



Natural Aging of your Copper DecoRoof

As soon as copper is exposed to air, it begins to age and change color. This is both *normal* and *useful*, since the natural patina formed over time serves as a protective coating for the raw copper underneath. This aging process may appear to have stopped after only a few years, but it actually continues for an average of 70 years - a relatively short time in the centuries of performance that many copper roofs have enjoyed throughout the world.

The initial aging process is accompanied by a series of changes in surface color.

- 1.) **Raw Copper Color (The “New Penny” look):** Because of very small quantities of naturally occurring impurities found in copper, this color can vary from one lot of pure copper to another, but is generally a very bright, shiny “new penny” look.
- 2.) **Shades of reddish-brown:** This color will gradually get darker with time, and is caused by the formation of cuprous oxides on the surface of the copper.
- 3.) **Deep bronze to bronze-black (Statuary finish):** This is the color that you have seen on many statues made of bronze. The color is caused by cuprous oxides and copper sulfides. Many find this to be a desirable color.
- 4.) **Greenish-brown, gradually getting lighter:** This is the stage where the cuprous oxides and copper sulfides begin to change to various sulfates, eventually resulting in a true patina finish.
- 5.) **Green or bluish-green (“Verde Antique”):** This is the stage that your copper will have a completely blue-green shade, similar to that found on the Statue of Liberty as an example. This is almost purely copper sulfate, and will protect the copper for years to come. If it gets scratched, it will form new patina over the scratch relatively quickly.

All aging is accelerated by factors such as moisture and atmospheric pollution, and is retarded by arid climates and clean air. Moreover, the aging may not be uniform over the entire surface of the roof. Orientation to the wind and elements such as rain, sun and shadows may all cause certain areas or sections of your roof to age at different rates, or in a manner differing from another portion of the roof. In time, this all tends to even out.

In coastal or ocean-isle areas and in industrial areas, the full blue-green patina stage may be reached in as little as three years. In desert environments, this stage may never be reached, and the statuary finish may be as far as the aging process gets. Except for the aesthetics, it really doesn't matter. Both finishes serve to protect and beautify the native metal.

It is possible to accelerate the aging process - using commercially available “patina solutions”, but this procedure is extremely chancy and the results unpredictable. All too often the surface minerals formed by the accelerant are much softer than the naturally occurring minerals, and may even bleach out in sunlight, and even wash away during a rainstorm.