# Application of Wisconsin building codes

There are two different building codes currently governing building design in the State of Wisconsin. One is Wisconsin Uniform Dwellings Code (One- and Two-Family Dwellings), or (UDC) which applies to the design of One- and Two-Family Dwellings in the State of Wisconsin. The other one is the Wisconsin Commercial Building Code which applies to the design of all kinds of buildings in the State of Wisconsin. The Professional Engineers at MiTek accept the 2000 International Residential Building Code (IRC 2000) for the UDC and the 2006 International Building Code (IBC 2006) for the Wisconsin Commercial Building Code.

The UDC is also known as Comm 020-025 of Wisconsin Administrative Code. This code specifies minimum design criteria for the design of One- and Two-Family Dwellings in the State of Wisconsin. A zone map of minimum roof snow design load is provided in the code and it is shown below (see Figure 2). The top chord live load for trusses used for residential structures (UDC) in the State of Wisconsin should be determined based on this map. To design trusses for One- and Two-Family Dwellings in the MiTek truss design engineering program, any one of the following code options could be used: “WISC/IRC00/ANSI95”, “WISC/IRC00/TPI2002”, “IRC00/TPI2002”, or IRC00/ANSI95 (see Figure 1). Either roof snow load or roof live load is acceptable as the design top chord live load on trusses with the selection of these building code options; however, the maximum Duration of Loading (DOL) which may be used for the top chord live load is 1.15. Since unbalanced top chord live load condition must be checked for the truss design, use of roof live load as top chord live load of truss may give more competitive results.

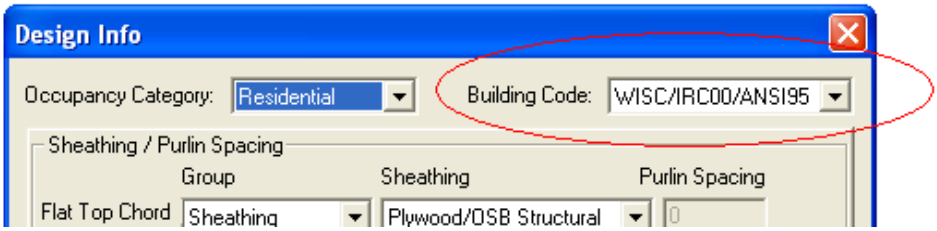


Figure 1. Building Code Selection

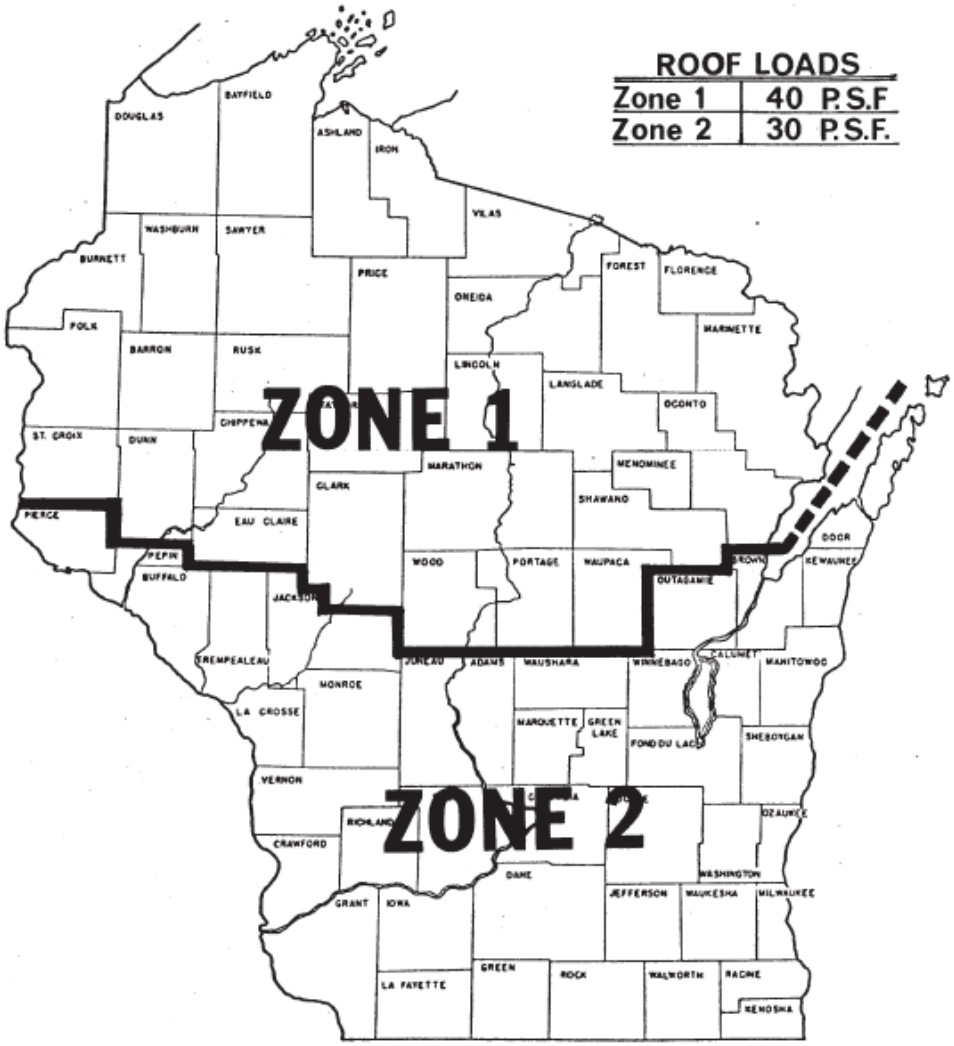


Figure 2. Zone Map of Minimum Roof Design Snow Loads

Wisconsin Commercial Building Code is also known as Comm 060-065 (after March 1, 2008 it will be Comm 060-066) of the Wisconsin Administrative Code. This code is an adoption of International Building Code with the Wisconsin State's amendments and this code may apply to the design of all kinds of buildings in the State of Wisconsin. For the design of One- or Two-Family Dwellings either one the Wisconsin Uniform Dwellings Code (One- and Two-Family Dwellings) or the Wisconsin Commercial Building Code may be used. An alternate map of ground snow zones of Wisconsin State is provided in the code and it is shown below (see Figure 3). Either one of the ground snow maps in International Building Code or the Wisconsin State alternate ground snow map in this code may be used to determine ground snow in the State of

Wisconsin. To design building with Wisconsin Commercial Building Code, the "snow" load box must be used and unbalanced roof snow load conditions must be checked. An alternate unbalanced roof snow calculation method is provided in the Wisconsin Commercial Building Code. To use alternate unbalanced roof snow load calculation, either of the following code options may be used "WISC/IBC00/ANSI95" or "WISC/IBC00/TPI2002". Since the State of Wisconsin has adapted the 2006 International Building Code and the new Wisconsin Commercial Building Code will be effective on March 1, 2008, these building code options may be replaced by "WISC/IBC06/TPI2002" in future version of the MiTek truss design engineering program.


Figure 3. Wisconsin State Alternate Ground Snow Zones Map

The building code options of "WISC/ANSI95" and "WISC/TPI2002" in the MiTek truss design engineering program are outdate code options. They are not recommended for use, especially, for the design of commercial buildings and multi-family (three or more) residential buildings.