106-95 CROSS REFERENCE EXAMINER

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PRINTING INK FOR PORTLAND CEMENT BASES

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2 Claims. (Cl. 106—27)

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This invention relates to a composition for printing color on asbestos-cement products and the like, such as sidings and shingles.

In my copending application Serial No. 216,870, now abandoned, I have disclosed an asbestos-cement product having a surface ornamentation made by indenting the surface of a freshly formed sheet of the material according to a predetermined design or pattern and simultaneously printing or applying coloring matter in the indentations. While it is preferred to apply the color to the indentations or vales, it may be applied to the ridges, or even upon a flat surface.

The present application is a continuation-in-part of said application Serial No. 216,870 and relates particularly to the color composition employed in printing or applying the ornamentation to the product.

Among the objects of the invention are to provide a coloring composition that will not smear, blend, drift, or bleed when applied to a freshly formed sheet of asbestos-cement so as not to distort the applied design.

A further object is to provide a composition that will not inhibit hydration of the cement, or deleteriously effect any of the properties of the finished product.

The coloring composition, broadly described, comprises a dry coloring powder mix composed of pigment and hydraulic or Portland cement, which powder mix is carried in a vehicle or medium consisting principally of an oil or liquid hydrocarbon of such character that it will in no way alter the properties of the hydraulic cement either prior to application of the composition or after the coloring matter has been deposited, and that will not effect the cement so as to inhibit its ultimate hydration after the vehicle has been released by evaporation, or by absorption into the asbestos-cement base.

The following are examples of oils or liquid hydrocarbons that I have found to have suitable characteristics for use as the vehicle, oils of such character may be used either alone or in combination. Other oils or hydrocarbons of similar characteristics may be used.

EXAMPLE I

Specific gravity at 60° F	0.775–0.825
Flash point, Pensky-Martins (closed cup)	160° F. min.
Aniline point	175° F. min.
Distillation range:	
I. B. P.	400° F. min.
D. P.	505° F. max.

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EXAMPLE II

Gravity, API	29.0–32.0
Viscosity, 100° F., Saybolt Univ	60–65
Color, ASTM max	1.5
Pour, degree F	20
Flash:	
Min.	330° F.
Fire	365° F.

EXAMPLE III

Gravity, API	36.0
Flash, degree F	310.0 min.
Fire, degree F	345 min.
Color, ASTM max	Light I
Pour, degree F	25 max.
Viscosity, 100° F., Saybolt Univ	57–61
Viscosity, 130° F., Saybolt Univ	46.7
Viscosity, 210° F., Saybolt Univ	35.2
Neutralization, No. max., contains oxidation inhibitor	0.10

In preparing a preferred form of vehicle, about 10 parts by weight of oil or hydrocarbon of the Example I type is mixed with about 12 parts of oil or hydrocarbon of the Example II type. To this mixture is added about 1.2%, based on the Example I weight, of a suitable bodying agent for liquid hydrocarbons such as the multiple hydroxy aluminum soaps of naphthenic, oleic, cocoanut acids, and the like. The mixture is heated to about 140–150° F. while being gently agitated. The mixture is continued at that temperature, under agitation until it is uniform, clear, and free of any undissolved matter, after which it is permitted to cool.

The dry ingredients consist of hydraulic cement, and suitable pigments, or mixtures of pigments, such as titanium dioxide, red oxide, yellow oxide, chrome oxide green, black oxide, etc. The dry ingredients are ground together in a ball-mill or other suitable apparatus, and the powdered dry ingredients are then gradually added to the vehicle while the mixture is being agitated.

The following are typical examples of the composition for different colors:

1. Gray

White hydraulic cement	parts by weight	92
Black oxide	do	5
Titanium dioxide	do	3
		100
Vehicle	parts	44

2. Green

Normal Portland cement	parts by weight	82
Chrome oxide green	do	14
Titanium dioxide	do	4
		100
Vehicle	parts	35

3. Black

Aluminum cement (Lumnite)	parts by weight	89
Black oxide	do	9
Titanium dioxide	do	2
		100
Vehicle	parts	26

4. Brown

Gray hydraulic cement	parts by weight	90
Brown oxide	do	10
		100
Vehicle	parts	44

It is to be understood that the foregoing formulas are given by way of illustration, and are subject to variation. It is desirable to keep the vehicle content to the minimum consistent with good results because if the oil or liquid hydrocarbon content is too high smearing of the color may result in handling the freshly made printed blanks. The amount of oil vehicle required to obtain a composition of satisfactory viscosity will vary somewhat with the amount of oxide pigments used in the mixture.

What I claim is:

1. A composition of printing consistency for application to a freshly made base of Portland cement reenforced with asbestos fibers, consisting of powdered Portland cement and pigment, in a vehicle consisting of a liquid hydrocarbon that will not inhibit hydration of the cement of the base, and an aluminum soap.

2. A composition of printing consistency for application to a freshly made base of Portland cement reenforced with asbestos fibers, consisting of powdered Portland cement and pigment, in a vehicle consisting of a liquid hydrocarbon that will not inhibit hydration of the cement of the base, and a bodying agent consisting of at least one of the hydroxy aluminum soaps selected from the group consisting of naphthenic, oleic, and cocoanut acids.

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References Cited in the file of this patent

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