



# COMcheck Software Version 3.4.1 Envelope Compliance Certificate

## 90.1 (2004) Standard

Report Date: 08/15/07

Data filename: J:\-COMME~1\SLEE45~1\comcheck.cck

### Section 1: Project Information

Project Title: SLidell KOA Campground

Construction Site:  
56009 HWY 433  
Slidell, LA 70458

Owner/Agent:  
~~Teresa~~ JimJ  
KOA  
56009 Hwy 433  
Slidell, LA 70458

Designer/Contractor:  
Pete Dammon  
Dammon Engineering  
1095 Florida Ave  
Slidell, LA 70458  
985-649-5832

### Section 2: General Information

Building Location (for weather data): **Slidell, Louisiana**  
Heating Degree Days (base 65 degrees F): **1674**  
Cooling Degree Days (base 50 degrees F): **6660**  
Building Type for Envelope Requirements: **Non-Residential**  
Project Type: **New Construction**  
Vertical Glazing / Wall Area Pct.: **3%**

<b>Building Type</b>	<b>Floor Area</b>
Retail	3834

### Section 3: Requirements Checklist

**Envelope PASSES: Design 7% better than code.**

#### Climate-Specific Requirements:

Component Name/Description	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor
Roof 1: Attic Roof with Wood Joists	3834	30.0	45.0	0.013	0.034
Exterior Wall 1: Wood-Framed, 24" o .c.	3834	19.0	30.0	0.021	0.089
Door 1: Other, Swinging	162	---	---	2.000	0.700
Window 1: Metal Frame with Thermal Break, Double Pane, Tinted, Fixed, SHGC 0.30, PF 0.20	120	---	---	1.000	1.220
Floor 1: Wood-Framed	3834	19.0	20.0	0.025	0.051

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.

#### Insulation:

- 1. Open-blown or poured loose-fill insulation has not been used in attic roof spaces with ceiling slope greater than 3 in 12.
- 2. Wherever vents occur, they are baffled to deflect incoming air above the insulation.
- 3. Recessed lights, equipment and ducts are not affecting insulation thickness.
- 4. No roof insulation is installed on a suspended ceiling with removable ceiling panels.
- 5. All exterior insulation is covered with protective material.
- 6. Cargo and loading dock doors are equipped with weather seals.

#### Fenestration and Doors:

- 7. Windows and skylights are labeled and certified by the manufacturer for U-factor and SHGC.





# Lighting and Power Compliance Certificate

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Project Title: SLidell KOA Campground

Construction Site:  
56009 HWY 433  
Slidell, LA 70458

Owner/Agent:  
Teresa JimJ Harrison  
KOA  
56009 Hwy 433  
Slidell, LA 70458

Designer/Contractor:  
Pete Dammon  
Dammon Engineering  
1095 Florida Ave  
Slidell, LA 70458  
985-649-5832

### Section 2: General Information

Building Use Description by:  
Project Type: **New Construction**

<u>Building Type</u>	<u>Floor Area</u>
Retail	3834

### Section 3: Requirements Checklist

#### Interior Lighting:

1. Total actual watts must be less than or equal to total allowed watts.

<u>Allowed Watts</u>	<u>Actual Watts</u>	<u>Complies</u>
5751	1440	YES

2. Exit signs 5 Watts or less per side.

#### Exterior Lighting:

3. Comply with Sections 9.4.4 and 9.4.5 of 90.1-2004 and attach documentation.

#### Controls, Switching, and Wiring:

4. Independent manual or occupancy sensing controls for each space (remote switch with indicator allowed for safety or security).

5. Occupant sensing control in class rooms, conference/meeting rooms, and employee lunch and break rooms.

*Exceptions:*

Spaces with multi-scene control; shop classrooms, laboratory classrooms, and preschool through 12th grade classrooms.

6. Automatic shutoff control for lighting in >5000 sq.ft buildings by time-of-day device, occupant sensor, or other automatic control.

*Exceptions:*

24 hour operation lighting; patient care areas; where auto shutoff would endanger safety or security.

7. Master switch at entry to hotel/motel guest room.

8. Separate control device for display/accent lighting, case lighting, task lighting, nonvisual lighting, lighting for sale, and demonstration lighting.

9. Photocell/astronomical time switch on exterior lights.

*Exceptions:*

Covered vehicle entrance/exit areas requiring lighting for safety, security and eye adaptation.

10. Tandem wired one-lamp and three-lamp ballasted luminaires (No single-lamp ballasts).

*Exceptions:*





**COMcheck Software Version 3.4.1**  
**Lighting Application Worksheet**

**90.1 (2004) Standard**

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**Section 1: Allowed Lighting Power Calculation**

A	B Floor Area	C Allowed Watts / ft2	D Allowed Watts
Retail	3834	1.5	5751
Total Allowed Watts =			5751

**Section 2: Actual Lighting Power Calculation**

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
<b>Retail (3834 sq.ft.)</b>				
Linear Fluorescent 1: 48" T12 40W / Magnetic	4	12	65	780
Incandescent 1: Incandescent 45W	6	11	60	660
Total Actual Watts =				1440

**Section 3: Compliance Calculation**

If the Total Allowed Watts minus the Total Actual Watts is greater than or equal to zero, the building complies.

Total Allowed Watts = 5751  
 Total Actual Watts = 1440  
 Project Compliance = 4311

**Lighting PASSES: Design 75% better than code.**



# Mechanical Compliance Certificate

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Construction Site:

56009 HWY 433  
Slidell, LA 70458

Owner/Agent:

Teresa JimJ

KOA  
56009 Hwy 433  
Slidell, LA 70458

Designer/Contractor:

Pete Dammon  
Dammon Engineering  
1095 Florida Ave  
Slidell, LA 70458  
985-649-5832

## Section 2: General Information

Building Location (for weather data): **Slidell, Louisiana**  
Heating Degree Days (base 65 degrees F): **1674**  
Cooling Degree Days (base 50 degrees F): **6660**  
Project Type: **New Construction**

## Section 3: Mechanical Systems List

### Quantity System Type & Description

- | Quantity | System Type & Description  |
|----------|--|
| 3        | HVAC System 1: Heating: Central Furnace, Electric, Heating Capacity <65 kBtu/h / Cooling: Split System, Capacity >=65 - <90 kBtu/h, Air-Cooled Condenser / Single Zone |

## Section 4: Requirements Checklist

### Requirements Specific To: HVAC System 1 :

- 1. Newly purchased equipment meets the efficiency requirements
- 2. Equipment minimum efficiency: Split System: 10.3 EER

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

- 1. Load calculations per 2001 ASHRAE Fundamentals
- 2. Thermostatic controls has 5 degrees F deadband
  - Exception: Thermostats requiring manual changeover between heating and cooling
- 3. Automatic Controls: Setback to 55 degrees F (heat) and 85 degrees F (cool); 7-day clock, 2-hour occupant override, 10-hour backup
  - Exception: Continuously operating zones
- 4. Hot water pipe insulation: 1 in. for pipes <=1.5 in. and 2 in. for pipes >1.5 in. Chilled water/refrigerant/brine pipe insulation: 1 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 3 in. for pipes >1.5 in.
  - Exception: Piping within HVAC equipment
  - Exception: Fluid temperatures between 55 and 105 degrees F
  - Exception: Fluid not heated or cooled
  - Exception: Runouts <4 ft in length
- 5. Where separate thermostats are used for heating and cooling, acceptable measures are used to prevent simultaneous heating and cooling
- 6. Motorized, automatic shutoff dampers required on exhaust and outdoor air supply openings





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# Mechanical Requirements Description

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The following list provides more detailed descriptions of the requirements in Section 4 of the Mechanical Compliance Certificate.

#### Requirements Specific To: HVAC System 1 :

1. The specified equipment is covered by Federal minimum efficiency requirements. New equipment of this type can be assumed to meet or exceed ASHRAE 90.1-2004 Standard requirements for equipment efficiency.
2. The specified heating and/or cooling equipment is covered by ASHRAE 90.1-2004 Standard and must meet the following minimum efficiency: Split System: 10.3 EER

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

1. Design heating and cooling loads for the building must be determined using procedures in the ASHRAE Handbook of Fundamentals or an approved equivalent calculation procedure.
2. Thermostats controlling both heating and cooling must be capable of maintaining a 5 degrees F deadband (a range of temperature where no heating or cooling is provided).
  - Exception: Deadband capability is not required if the thermostat does not have automatic changeover capability between heating and cooling.
3. The system or zone control must be a programmable thermostat or other automatic control meeting the following criteria:a) capable of setting back temperature to 55 degrees F during heating and setting up to 85 degrees F during coolingb) capable of automatically setting back or shutting down systems during unoccupied hours using 7 different day schedulesc) have an accessible 2-hour occupant overridden) have a battery back-up capable of maintaining programmed settings for at least 10 hours without power.
  - Exception: A setback or shutoff control is not required on thermostats that control systems serving areas that operate continuously.
4. All pipes serving space-conditioning systems must be insulated as follows: Hot water piping for heating systems: 1 in. for pipes  $\leq 1\frac{1}{2}$ -in. nominal diameter 2 in. for pipes  $> 1\frac{1}{2}$ -in. nominal diameter. Chilled water, refrigerant, and brine piping systems: 1 in. insulation for pipes  $\leq 1\frac{1}{2}$ -in. nominal diameter 1  $\frac{1}{2}$  in. insulation for pipes  $> 1\frac{1}{2}$ -in. nominal diameter. Steam piping: 1  $\frac{1}{2}$  in. insulation for pipes  $\leq 1\frac{1}{2}$ -in. nominal diameter 3 in. insulation for pipes  $> 1\frac{1}{2}$ -in. nominal diameter.
  - Exception: Pipe insulation is not required for factory-installed piping within HVAC equipment.
  - Exception: Pipe insulation is not required for piping that conveys fluids having a design operating temperature range between 55 degrees F and 105 degrees F.
  - Exception: Pipe insulation is not required for piping that conveys fluids that have not been heated or cooled through the use of fossil fuels or electric power.
  - Exception: Pipe insulation is not required for runout piping not exceeding 4 ft in length and 1 in. in diameter between the control valve and HVAC coil.
5. Where zone heating and cooling are controlled by separate zone thermostats, means (such as limit switches, mechanical stops, or, for DDC systems, software programming) must be provided to prevent simultaneous heating and cooling to the zone.
6. Outdoor air supply and exhaust systems must have motorized dampers that automatically shut when the systems or spaces served are not in use. Dampers must be capable of automatically shutting off during preoccupancy building warm-up, cool-down, and setback, except when ventilation reduces energy costs (e.g., night purge) or when ventilation must be supplied to meet code requirements. Both outdoor air supply and exhaust air dampers must have a maximum leakage rate of 3 cfm/ft<sup>2</sup> at 1.0 in w.g. when tested in accordance with AMCA Standard 500.
  - Exception: Gravity (non-motorized) dampers are acceptable in buildings less than three stories in height.
  - Exception: Systems with a design outside air intake or exhaust capacity of 300 cfm (140 L/s) or less that are equipped with motor operated dampers that open and close when the unit is energized and de-energized, respectively.
7. Stair and elevator shaft vents must be equipped with motorized dampers capable of being automatically closed during normal building operation and interlocked to open as required by fire and smoke detection systems. All gravity outdoor air supply and exhaust hoods, vents, and ventilators must be equipped with motorized dampers that will automatically shut when the spaces served are not in use. Exceptions: - Gravity (non-motorized) dampers are acceptable in buildings less than three stories in height above grade. - Ventilation systems serving unconditioned spaces.

8. Where a zone is served by a system(s) with both humidification and dehumidification capability, means (such as limit switches, mechanical stops, or software programming) must be provided to prevent simultaneous operation of humidification and dehumidification equipment.
  - Exception: Zones served by desiccant systems, used with direct evaporative cooling in series; Systems serving zones where specific humidity levels are required.
9. All freeze protection systems, including self-regulating heat tracing, must include automatic controls capable of shutting off the systems when outside air temperatures are above 40 degrees F or when the conditions of the protected fluid will prevent freezing. Snow- and ice-melting systems must include automatic controls capable of shutting off the systems when the pavement temperature is above 50 degrees F and no precipitation is falling, and an automatic or manual control that will allow shutoff when the outdoor temperature is above 40 degrees F.
10. Systems with design outside air capacities >3,000 cfm serving areas having an average design occupancy density exceeding 100 people per 1000 ft<sup>2</sup> must include means to automatically reduce outside air intake below design rates when spaces are partially occupied. Ventilation controls must be in compliance with ASHRAE Standard 62 and local standards.
11. Duct and pipe insulation exposed to weather must be suitable for outdoor service; e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation that can cause degradation of the material. Insulation covering chilled water piping, refrigerant suction piping, or cooling ducts located outside the conditioned space must include a vapor retardant located outside the insulation (unless the insulation is inherently vapor retardant), all penetrations and joints of which must be sealed.
12. Duct Sealing Requirements: - Pressure sensitive tape prohibited as the primary sealant - Longitudinal and transverse seams for ducts in unconditioned spaces - Longitudinal and transverse seams and duct wall penetrations for ducts outside the building - Transverse seams on buried ducts
13. All supply and return ducts and plenum installed as part of an HVAC air distribution system must be thermally insulated: R-6 for supply air ducts located outside the building, in ventilated attics and in unvented attic above insulated ceiling, R-3.5 for supply air duct insulation in unvented attic with roof insulation, unconditioned and underground spaces, R-3.5 for return air ducts located outside the building, in ventilated attics and in unvented attic above insulated ceiling.
14. Where humidistatic controls are provided, such controls must prevent reheating, mixing of hot and cold air streams, or other means of simultaneous heating and cooling of the same air stream. Exceptions: - capability to first reduce flow rate - cooling capacity <80 kBtu/h and capability to unload cooling equipment - cooling capacity <40 kBtu/h - rigid humidity requirements - site-recovered or site-solar energy sources or - use of a desiccant systems.
15. Individual fan systems with a design supply air capacity of 5000 cfm or greater and minimum outside air supply of 70% or greater of the supply air capacity must have an energy recovery system with at least a 50% effectiveness. Exceptions: - Systems serving spaces that are not cooled and heated to <60 degrees F. - Commercial kitchen hoods (grease) classified as Type 1 by NFPA 96 - Systems exhausting toxic, flammable, paint, or corrosive fumes or dust If an air economizer is also required, heat recovery must be bypassed or controlled to permit air economizer operation.
16. Individual kitchen exhaust hoods larger than 5000 cfm must be provided with make-up air sized for at least 50% of exhaust air volume that is uncooled and either unheated or heated to no more than 60 degrees F Exceptions: - Where hoods are used to exhaust ventilation air that would otherwise exfiltrate or be exhausted by other fan systems. - Certified grease extractor hoods that require a face velocity no >60 fpm.
17. Buildings with fume hood systems having a total exhaust rate >15,000 cfm must either have variable air volume hood design, exhaust air heat recovery, or separate make up air supply meeting the following makeup air requirements: - at least 75% of exhaust flow rate - heated to no more than 2 degrees F below room setpoint temperature - cooled to no lower than 2 degrees F above room setpoint temperature - no humidification added - no simultaneous heating and cooling