



COMcheck Software Version 4.1.1.0
Mechanical Compliance Certificate

Section 1: Project Information

Energy Code: 2009 IECC
 Project Title: Midsouth Carpenter's Training Inst.
 Project Type: New Construction
 Construction Site: La Vergne, TN
 Owner/Agent: Designer/Contractor:

Section 2: General Information

Building Location (for weather data): Nashville, Tennessee
 Climate Zone: 4A

Section 3: Mechanical Systems List

Quantity	System Type & Description
7	HVAC System 1 (Single Zone) Heating: 1 each - Unit Heater, Electric, Capacity = 65 MBtu/h No minimum efficiency requirement applies Fan System: None
1	HVAC System 2 (Single Zone) Heating: 1 each - Unit Heater, Electric, Capacity = 11 MBtu/h No minimum efficiency requirement applies Fan System: None
3	HVAC System 3 (Single Zone) Heating: 1 each - Central Furnace, Electric, Capacity = 27 MBtu/h No minimum efficiency requirement applies Cooling: 1 each - Split System, Capacity = 48 MBtu/h, Air-Cooled Condenser, No Economizer, Economizer Proposed Efficiency = 14.50 SEER, Required Efficiency: 13.00 SEER Fan System: None
2	HVAC System 4 (Single Zone) Heating: 1 each - Central Furnace, Electric, Capacity = 33 MBtu/h No minimum efficiency requirement applies Cooling: 1 each - Split System, Capacity = 59 MBtu/h, Air-Cooled Condenser, No Economizer, Economizer Proposed Efficiency = 14.50 SEER, Required Efficiency: 13.00 SEER Fan System: None
1	Water Heater 1 Electric Storage Water Heater, Capacity: 110 gallons Proposed Efficiency: 0.78 EF, Required Efficiency: 0.78 EF

Section 4: Requirements Checklist

- Requirements Specific To: HVAC System 1 :**
 None
- Requirements Specific To: HVAC System 2 :**
 None
- Requirements Specific To: HVAC System 3 :**
 1. Equipment minimum efficiency: Split System: 13.00 SEER

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2. Newly purchased equipment meets the efficiency requirements

- Requirements Specific To: HVAC System 4 :**
 1. Equipment minimum efficiency: Split System: 13.00 SEER
 2. Newly purchased equipment meets the efficiency requirements

Requirements Specific To: Water Heater 1 :

1. Water heating equipment meets minimum efficiency requirements: Electric Water Heater efficiency: 0.78 EF (82.5), Blurb (l = 12 kWh)
 2. First 8.5 gal of water is included
 3. Hot water storage temperature controls that allow setpoint of 90°F for non-dwelling units and 110°F for dwelling units
 4. Heat loss protected on hot and cold outlets of storage tanks

Generic Requirements: Must be met by all systems to which the requirement is applicable:

1. Plant equipment and system capacity no greater than needed to meet loads (Exceptions):
 Standby equipment automatically off when primary system is operating
 Multiple units controlled to sequence operation as a function of load
2. Minimum area temperature control device per system
3. Minimum area humidity control device per enclosed humidification/dehumidification system
4. Load calculations per ASHRAE/ACCA Standard 18S
5. Automatic Controls: Setback to 55°F (heat) and 65°F (cool); 7-day clock; 2-hour occupant override; 10-hour setback (Exceptions):
 Continuously operating zones
 Outdoor-air source for ventilations system capable of reducing ODA to required minimum
6. Outdoor-air source for ventilations system capable of reducing ODA to required minimum
7. R-6 supply and return air duct insulation in unconditioned spaces
 R-6 insulation between ducts and the building exterior when ducts are part of a building assembly (Exceptions):
 Ducts located within equipment
 Ducts with interior and exterior temperature difference not exceeding 10°F
8. Mechanical features and sealants used to connect ducts and air distribution equipment
9. Ducts sealed - longitudinal seams on rigid ducts; transverse seams on soft ducts; LD, HD or 1818 tapes and mastic
10. Hot water pipe insulation: 1.5 in. for pipes <= 1.5 in. and 2 in. for pipes > 1.5 in.
 Cold hot water/temperature pipe insulation: 1.5 in. for pipes <= 1.5 in. and 1.5 in. for pipes > 1.5 in.
 Steam pipe insulation: 1.5 in. for pipes <= 1.5 in. and 2 in. for pipes > 1.5 in. (Exceptions):
 Piping within HVAC equipment
 Fluid temperatures between 85 and 103°F
 Fluid not heated or cooled with mechanical energy
 Piping within room-for-cool (with AHS449 rating) and unit ventilators (with AHJ646 rating)
 Records <= 8 ft in length
11. Operation and maintenance manual provided to building owner
12. Thermostatic controls have 2°F deadband (Exceptions):
 Thermostats requiring manual changeover between heating and cooling
 Special occupancy or special applications where wide temperature ranges are not acceptable and are approved by the authority having jurisdiction
13. Retarding devices provided in accordance with IMC 603.17
14. Demand control ventilation (DCV) tested for high design occupancy areas (>40 persons/1000 sq ft) in spaces >100 sq ft and systems with any one of 1) an air-to-air economizer, 2) automatic modulating control of the outdoor air damper, or 3) a design outdoor airflow greater than 3000 cfm. (Exceptions):
 Systems with heat recovery
 Multiple-zone systems without ODC of individual zones communicating with a central control panel
 Systems with a design outdoor airflow less than 1200 cfm
 Spaces where the supply airflow rate minus any makeup or outdoor transfer requirement is less than 1200 cfm
15. Mechanical automatic shutoff dampers required on exhaust and outdoor air systems (Exceptions):
 Gravity dampers acceptable in building <= 3 stories

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16. Automatic controls for freeze protection systems present
17. Exhaust air heat recovery included for systems >200 cfm or greater with more than 70% outside air fraction or specifically exempted equipment:
 Recirculation exhaust systems, commercial kitchen and clothes dryer exhaust systems that the International Mechanical Code prohibits the use of energy recovery systems.
 Systems serving spaces that are heated and not cooled to less than 62°F.
 Where more than 40 percent of the outdoor heating energy is provided from pre-recovered or site source energy.
 Heating systems in climates with less than 3000 HDD
 Cooling systems in climates with a 1 percent cooling design wet-bulb temperature less than 64°F.
 Systems requiring dehumidification that employ energy recovery in series with the cooling coil.
 Laboratory fume hood exhaust systems that have either a variable air volume system capable of reducing exhaust and makeup air volume to 75 percent or less of design volume or a variable make-up air supply meeting the following make-up air requirements: a) at least 75 percent of exhaust flow rate, b) heated to no more than 2°F below room setpoint temperature, c) cooled to no lower than 3°F above room setpoint temperature, d) no humidification added, e) no simultaneous heating and cooling.

Section 5: Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2009 IECC requirements in COMcheck Version 4.1.1.0 and to comply with the International Mechanical Code.

Brandon R. Dillard, Mechanical Engineer P.E. Signature: [Signature] Date: 10/07/20

Section 6: Post Construction Compliance Statement

- HVAC record coverage of the actual installation, system capacities, calibration information, and performance data for equipment required to the owner.
 HVAC O&M documents for all mechanical equipment and systems provided to the owner.
 Proper HVAC operation and operations report provided to the owner.

The above post construction requirements have been completed.

Proposed Mechanical Designer/Name: [Signature] Date:

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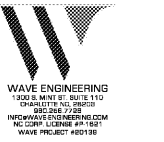
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STAMPS



9/30/2020

CONSULTANT



MIDSOUTH
 CARPENTER'S
 TRAINING
 TRUST

La Vergne, TN

PROJECT NUMBER	1987
ISSUE DATE	
FOR PERMIT	09.30.20

DRAWING DATA
 DRAWN BY: MRM
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SHEET TITLE
 MECHANICAL
 COMCHECK

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