

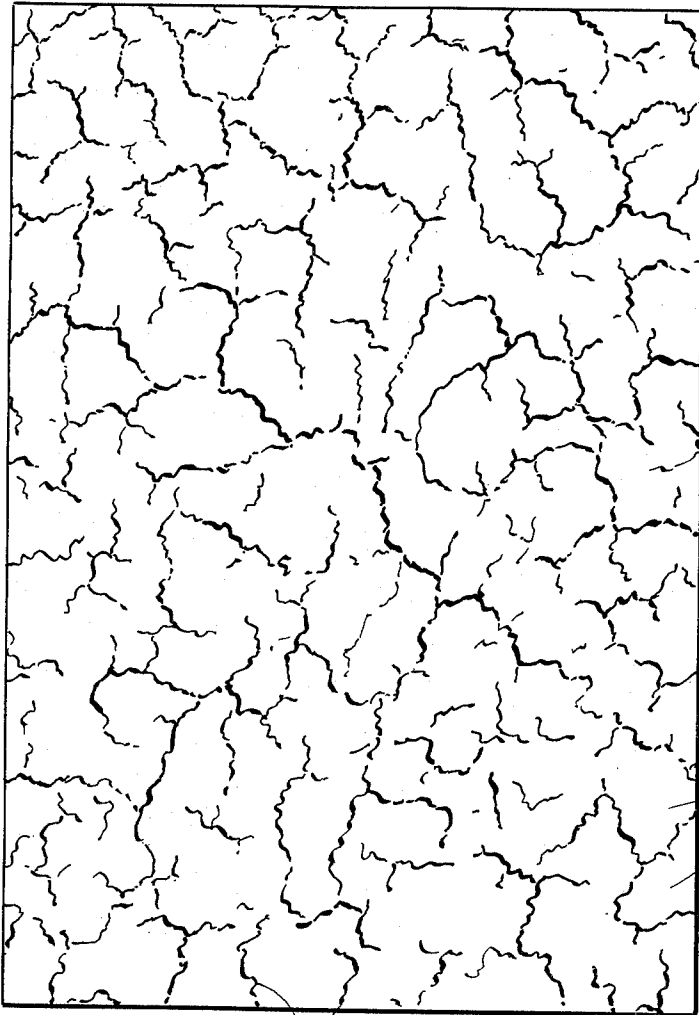
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METHOD OF DECORATING A SURFACE WITH A CRACKLE FINISH

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METHOD OF DECORATING A SURFACE WITH A CRACKLE FINISH

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This invention relates, as indicated, to a novel method of obtaining a decorative surface and to the articles produced by such method. More particularly, this invention is concerned with a special type of surface decorating means having, in a general way, the appearance characteristics of a crackle finish, but which is characterized in that it may be applied easily by skilled as well as unskilled painters. Thus the adaptability to application by the home owner may be readily appreciated.

Crackle finishes, characterized by a discontinuous resinous film overlying a continuous film, are to be distinguished from wrinkle finishes which are characterized by a pattern resulting from the drying characteristics of a single film. As such, crackle finishes are well known. For example, the combination of two dissimilar coatings and a stencil has been used to achieve an embossed surface by preparing the surface with a layer of plastic material readily soluble in water and then rendering the so applied layer at the part or parts thereof in accordance with a predetermined desired design non-soluble but changing or impregnating such part or parts with a non-soluble material after which the remaining parts are removed with water (Haberstroh, U. S. Patent 397,054, dated January 29, 1889). Ten years later Goldsmith, U. S. Patent 631,295, dated August 22, 1899, taught the use of a pyroxylin varnish recoated before drying with another layer of pyroxylin varnish to obtain a mottled surface. Returning again to dissimilar coatings, Guenot and Maurice, U. S. Patent 1,561,324, dated November 10, 1935, achieved a decorative effect by using a coating of an animal varnish (shellac) applied over a vegetable varnish (copal), they having discovered a marked absence of any tendency of these two varnishes to mix or coalesce. Whyte, U. S. Patent 1,600,156, dated September 14, 1926, discloses still another method of obtaining a decorated surface from plural coatings involving applying a specially prepared "separating paint" to a dried oleoresinous film. Gold, bronze or other such metallic pigment was then rubbed on the surface to give a decorative effect, the powder adhering preferentially to the slower drying base coat. Egelhoff, U. S. Patent 1,600,723, dated September 21, 1926, and reissued October 4, 1927, as Re. No. 16,760, produced a "crackle finish" from two coats having different drying characteristics in that the undercoat dries slower than the outer coat, thereby causing the top coat to slip on the undercoat so as to produce checks or cracks giving a pleasing pattern. The base coat was an oleoresinous varnish and the top coat a rapidly drying suspension of lead carbonate or ordinary white lead in volatile solvents.

Simon, 1,711,330, dated April 30, 1929, produced decorated surface from a larger number of layers than heretofore described achieving some of the pattern through mechanical daubing of color patches on a background and subsequently applying a crackle enamel over the composite. Neuhaus, 2,021,152, dated November 13, 1935, discloses obtaining a two-tone metallic effect from a composite base coat of a non-crackling or non-

porous lacquer and a crackle or porous lacquer applied thereover. This composite is then sprayed with a dyed metallic lacquer. The portion of the top coat overlying the non-porous portions dries to a metallic color while the position of the top coat overlying the porous crackle finish loses its dye component through absorption, leaving the undyed metal as the pigment in the lacquer film and thereby yielding a two-tone metallic effect. Pritzker, U. S. Patents 2,467,228 and 2,467,229, dated April 12, 1949, utilized a base coat which when dry exerted a repellent effect on the top coat preventing the top coat from flowing or forming a continuous film as ordinary coatings will do, exposing certain sections, areas or parts of the first coat.

Thus, the prior art has recognized the phenomena of crackle finishes utilizing a plurality of coatings to achieve various decorative results. The present invention provides a new method of obtaining a highly decorative surface which although producing a similar visual effect to a crackle finish is not regarded as strictly a "crackle finish." The previous crackle finishes formulated in accordance with the prior art were quite brittle and would not withstand washing, abrasion or sharp impact without damage to the surface. Moreover, the second coat had to be applied either after the base coat was entirely dry or at a time when the base coat was at some undefined consistency in order to achieve the desired effect. It was not the type of coating or surface decoration which was conveniently applied by unskilled painters.

Because of the differences in physical characteristics during the drying period and after the composite has dried, and a difference in appearance, it is believed that the term "crackle finish" is a misnomer when applied to the compositions of the present invention. I have therefore adopted the term "island finish" as being a truer connotation of the materials produced in accordance with this invention. From a visual standpoint, the coating composition which completes the patterns obtainable by means of this invention forms well defined "islands" of quite uniform size and the "rivers" between the islands for a given coating composition are also of fairly uniform width.

From the point of view of physical properties, the "rivers" are recessed and the "islands" are correspondingly raised. The respective coatings will for purposes of convenience be termed the "base coat" or "base composite" and secondly the "islanding" coat. It should be understood that while it is possible to decorate surfaces in accordance with this invention with but two coats, namely, the base coat and the islanding coat, it is not unusual that three or more coats are employed to complete the surface.

Considering only the islands as produced in accordance herewith, they may be differentiated from prior devices in several ways. First, the individual island is a non-porous patch as distinguished from certain porous patches as previously produced. It is very strongly bonded to the film immediately beneath it and demonstrates great flexibility and washability. The size of the islands is remarkably uniform over large areas but may be controlled in the largest degree by special composition variations within the islanding material. Previous crackle compositions were not subject to such control. Another important factor is that the island size will not vary materially with different methods of applying the islanding coat. Thus paint roller, or brush application yields substantially comparable results at the same average wet film thickness. Quite unexpectedly, spray application is productive of no islands whatsoever. The islanding coat may be applied in any plane without affecting the result whereas certain of the prior art compositions required application on a horizontal plane.

The "rivers" as produced in accordance herewith result from shrinkage of the island forming coat during the drying process, the breaks occurring at wet or thicker portions first and at the thinner dry portions last or not at all. As the islanding coat is applied before the surface of the base coat or base composite has dried, the shrinking of the islanding coat apparently pulls the surface layer of the base coat rather than slipping thereover before adhesion to the base coat is achieved.

It is a primary object of this invention, therefore, to provide a novel method of decorating surfaces with an "island finish" and a surface decorated by said method.

Another object of this invention is to provide a method of decorating surfaces which is capable of being carried out by unskilled painters.

Another object of this invention is to provide a method of decorating surfaces to yield a patterned surface of "islands" and "rivers."

Another object of this invention is to provide a method of decorating surfaces to yield a two-toned patterned surface of "islands" and "rivers."

Still another object of this invention is to provide a method of decorating surfaces to yield a patterned surface of "islands" and "rivers" in which the "islands" are of substantially uniform size, and in which the "rivers" are also of substantially uniform width.

A further object of this invention is to provide a method of decorating surfaces with a paint roller or brush without the aid of mechanical pattern imparting devices such as stencils.

Other objects of this invention will appear as the description proceeds.

To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the appended claims, the following description setting forth in detail certain illustrative embodiments of the invention, such disclosed means constituting, however, but a few of the various forms in which the principle of this invention may be employed.

I have discovered that a decorative surface may be produced by coating a supported partially dry oleoresinous film with a latex emulsion paint applied by means of a paint roller or brush, each of which yield a film of non-uniform thickness, and permitting the combined films to dry spontaneously. Broadly stated, therefore, this invention comprises the method of decorating a surface to provide segregated raised areas of color superimposed upon a background color thereby imparting color to the areas between said segregated raised areas which comprises the steps of coating said surface with an oleoresinous base coating composition characterized in that it remains tacky for a period of from about 1 to about 8 hours, and during the time which said oleoresinous base varnish remains tacky, re-coating said surface with a latex emulsion paint as a continuous wet film of non-uniform thickness, and allowing the plural coated surface to dry. For convenience, consideration will be given to the various essential layers which contribute to the decorative surfaces of this invention beginning with the substrate and concluding with the islanding coat.

It will, of course, be understood that other layers may be present except that none shall be interposed between the oleoresinous film which is coated in a partially dry state with the islanding coat or latex emulsion paint.

The annexed drawing depicts a form of the results which are obtainable in accordance with this invention. In the drawing are shown segregated raised areas of color 1, hereinafter referred to as "islands," and recessed portions 2, between said islands, hereinafter referred to as "rivers."

THE SUBSTRATE

The materials which may be surfaced in accordance with this invention are broadly any substrate capable of supporting a continuous paint film. Thus, metallic or

glass surfaces may be decorated as well as the normal wall and ceiling surfaces, e. g., plaster, plaster board, sanitas, concrete block, brick, wood, etc. With the substrate surfaces which are tightly sealed, e. g., metal, glass or painted wood, painted plaster, paper, etc., no preliminary surface treatment is required prior to the decorating steps. However, with the porous substrates, such as concrete block, cinder block, wood, unpainted plaster and the like should be properly sealed before decorating. Flat wall paint surfaces tend to be too porous for satisfactory results and should also be sealed. While island formation will occur over sand textured sub-coats, the results are not very satisfactory. But for these preferences, the substrate may be any composition and if desired, coated with any non-porous coating composition which may be pigmented or not as may be desired. It will appear later that the coating on the substrate prior to the decorating steps in accordance herewith may serve to provide a contrasting color to the islanding color producing very attractive combinations. In such a case the oleoresinous varnish or base coat is a clear varnish allowing the color to be transmitted therethrough giving color to the "rivers."

It is preferred, therefore, in order to achieve the most satisfactory results, that the surface to be decorated be substantially non-porous; and thus, normally porous substrate materials are preferably sealed prior to the decorating. An effective sealer coat is the same type of latex emulsion paint later used in combination with the oleoresinous varnish to provide the decorative effect. However, other sealer coats as well known to the art may be employed for this purpose. The substrate, with the sealer, if used, should preferably also be fairly smooth, that is, free from large amounts of sand or grit embedded in the film or surface. A dry substrate surface, thus prepared, is then treated with the base coat, or a base composite is built up thereover.

THE BASE COAT OR BASE COMPOSITE

An essential element of this invention is the base coat or base composite. This may comprise a single coat of a clear or pigmented slow drying varnish, or it may comprise a primary coating of a color providing composition over which is coated a clear or pigmented slow drying varnish. This coating or composite is to be considered apart from primer coats over the substrate which may or may not be used as desired. There are certain instances, however, where the primer coat over the substrate may become part of a base composite as distinguished from a single base coat. For example, a latex base emulsion paint utilizing, for example, a butadiene-styrene latex, may serve both as a primer or sealer over a porous substrate, e. g., plaster board, and as the color providing composition over which is applied a clear slow drying varnish. On the other hand, it has been found that while certain flat wall paints may serve as a primer and sealer for the substrate, the character of the islands is adversely affected due to the porosity of the flat wall paint film.

In the preferred embodiments of this invention, the base coat or the top coat of a base composite is a clear or transparent varnish which may include pigments, such as, metallic pigments, e. g., aluminum, or slight amounts of a tracer color as an aid to insuring fairly uniform film thickness. It is essential that the varnish be slow drying. The islanding coat must be applied before the base coat is tack-free, i. e., before all the solvent has evaporated, in order that proper islanding may occur. In general, any oleoresinous or mixed oleoresinous-synthetic resin varnish having a tack-free time of from about 1 to about 8 hours is a practical varnish to be used. In the preferred case, tack-free times of from 2 to 4 hours are employed. Regarding these limits, tack-free times of less than 1 hour become very hard to work especially where large areas are decorated in accordance herewith. For the unskilled painter, application of the islanding coat within

from 2 to 4 hours after the base coat has been applied will give satisfactory results, and accordingly the base coat varnish desirably has a tack-free time of somewhat more than 4 hours. While it is theoretically possible to employ a varnish that is permanently tacky and obtain the decorative results of this invention, tack-free times of more than 24 hours are impractical, and thus for most purposes tack-free times of from 1 to 8 hours will be found quite suitable. The base coat varnish should also have an overnight dry time for convenience, but this property is not as important as the minimum tack-free time. In certain cases dry times as long as 72 hours may be tolerated, but for the home owner, the base coat should dry in no more than about 24 hours.

It is convenient to apply the varnish at from about 40% to about 70% total solids, that is, the varnish contains from about 40% to 70% non-volatiles and from about 60% to 30% of volatile solvent, e. g., mineral spirits, xylol, toluene, etc., such varnish solvents being well known to the art.

The normal driers or mixed driers may be used in concentrations which are preferably slightly below the recommended drier content for the oil content. The usual driers comprising lead, cobalt and/or calcium soaps of naphthenic, rosin, petroleum, etc. acids may be used.

The base coat varnish is preferably additionally characterized by the presence therein of a water-insoluble, 16-24 carbon atom, aliphatic straight chain saturated or unsaturated fatty acid soap and preferably a mixture of such soaps. These soaps are distinguished from the drier soaps in that they demonstrate little or no drier activity. Thus soaps of stearic, palmitic, oleic, arachidic, carnaubic, etc. acids may be used. The metal ion may be any polyvalent metal such as, calcium, barium, strontium, magnesium, aluminum, zinc, tin, iron, chromium, etc. A highly satisfactory soap addition comprises a mixture of aluminum and calcium stearates. Such soaps are generally employed in amounts ranging from 0% to 7% by weight of the varnish. With aluminum soaps, amounts in excess of about 2% should be avoided as the gel characteristics of the varnish become increasingly troublesome with increasing amounts. Amounts of aluminum stearate ranging from 0.01% to 1% provide a useful method of sag control. It has been found desirable to use in conjunction with the aluminum soap a second soap such as the calcium soap in amounts up to 6% by weight of the varnish.

It has been observed that with increasing amounts of aluminum soap, smaller islands are obtained with a given islanding coat. With increasing amounts of the calcium soap, larger islands are obtained.

The base coat is also preferably additionally characterized by the presence therein of an oxidation inhibitor such as a phenolic compound, e. g., phenol, alkyl phenols, such as, cresol, ethyl phenol, t-butyl phenol, orthoamyl phenol, etc. The effect of this ingredient is to prolong the induction period before hardening due to oxidation sets in.

A typical varnish which may be used in accordance with this invention has the following composition:

Varnish solids:

Drying oil, e. g., alkali refined linseed oil	per cent	67
Fumaric-rosin-glycerine resin	do	33

Varnish:

Varnish solids	pounds	60
Mineral spirits	do	40
Aluminum stearate	do	0.6
Calcium stearate	do	1.8
Driers	do	1.7
Orthoamyl phenol	do	0.6

This varnish has a viscosity at 60% NVM of about E on the Gardner-Holdt scale.

The oleoresinous varnish solids may comprise any dry-

ing oil or semi-drying oil, natural or synthetic alone or in combination with one or more synthetic varnishes such as alkyds, oil modified alkyds, styrenated drying oils, styrenated drying oil modified alkyds, etc. With different varnishes, adjustments should be made in the solvents and drier content to provide the tack-free range above mentioned, as will be well understood by those skilled in varnish formulation.

Specific examples of drying and semi-drying oils which may be used in accordance herewith include soya-bean oil, linseed oil, dehydrated castor oil, phenol modified linseed oil, maleic treated oils, tung oil, safflower oil, chia oil, fish oils, etc.; blown oils, alkali refined oils, acetylated oils, etc. Drying or semi-drying oil modified esters of polyhydric alcohols and polybasic acids, e. g., glyceryl phthalate, pentaerythryl phthalate, glyceryl sebacate, etc. may be used. It is desirable with varnishes wherein the varnish solids consisting in whole or in part of oil modified alkyds, that they have a rather high oil content as the shorter alkyds tend to dry too rapidly for practical use herein. Other varnishes such as ester gum, Congo, and drying oil modified derivatives thereof may be employed.

The varnish may be applied at any workable viscosity and should not sag, e. g., D to G on the Gardner-Holdt scale. Higher viscosities may be employed if desired. Application of the varnish to the substrate, or to a sealer coat over the substrate, may be by any suitable means such as paint roller, brush, or spray. These varnishes may also be pigmented, if desired, with the usual pigments, fillers, and extenders to provide a color for the "river" portion of the decorated surface. Normally, however, it is preferred to use the varnish as a transparent liquid overlying an undercoat utilized to impart desired color to the "rivers." Best results are obtained, particularly as to uniformity of island size, if the varnish is applied at as uniform a film thickness as possible. This is quite readily and satisfactorily achieved with a paint roller. Care should be taken, however, to distribute the film by rolling and re-rolling in various directions to prevent undue film build-up where one pass overlaps a previous one.

THE ISLANDING COAT

Before the base coat or base composite has become tack-free, the surface to be decorated is re-coated by paint roller or by brush with a latex emulsion paint. Spray application of this coating either fails to produce islands at all or yields such large non-uniform islands, e. g., 8 to 20 or more inches in average diameter as to present a surface quite out of accord with the present invention. Both paint roller application and brushing techniques give films of non-uniform thickness, whereas spray application yields a coating of uniform film thickness. The non-uniform thickness of the top coat is, therefore, critical insofar as achieving the decoration provided by this invention.

The latex emulsion paints found useful in accordance herewith are generally of the oil-in-water class, best results being achieved with those characterized by a co-polymer of a monovinyl aromatic hydrocarbon, e. g., styrene or vinyl toluene, with an aliphatic conjugated diolefin, e. g., butadiene, produced following an emulsion polymerization technique. Other latex emulsion paints utilizing natural rubber or synthetic rubber latices may be employed, such compositions being well known to those skilled in the art. These latex emulsion paints are fast drying, i. e., dry in from about 1 to 3 or 4 hours after application.

It is convenient to illustrate the type of latex emulsion paints which have been found satisfactory for use in accordance herewith by giving specific examples.

Example 1.—Oil-modified latex paint

Lithopone	Parts
Rutile TiO ₂	100
	150

	Parts
Ferrite yellow	2
Black iron oxide	2
Mica	40
Clay	65
Lorite (80% calcium carbonate and 20% diatomaceous silica)	60
Sodium salt of alkyl aryl sulfonate	3
Tetra sodium pyrophosphate	2
Soya protein solution (stabilizer solution "B")	175
Water	188

were thoroughly mixed together. Thereafter 45 parts of four-minute heat bodied linseed oil, 1 part of 25% lead naphthenate, 3 parts of 6% cobalt naphthenate and 4 parts of pine oil were added to the pigment slurry. After incorporation of the oils and driers, the pigment slurry was passed through a zone of high shear (e. g., a colloid mill) into a thin-down vessel. Thereafter 300 parts of a paint latex were mixed into the milled emulsion. The paint latex contained 200 parts of a 45% solids emulsion co-polymer containing approximately 60% styrene and 40% butadiene and 100 parts of an emulsion co-polymer containing 80% styrene and 20% butadiene.

Example 2.—Soya protein stabilized latex paint

	Parts
Lithopone	50
Rutile TiO ₂	240
Mica	60

were thoroughly incorporated into 165 parts of stabilizer solution "B," hereinafter defined, along with 140 parts of water containing 2 parts of tetra sodium pyrophosphate and 2.5 parts of sodium alkyl aryl sulfonate. To the aqueous slurry of pigment were added 10 parts of sulfonated tallow and 30 parts of a four-minute heat bodied linseed oil containing 1 part of 25% lead naphthenate and 2 parts of 6% cobalt naphthenate. After thorough incorporation of the above ingredients, the mass was passed through a zone of high shear to produce a uniform emulsion and dispersion and collected in a thin-down vessel equipped with an agitator. Thereafter 425 parts of a 45% solids paint latex containing 67% styrene and 33% butadiene and 200 parts of water were added to the milled mass. The yield was 125 gallons of latex emulsion paint.

Example 3

The above example was repeated with the substitution of a paint latex containing approximately 62% styrene and 38% butadiene.

Example 4

Same as Example 2 except a paint latex containing 60% styrene and 40% butadiene was substituted.

Example 5.—Oil-free casein stabilized latex paint

	Parts
Rutile TiO ₂	200
Lithopone	100
Mica	25
Clay	75
Tetra sodium pyrophosphate	2
Casein solution A	192
Pine oil	4
Water	112

were thoroughly mixed and passed over a colloid mill to assure uniform dispersion of the pigmentary material. To the milled pigment slurry was added 425 parts of a 45% solids paint latex containing 67% styrene and 33% butadiene co-polymerized by emulsion techniques. The yield was approximately 100 gallons.

Example 6

Example 6 was similar to Example 5 with the sub-

stitution of a paint latex containing 60% styrene and 40% butadiene as the components of an emulsion co-polymer. This latex contained approximately 45% solids.

Example 7.—Sodium carboxy methyl cellulose stabilized latex paint

	Parts
Lithopone	200
Rutile TiO ₂	55
Ultramarine blue	50
Pigment green B	15
Mica	40
Tetra sodium pyrophosphate	2
Sodium carboxy methyl cellulose (high viscosity)	5
Alkylolamide emulsifying agent	15
Sodium polyacrylate	10
Sulfonated tallow (anti-foam)	10
Four-minute, heat bodied linseed oil	45
25% lead naphthenate	1
6% cobalt naphthenate	3
Water	305
Pine oil	4

The above ingredients were thoroughly mixed together and passed through a colloid mill into a reducing vessel. To the milled material was added 343 parts of a 40% solids paint latex (62% styrene-38% butadiene latex). The yield was 100 gallons of ready-to-apply emulsion paint.

The following examples were formulated following substantially the same procedure as outlined in the previous examples and serve to illustrate additional colors which may be used in producing the decorative effects of this invention.

Example 8

	Lbs.
Lithopone	50
Titanium dioxide	240
Mica	40
Diatom calcium carbonate	50
Clay	50
Stabilizer "B"	192
Butadiene-styrene latex emulsion (45% NV)	312
Linseed modified fumaric rosin ester	45
Driers	6
Water	158

This formulation gives a white latex emulsion paint which may be shaded with a color imparting pigment dispersed in water with the aid of a dispersing agent, and said composition may also include fungicides, anti-foaming agents, odor improving ingredients and the like.

Example 9

The following formulation provides a medium dark blue material which may be used as the islanding finish in accordance with this invention.

	Lbs.
Lithopone	100
Titanium dioxide	150
Mica	40
Diatom calcium carbonate	50
Clay	50
Ultramarine blue	30
Stabilizer "B"	192
Latex emulsion (45% solids)	312
Linseed modified fumaric rosin ester	45
Driers	6
Water	154

Example 10

The following formulation gives a rose colored latex emulsion suitable for use in accordance with this invention.

Lithopone -----	Lbs. 50
Titanium dioxide -----	160
Mica -----	40
Diatom calcium carbonate -----	60
Clay -----	75
Black iron oxide -----	1
Red iron oxide -----	20
Orange iron oxide -----	6
Stabilizer "B" -----	192
Latex emulsion (45% solids) -----	312
Linseed modified fumaric rosin ester -----	45
Driers -----	6
Water -----	150

In the foregoing examples, reference has been had to solutions A and B. These may be identified as follows:

STABILIZER SOLUTION "A"

75 parts dried acid precipitated casein and 412 parts of water were weighed into a jacketed vessel equipped with an agitator. The temperature of the slurry was increased to 160° F. after which 10 parts of sulfonated tallow and 8 parts of sodium pentachlorophenol, 5 parts of borax and 5 parts of 26° Baumé ammonia were added and stirred into the aqueous solution. Thereafter the temperature was increased to 170° F. and held for a half hour. This solution was then drawn off for use in the preparation of some of the foregoing examples.

STABILIZER SOLUTION "B"

380 parts of water and 60 parts of dried soya protein were weighed into a jacketed mixing vessel. The temperature of the slurry was increased to about 150° F. and 15 parts of sulfonated tallow and 8 parts of sodium orthophenylphenate, 2.5 parts of caustic soda and 7.5 parts of boric acid were added. Thereafter the temperature was increased to 165 to 175° F. and held for a half hour. The prepared protein solution was drawn off for later use in the formulation of latex paints.

METHOD OF DECORATING THE SURFACE

As a general rule, it has been found desirable to wash the surface and/or prime it with a suitable primer or sealer coat if necessary. If the paint that is already on the wall or surface has a suitable color as a contrasting or harmonizing color for the "river" portion, then an oleoresinous slow drying varnish which is transparent may be applied directly over the surface by paint roller, brush, or spray technique. For best results it is desirable to maintain uniformity of film thickness as variations in film thickness will cause variations in the size of the "islands" which will later form, thereby altering the decorative effect of the finished product. It is further recommended that careful note of the sequence followed in applying the oleoresinous varnish be noted because it has been found that with certain oleoresinous varnishes differences in time of exposure to air will cause differences in degree of drying, thereby affecting the "island" size. Thus in applying the latex emulsion paint over the tacky oleoresinous varnish, it is recommended that the same sequence be followed in order to maintain the air exposure time of the surface as nearly uniform as possible. In certain instances, however, the oleoresinous varnishes may demonstrate a drying curve which has a prolonged flat portion in the curve where over a considerable period of time, i. e., from 1 to 2 hours, there is very little noticeable change in the character of the surface. Where such varnishes are employed, the degree of care which is required is very much less than where the varnish shows a continuously increasing drying curve.

With oleoresinous varnishes formulated in accordance with the example given above under the heading "Base coat" or "Base composite," re-coating with the islanding coat or latex emulsion paint may be done anywhere from

2 to 4 hours after the application of the base coat to yield satisfactory results. While the temperature at which the coatings are applied has some effect on the size of the islands obtained, temperatures of from about 65 to about 85° F. seem to produce fairly uniform results. Higher temperatures tend to give larger islands and the lower temperatures tend to give smaller islands. With respect to relative humidity, best results are obtained at a relative humidity of from 45 to 55%. As with the temperature, the island size seems to vary directly with the humidity. Another factor affecting the end result to a minor degree is the presence of moving air. A strong current of air and the direction of the paint roller passes will to some extent control the direction of the rivers and produce a somewhat larger island size. Normal room conditions, however, yield normal effects.

In using the paint roller or brush, it should be emphasized that it is desirable to distribute the islanding coat quite well and to avoid lapping by stroking the wet surface with a fairly dry roller in a direction at right angles, for example, to the direction at which the coat was initially laid down. This will minimize effects due to lapping in successive passes.

The islands obtained in accordance with this invention range in size from about an average diameter of ¼ to ¾ of an inch up to an average diameter of from about 1 to 2 inches. With a given top coat, when the coatings are laid down under ideal conditions, the islands throughout the entire surface will have a remarkably uniform size. Likewise, the rivers will all appear to have about the same width. It can be appreciated, therefore, that very attractive color combinations can be achieved in the manner aforesaid. For example, a light yellow background or river color produces a very pleasing color combination with a dark green island superimposed thereover. A silver background such as is produced where the oleoresinous vehicle contains aluminum pigment dispersed therethrough having superimposed thereover dark blue islands is likewise a very attractive surface decoration. As indicated above, the oleoresinous varnish may be pigmented with either metallic pigments such as aluminum or with the normal insoluble pigments commonly used in paint formulation including carbon black, lithopone, titanium dioxide, copper phthalocyanine blue, ferrite yellow, red iron oxide, and the like. Where the oleoresinous varnish is pigmented, quite obviously no base color is necessary to impart color to the rivers. It is also desired that an enamel grade of paint be formulated because it is the binder solids which give the proper results.

Another unique design may be acquired by utilizing a white base color for the rivers having superimposed thereover a white latex emulsion paint to form the islands. While the color is entirely uniform, nevertheless the relief effect of the islands is quite decorative. Variations in sheen between the rivers and the islands may also be obtained where the same or different colors are employed in the essential coatings. The latex emulsion paint is normally fairly flat while the base coat may be high, medium, or low gloss. An entirely glossy finish may be produced by over coating the decorated surface with a high gloss clear varnish.

Other modes of applying the principle of this invention may be employed instead of those specifically set forth above, changes being made as regards the details herein disclosed, provided the elements set forth in any of the following claims, or the equivalent of such be employed.

I, therefore, particularly point out and distinctly claim as my invention:

1. The method of decorating a substantially non-porous surface to provide segregated raised areas of color superimposed upon a background color thereby imparting color to the areas between said segregated raised areas which comprises the steps of coating said surface with an oleoresinous base coating composition characterized in

that it remains tacky for a period of from about 1 to about 8 hours, and during the time which said oleoresinous base varnish remains tacky, re-coating said surface with a latex water emulsion paint as a continuous wet film of non-uniform thickness by using a coating applying means which deposits the coating on direct contact of said means with said surface, and allowing the plural coated surface to dry.

2. The method of decorating a surface to provide segregated raised areas of color superimposed upon a background color thereby imparting color to the areas between said segregated raised areas which comprises the steps of coating said surface with a pigmented coating composition capable of yielding a substantially non-porous film on said surface, allowing said pigmented coating composition to dry, re-coating said surface with a non-pigmented oleoresinous base coating composition characterized in that it remains tacky for a period of from about 1 to about 8 hours, during the time which said oleoresinous base varnish remains tacky, re-coating said surface with a latex water emulsion paint as a continuous wet film of non-uniform thickness by using a coating applying means which deposits the coating on direct contact of said means with said surface, and allowing the plural coated surface to dry.

3. The method of claim 1 in which the oleoresinous base coating composition is additionally characterized by the presence therein of up to 7% by weight of the varnish of a water-insoluble polyvalent metal soap of an aliphatic straight chain carboxylic acid containing from 16 to 24 carbon atoms the amount of such soap employed being insufficient to cause gellation.

4. The method of decorating a substantially non-porous surface to provide segregated raised areas of color superimposed upon a background color thereby imparting color to the areas between said segregated raised areas which comprises the steps of coating said surface with an oleoresinous varnish comprising a refined drying oil having dispersed therein a polyvalent metal soap of an aliphatic straight chain carboxylic acid containing from 16 to 24 carbon atoms in an amount sufficient to cause gelling, and additionally characterized in that it remains tacky when spread in a thin film for a period of from about 1 to about 8 hours, during the time which said oleoresinous base varnish remains tacky, re-coating said surface with a latex water emulsion paint of the oil-in-water type as a continuous wet film of non-uniform thickness by using a coating applying means which deposits the coating on direct contact of said means with said surface, and allowing the plural coated surface to dry.

5. A process in accordance with claim 4 in which the drying oil is an alkali refined linseed oil.

6. A process in accordance with claim 4 in which the drying oil is alkali refined soya bean oil.

7. A process in accordance with claim 4 in which the drying oil is an alkali refined linseed oil and is in admixture with a fumaric modified rosin-glycerine ester.

8. A process in accordance with claim 4 in which the latex emulsion paint of the oil-in-water type is characterized by the presence therein of an emulsion polymerized co-polymer of a monovinyl aromatic hydrocarbon and an aliphatic conjugated diolefin.

9. A method of decorating a substantially non-porous

surface in accordance with claim 8 in which the latex water emulsion paint is a butadiene-styrene co-polymer water emulsion paint.

10. The method of decorating a substantially non-porous surface to provide segregated raised areas of color superimposed upon a background color thereby imparting color to the areas between said segregated raised areas which comprises the steps of coating said surface with an oleoresinous base coating composition having the varnish solids composed of a drying oil and a fumaric-rosin-glycerine resin, said varnish being applied at about 60% non-volatile matter in mineral spirits and containing a mixture of aluminum and calcium stearates in the amounts of about 1% and about 3% respectively based on the weight of the varnish solids, and further containing about 1% by weight of the varnish solids of orthoamyl phenol, during the time which said oleoresinous base varnish remains tacky, re-coating said surface with a latex water emulsion paint as a continuous wet film of non-uniform thickness by using a coating applying means which deposits the coating on direct contact of said means with said surface, and allowing the plural coated surface to dry.

11. The method of decorating a surface to provide segregated raised areas of color superimposed upon a background color thereby imparting color to the areas between said segregated raised areas which comprises the steps of coating said surface with a background color imparting coating composition characterized by a substantially non-porous pigmented film, allowing said background color coating to dry, re-coating said surface with an oleoresinous base coating composition having the following composition and characterized in that it remains tacky for a period of from about 1 to about 8 hours:

Varnish solids:	
Alkali refined linseed oil.....	per cent. 67
Fumaric-rosin-glycerine resin.....	do. 33
Varnish:	
Varnish solids.....	lbs. 60
Mineral spirits.....	lbs. 40
Aluminum stearate.....	lbs. 0.6
Calcium stearate.....	lbs. 1.8
Driers	lbs. 1.7
Ortho-amyl phenol.....	lbs. 0.6

within a period of from about 2 to about 4 hours after the application of said oleoresinous base coating composition, re-coating the surface by means of a paint roller with a butadiene-styrene latex water emulsion base paint as a continuous wet film of non-uniform thickness by using a coating applying means which deposits the coating on direct contact of said means with said surface, and allowing the plural coated surface to dry.

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