

# Earthen Floor Recipe from Sustainable Nations



## **Preparation**

Essential to any work is good preparation. Ensure your work site is set up to be easy to use, with screening table, mixing area, water source, and an easy path of transport from the materials to the floor. Remember that earthen construction takes a LOT of earth. Have a large pile of clay soil, a large pile of sand, and pre-chopped bagged straw prepared.

**Mask Everything! Mud, particularly clay, can be difficult to scrub off.**

**Level** the floor base and snap chalk lines for the finish floor height. The base should be about six inches below the finished floor height.

Some choose to use a vapor barrier here. If you are choosing to use a vapor barrier, place a layer of sand below and above the barrier to protect it from puncture.

## **For a conventional adobe floor base layer, appropriate for dry climates**

Lay down  $\frac{3}{4}$  inch gravel 4 inches deep as a capillary break.

Then lay the straw/clay adobe: 25-35% clay soil, 65-75% sandy/gravelly soil, and a good amount of chopped straw.

This straw rich base layer goes on 4-6 inches deep

Level this, let dry. If mold is a concern, use 1 C borax or lime to every wheelbarrow.

We have had great success with use of Lime.

Then level and screed.

### **For a quick-drying base layer, for diverse climates**

Use road base (a purchase-able mix made of clay, sand, and rock).

Lay the first layer of road base, about 2 inches thick, and slightly dampen it. Compact this layer. Continue this process, tamping 2 inch layer by 2 inch layer, until about an inch below your finish height. If you are installing in floor radiant heating, this is the layer it is set in. Level the floor.

### **Final Layer**

This top layer is made up of approximately 25% clay and 75% sandy soil, screened through ¼ inch screen. Some use 1/8 " screen fineness. Every type of soil is different, so make sure you test it out! Trowel on smooth, working your way out the door! Some people enjoy the look of straw showing through the floor. In this case, add straw as well. The next day, press the floor with a steel trowel, and burnish.

Repair any cracks with more adobe mix as the floor dries.

Depending upon the technique utilized and your climate, these floors can take a week to a month to dry completely.

A clay alis (using colored or white kaolin clay), with pigment washes (see natural plaster information) can be used to tint your floor. Mica, chopped straw, or other pretty additives can be added.

### **Sealing your Floor**

You **MUST** wait until the floor is completely dry to seal. I have made the mistake of sealing before completely dry, and it quite a piece of work to fix.

Sealants are made of oils and waxes. There are many products to choose from.

The Bioshield company produces natural floor oil. Many choose to use boiled linseed oil mixed with mineral spirits (don't thin the linseed oil more than 25%). It takes about a gallon per 100 ft sq.

Apply these with either a brush and rag or a paint roller, sparingly. Do not use too much too fast or it will not soak in. Apply 2-3 coats of oil, to soak into the adobe by ¼ inch.

Finish wax can be beeswax, caranuba, or the hard wax impregnation from the Bioshield company.

Heat the wax, and apply in 1-3 successive thin coats. Buff out.

### **Repair Issues and Maintenance**

Over time, the floors may need re-oiling. To do this, wash and scrub floor with water two to three times to remove most dust and dirt. Lightly sand the floor with fine sand pads to open pores of oil. Do not sand too hard unless you drastically want to change surface finish. The finish can be damaged by sanding too much. If lightly sanded, just reapply hard oil wax impregnation. If sanded extra, or too much, reapply Hard Oil Wax.

Repairs of scratches: just rub on little amounts of Hard Wax Impregnation Oil. By blending the existing oil with the impregnation oil, the scratches can be filled in and eliminated.

Repairs of holes: if small fill with wax to match color, you can use crayons melted with a small lighter. Then drip this into hole or dent. Fill above the floor surface and shave off excess with razor blade then apply wax impregnation.

