



## WINE CELLAR “ROOM PREP” CONSTRUCTION GUIDE

### **Step 1 Wall and Ceiling Framing:**

Build the wine cellar walls using standard 2 x 4 or 2 x 6 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.

### **Step 2 Closed Cell Foam:**

Spraying closed cell foam is the preferred way to properly install and vapor barrier a wine cellar space. This is an all-in-one solution to insulate and at the same time keep the proper vapor seal on all walls, ceiling and floor. The closed cell foam starts as a liquid to penetrate even the hard to reach areas then quickly harden into a solid foam. If closed cell foam is not available then Steps 2A & 2B are the alternative methods to prepare the cellar walls, ceiling and floor.

### **Step 2A Vapor Barrier:**

Vapor barrier is REQUIRED if a climate control cooling unit is installed to keep the cellar at the correct temperature. 6 mill plastic sheeting is applied to the HOT 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.

### **Step 2B 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, R13 fiberglass insulation is designed to be used in a 2 x 4 wall. R19 is used in a 2 x 6 wall. When building a cellar it is important to use the correct insulation for the wall thickness. A minimum of R13 should be applied to the walls of a cellar. R19-R30 is recommended in the ceiling. Standard “Fiberglass” or “Rigid Foam” insulation is normally used in cellar construction, or in some cases, blown in insulation is used. 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.

### **Step 3 Wall & Ceiling Coverings:**

The interior wall and ceiling coverings are determined by the decor theme of the cellar. Often time’s drywall (green board) is applied, and then painted (always use latex paint) to match a color theme of the cellar. Very commonly used is wood paneling that matches the wood species of the wine racking material. This makes for a very uniform look throughout the cellar. Reclaimed wine barrel materials, stone or granite are also used as a wall covering material.

#### **Step 4 Cellar Doors:**

If a cooling system is installed, an exterior grade (1 ¾") 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 recommended. 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-tempered glass. At Rhino Wine Cellars we offer several doors styles that are constructed for wine cellars that make a beautiful décor statement to any cellar.

#### **Step 5 Flooring:**

All types of flooring are used in cellars. Most commonly used is slate, tile, marble, 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.

#### **Step 6 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. Rhino Wine Cellars offers display LED lighting that is specially designed and built to fit into the display angle of individual 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.

#### **Step 7 Climate Controlled Systems:**

If a climate-controlled cellar is required, Rhino Wine Cellars can provide cooling equipment to properly keep the cellar at a temperature of about 55-60 degrees and humidity of 50-70%. This is often the most misunderstood but most important part of the wine cellar building process. There are several types of units. "Through-The-Wall" Systems, "Split Systems-Ducted", Split System-Ductless, Water Cooled Systems.

We also have optional humidity controls systems to maintain the proper 50-75% 12 months of the year. This is especially important in dry desert climates and high mountain regions. Consult with a Rhino Cellar Consultant to assist with sizing the correct cooling unit, and to get installation and power supply instructions. Passive cellars are rooms that are built below ground level. The natural ground temperature will be consistent at about 55 degrees to protect your wine for long-term storage and no cooling equipment is required.

#### **Step 8 Wine Racking Systems:**

When deciding on a wood for wine racking choose a species that is very resistant to rot in the cool, damp environment of a cellar. Common woods for building a cellar are Western Red Cedar, Redwood, Mahogany, Cypress, Oak, Walnut, and Knotty Alder. Clients usually choose one over the other due to matching decor colors in the cellar design. Rhino Wine Cellars will send wood samples at no charge. The racking design ideas are endless. Rhino Wine Cellars has a design department ready to give you CAD layouts to customize the racking system to match your exact storage needs.

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