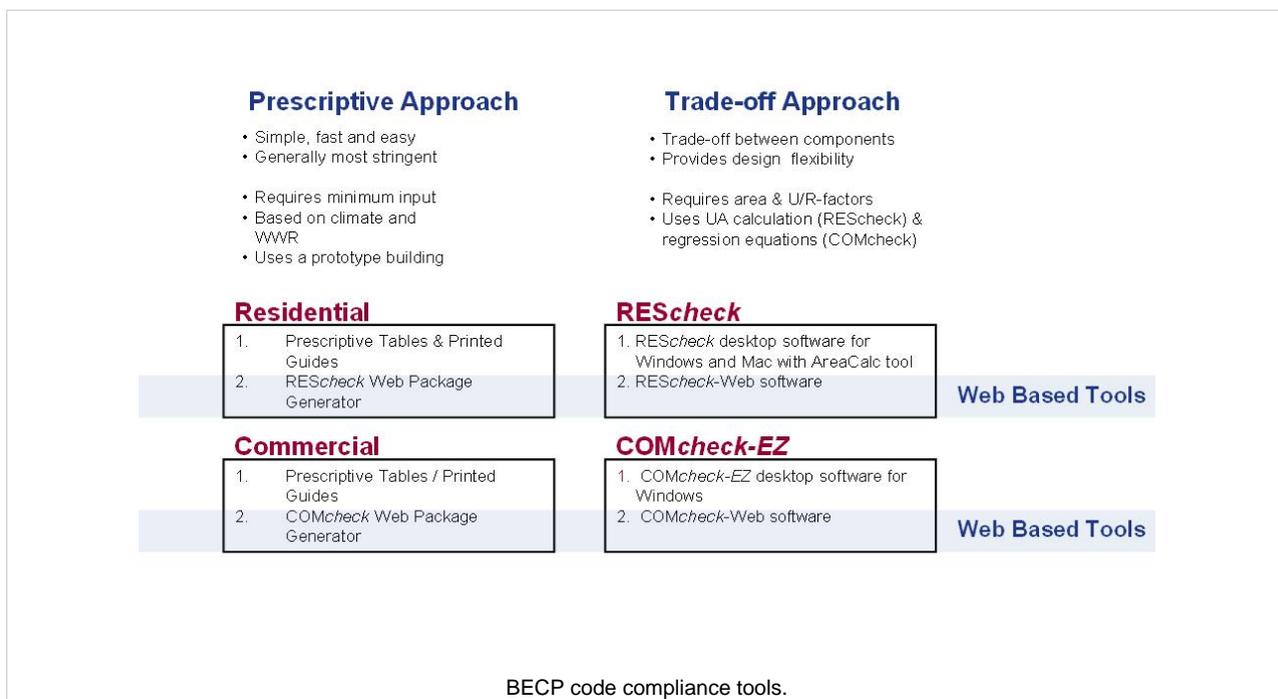
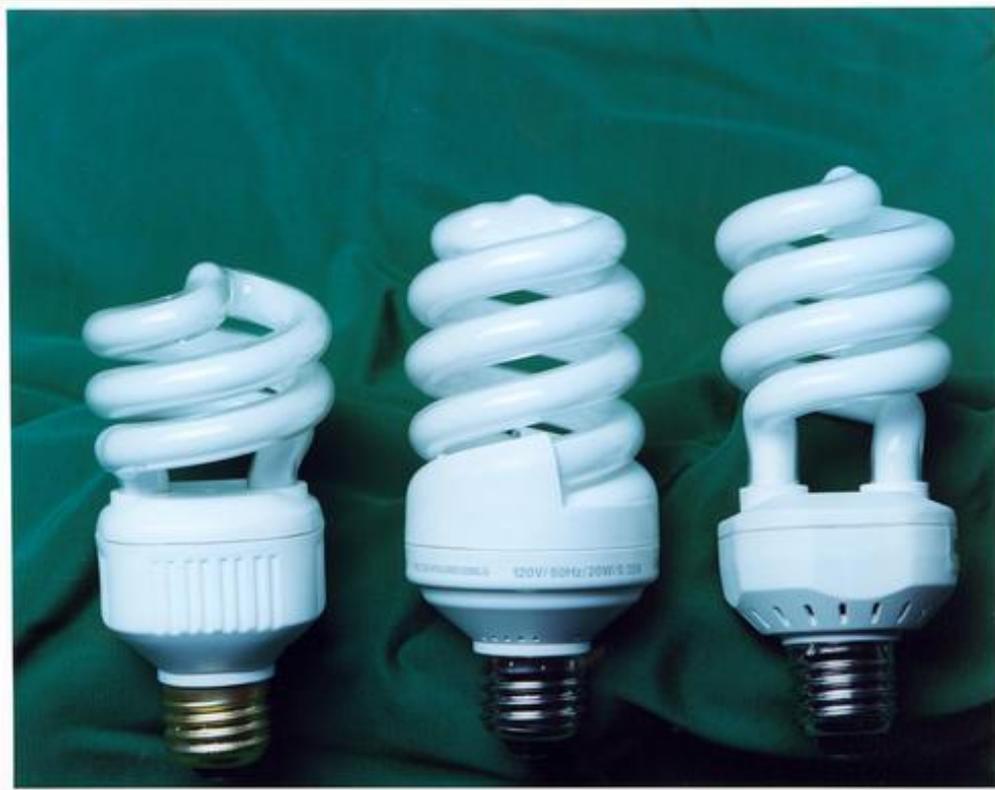


Why are There So Many Approaches for Energy Code Compliance?

Over the years, the International Energy Conservation Code (IECC)/Model Energy Code (MEC) has grown to provide different approaches of varying simplicity and flexibility to meet user needs. The simpler approaches are less flexible but are generally easier to use. Some of the approaches have considerable overlap.



A prescriptive packages approach lists the minimum R-value or maximum U-factor requirements for each building component such as windows, walls, and roofs. For lighting systems, a prescriptive approach would simply list the allowable watts per square foot for various building types. For mechanical systems and equipment, a prescriptive approach would list the minimum required equipment efficiencies. This approach is quick and easy to use, but you may find the approach somewhat restrictive because the requirements typically are based on worst-case assumptions and all requirements must be met exactly as specified. By locating the correct climate zone and looking up the appropriate table of packages, you can verify that your project meets one of the packages listed for that climate zone.



Compact fluorescent lights.

A trade-off approach allows you to trade enhanced energy efficiency in one component against decreased energy efficiency in another component. These trade-offs typically occur within major building systems-envelope, lighting, or mechanical. You can, for example, trade decreased wall efficiency (lower R-value) for increased window efficiency (lower U-factor), or increase the roof insulation and reduce or eliminate slab-edge insulation. For lighting systems, the trade-off typically would occur between proposed lighting fixture wattages in various spaces within a building. The only trade-off allowed for mechanical systems and equipment is found in Chapter 8 of the IECC. You may trade off higher cooling equipment efficiency against a requirement for an economizer. Typically, this method is less restrictive than prescriptive approaches because components that exceed the requirements can compensate for those that do not meet the code. The REScheck and COMcheck-EZ software automates this approach.

A performance approach (also known as a systems performance approach) allows you to compare your proposed design to a baseline or reference design and demonstrate that the proposed design is at least as efficient as the baseline in terms of annual energy use. This approach allows greater flexibility but requires considerably more effort. A performance approach is often necessary to obtain credit for special features, such as passive solar design, photovoltaic cells, thermal energy storage, fuel cells, and other nontraditional building components. This approach requires an annual energy analysis for the proposed design and the reference design.