



COMcheck Software Version 3.1 Release 1

# Envelope Compliance Certificate

## Standard 90.1-2001

Report Date: 12/26/06

Data filename: J:\KAUFMA~1\50X200~1\BUILDO~2\NEWCHE~1.CCK

### Section 1: Project Information

Project Title: SURGI PROPERTIES

Construction Site:

1030 OLD SPANISH TRAIL SUITE 30 & 40  
Slidell, LA 70458

Owner/Agent:

WEST SURGI  
1030 OLD SPANISH TRAIL, SUITE 30  
& 40  
Slidell, LA 70458

Designer/Contractor:

Emmett Dammon  
Dammon Engineering  
1095 Florida Ave.  
Slidell, LA 70458  
(985) 649- 5832  
dammoneng@bellsouth.net

### 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

Glazing Area Percentage:

7%

**Building Type**

Warehouse

**Floor Area**

2525

### Section 3: Requirements Checklist

**Envelope PASSES:** Design 40% 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: Metal Building, Standing Seam	2225	30.0	30.0	0.020	0.065
Exterior Wall 1: Metal Building Wall	400	13.0	13.0	0.046	0.113
Window 1: Metal Frame with Thermal Break: Double Pane with Low-E, Tinted, Fixed, SHGC 1.00, PF 2.00	60	---	---	2.000	1.220
Door 1: Insulated Metal, Swinging	48	---	---	1.000	0.700
Exterior Wall 2: Metal Building Wall	400	13.0	13.0	0.046	0.113
Door 2: Insulated Metal, Swinging	48	---	---	1.000	0.700
Interior Wall 1: Steel-Framed, 16" o.c.	800	13.0	13.0	0.047	0.352

(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.

1/11/07

Information on all 3 reports appears to comply with code

Emmett Dammon

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- 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.
- 8. Fixed windows and skylights unlabeled by the manufacturer have been site labeled using the default U-factor and SHGC.
- 9. Other unlabeled vertical fenestration, operable and fixed, that are unlabeled by the manufacturer have been site labeled using the default U-factor and SHGC. No credit has been given for metal frames with thermal breaks, low-emissivity coatings, gas fillings, or insulating spacers.

**Air Leakage and Component Certification:**

- 10. All joints and penetrations are caulked, gasketed, weather-stripped, or otherwise sealed.
- 11. Windows, doors, and skylights certified as meeting leakage requirements.
- 12. Component R-values & U-factors labeled as certified.

**Section 4: Compliance Statement**

*Compliance Statement:* The proposed envelope design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed envelope system has been designed to meet the Standard 90.1-2001 requirements in COMcheck Version 3.1 Release 1 and to comply with the mandatory requirements in the Requirements Checklist.

EDMUND T. D'AMICO  
Principal Envelope Designer-Name

  
Signature

12-26-06  
Date



## COMcheck Software Version 3.1 Release 1

# Lighting and Power Compliance Certificate

### Standard 90.1-2001

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Slidell, LA 70458

**Designer/Contractor:**

Emmett Dammon  
Dammon Engineering  
1095 Florida Ave.  
Slidell, LA 70458  
(985) 649- 5832  
dammoneng@bellsouth.net

### Section 2: General Information

Building Use Description by:

Project Type: **New Construction**

**Building Type**

Warehouse

**Floor Area**

2525

### Section 3: Requirements Checklist

**Interior Lighting:**

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

Allowed Watts	Actual Watts	Complies
3030	1150	YES

**Exterior Lighting:**

2. Minimum efficacy of 60 lumen/watt for lamps greater than 100W.
3. Lighting power for canopies, entrances, and exits meets the following criteria (trade-offs allowed among these applications):
- (i) Lighting power for free-standing canopy areas or building entrances with canopies is less than or equal to 3 watts per square foot.
  - (ii) Lighting power for building entrances without a canopy is less than or equal to 33 watts per linear foot of door width.
  - (iii) Lighting power for building exits is less than or equal to 20 watts per linear foot of exit door width.
4. Lighting power for building facades is less than or equal to 0.25 watts per square foot of the illuminated area.

*Exceptions:*

Controlled by motion sensor, signal or advertising signage, highlighting features of historic monuments and buildings, or required for safety or security.

**Controls, Switching, and Wiring:**

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

- 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:*

Electronic high-frequency ballasts;  
Luminaires not on same switch;  
Recessed luminaires 10 ft. apart or surface/pendant not continuous;  
Luminaires on emergency circuits.

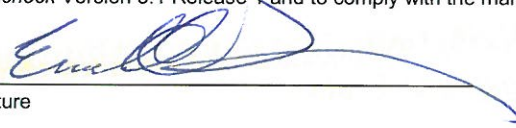
**Voltage Drop:**

- 11. Feeder conductors have been designed for a maximum voltage drop of 2 percent.
- 12. Branch circuit conductors have been designed for a maximum voltage drop of 3 percent.

**Section 4: Compliance Statement**

*Compliance Statement:* The proposed lighting design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting system has been designed to meet the Standard 90.1-2001 requirements in COMcheck Version 3.1 Release 1 and to comply with the mandatory requirements in the Requirements Checklist.

EMMETT PARRINO  
Principal Lighting Designer-Name

  
Signature

12-26-06  
Date

**Section 5: Post Construction Compliance Statement**

**Record Drawings and Operating and Maintenance Manuals**

Construction documents with record drawings and operating and maintenance manuals provided to the owner.

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# Lighting Application Worksheet

## Standard 90.1-2001

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### Section 1: Allowed Lighting Power Calculation

A	B Floor Area	C Allowed Watts / ft2	D Allowed Watts
Warehouse	2525	1.2	3030
Total Allowed Watts =			3030

### 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)
Incandescent 1: Incandescent 250W	1	3	250	750
Linear Fluorescent 1: 48" T12 40W / Magnetic	4	10	40	400
Total Actual Watts =				1150

### 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 =	3030
Total Actual Watts =	1150
Project Compliance =	1880

**Lighting PASSES:** Design 62% better than code.

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# Mechanical Compliance Certificate

## Standard 90.1-2001

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## 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**

- |   |  |
|---|--|
| 1 | HVAC System 1: Heating: Central Furnace, Electric, Heating Capacity <65 kBtu/h / Cooling: Split System, Capacity >=135 - <240 kBtu/h, Air-Cooled Condenser / Multiple-Zone |
|---|--|

## Section 4: Requirements Checklist

**Requirements Specific To: HVAC System 1 :**

- 1. Newly purchased equipment meets the efficiency requirements
- 2. Minimum one temperature control device per zone
- 3. Equipment minimum efficiency: Split System: 9.7 EER
- 4. Integrated air economizer required
- 5. Systems serving more than one zone must be VAV systems

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

- 1. Load calculations per 1997 ASHRAE Fundamentals
- 2. Minimum one temperature control device per system
- 3. Thermostatic controls has 5 degrees F deadband
  - Exception: Thermostats requiring manual changeover between heating and cooling
- 4. 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
  - Exception: Residential occupancies may use controls that can start and stop the system under two different time schedules per week.
- 5. 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
6. Where separate thermostats are used for heating and cooling, acceptable measures are used to prevent simultaneous heating and cooling
7. Motorized, automatic shutoff dampers required on exhaust and outdoor air supply openings
- Exception: Gravity dampers acceptable in buildings <3 stories
  - Exception: Gravity (non-motorized) dampers are acceptable in systems with a design outside air intake or exhaust capacity of 300 cfm (140 L/s) or less.
8. Stair and elevator shaft vents are equipped with motorized dampers
9. Acceptable measures used to prevent simultaneous humidification and dehumidification
- Exception: Desiccant systems and systems for uses requiring specific humidity levels (approval required)
10. Automatic controls for freeze protection systems present
11. Automatic ventilation controls (e.g., CO2 controls) or exhaust air heat recovery present for high design occupancy areas (>100 person/1000 ft2) with >3,000 cfm outside air capacities
12. Duct, plenum, and piping insulation surfaces suitably protected from weather, moisture, or likely damage
13. R-6 supply and return air ducts in unconditioned spaces R-8 supply and return air ducts outside the building R-8 insulation between ducts and the building exterior when ducts are part of a building assembly R-3.5 supply and return air ducts insulation underground
14. Duct Sealing: Pressure sensitive tape is not used 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
15. Humidistat controls prevent reheating, recooling, and mixing of mechanically heated air with mechanically cooled air
16. Exhaust air heat recovery included for systems 5,000 cfm or greater with more than 70% outside air fraction or specifically exempted
17. Kitchen hoods >5,000 cfm provided with 50% makeup air that is uncooled and heated to no more than 60 degrees F unless specifically exempted
18. Buildings with fume hood systems must have variable air volume hood design, exhaust heat recovery, or separate makeup air supply meeting the following: a) 75% make up air quantity, and /or b) within 2 degrees F of room temperature and/or c) no humidification d) 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 Standard 90.1-2001 requirements in COMcheck Version 3.1 Release 1 and to comply with the mandatory requirements in the Requirements Checklist

EMMETT DANNOX                      [Signature]                      12-26-20  
 Principal Mechanical Designer-Name      Signature                      Date

## Section 6: Post Construction Compliance Statement

- HVAC record drawings of the actual installation and performance data for each equipment provided to the owner within 90 days after system acceptance.
- HVAC O&M documents for all mechanical equipment and system provided to the owner within 90 days after system acceptance.
- Written HVAC balancing report provided to the owner.

The above post construction requirements have been completed.

\_\_\_\_\_  
 Principal Mechanical Designer-Name      Signature                      Date



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# Mechanical Requirements Description

### Standard 90.1-2001

Report Date:

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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 90.1-2001 Standard requirements for equipment efficiency.
2. Each zone of a multiple-zone system must have its own temperature control device.
3. The specified heating and/or cooling equipment is covered by ASHRAE 90.1-2001 Standard and must meet the following minimum efficiency: Split System: 9.7 EER
4. An integrated air economizer is required for individual cooling systems over 65 kBtu/h in the selected climate. An integrated economizer allows simultaneous operation of outdoor-air and mechanical cooling.
5. Systems serving multiple thermostatic control zones must be variable-flow systems. Zone terminal controls must reduce the flow of primary supply air before reheating, recooling, or mixing air streams.

#### 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 equivalent to those in Chapters 27 and 28 of the ASHRAE Handbook of Fundamentals or an approved equivalent calculation procedure.
2. Each heating or cooling system serving a single zone must have its own temperature control device.
3. 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.
4. 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 override) 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.
  - Exception: Residential occupancies may use controls that can start and stop the system under two different time schedules per week.
5. All pipes serving space-conditioning systems must be insulated as follows: Hot water piping for heating systems: 1 in. for pipes <=1 1/2-in. nominal diameter 2 in. for pipes >1 1/2-in. nominal diameter. Chilled water, refrigerant, and brine piping systems: 1 in. insulation for pipes <=1 1/2-in. nominal diameter 1 1/2 in. insulation for pipes >1 1/2-in. nominal diameter. Steam piping: 1 1/2 in. insulation for pipes <=1 1/2-in. nominal diameter 3 in. insulation for pipes >1 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.
6. 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.
7. 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: Gravity (non-motorized) dampers are acceptable in systems with a design outside air intake or exhaust capacity of 300 cfm (140 L/s) or less.
8. 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.
  9. 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.
  10. 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.
  11. 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.
  12. 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.
  13. R-6 supply and return air ducts in unconditioned spaces R-8 supply and return air ducts outside the building R-8 insulation between ducts and the building exterior when ducts are part of a building assembly R-3.5 supply and return air ducts insulation underground
  14. 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
  15. 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.
  16. 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.
  17. 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.
  18. 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