(54) Title: MATERIALS FOR COATINGS AND CONSTRUCTIONAL UNITS

(57) Abstract

Materials for coatings and constructional units, which materials contain lime, are described. They contain with regard to the total dry material up to 90 % of lime, from 1 to 8 % of sugar as binder and the difference up to 100 % is a filler and optionally water and other conventional additives.
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MATERIALS FOR COATINGS AND CONSTRUCTIONAL UNITS

Technical Field

The present invention belongs to the field of building and construction industry and especially relates to materials for coatings such as wall paints and ceiling paints, façade paints, protective coatings, gap-filling materials and cements, decorative coatings and also to materials for manufacturing constructional units e.g. bricks. The invention is applicable to lime-based materials.

Technical Problem

There existed a need for the above-mentioned materials, which would provide for coatings and constructional units having very good mechanical, physical and chemical resistances, which would contain naturally available substances and would not affect environment.

Prior Art

A number of lime-based materials for the above uses are commercially available. The binders therefor are e.g. water glass, polyacetates, polyacrylates. However, they are disadvantageous in many respects. Thus a well-known powdery lime paint has the shelf life of one year and is not frost-resistant, whereas the material according to the invention, useful as a powdery lime paint, has unlimited shelf life, is frost-resistant up to -20°C, exhibits an excellent mechanical, physical and chemical resistance and is obtained from readily available natural raw materials. Some coatings containing formaldehyde are also harmful to the environment, others exhibit poor permeability and, consequently, mouldiness occurs on lintels where iron is present.

The Inventive Solution

The object of the present invention are lime-based materials for coatings and constructional units, characterized in that they contain with regard to the total dry material up to 90% of lime, from 1 to 8% of sugar as binder and the difference up to 100% being a filler and optionally water and other conventional additives.
As sugar conventional consumer sugar is employed.

The invention is especially useful for preparing interior wall lime paints and ceiling lime paints as well as exterior lime paints. These paints may be powdery masses or pastes depending upon the content of water. For interior paints already about 1% of the binder is sufficient, whereas for the exterior use a greater amount of the binder is necessary.

Other uses are e.g. façade paints, gap-filling materials, cements, coarse and fine wall plasters, decorative finishing plasters, materials for treating of rocky walls against crumbling, materials for the manufacture of bricks for insulation walls or for partition walls.

Under conventional additives, materials to be used for a certain purpose are to be understood, e.g. cement should be added to a material for the protection of rocks against crumbling. Someone skilled in the art will readily ascertain which known additives and in what amount should be added.

In order to prepare a material according to the invention, all ingredients are stirred in conventional blenders for dry blending or paste blending such as dissolvers or planetary-type mixers.

In the case of lime paints according to the invention, 1.5 l of water should be added to 1 kg of the powdery paint before use, which suffices for 15 m² of an ideal surface area. In case of known paints, however, 1 to 2 dl of water are added to 1 kg of the paint, which suffices for 6 m² of an ideal surface area. Thus the paint according to the invention is much more economical than the known paint. When using the paint according to the invention as well as when using the known paint, a base coat has to be applied first.

An example of the composition of the interior wall and ceiling paint is 40 to 50% of lime, 50 to 40% of fillers and 10% of sugar as the binder and other additives. Façade paints contain up to 90% of lime and up to 8% of sugar.

As an example of the material for manufacturing bricks, the composition may be 60% of electroprecipitated fly ashes, 38% of lime and 2% of sugar.
The invention is illustrated by the following Examples.

Example 1

Powdery interior lime wall and ceiling paint

Sugar (1 kg), lime (40 kg), calcite (30 kg), quartz powder (5 kg), hydroxymethyl cellulose (0.5 kg), silicone (2 kg; BSR-50 of Wacker, Germany) and quartz sand (21.5 kg) having a particle size of 0 to 5 mm were dry-blended in a dissolver for about 20 minutes. The mixture was packed in appropriate packages.

Example 2

Paste for the protection of rocks against crumbling

Sugar (6 kg), water (30 kg), cement (30 kg), lime (30 kg), quartz sand (2 kg) having particle size of 0 to 5 mm, and hydroxymethyl cellulose (0.1 kg) were blended into a paste by means of a planetary-type mixer. The obtained paste was packed in appropriate packages.
CLAIM

Materials for coatings and constructional units, which materials contain lime, characterized in that they contain with regard to the total dry material up to 90% of lime, from 1 to 8% of sugar as a binder and the difference up to 100% is a filler and optionally water and other conventional additives.
A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C04B28/10 //C04B28/10,24:10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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Date of the actual completion of the international search 2 February 1996

Date of mailing of the international search report 16.02.96

Name and mailing address of the ISA
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| X        | CHEMICAL ABSTRACTS, vol. 111, no. 22, 27 November 1989  
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