literature for the backflow prevention assembly showing the listing and the pressure losses as a function of the flow. (NFPA 13 Sec. 28.2.3.3; LAPC 103.2.2).
6. Provide a complete riser diagram. The riser diagram shall show all pipe sizes, Fire Department connection, backflow prevention assembly, check valves, control valves, pressure regulators, hose outlets, drain lines, inspector test, flow switches, pressure regulators, and water meter. (LAPC 101.5.1; LAPC 101.3.2; NFPA 13 Sec. 28.1.3(17); 28.1.3(21); 28.1.3(23d))
7. Provide a copy of the hydraulic design information sign on the plans. The sign shall include the following information:
  - (1) Location of the design area or areas;
  - (2) Discharge densities over the design area or areas;
  - (3) Required flow and pressure of the system at the base of the riser;
  - (4) Occupancy classification or commodity classification and maximum permitted storage height and configuration;
  - (5) Hose stream allowance included in addition to the sprinkler demand;
- (6) The name of the installing contractor;
- (7) Required flow and pressure of the system at the water supply source;
- (8) Required flow and pressure of the system at the discharge side of the fire pump where a fire pump is installed;
- (9) Type or types and number of sprinklers or nozzles installed including the orifice size, temperature rating, orientation, K-Factor, sprinkler identification number (SIN) for sprinkler heads when applicable, and response type;
- (10) The minimum discharge flow rate and pressure required from the hydraulically most demanding sprinkler;
- (11) The required pressure settings for pressure reducing valves;
- (12) For deluge sprinkler systems, the required flow and pressure at the hydraulically most demanding sprinkler or nozzle;
- (13) The protection area per sprinkler based on the hydraulic calculations;
- (14) The edition of NFPA 13 to which the system was designed and installed. (LAPC 2010.0; NFPA 13 Sec.28.1.3(23c); 29.4.3; LABC Ch 35 (NFPA 13 Sec. 29.4.3))

## **SPRINKLERS**

8. The protection area of each sprinkler shall not exceed 100 ft<sup>2</sup>. (NFPA 13 Sec. 10.2.4.2.1; Table 10.2.4.2.1(c))
9. The maximum distance between sprinklers shall not exceed 12 ft. (NFPA 13 Sec.10.2.4.2.1; Table 10.2.4.2.1(c))
10. Sprinklers shall be spaced not less than 6 ft. on center. Sprinklers spaced less than 6 ft. on center shall be separated by baffles. (NFPA 13 Sec. 10.2.5.4.1; 10.2.5.4.2)
11. The distance between the sprinkler deflector and the ceiling shall be a minimum of 1 in. and a maximum of 12 in. (NFPA 13 Sec.10.2.6.1.1.1)

12. The sprinkler deflector shall be installed at least 18 inches above the top of the car. (NFPA 13 Sec. 20.9.6.1)
13. Indicate on the plans the make, type, model, orifice size, sprinkler identification number and temperature rating of all sprinkler heads used. (NFPA 13 Sec. 28.1.3 (17a)).
14. Quick response sprinklers shall not be permitted for use in extra hazard occupancies under the density/area design method. (NFPA 13 Sec. 10.2.3; 19.2.3.2.2.2)
15. Listed extended coverage extra hazard sprinklers shall not exceed 14ft. maximum spacing and 196 ft<sup>2</sup> maximum area per sprinkler OR 15 ft. maximum spacing and 144 ft<sup>2</sup> maximum area per sprinkler. (NFPA 13 Sec. 11.2.2.1.3; Table 11.2.2.1.2)
16. For car stackers and car lift systems with a maximum of two cars stacked vertically, sidewall sprinklers can be installed under each level of cars. (NFPA 10.3.2)
21. A water allowance of 500 gpm for hose stream allowance shall be added to the sprinkler requirement at the connection to the city main or a private hydrant, whichever is closer to the system riser. (NFPA 13 Sec. 19.1.4.2; 19.1.6.2; Table 19.2.3.1.2)
22. Show node points consistent with the node points in the calculations. (NFPA 13 Sec. 28.1.3 (21b))
23. Specify how many square feet are protected by each riser system. (NFPA 13 Sec. 28.1.3(16))
24. The maximum floor area protected by each riser system is 40,000 ft<sup>2</sup> for Extra Hazard. (NFPA 13 Sec. 4.4.1(3))
25. Provide listed pressure reducing valves where the pressure exceeds 175 psi. The pressure reducing valves shall be set for an outlet pressure not exceeding 165 psi. (NFPA 13 Sec. 16.9.7.1; 28.1.3(23d))

### **HYDRAULIC CALCULATIONS**

17. Mechanical parking lifts/car stackers with a maximum of two cars stacked vertically shall be classified as Extra Hazard Group 2. (NFPA 13 Sec. 4.3.5; 19.2.1.2.3)
18. Mechanical parking lifts/car stackers with more than two cars stacked vertically shall be classified as high piled storage, Class IV commodity. (NFPA 4.3.6)
19. Provide hydraulic calculations for the hydraulically most demanding area. (NFPA 13 Sec. 28.5.4; 28.2.4.1; 19.1.4.1(1); 19.2.3.1.1)
20. Provide an S.A.R. (Service Advisory Report) from the Los Angeles Department of Water and Power. (NFPA 13 Sec. 28.1.3(13); 5.1.2)
26. Provide product literature for the pressure reducing valve showing the pressure losses in function of the flow, the maximum allowable pressure and the range at which can be set. (LAPC 103.2.1)
27. Provide evidence that the pressure reducing valve is listed. (NFPA 13 Sec. 16.9.7.1; LAPC 103.2.1)
28. Provide evidence that the pipe can withstand the maximum pressure that the system will experience. (NFPA 13 Sec. 7.1.2)
29. Provide a full height cross section including the car stackers. (LAPC 103.2.2; NFPA 13 Sec. 28.1.3(15b))
30. Indicate on the plans the height of car stacker (from ground to each level and to top of car), the height of the ceiling, and the distance between the sprinkler deflector and the top of

the car. (LAPC 103.2.2; NFPA 13 Sec. 28.1.3(15b); 20.9.6.1)

31. Indicate the ceiling slope on the plans. (NFPA 13 Sec. 28.1.3 (9))
32. For buildings with two or more adjacent hazards, the required sprinkler protection for the more demanding design bases shall extend 15 feet beyond its perimeter. (NFPA 13 Sec. 19.1.2(1))

#### **FIRE PROTECTION TANK CAPACITY**

33. The capacity of the fire protection tank shall be based on the required standpipe demand capacity or the hydraulically calculated demand of the car stacker area including the hose stream requirement of 500 gpm, whichever is greater, and shall be for a 90 minute duration. (LAPC 2050.2(3); NFPA 13 Table 19.2.3.1.2; LABC 403.3.3)