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MADISON 5. WISCONSIN

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ALUMINUM PAINTS

Aluminum bronze powder or aluminum paste, with almost any drying oil or varnish liquid as the vehicle, serves admirably as a pigment for paint. Such paints are characterized by remarkably high opacity (1 coat will hide the underlying surface completely) and by great effectiveness in preventing the passage of moisture. These properties are due to the fact that aluminum pigment is made up of very thin, highly polished flakes that are not thoroughly moistened by paint or varnish liquids. As a result, when aluminum paint is applied, the aluminum flakes "leaf," that is, orient themselves in parallel layers, the top layer being an almost continuous film of aluminum.

Some of the liquids that have been used for vehicles for aluminum paints are:

- Gloss oil
- Shellac
- Nitrocellulose lacquer
- Asphalt paint or pitch paint
- Interior varnish
- Spar varnish
- Kettle-bodied linseed oil
- Boiled linseed oil

Of these, gloss oil is the cheapest. It dries rapidly, but is not durable if the coating comes in direct contact with excessive moisture. Shellac and nitrocellulose lacquer are also fast drying and more durable than gloss oil, though not satisfactory for use out of doors.

Asphalt and pitch paints alone are very effective coatings for preventing moisture absorption, but they do not withstand constant exposure to sunlight. When they are mixed with aluminum flake, an exceedingly effective and more durable coating is obtained, though it is still inferior in

durability to paints made with spar varnish or treated linseed oil. The flakes of the aluminum powder usually obscure the black color of such liquids.

Aluminum paint made with interior varnish, which is high in resin content, is used particularly for preventing "bleeding" of undercoatings and has even been recommended for painting over creosote-treated wood. Aluminum paints made with long-oil spar varnish or kettle-bodied linseed oil are very durable and are especially serviceable for exterior work. Where neither of these liquids can be obtained, ordinary boiled linseed oil may be substituted, though the aluminum paint made with it is too thin for convenient application.

To mix aluminum paint of either "standard varnish" or standard lining grade, add 1-1/2 to 2 pounds of aluminum bronze powder, or the equivalent in aluminum paste, to 1 gallon of liquid, and stir the aluminum thoroughly into the liquid with a paddle. It is best to mix the paint just before use, because after standing the aluminum flakes tend not to "leaf" as effectively as they do immediately after the paint has been mixed. There are, however, some ready-mixed aluminum paints on the market.

Two coats or more of aluminum paint should be applied when effective protection against changes in moisture content of the coated wood is the principal objective. One coat is usually very much less effective than two coats.

The color of aluminum paint may be altered by incorporating small amounts of suitable tinting pigments, but the metallic luster of the aluminum is usually retained. The addition of material quantities of granular pigments interferes with the formation of the coating of aluminum flakes and thereby decreases its effectiveness as a barrier against the movement of moisture. The best way to use aluminum paints for making material moisture-proof and yet obtain the color and sheen of ordinary paints and enamels is to apply two coats of plain aluminum paint followed by one or two coats of paint or enamel that will produce the desired appearance. Aluminum paints prepared in the way described afford a satisfactory foundation for the application of customary finishes.