



CITY OF MESA
DEVELOPMENT SERVICES
MECHANICAL REQUIREMENTS

PROJECT STREET ADDRESS: _____

PERMIT # _____

THIS CHECKLIST CAN BE USED AS A GUIDE WHEN PREPARING PLANS FOR MECHANICAL INSTALLATIONS. **NOTE: ALL REFERENCES WERE TAKEN FROM THE 2018 MESA MECHANICAL CODE.**

Chapter 3 General Regulations

- _____ 1. The Mechanical Code reference is required to be on the plans. The City of Mesa has adopted the 2018 Mesa Mechanical Code with Amendments.
- _____ 2. Plans must be complete and for a complete comprehensive review to be done. Additional corrections may be identified upon review of a complete set of plans.
- _____ 3. Plans, specifications and calculations may be required to be sealed and signed by an architect or engineer licensed by the State of Arizona.
- _____ 4. Provide Structural Analysis and Calculations for the roof loading of all new and existing rooftop supported equipment and/or equipment hung from below. Calculations and analysis to include the existing and any new HVAC's, evaporative coolers, air handling units, kitchen exhaust fans, kitchen hoods, make-up air units, boilers and roof curbs with all ductwork to all equipment as required for the areas affected by their installations. Provide on the plans all required structural modification details as specified from your structural analysis. 302.1
- _____ 5. Provide details to show how the new equipment will be protected. 303.4
- _____ 6. Identify all new mechanical equipment to be installed and provide an equipment list and/or schedule for the equipment. Equipment list to include make, model number, size, operating weight and type. 304.1
- _____ 7. Provide access to the appliances/equipment as required by Sections 306.1 through 306.5.1
- _____ 8. Provide details on the plans to show compliance with the condensate disposal. 307.2.1 & 307.2.2

Chapter 4 Ventilation

- _____ 9. Identify how natural ventilation for the occupied space will be achieved per section 402 or by mechanical means per section 403.

- ___ 10. Provide the opening locations for the exhaust and/or intakes to comply with section 401.4.
- ___ 11. Provide the locations and details for collection and removal of air-borne contaminants. 401.6
- ___ 12. Show ventilation calculations for natural ventilation. 4% of floor area is required. 402.2
- ___ 13. Ventilation provided by mechanical means shall comply with Section 403. Provide air balance calculations for the mechanical ventilation system as required by Section 403.
- ___ 14. Provide the minimum outdoor air ventilation rate as required by Section 403.2.
- ___ 15. Provide the minimum ventilation for the uninhabited space. 406.1

Chapter 5 Exhaust Systems

- ___ 16. The exhaust system provided does not comply with Section 502. Revise accordingly.
- ___ 17. Provide information for the commercial clothes dryer showing compliance with Section 504.9.
- ___ 18. Show compliance with Section 505.5, Common exhaust systems for domestic kitchens located in multi-story buildings, #1 through 12.
- ___ 19. Ducts on the plans serving the Type I hood(s) do not comply with Section 506.3. Revise accordingly.
- ___ 20. Ducts on the plans serving the Type II hood(s) do not comply with Section 506.3. Revise accordingly.
- ___ 21. Provide the exhaust outlet locations for the Type I and/or Type II hoods. 506.3.13, 506.4.2 and 506.5.6
- ___ 22. Provide compliance with Pollution Control Units as required by Section 506.5.2.
- ___ 23. Provide a Type I commercial kitchen hood complying with Sections 507.1 through 507.2.9.
- ___ 24. Provide a Type II commercial kitchen hood complying with Sections 507.3 through 507.3.3.
- ___ 25. Provide make-up air for the commercial kitchen exhaust. 508
- ___ 26. Provide a hazardous exhaust system. 510
- ___ 27. Provide detailed engineering calculations and plans for required smoke control system. 513
- ___ 28. The energy recovery ventilation system on the plans is not allowed. Revise accordingly. 514.2

Chapter 6 Duct Systems

- ___ 29. Positive exhausting, chimneys and venting through air plenums is not allowed. Revise the exhausting to show compliance with Section 601.4

- ___ 30. Return air openings shall comply with Section 601.5 #s 1 – 8. Revise accordingly.
- ___ 31. The materials used within the plenum as indicated on the plans do not comply with Section 602.2.1. Revise accordingly.
- ___ 32. Identify the wiring exposed within the plenum. Wire is required to be plenum rated. 602.2.1.1
- ___ 33. Provide information for the foam plastic used as an interior finish within the plenum. Foam plastic must comply with Section 602.2.1.6.
- ___ 34. Identify the classification of the duct, based on the maximum operating pressure. 603.3
- ___ 35. Provide locations of all smoke detectors as required by 606.2.
- ___ 36. Identify the type and rating of all dampers as required by 607.3 through 607.3.3.5.

Chapter 7 Combustion Air

- ___ 37. Provide compliance with dampered openings per Section 701.2.

Chapter 8 Chimneys and Vents

- ___ 38. Identify the fuel-burning appliance vent as required by Section 801.2
- ___ 39. Provide manufacturers installation details and locate on the plans where the appliances direct-vent terminates. 804.1
- ___ 40. Provide all information for the mechanical draft system(s) as required by Section 804.3.
- ___ 41. Provide a detail showing the insulation shield where the factory-built chimney passes through the insulation. 805.7

Chapter 9 Specific Appliances, Fireplaces and Solid Fuel Burning Equipment

- ___ 42. Fireplaces and solid fuel-burning appliances shall not be installed in hazardous locations. 901.3
- ___ 43. Provide manufacturers installation details for the factory-built barbecue appliance. 906.1
- ___ 44. Provide incinerator and/or crematory installation details on the plans. Include manufacturers cut sheets and their listings in your resubmittal as required by Section 907.1.
- ___ 45. Provide manufacturers installation details for the cooling tower. 908.1
- ___ 46. The location of the cooling tower, evaporative cooler and/or fluid cooler does not comply with Section 908.3.
- ___ 47. Provide backflow protection for the cooling tower, evaporative cooler and/or fluid cooler water lines. 908.5
- ___ 48. Provide details and clearances for the infrared radiant heaters. Include manufacturers cut sheets and their listings in your resubmittal as required by Section 912.
- ___ 49. Provide installation details with clearances for the cooking appliances(s). Include manufacturers cut sheets and their listings in your resubmittal as required by Section 917.

- ___ 50. Provide installation details with clearances for the small ceramic kiln(s). Include manufacturers cut sheets and their listings in your resubmittal as required by Section 923.
- ___ 51. Radiant heating systems installed on wood or steel framing shall conform to section 927.3 and in concrete or masonry shall conform to Section 927.4.

Chapter 10 Boilers, Water Heaters and Pressure Vessels

- ___ 52. Provide a note on the plans stating that the contractor shall contact the Industrial Commission of Arizona, Division of Occupational Safety and Health, Phoenix, Arizona, at phone number 602-542-1648 for the inspection of the steam generated equipment and/or pressure vessels per State of Arizona statutes Title 23, Chapter 2, Article 11 and Title 20, Chapter 5.

Chapter 11 Refrigeration

- ___ 53. Provide an equipment schedule identifying the type of refrigerant used in each of your refrigeration and/or HVAC systems. 1102.2 and Table 1103.1
- ___ 54. Provide the occupancy classification of the area where the refrigeration equipment is to be located. 1103.3
- ___ 55. Provide the quantity of refrigerant for each independent refrigerant circuit. Locate all components outside or in a machinery room as required by Section 1104.2.
- ___ 56. Provide the requirements for industrial occupancies and/or refrigerated rooms as required by Section 1104.2.2.
- ___ 57. Provide the maximum quantity of refrigerant for each independent refrigerant circuit and show compliance with Section 1104.3.
- ___ 58. Provide all of the requirements for the machinery room as indicated in Sections 1105 and 1106.
- ___ 59. Identify the type of material used for the refrigerant pipe and/or tubing. 1107.5

Chapter 12 Hydronic Piping

- ___ 60. Identify the type of material used for all the hydronic piping. 1202
- ___ 61. Provide the locations of the shutoff valves. 1205
- ___ 62. Provide protection for the potable water line from backflow. 1206.3

Chapter 13 Fuel Oil Piping and Storage

- ___ 63. Identify the type of material used for all the fuel oil piping. 1302
- ___ 64. Identify the type of pump(s) used and provide an electric schematic for the automatic shutoff. 1302.7
- ___ 65. Identify the location of all vent piping. 1305.7
- ___ 66. Provide the locations of the shutoff valves. 1307.1 and 1307.2
- ___ 67. Provide the locations of all relief valves. 1307.3 through 1307.5

Chapter 14 Solar Systems

- ___ 68. Provide potable water contamination protection. 1401.2
- ___ 69. Provide manufacturers installation instructions for the new solar equipment and appliances. 1401.4
- ___ 70. Identify the type of heat transfer fluids used and their flash points. 1403.

Appendix A – Combustion Air Openings and Chimney Connector Pass-Throughs

- ___ 71. Provide details to show compliance with Appendix A Figure A-1
- ___ 72. Provide details to show compliance with Appendix A Figure A-2
- ___ 73. Provide details to show compliance with Appendix A Figure A-3
- ___ 74. Provide details to show compliance with Appendix A Figure A-4
- ___ 75. Provide details to show compliance with Appendix A Figure A-5