



Introduction To Compliance With The New York State Energy Conservation Construction Code For Residential Buildings

What Buildings Must Comply

The code applies to new residential buildings, three stories or less in height, and additions to such buildings. Residential buildings are defined as detached one- and two-family buildings and multifamily buildings (such as apartments, condominiums, townhouses, dormitories, and rowhouses). Multifamily buildings have three or more attached dwelling units and are referred to as type R-2 and R-4 in the code. Throughout these materials, generic references to “building(s)” signify residential buildings three stories or less in height.

When over 10% of the area of any floor of a residential building is used for commercial purposes, the portion of the building used for commercial purposes must meet the requirements of the commercial energy code. In such cases, the code will only apply to those portions of the building that are used for residential purposes. Multifamily buildings four or more stories above grade are considered commercial buildings.

Exemptions

The following building categories are exempted from the provisions of the code:

- existing buildings
- very low-energy buildings (<3.4 Btu/h-ft² or 1 W/ft² of floor area)
- buildings (or portions of buildings) that are neither heated nor cooled
- buildings designated as historical.

What's in the Guides

The *Basic Requirements Guide* applies to all residential buildings and should be read by all users. Home builders and designers can then use one of the three approaches to show compliance with the insulation and

window requirements. The prescriptive package approach is described in the *Prescriptive Package User's Guide*. The software approach is described in the *Software User's Guide*. The trade-off approach is described in the *Trade-Off Worksheet User's Guide*.

The **Basic Requirements Guide** discusses all of the basic requirements except for the insulation and window requirements (which are covered in other sections). The basic requirements represent minimum criteria that must be met regardless of which insulation compliance approach you choose. These criteria include provisions that limit air leakage through the building envelope and regulate heating and cooling systems and duct insulation levels.

The **Prescriptive Package User's Guide** describes the simplest of the three compliance approaches. With this approach, you select a package of insulation and window requirements from a list of packages developed for a specific climate zone. Each package specifies insulation levels, glazing areas, glazing U-factors, and sometimes heating and cooling equipment efficiency. Once selected, simply meet or exceed all requirements listed in the package to achieve compliance. Few calculations are required.

The **Trade-Off Worksheet User's Guide** briefly describes a "pencil-and-paper" compliance approach. The trade-off approach enables you to trade off insulation and window efficiency levels in different parts of the building. You can trade off ceiling, wall, floor, basement wall, slab-edge, and crawl space wall insulation; glazing and door areas; and glazing and door U-factors. The trade-off approach calculates whether your home as a whole meets the overall code insulation and window requirements.

The **Software User's Guide** explains how to use the MECcheck software approach. The software approach is the most flexible of the three compliance approaches. The software allows trade-offs between all building envelope components and heating and cooling equipment efficiencies. With minimal input, you can quickly compare different insulation levels to select a package that works best for your proposed building. Unlike the prescriptive package and trade-off approaches, the software approach enables you to trade off basement wall, slab-edge, and crawl space wall insulation depth as well as insulation R-value. The software automatically generates a report that can be submitted for plan review to document compliance.

Several forms, worksheets, and lists are included with the materials to help determine and document compliance. You may make multiple copies of the forms and distribute them freely.

Compliance Process

Figure 1 illustrates the steps you should follow to determine compliance with the code.

Step 1: Determine If Your Building Must Comply with the Code.
(See *What Buildings Must Comply* in this introduction.)

Step 2: Meet the Basic Requirements. The basic requirements discussed in the *Basic Requirements Guide* must be incorporated into the design.

Step 3: Use One of Three Compliance Approaches for Insulation and Windows. Select one of the three compliance approaches described in the *Prescriptive Package User's Guide*, *the Software User's Guide*, and the *Trade-Off Worksheet User's Guide*. Examining the prescriptive packages for the building location will give you an idea of the insulation requirements. Use the selected approach to determine the insulation and window requirements. Document compliance on the form(s) provided for the selected approach.

Step 4: Submit Building Plans and Compliance Forms for Plan Review. Submit MECcheck forms or their equivalent, building plans, and specifications for plan review. The compliance forms must match the building plans and specifications.

Step 5: Construct the Building According to Approved Plans. In most jurisdictions, construction may begin after a building permit is issued. It is required to have the approved set of plans and specifications at the job site for use by the field inspector. MECcheck forms or their equivalent must be re-submitted if changes from the approved plans or specifications are made that increase the glazing area, decrease insulation R-values, or decrease equipment efficiencies of the building.

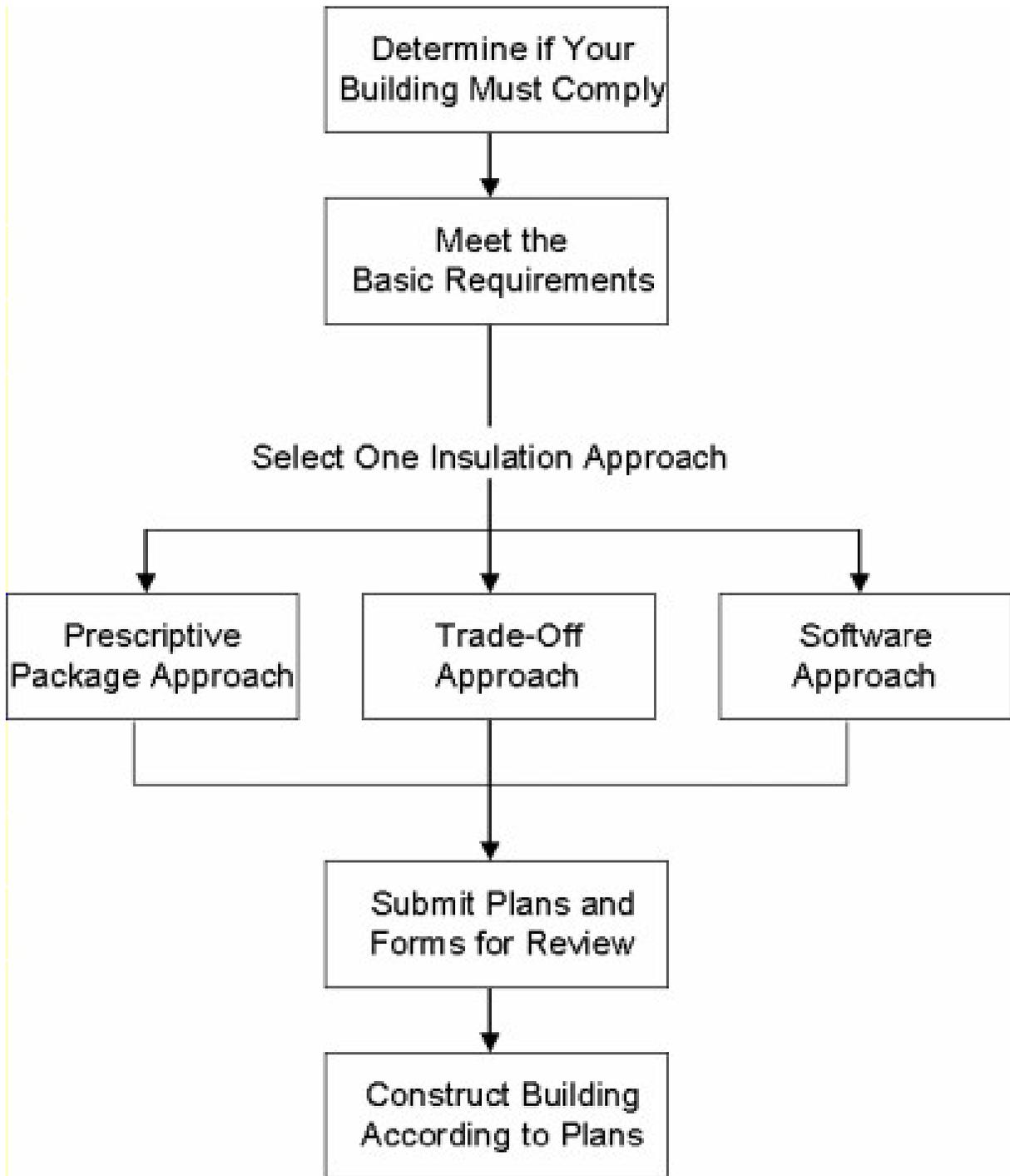


Figure 1. Compliance Path