

Vapor Retarders/Cathedral Ceilings

Nu-Wool[®] Co., Inc. advises contractors that a vapor retarder is not necessary with the Nu-Wool[®] WALLSEAL[®] system in walls using gypsum wallboard. This is due to the product's unique ability to resist air movement, and therefore, the transmission of moisture. Air movement is the primary mechanism for moisture transfer. In fact, air accounts for 98% of all vapor movement in insulated cavities. Clearly, stopping air movement is the fundamental issue that builders and insulators should address. Vapor retarders are not necessary or even desirable in all buildings or in all climates, because they can trap moisture. ASHRAE standards warn against the use of vapor retarders in any structure in warm climates. There is also danger with moisture problems in cold climates caused by moisture being driven into the wall in the summer. Vapor retarders are installed on the interior in cold climates to control moisture movement from inside out during the heating season, however those same vapor retarders trap the moisture contained in solar driven, warm summer air.

How does Nu-Wool[®] WALLSEAL[®] stop vapor movement?

The installed density of Nu-Wool[®] WALLSEAL[®] far exceeds the installed density of fiberglass insulation products. This increased mass reduces the flow of water vapor into the insulated assembly, which is the main function of a vapor retarder. Walls insulated with Nu-Wool[®] WALLSEAL[®] are effectively a vapor retarder when used with ordinary paint on gypsum wallboard. Moisture in the form of water vapor moves both directions through a wall – from the inside to the outside in winter, and from the outside to the inside in summer. Regardless of the season, the mass of Nu-Wool[®] WALLSEAL[®] greatly reduces the movement of water vapor through the wall, and its cellular structure manages any small amounts of moisture that do move into the wall. All of this is accomplished without losing any insulating properties.

Vapor Retarders in Cold Climates?

Research in Canada supports the position that vapor retarders can do more harm than good. While they may work well in cold Canadian winters, they can cause serious problems in humid periods during the summer. The Canadian research states that designers ignore the part air conditioning plays in this problem. When the air conditioning is running on a hot humid day, even in Canada, the temperature of the poly vapor retarder on the inside of the wall reaches the dew point. Moisture driven into the wall condenses on the back of the poly material. The Canadian research says that a designer should rely on the painted surface of the drywall as an effective vapor retarder. Even ordinary latex paints perform adequately for stopping moisture. But remember, the bulk of the moisture that moves into an assembly is driven by air. Nu-Wool Insulation is the mechanism for controlling this part of moisture movement. Nu-Wool Co., Inc. does not recommend the use of vapor retarders with gypsum wallboard even in cold climates.

Nu-Wool[®] Guarantee

Nu-Wool[®] Co., Inc. is the oldest manufacturer of cellulose insulation in the world. Nu-Wool[®] Co., Inc. guarantees the proper application of Nu-Wool[®] WALLSEAL[®] without a vapor retarder in buildings with walls using gypsum wallboard and normal relative humidity levels. Vapor retarders are still necessary in buildings with high relative humidity levels, such as those with indoor pools. Many university research studies and building scientists have concluded that the vapor retarder provisions in building codes should be eliminated. Nu-Wool[®] Co., Inc., along with the Department of Energy and others, is involved in work with the International Code Council to promote a change in the building codes relating to vapor retarders.

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