NYC Lighting Energy Codes and COMcheck
Frequently Asked Questions

What version of NYS Code is currently required in NYC? Is ASHRAE/IESNA Std. 90.1-2004 or 2007 the applicable alternative standard in NYC?

ECCCNYS 2007 – Energy Conservation Construction Code of New York State is the current code, and it allows the use of ASHRAE/IESNA Standard 90.1-2004 for prescriptive or performance paths. Beginning 1 July 2010 New York City will have its own energy code, "NYCECC", allowing either ECCCNYS or ASHRAE/IESNA Standard 90.1-2004.

Are we required to comply with the ECCCNYS if our building alteration involves less than 50% of the building or the subsystem being replaced?
As of today, your project is not required to comply. However, beginning 1 July 2010, ALL alterations will be required to comply with the new NYCECC.

When using the prescriptive compliance path, is it required that all systems (lighting, HVAC, envelope) use the same standard (either NYS or Std.90.1)

No, individual systems can may select either ECCCNYS 2007 or ASHRAE/IESNA Std 90.1-2004. So lighting can use Std.90.1 while mechanical uses NYS or vise versa. The new NYCECC will not change this choice.

What submittals are required by the New York City Department of Buildings (DOB) related to lighting energy codes.

The following information is required to be part of the initial permit drawings, as shown on the DoB website:

A. Professional Statement of compliance with the ECCCNYS as part of the Plan / Work Application (Form PW1, item 10). The form is signed and sealed by a licensed professional, Architect or Engineer.

B. Energy Analysis – COMcheck or Energy Model report – part of drawing set on a drawing sheet in the package for the initial filing.

C. Supporting Documentation – lighting layouts with fixture type designations, and specification information on lighting fixtures, wattages and controls.

LEED often requires a whole building energy simulation (Energy Model) analysis using ASHRAE/IESNA Standard 90.1 "energy cost budget" method. What forms are required for NYC?
DoB form EC1 is required – Energy Cost Budget worksheet, using a NYS DoS-approved software program.

The Standard 90.1 performance path, (the energy cost budget method), also requires compliance with mandatory lighting control requirements and exterior power allowances, in addition to the whole-building energy simulation calculations.

What backup documentation materials is required for lighting

Reflected ceiling plans or lighting layouts on floor plans must be provided, showing lighting fixture type designations. A lighting fixture schedule must be provided, containing lighting fixture type designation, brief descriptions, type and quantity of lamps per fixture, ballast/transformer type, and "system input" watts per fixture. If the prescriptive method of lighting compliance is used, the COMcheck Proposed Lighting Power Calculation shall use the same fixture type designations and input wattages as the lighting fixture schedule shown on the drawings. To demonstrate compliance with mandatory control requirements, the drawings shall show layouts, schedules and any other information necessary to describe the lighting controls, and a narrative keyed to the mandatory controls requirements, briefly describing how each control criterion is achieved. In case of an audit by the DoB, more information may be requested.

What lighting code submittals are required for residential buildings in NYC?

There are no lighting requirements for residential buildings under three-stories, and lighting is not a component of REScheck software. For high-rise residential, COMcheck may be used for the general building spaces, but dwelling units are currently exempt.

What does NYC Local Law 86 (2005) require?

Local Law 86 prescribes that capital projects of $2,000,000 or more shall be designed and constructed to achieve "LEED silver" or higher (some classifications just have to be "LEED certified"). Capital projects with estimated construction costs of over $12,000,000 have to show energy cost reductions of between 20% and 30% depending on payback of Energy Efficiency Measures (EEM's). There are also provisions for retrofit and replacements of boiler, lighting, and HVAC systems. The law has already been updated to include LEED version 3 / 2009. DoB has no part in enforcing Local Law 86 – contact Office of Environmental Coordination in the Mayor's Office of Operations.

COMCHECK FAQs

When is COMcheck software applicable?

COMcheck software is used to demonstrate compliance under the "prescriptive paths" of ECCCNYS, Standard 90.1 and the new NYCECC, where each building energy system (lighting, HVAC, envelope) must comply individually, without trade-offs with other building systems.

Which version of COMcheck is the latest? Which code should be selected when using COMcheck?

COMcheck Version 3.7.0 is the most current version of the desktop software available for free download from the USDOE, although version 3.6.1 may also be used. Both have a pull-down menu to select the applicable code. Currently, you may select either "New York" for

the ECCCNYS, or "90.1 (2004) Standard" for ASHRAE/IESNA Standard 90.1-2004. The new NYCECC will not change this process.

Is a single run of COMcheck required for all building systems together?

No. It is not necessary to use the same file or same run of COMcheck, since there are no trade-offs between systems under the prescriptive path. In some cases a single run of the software is not even possible. For example, each run of COMcheck is limited to a single code. Thus, if lighting and envelope systems are using Standard 90.1, and HVAC is using ECCCNYS, these will require separate cck files and will generate separate reports. Even under the new NYCECC, a single run of COMcheck will not be required.

Note that the latest online version of COMcheck-Web does not support Lighting Allowances or Mechanical compliance, so the desktop COMcheck software is recommended.

Why use ECCCNYS prescriptive path versus ASHRAE/IESNA Std. 90.1 prescriptive path for lighting?

When using COMcheck, you must use Standard 90.1 for "alterations", and select "Alterations" as "Project Type" so this will be indicated on the final Report. (Older COMcheck editions do not accommodate alterations). Either code may be used for new construction or additions. LEED references Standard 90.1 for several credits. ECCCNYS has fewer exemptions and fewer space types, and currently does not include exterior lighting power compliance although it does require minimum lamp efficacy. Both codes allow the Interior Power Allowance to be determined on a whole building or space-by-space method. Demonstration of compliance is the same for the prescriptive path with either code, listing fixture types, wattages and counts to determine the total connected load.

When using COMcheck for lighting, why use the lighting Whole Building Method rather than the Area Category (space-by-space) Method to establish our lighting allowance?

It may be faster and less complicated for some projects to develop the Interior Lighting Allowance under Section 1. However, if an alteration does not comprise all of the building spaces, or if the building type is not listed, or if exemptions are needed (i.e. decorative, display, etc) – you must use space-by-space / tenant area methods. In Section 2, both methods require the same level of detail (listing of luminaires by fixture types and input watts) to demonstrate compliance using the Proposed Lighting Power Calculation.

How is the area of each space type measured?

The Architect should supply this information to all sub-consultants so all area information will be consistent across the various building systems. This is especially critical for LEED projects so that values stay the same for all credits. Whole building method – Building areas are measured from exterior face of exterior wall. Space-by-space method – Room areas are measured from centerline of partition walls

If we use the space-by-space method, must each interior space comply with the relevant LPD?

NO! The proposed connected lighting load must not exceed the interior lighting power allowance – that's it.

Except, in a few interior spaces, additional wattage or exemptions are limited to that specific space or usage, i.e., are untradeable: use them or lose them. For the exterior lighting, provisions in ASHRAE/IESNA 90.1 include some wattages that are "tradable" between uses, and some that may only be used for specific uses and are "untradeable".

COMcheck handles all these variations for you.

What is the difference between fixture watts and the nominal lamp watts? Doesn't a fixture with two 32 watt fluorescent lamps use 64 watts?

No. Fixture watts (also known as system watts or input watts) include lamp + ballast. The ballast determines the wattage consumption. For example, the (2) 32-watt fixture may consume between 53 and 55 watts when a "NEMA Premium" electronic ballast is used, depending on rapid start, instant start or programmed start. Electronic non-premium ballasts or dimming ballasts are higher but still less than 64 watts. A "high lumen output" ballast will use more than 64 watts but will also provide more lumens. It is necessary to use actual ballast input wattage available from ballast manufacturers. Your fixture manufacturer can also help. It should be noted that metal halide ballasts typically consume more watts than the lamp wattage rating.

More information:

DoB Guidelines:
 http://www.nyc.gov/html/dob/html/reference/ecccnys.shtml

COMcheck:
http://www.energycodes.gov/compliance_tools.stm

Manual for Quality, Energy Efficient Lighting, NYC Department of Design and Construction:
http://www.nyc.gov/html/ddc/downloads/pdf/lightman.pdf

NYS Energy Conservation Construction Code, 2007 Edition
http://www.dos.state.ny.us/code/energycode/nyenergycode.htm

ASHRAE/IESNA Standard 90.1 – (2004)
www.ashrae.org
www.iesna.org