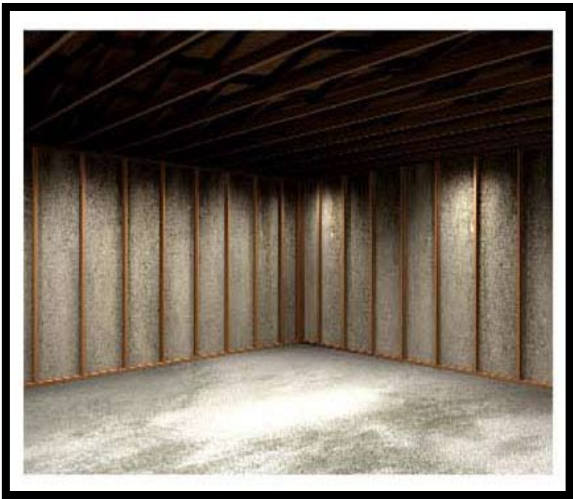


Instructions for Wine Cellar Construction

Step 1: Location of the Wine Cellar

The question most often asked is, “Can I put a wine cellar anywhere in the home?” The answer is yes, but the location that you choose will have a future impact on the cost of maintaining your cellar. A wine cellar should be placed in the coolest and most humid place in your home. The closer you are to the 55-58 degree (F) temperature and 55-75% humidity that your wine will need, the smaller size cooling unit you will need and the lower the overall cost will be. The heat gain calculation for your wine cellar takes into consideration the surrounding environment that will affect the wine cellar. If the surrounding environment has an average yearly temperature of 85 degrees, compared to an average temperature of 65 degrees, then you will have to purchase a larger cooling unit in order to maintain proper conditions. A dry environment will also require a more frequent introduction of humidity.

Step 2: Installing Studs



If this is new construction you will need to stud the space to frame out your wine cellar. Start by sealing the concrete foundation walls prior to installing studs. Then use either 2x4 or 2x6 construction. The 2x6 construction is used when you want to increase the insulation value in order to minimize cooling unit size and energy consumption. This is similar to adding additional insulation to your home in order to minimize your monthly utility bills. You should obtain a permit and follow all local, state, and national building codes when building your wine cellar.

Step 3: Soffits in a Wine Cellar



If you build a soffit to cover ducting, piping, or other obstructions, it is important to note that the lighting installed in the soffit should be placed far enough away so that it does not interfere with the finished racking and/or ducting depth, including depth of crown molding. You will want to ask for the final depth of your racking including the crown molding at this location and then make sure to allow for the size of the ring on the light fixture as well. A rule of thumb is to leave a 1" gap from the front of the crown molding to the closest edge of the ring on the can light. You also want to make sure to use IC can lights so you can insulate around them.

Step 4: Rough-in Refrigeration - Air Handler



If you are purchasing a ducted Air Handler you will need to run the ducting and line set at this stage. The ducting will be in the wine cellar, running to the air handler that is normally placed in a mechanical room. The line set is then run from the air handler location to the condenser location, standard condensers are located outdoors, but an indoor option is available. You will need to install a drain line and electric minimally, and a water line, line voltage, and control wire if humidifier, dehumidifier, or alarm options are added.

Step 5: Installing an opening for a self-contained cooling unit



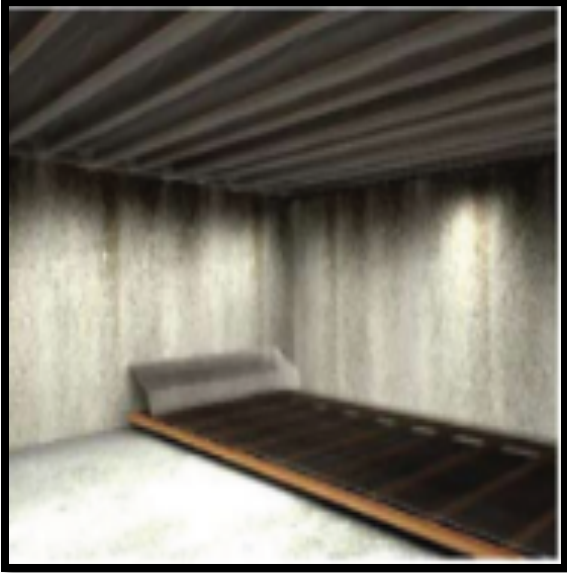
If you plan to utilize a self-contained cooling unit you will need to make a hole in the wall adequately sized for the unit. You will also need to run an electrical outlet near the space and it may need to be on the inside or outside of the unit based on the unit you decide to purchase. Many of these units also require a drain line, so you will need to allow for a location for a condensate drain. These units also do not have the ability to add humidity to a wine cellar so you may need to allow for a 110V electrical outlet for a humidifier in the wine cellar. *Exhaust side of unit must be 2x size of cellar and adequately be able to dissipate the heat.

Step 6: Select your Insulation and Vapor Barrier



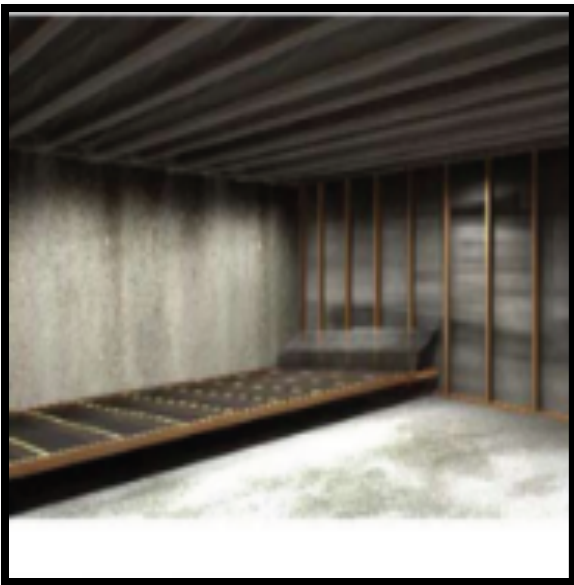
There are two common methods for wine cellar insulation and vapor barriers. Spray foam or 6 mil vapor barrier and fiberglass batts. Spray foam is normally more expensive, but it will prevent the possibility of a puncture mark in your vapor barrier (as a 6 mil vapor barrier is not necessary when using spray foam) caused by someone inserting screws, running wire, plumbing, etc. into or through the wall from outside the wine cellar. With non-shrinking closed cell spray foam the screw will not compromise the enclosure and the foam will expand to fill all the crevices to ensure a tight seal.

Step 7: Vapor barrier for new construction



If this is new construction and you are not going to use spray foam, then it is recommended that you install a 6 mil vapor barrier on the back side of your wall studs before lifting them into position. You will also need to wrap your ceiling joists as shown.

Step 8: Wrapping walls and filling holes



Make sure to leave excess vapor barrier at the corners so that you can wrap it, overlap the seams and tuck tape (not duct tape) them shut. Then fill all holes in studs and joists with fire rated penetration sealant to reduce air movement.

Step 9: Insulation and Vapor Barrier



After the vapor barrier has been installed you will need to put insulation in the stud and joist cavities. The most common insulation used is fiberglass batts. In a 2x4 wall cavity, using fiberglass will provide you with an R-13 insulation value. In a 2x6 wall, fiberglass will provide you with an R-19 insulation value. The entire cavity must be “fluffed” with insulation leaving no air filled cavities.

Step 10: Electrical outlet placement



Outlets in a wine cellar are best placed in the dead spaces at the corners where your racks come together. If you place the outlet outside of this area it is possible it will be obstructed by one of the wine rack posts. It is important to follow your local building code for outlet placement and that will supersede any recommendations made for outlet placement in your cellar.

Step 11: Outlet placement for high reveal lighting



It is not necessary to place an electrical outlet in the area where a high reveal racking is located in order to plug in your lighting. The cord will be able to reach down to the outlet placed in the dead space as far as 6 feet away. If you would prefer to have the outlet located in this area for ease of access you will need to inform your design consultant to locate the outlets accordingly when they do the outlet placement design for you. It is recommended that outlets for high reveals and other accent lighting, such as for archways, be placed on a switch, separate from any existing lights

Step 12: Wall Coverings



Once you have installed the studs, vapor barrier, insulation, and electrical outlets the next step will be to cover the walls and ceiling. You will need to utilize material that is resistant to the high humidity conditions that will be present in your cellar and based on that criteria the most common choice for wall and ceiling coverings is water resistant drywall (commonly referred to as green board). This is the same drywall that is utilized in bathrooms and kitchens of most homes and is therefore readily available. It is specifically recommended that the green board be screwed into the walls and ceiling of your wine cellar.

Step 13: Finishing the Drywall



The base molding will be attached to the front of the racking, **which means it is important that you run the drywall all the way to the floor and do not allow any gaps. No molding should be installed on the wall so that the back of the rack remains flush with the wall.**

For personal assistance or for an onsite consultation call

Pam Kopp 630-746-7278