What are my options for an internal wall finish?

We talk a lot about insulation, R-values and heat loss in your walls. In addition to insulation, most walls will be “finished” on the interior side. As a quick review of the purpose of interior finishes -- first, finish materials are generally non-combustible, which provides some protection from the spread of a house fire. They also cover up the insulation and electrical and plumbing systems, which, while necessary, aren’t always attractive. Finally, an interior finish allows people to decorate with paint or hang pictures.

The most common interior wall finish is gypsum wallboard, also known as drywall or sheetrock, which consists of a noncombustible core made from gypsum and paper surfaces on either side. Gypsum is a mineral that is both naturally occurring and synthetically created. Gypsum can be harvested from a quarry, then crushed into a fine powder, heated to release some of the water, and then processed into wallboard and other building products.

Synthetic gypsum mainly comes from coal-fired electrical plants with scrubbers in place to remove sulfur dioxide from the gases produced by the coal fires. The scrubbers contain limestone, which absorbs and combines with sulfur dioxide to form gypsum - which then goes to the manufacturing plant.

Gypsum wallboard is popular as an interior finish for a number of reasons. One, the final product is resistant to fire because the gypsum core consists of 20% chemically combined water. In a fire this water is released as steam, which helps to prevent the fire from spreading. Two, it is cheap compared to other options. The panels come in a variety of lengths (8, 10, or 12 feet) and widths (4 feet and 4.5 feet).

Finally it’s easy to install - panels can be cut to custom sizes with a utility knife or saw. They can be attached to a backing using adhesives, screws, nails or staples. Separate sheets can be joined with a compound that hides the joint.

Some disadvantages to drywall are that it is somewhat fragile to transport and work with (after all, the sides are made of paper). It also isn’t the most durable material when exposed to moisture in a damp environment, such as a bathroom (although there is a special, more expensive gypsum product called greenboard that is more tolerant to water). For better or worse, each wall looks the same, covered in a smoothly painted board.

There are a variety of other ways to finish walls. Wood can be used as planking, panels or boards. Tiles, common in kitchens and bathrooms, are available in many different materials: porcelain, ceramic, glass, mosaic, and brick.

Some homes use stone in a random pattern, such as marble, slate or granite. Similarly, adobe walls are made of clay, sand and straw and can be covered with a plaster of clay or lime. There are a variety of plasters that can be sprayed onto a wall.

Many homes use different wall finishes in different areas. For instance, a stone finish in the entryway and living room, tile in the kitchen and bathroom and wallboard in the rest of the home. Alternatively, builders might add trim details such as tile or cabinets on top of a wall finish to provide...
some variety and contrast in different rooms. As long as the wall finish is approved by building code, builders can be creative and use different finishes for a unique look.