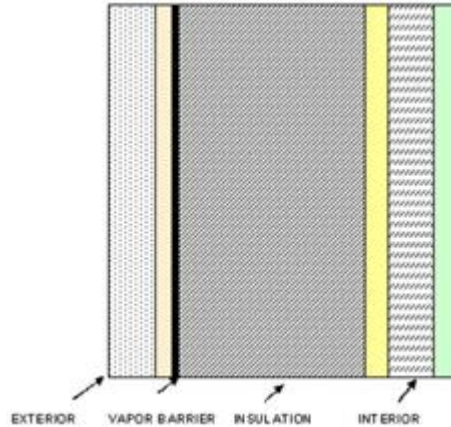


# How To Build Your Wine Cellar

When building your wine cellar, room preparation is key in controlling the environmental factors that may negatively affect the storing and aging of your wine. A properly constructed cellar will allow you to use the smallest cooling system possible.



## General guide on how to construct a wine cellar:

- All walls and ceilings must be sealed with a vapor barrier on the "warm side" of the walls. We recommend a 6 or 8 mil plastic sheeting.
- Interior walls should be insulated to a minimum of R-13. We recommend rigid foam board. All cracks should be filled with expanding spray foam.
- Walls are finished with moisture resistant green board.
- Doors should be solid wood and/or insulated. Weather stripping should be used for an air tight seal.
- Glass should be double pane with a minimum of a 1/2" gap.
- Lighting should be low wattage

### Wall & Ceiling Framing

Build wine cellar walls using standard 2x4 or 2x6 construction methods and ceiling joists following the guidelines of local and state codes in your area. The general rule for a cellar is the thicker the walls, the better the insulation factor, the better the cellar remains at a consistent temperature.

### Vapor Barrier

Vapor barrier is REQUIRED if a climate control cooling unit is installed to keep the cellar at the correct temperature. Six mil. plastic sheeting is applied to the WARM side of the cellar walls. The vapor barrier must be either applied to the outside walls and ceiling, or if it is impossible to get to the outside, then the plastic must be applied from within the cellar. The most common method is to wrap the entire interior, leaving the plastic loose in the stud cavity so the insulation can be placed between each stud. All walls and ceiling must be wrapped in plastic for a complete vapor barrier. High Density Closed Cell foam vapor barrier/insulation can also be used.

### Insulation

Insulation is REQUIRED if a climate control cooling unit is going to be used. The R factor or thickness of insulation is determined by the thickness of the walls and ceiling. For example, fiberglass insulation of R13 is designed to be used in a 2x4 wall while R19 is used in a 2x6 wall. It is important to use the correct insulation for the wall thickness.

A minimum of R13 should be applied to the interior walls of a cellar. A minimum of R19 should be applied to any walls that are an exterior wall of the home. R19-R30 is recommended in the ceiling. Standard "Fiberglass" or Rigid Foam" insulation is normally used in cellar construction. Blown in insulation is not recommended as it can settle with time. It is very important that all walls and ceiling be insulated to keep the cellar temperature as consistent as possible during

the summer and winter months. High Density Closed Cell foam vapor barrier/insulation can be used.

### **Wall & Ceiling Covering**

Generally, 1/2" plywood sheeting will be secured to all walls (after electrical rough in and insulation) to anchor any metal wine racking but it is not required with Wine Cellar Specialists wood wine racking, as the racking can be anchored to the studs through the back stabilizers of the racks. The interior wall and ceiling covering is determined by the decor theme of the cellar. Often green board or other moisture resistant material is applied, then painted (always use latex paint) to match a color theme of the cellar.

Also commonly used is redwood or mahogany (depending upon the racking materials) tongue and groove material applied to the walls and ceiling. This T&G 1x4 paneling can be the same wood species as the racking material which makes for a very uniform look throughout the cellar. Stone or granite is also used as a wall covering material. NEVER USE CEDAR due to its aroma that can taint wine.

### **Wine Cellar Doors**

If a cooling system is installed, an exterior grade (1 3/4") door must be installed as a cellar door. It is very important that weather stripping is attached to all 4 sides of the door jamb. A bottom "sweep" or threshold is also imperative. The door MUST have a very good seal to keep the cool cellar air from escaping out of the cellar.

One of the most common problems with cooling units running continually is due to not sealing the door properly. Solid core doors or doors with a full glass insert are most often used. Glass doors must have at least double-pane insulated tempered glass.

### **Wine Cellar Flooring**

Many types of flooring products are used in cellars. Most commonly used is slate, tile, marble, hardwood, cork or vinyl. NEVER USE CARPET. Carpet will mold and mildew in the cool, damp climate conditions of a cellar. As with the case of wall coverings, flooring is normally chosen to match the overall decor colors of the cellar. The flooring should be applied to a level surface. It is best not to apply base trim or moldings to the walls behind the racking as the racking must sit flush with the wall.

### **Wine Cellar Lighting**

Lighting a wine cellar is an important part of the overall cellar decor. "Air Lock" recessed ceiling can lights are the most popular. These should be put on dimmer switches to control brightness. In most cases, these are used as the main lights within the cellar. Also popular are various display lights to accent different areas of the cellar. Display led "ribbon" lighting is commonly used above any display row of bottle racking.

Different types of spotlights are used to highlight picture openings, table areas, or large format display bottles. It is recommended that all lighting be on a timer system so they can't be left on for long periods of time. Lights cause excess heat and will cause the cooling equipment to over work itself. The use of LED lighting is becoming more popular. Led lighting will emit little to no heat in the wine cellar.

### **Wine Cellar Climate Control**

If a climate controlled cellar is desired, provide cooling equipment to properly keep the cellar at a temperature of about 55-58 degrees and humidity of 50-70%. Contact a Wine Cellar Specialist to help you determine the size and type of cooling equipment needed for your application.

### **Wine Cellar Racking**

Standard materials include All Heart Redwood, Premium Redwood, Mahogany or Alder. All of these are woods that are very resistant to rot in the cool, damp environment of a cellar. They can be left unfinished or lacquered or stained and lacquered. Do not try to stain or lacquer racking yourself. If your stain or lacquer is highly odorous it can damage your wines. Wine cellar manufacturers know what will work for wine cellar racking. Another option is reclaimed wine barrel wine racks. These are made from recycled oak wine barrels. Clients usually choose one wood species or options over the others due to matching decor and colors in the cellar design.

**If you have any questions, please contact Wine Cellar Specialists at (972) 454-0480.**