



# PLAN CHECK CORRECTION SHEET FOR METHANE MITIGATION SYSTEMS 2017 LAPC

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 REQUIREMENTS FOR METHANE MITIGATION PLAN CHECK SUBMITTAL**

1. Provide a building floor plan showing building lines, the perforated horizontal pipes, the de-watering pipes (if required), other subsoil drainage pipes, locations of public sewer, storm drainage, vent risers (passive and/or active type), de-watering sump pump pit(s) (if required), foundation sump pump pit(s) (if required), emergency drain sump pump pit(s) (if required), deep vent well(s) (if required), and all other piping and equipment related to the methane mitigation systems. (LAPC 101.5; LAPC 103.2.2)
2. Plans shall be drawn to a scale not less than 1/8 inch per foot. (LAPC 101.5.4)
3. Provide documentation from the soil engineer indicating the expected flow in the de-watering system. (LAPC 306.0)
4. Provide a copy of the signed certificate of compliance for methane test data, Form 1 of the Methane Mitigation Standard Plan.
5. Provide a copy of the approved plan from Bureau of Sanitation, Industrial Waste Division, if the sump pumps discharge to the sanitary sewage system. (LAPC 306.0)
6. Provide a copy of the approved plan from Bureau of Engineering, Storm Water Management Division, if the sump pumps discharge to the storm drain system. (LAPC 306.0)
7. Plans shall bear the registration or license number and signature of an architect, engineer, or geologist, registered in the appropriate classification by the State of California. (State of California Business and Professional Code Div. 3, Chap. 7, Art. 3, Sec. 6735.4; LAPC 101.5.2; LAPC 101.5.6; LAPC 103.2.1)

## **METHANE MITIGATION SYSTEMS:**

1. De-Watering System:
  - a. The historical high ground water table in this site is within twelve inches from the lowest perforated horizontal piping, please provide de-watering system. (Methane Hazard Mitigation Standard Plan, Sheet 1-Section V)
  - b. Provide a riser diagram showing the sump, sump inlet and outlet, the control water level of the sump, the vent, the sump pumps with the required valves, and the gravity line. (LAPC 101.5.3; LAPC 103.2)
  - c. Show the de-watering rates on the plan. (Methane Hazard Mitigation Standard Plan, Sheet 1-Section V)
  - d. The engineer or geologist responsible for determining the de-watering rates shall sign the plan. (Methane Hazard Mitigation Standard Plan, Sheet 1-Section V)
  - e. Pipes used for de-watering shall be listed. Factory slotted or perforated pipe shall be a minimum of 3 inch in diameter. (LAPC 1101.6)
  - f. De-watering pipes shall be sloped at ¼ inch vertical to 12 inch horizontal (2% slope). The slope may be reduced to 1% if the pipe size is increased one full size in pipe diameter. (Methane Hazard Mitigation Standard Plan, Sheet 1-Section V)
  - g. Combination de-watering and Sub-slab vent piping system may be used when installed with nominal four (4) inches diameter pipes. The maximum pipe spacing is 50 feet and shall be sloped at ¼ inch vertical to 12 inch horizontal (2% slope). (Methane Hazard Mitigation Standard Plan, Sheet 1-Section V and Sheet 4-Table 2)
  - h. The dewatering pipe shall be a minimum Schedule 40, slotted or perforated Polyvinyl Chloride (PVC) pipe or other approved material approved under LARR for the intended use (Methane Hazard Mitigation Standard Plan, Sheet 1-Section V)
  - i. Sump(s) shall be made of concrete, metal or other approved materials. Prefabricated fiberglass sumps shall be listed by a City of Los Angeles recognized listing agency or approved by Los Angeles Mechanical Testing Laboratory. (LAPC 710.8)

- j. Provide airtight cover for the sump. (LAPC 710.10)
- k. Sump(s) shall be provided with a vent pipe, which shall extend through the roof. (LAPC 710.7; LAPC 710.10)
- l. Show high water level in the sump. It shall be at least 2 inches below the lowest inlet. (LAPC 710.9)
- m. Show the make, model, and horsepower of the sump pumps on the plan. (LAPC 101.5; LAPC 103.2.1)
- n. Provide size, length, and type of material of the pump discharge piping. (LAPC 101.5; LAPC 103.2.1; LAPC 701.0)
- o. The pump shall have a discharge capacity of not less than 15 gpm. (LAPC 1101.6.2) Provide pump performance curve. (LAPC 101.5.1; LAPC 103.2.1)
- p. State the length of the pipe from the pump to the gravity line, and the elevation difference between the bottom of the sump and the gravity line where the pump is discharging. (LAPC 101.5; LAPC 103.2.1)
- q. Provide dual pumps, each shall be capable of handling the load independently. (LAPC 710.9)
- r. The discharge line from the sump shall be at least 1-½ inches in diameter. (LAPC 1101.6.2)
- s. The discharge line from the sump pump shall be provided with an accessible check valve and gate valve. (LAPC 710.4; LAPC 710.6)
- t. The gate valve shall be located on the discharge side of the check valve. Gate valve and check valve shall be located outside the sump. (LAPC 710.4; LAPC 710.6)
- u. Provide pump sizing calculation by the following steps:
  - i) Provide calculations for the system curve. Take into consideration all the fittings, gate valve and check valve. (LAPC 101.5.1; LAPC 103.2.1)
  - ii) Draw the system curve on the pump curve to determine the point of intersection, which will determine the pump discharge flow. (LAPC 101.5.1; LAPC 103.2.1)

## 2. Sub-Slab Vent System:

### a. Perforated Horizontal Pipes:

- i) The perforated horizontal pipes shall be listed, and shall be 4-inch nominal diameter minimum. (Methane Hazard Mitigation Standard Plan, Sheet 1-Section V)
- ii) The spacing and locations of the Perforated Horizontal Pipes shall comply with Table 2 of the Methane Hazard Mitigation Standard Plan.
- iii) The sub-slab pipe material shall comply with Table 1101.4.6 in the Los Angeles Plumbing Code. (LAPC 1101.4.6)

### b. Vent Riser:

- i) Show the total footprint area of the building on the plan. (Methane Hazard Mitigation Standard Plan, Sheet 4-Table 2)
- ii) The number of vent risers required shall be based on Table 2 of the Methane Hazard Mitigation Standard Plan.
- iii) Vent risers shall be constructed of an approved material. (Methane Hazard Mitigation Standard Plan, sheet 1-Section V)
- iv) ABS and PVC installations are limited to not more than two stories of areas of residential accommodations. (LAPC 701.2; LAPC 903.1.1)
- v) The spacing and locations of the Vent Risers shall comply with Table 2 of the Methane Hazard Mitigation Standard.
- vi) Vent Riser outlets shall be located at least:
  - 10 feet above grade,
  - 10 feet away from or at least 3 feet above any window, door, roof hatch, opening or air intake into the building, or vent shaft
  - 3 feet above the roof line,

- 3 feet away from any parapet,
- 3 feet away from the property line, and
- 5 feet away from any electrical device. (Methane Hazard Mitigation Standard Plan, Sheet 1-Section V, Sheet 8, Detail 12)

3. Mechanical Extraction System:

- a. Calculate the total volume of the gravel blanket and perforated horizontal pipes. The porosity of the gravel blanket material shall be taken as 25%. (Methane Hazard Mitigation Standard Plan, Sheet 1-Section V)
- b. Calculate the required volume of air to be mechanically exhausted by the gas extraction powered device. It shall be not less than 3 air changes per hour. (Methane Hazard Mitigation Standard Plan, Sheet 1-Section V)
- c. Show on the plan the make, model, and horsepower of the blowers, fans, or other Gas Extraction Power Devices. (LAPC 101.5.1; LAMC 112.2(1) (D))
- d. Provide performance curve of the Gas Extraction Power Devices. (LAMC 112.3(2))
- e. Both the Gas Extraction Power Device and the casing shall be constructed of non-sparking materials. (LAMC 503.2)
- f. Detector shall be fitted within the active Vent Riser of the Mechanical Extraction System. (Methane Hazard Mitigation Standard Plan, Sheet 1-Section V)

4. Mechanical Ventilation System:

- a. Show on the plan the make, model, and horsepower of the blowers, fans, or other power devices. (LAMC 112.3(1)(D))
- b. The exhaust of the Mechanical Ventilation System shall discharge to the outside of the building. (LAMC 502.2.2)
- c. The make-up air shall be 100% outside air. (Methane Hazard Mitigation Standard Plan, Sheet 2-Section V)
- d. Provide performance curve of the Mechanical Ventilation Devices. (LAMC 112.3(1) (D))
- e. Mechanical Ventilation System shall be provided using one of the following options for garages, lowest occupied and unoccupied spaces: (Methane Hazard Mitigation Standard Plan, Sheet 2-Section V)
  - i) Option #1: Activated Mechanical Ventilation – Mechanical Ventilation System shall be capable of removing methane gas at a rate of four (4) air changes per hour when activated by the Gas Detection and Control Panel, at 10% LEL (5,000 ppmv). Back-up power is not required.
  - ii) Option #2: Continuous Ventilation – Mechanical Ventilation System sized to ventilate the building spaces at a rate of one (1) air change per hour on a continuous basis. Mechanical ventilation in this option shall be provided with 24 hours of back-up power when Detectors and Pressure Sensors are not provided.
  - iii) Option #3: Scheduled Start-up Ventilation – Mechanical Ventilation System shall start-up at least once every six (6) hours to provide a minimum of 24 air changes per day. Mechanical Ventilation in this option shall be provided with 24 hours of back-up power when Detectors and Pressure Sensors are not provided.
  - iv) Option #4: Alternate Natural Ventilation – Alternate method of ventilation may be utilized in lieu of mechanical ventilation in Option #1, #2, and #3 when Building Plan Check approves the building design is in compliance with the Natural Ventilation requirements.

5. Sequence of Operation:

- a. Show the sequence of operation of the methane mitigation system on the plan. (LAMC 112.3(2))
- b. The sequence of operation of the methane mitigation system shall be in accordance to Table 5 of MSP. (LAMC 112.3(2))

