

Ask Jon Eakes

Vapour barrier paint -- it does exist -- it does work.

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Kyle from Fort Erie, Ontario, has a vapour barrier question. "We have a house, 80-90 years old, with no insulation in the attic. The house is a 1-1/2 story building with sloped ceilings on the second floor to the outside walls. Our ceilings are plaster. Can we lay insulation in the attic without adding a vapour barrier? If not, what is the best way to do so without a major renovation?"

This is really a big topic and I refer you to many database entries that can help you to understand both Vapour Barriers and Air Barriers. Here, I want to give you some technical details which will help out Kyle directly.

Yes you need a vapour barrier if you add insulation. But just what is a vapour barrier? And maybe you already have one without knowing it.

According to the building code there are two types of vapour barriers: Type 1 : that have to really restrict the passage of moisture in a major way, defined as not allowing more than 15 ng/(P.s.m²) (metric) or 0.26 Perms (Imperial) of moisture passage. These are required where there is cladding on the house that doesn't breath well. Type 2 : the common vapour barrier for ordinary conditions is defined as not allowing more than 60 ng/(P.s.m²) or 1 perm after ageing, of moisture passage. That's the technical stuff, but it is easy to remember that less than 1 Perm is a functioning vapour barrier.

Now the application of that is very interesting. Plastic and aluminium sheets are well under 1 Perm. Two coats of a good oil paint will provide a vapour barrier of less than 1 Perm as well. There are even some latex vapour barrier primers that will do the job. It is funny that the paint companies themselves back off from promising that it will do the job, only because they are not really familiar with the building code, but their technical specifications show that they have been tested to less than 1 Perm, making them a legitimate Type 2 vapour barrier.

I used latex vapour barrier paint years ago, then lost track of it because not many people used it so it disappeared from most paint stores. Thanks to Roger Williams from Hotmail Canada who answered my request to find it again. ICI Ultra Hide Vapour-Barrier Primer Sealer (Product code 1060-1200) is available at Glidden and Colour Your World stores in Canada, and this does satisfy the building code for vapour barriers as it is tested to having a permanence, if you apply it according to instructions, of less than 1 Perm -- 0.6 Perms to be exact. The problem is that they don't market it well and the guys in the store don't know what you are talking about so they usually force you to buy a minimum order of 4 gallons at a time. In addition, although it does create the vapour barrier, it is a primer that has very little hiding power so it doesn't always advance a paint job much.

The company Zinsser makes a shellac based white primer called BIN that is primarily used for hiding difficult stains, but it too rates in at less than 1 perm and this company has recently added the vapour barrier claim to their packaging. Although more expensive per gallon, you can easily find this product in most paint departments.

However Kyle, with that 80 year old house, don't bother. I can almost guarantee you that there are at least 5 coats of oil paint on that plaster and lathe ceiling. You already have a very good vapour barrier as it takes only 2 coats of standard oil paint to create a vapour barrier. But don't forget to read up on Air Barriers. Holes into the attic can cause lots of problems after you add insulation because they allow large quantities of warm moist air into the attic. The photo above shows how the plastic sheet is not just a plastic sheet in a newly constructed ceiling, but is sealed air tight around all the penetrations creating an air barrier as well. In that old house, there is a lot of work to be done to seal up around the plumbing stack, the electrical outlets, etc.

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