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formulas have been in use with success.

- 127 parts sand.
- 62 parts kaolin.
- 59 parts red lead.
- 23 parts borax.
- 18 parts whiting.

N. parts coloring oxide.

N. represents the following colors:

- 42.2 parts of cobalt.
- 38.1 parts oxide of chrome.
- 39.8 parts oxide of copper.
- 40.0 parts oxide of iron.
- 38.2 parts oxide of manganese.
- 34.4 parts oxide of nickel.
- 70.3 parts oxide of uranium.

These frits are usually put in saggars and fritted in the glaze kiln. They are strong in color and should be diluted with the white glaze in order to give the different shades required. For matt glazes the amount of kaolin is increased until the glaze has a matt appearance. A good crystal glaze which matures at cone 1 is made as follows:

- 91 parts sand.
- 61 parts saltpetre.
- 53 parts oxide of zinc.
- 28 parts of feldspar.
- 25 parts of boracic acid.

These materials are also fritted and applied to the ware. They can be colored by small amounts of coloring oxides. The firing should be entirely oxydizing and the coloring should be very slow from the start.



STRENGTH.

RUSSELL D. CHASE.

I ask a life well-rounded, full and free—
 I ask a life of strength, by that I mean
 That each recurrent day will bring to me
 Desire of venturing truth where doubt has
 been.

Life is as full and perfect as my aim,
 Peace can be bought with silence or with
 lies—
 But I would rather censure bear, and blame
 Than play a coward's part in manly guise.



Ceramics In Exterior Work.

By CHARLES JAMES FOX, Ph. D.

(From "Architecture" October, 1907.)

One of the latest innovations in American architecture is the use of the baked clay product in the form of tile or ceramic-mosaics in exterior building operations. This is an imitation of a custom that has prevailed for some time in Europe where the extreme durability of the clay tile, the permanency of its brilliant color effects, and its remarkable power of resistance to the deteriorating effects of atmospheric influences have long been appreciated by both the architect and the general public. The ornamental possibilities of the clay products are now being fully realized by the advocates of exterior color decorations of stone, brick and concrete building. Those who favor the architectural application of color, both material and applied, are becoming each day more numerous, as the depressing effect of the cold, somber, monochrome appearance of the street facade, es-

pecially in the residential sections of the city, which are not enlivened by the shop windows, is being more fully realized. The modern facade in street architecture is necessarily flat and to emphasize its monotonous appearance by a dull monochrome surface has a depressing effect upon the observer, even though it may be unconscious.

The physiological and psychological value of harmonious color decoration is now as generally recognized as is the painful effect on the human eye of a combination of colors which do not harmonize. There is no valid reason why American street architecture when handling inorganic building materials, should be deprived of the use of color decorations, which is one of the chief aides in accomplishing the true mission of architecture, namely to combine beauty or ornamentation with utility.

The first appearance of tile or ceramic work in exterior decoration was in the vestibule of the city house. The floors and wainscoting of the vestibule must necessarily be decorative and attractive, they must be covered with durable material which does not show signs of wear, and which can withstand the nails of the shoe, the street dirt, rain, snow, dust and other things which injure the floor of the vestibule. The vestibule must likewise be covered with material which is easy to keep clean. As the vestibule must be ornamental, durable and always

clean in appearance tile or ceramic-mosaic makes the ideal covering for its floor and wainscoting.

Tiles are baked in numerous colors and can be moulded in almost any shape. Consequently tiling adapts itself readily to almost any decorative scheme. The vitrified, the unglazed floor tile, and the ceramic-mosaic are all baked harder than steel, so that they cannot be scratched by the nails of the shoe and can easily withstand the knocks and blows caused by carrying baggage, furniture or other articles into or out of the house.

The glazed wall tile which is often used on the wainscoting is likewise very durable and can withstand any of the usual knocks and blows to which the walls of the vestibule are likely to be subjected. A vestibule lined with tile or ceramic-mosaic is impervious to moisture and cannot absorb dirt or septic matter. Consequently it is quite easy to keep clean and fresh in appearance by simply flushing out with a hose.

The same considerations which make tile the ideal covering for the floor of the vestibule, apply with even greater force to the porch floor. The porch floor is in many respects the most abused part of the house. It is always exposed to the elements and is frequently covered with rain, snow, or dust, or with the street dirt, and mud which is brought in on the shoes of the visitor. If the porch floor is covered with wood, it is but a short time before this perish-

able material begins to show the deteriorating effects of the elements, and long before the rest of the house shows the slightest sign of age or wear the wooden porch floor is quite shabby. The painter and the carpenter are frequently called upon to paint over or repair the porch, and although the wooden floor is at first considerably cheaper than one covered with tile or ceramic-mosaic, the clay product is really more economical, because if properly set, it never needs repairs. In addition to its durability and its decorative and substantial appearance, the tiled or ceramic-mosaic porch has several other advantages. It frequently happens that the porch is too narrow or otherwise out of proportion with the general appearance of the house. These unsymmetrical proportions of the porch are often inevitable, as it is necessary to prevent the porch from taking too much light from the rooms on the ground floor. The appearance of this faulty construction is often emphasized by the cracks between the boards of the wooden flooring, but this can always be remedied by a suitable border, panelling or design in tile or ceramic work.

Tile and ceramic-mosaic next appeared as an exterior decoration to the shop facade in many of our largest cities. Many American storekeepers, especially those who deal in provisions, many restaurant keepers, druggists, barbers and others who appreciate the value of absolutely

sanitary arrangements in their stores, have adopted the custom of tiling them throughout, not only in the interior, but on the exterior facade as well. The brilliant color effects of the clay tile are used to great advantage in stores not only for decoration, but for advertising as well. Both the glazed tile and the vitreous and unglazed floor tile and ceramic-mosaic are very easily kept clean, as they cannot absorb any of the street dirt or dust which is constantly being deposited on the store facade which is so close to the street. The painted shop front is soon stained, and shows other signs of wear and dirt. The paint needs frequent renewing and this is not only very expensive but also very annoying while the paint is drying. A tiled shop front never has to be painted and can always be kept bright and clean by simply washing it off with a hose. The tile colors never fade.

Tiled or ceramic-mosaic exterior decoration is especially appropriate for stores or shops that are located in the basement of buildings. Situated below the surface of the sidewalk, basement stores naturally receive more street dirt and dust and other abuse than if they were located above the sidewalk. There is furthermore something about the basement of all buildings which to a certain extent suggests the cellar and in order to overcome this unpleasant impression it is necessary for the basement store to be even more

attractive looking and for its owner to pay greater attention to cleanliness than if it were located on the first or second floor. During every storm the windows and front of basement stores are naturally more or less bespattered with mud by the rain which first strikes the dusty sidewalk before it is deflected into the basement below. If the shop facade is covered with an absolutely non-absorbent material from which the dirt is easily removed by washing the mere continuance of the rain storm will wash the surface and make it appear as bright and clean as ever. If, however, the facade is covered with paint or other perishable veneer, it is soon stained and ruined by the muddy rain water, street dust and other filth which is blown or swept from the sidewalk above. Restaurants, barber shops and similar stores, where for business reasons, if for no others, it is necessary to pay strict attention to sanitary conditions, the tile or ceramic-mosaic shop facade is the best one which can be had.

In many European cities the street architecture is much enlivened by the high coloring and artistic ceramic decorations on the large stone, brick and especially the concrete buildings. Concrete is being used to a great extent in this country and about the only serious objection to it as a building material is its dull, sombre and monotonous appearance. This could be easily obviated by an appropriate use of ceramic decoration.

The tile or mosaic work can be readily set in cement, and as it unites with it by chemical combination, and not by mere adhesion, it is virtually impossible for the tile either to work loose or fall out. With ceramic ornamentation a concrete building can be made as beautiful or attractive looking as one made of any other material. There are in America many instances of the use of tile or ceramic-mosaics on the exterior of concrete buildings, and in every city in which the experiment is tried, it has soon a host of imitators. The same kind of decoration is equally applicable to buildings of brick, stone, or of any other inorganic material.

Its extreme durability which is even greater than that of cement has lead to the adoption of ceramic-mosaics for sidewalks, especially in fronts of stores, hotels, clubs, theaters and other places where it is desired to use the sidewalk as a kind of advertisement, if only for the purpose of attracting the attention of the passerby to the name and number of the house.

Many enterprising store-keepers, who realize that people may pass their stores without even glancing at their display windows, have adopted the mosaic sidewalk as a method of arresting the attention of a possible customer. The ceramic sidewalk virtually never wears out and by simply hosing it off each morning it can be kept in a most neat and attractive looking condition. It is

an agreeable surface to walk upon, and its decorative appearance presents a marked contrast to the usual grey cement surface. The ceramic-mosaic or tiled store vestibule is very common, and it is made more attractive by continuing the mosaic work over the entire sidewalk in front of the store.

The floor and wall tile or ceramic-mosaic is not a structural material, but its durable, sanitary and decorative properties give it an almost unlimited scope as a facing and protective material in exterior, as well as interior work. The enormous increase in concrete construction is giving a great impetus to the tile industry because there are no buildings upon which the application of tile or ceramic-mosaic is more appropriate than upon those of concrete.



The Labor Editor.

REV. CHARLES STELZLE.

There is a peculiar twist in the human mind which leads it to believe that a thing is so because it is in print. The fact that a newspaper has said thus and so is to most folks sufficient evidence that it is true. We need not stop to analyze this curious psychological delusion.

To some editors this fact is a source of congratulation. But the true "moulder of public opinion" seeks to arouse the thinking machinery of his constituency. He is really an educator. He is one of

the most important factors in the development of the human race. But he is not infallible. He will be the first to admit it. He is tempted in all points like as we are, and he is not without sin.

My observation of the labor editors of this country has led me to have for them the greatest respect. Many of them are engaged in a most difficult task. Often the support which is given them is insufficient to permit them to do their best work in behalf of labor. They should receive the most cordial co-operation of the rank and file, as well as that of the leaders.

They are really very human. They are glad to receive helpful suggestions. They expect the "knocks" and they are not disappointed. But there are other ways of boosting the labor press. The editor appreciates it when he is told that he has said or done a good thing through his paper. Tell him about it.

As a rule, he needs the money. He eats the same kind of food that the rest of us eat—when he can get it. Some of us have apparently concluded that he lives on ink. But even ink costs money. And the market price is advancing. He wears the same kind of clothes. He lives in the same kind of a house and he deals with the same kind of a landlord.

Just for the fun of it—let's give him a boost—in just the way that you know best.

Tile Layers' and Helpers' Journal.

JAMES P. REYNOLDS EDITOR

Published Monthly in the interest of the Ceramic, Mosaic and Encaustic Tile Layers' and Helpers' International Union, at Allegheny, Pa., on the 20th of each month.

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OFFICIAL.

The Tile Layers and Helpers, of Des Moines, Iowa, have applied for a Charter and outfit. The following are the names of the applicants: Tile Layers, Joseph Cyrac, A. R. Rintz, E. Groves, Arthur Hendricks, E. Roper; Helpers, S. M. Woodward, A. Canterbury, S. A. Beck, Guy Ashley, W. E. Barcus.

Any objections to the issuance of a Charter to the above-named applicants must be lodged with the G. S.-T. within two weeks, and specific reasons given why the Charter should not be issued; otherwise the Charter will be granted.



THE following letter is self-explanatory:

St. Louis, Mo., Nov. 2, '07.

MR. JAS. P. REYNOLDS,
G. S.-T.,

Dear Sir and Brother:—I hereby resign as a member of the General Executive Council on account of going into business for myself. Same to take effect at once.

Fraternally yours,

ADAM J. MAY.



Correction of an Error in Last Month's Issue.

We desire to call attention to an error in last month's issue, in an article printed on page twelve of the