

USEFUL HINTS.

A glue which will resist the action of water is made by boiling one pound of common glue in two parts of skimmed milk.

To darken the natural hue of wood use a solution composed of equal parts of manganate of soda and crystallized Epsom salts, dissolved in twenty to thirty times the amount of water in about 114 days. The less water employed the darker will be the hue.

In selecting colors in which to paint the wood work of a room, the rule is to take the prevailing tint of the wall paper, but it is sometimes difficult to know exactly what this is. If the contrast is not too great, a good plan is to use the ground colour of the wallpaper for the styles and rails of the doors and corresponding parts, and the colour of the pattern for the panels.

It is in all cases desirable to keep the colours light, as the extent of the surface prevents dark colours being used.

TO MAKE POSITIVE COPIES OF DRAWINGS.—The paper to receive the impression is coated with a 2 per cent. solution of bichromate of ammonium to which a little grape sugar has been added, and then dried in the dark. The sheet containing the drawing is laid upon the prepared paper and exposed to the light until the paper has assumed a grey color. It is now dipped into a 1 per cent. solution of nitrate of silver, one-tenth of the volume of which consists of acetic acid. The positive image developed thereby becomes dark brown on drying.

The feasibility of the use of tin plates as an exterior covering felt or other insulating materials for steam and hot-water pipes seems worthy of consideration. Heating and Ventilation. The amount of heat that can radiate from a polished and tinned surface is very much less than the radiation from canvas and many other substances which ordinarily form the outer surfaces of pipe coverings. The cost of the tin and its application would not be materially more than that of canvas; and as it could be left bright, while canvas is usually painted, and as inferior sorts of tin would answer well for this purpose, the difference in cost, if any, would be trifling. We have seen a very neat job done in this way with apparently excellent results, the insulating material used being mineral wool.

PREPARED MORTAR FOR USE IN VERY COLD WEATHER.—In France, attention has been called recently by Mons. Rabut to the extraordinary results obtained during the long frost of 1892-93 on the Caen and Vive Saint Lo railway lines by the use of soda with the mortar; and it is well, says the *British Clay Worker*, that we should call the attention of builders to these results. Mortars were made in the following way:—Anhydrous carbonate of soda was dissolved in boilers of water, at the rate of 2 lbs. per gallon, the temperature being maintained at 30° C. This was served out to the workmen, who mixed with it an equal quantity of water, and used the solution instead of water for making the mortar. It required 25% more of this solution to make mortar than if plain water were used. The masons had to use india-rubber gloves. The extra cost was computed to be in English money 1s. 6d. per cubic yard of masonry. The addition of the soda not only permitted building to be carried on at a low temperature, but accelerated the setting of the mortar; in short, mortar mixed with it set at 5° of frost twice as quickly as plain mortar at 10° above freezing point.

A NEW USE FOR BRICK-DUST.—A sort of terra-cotta is being made rather largely in Austria, and is finding considerable favor amongst architects and builders. The material consists of a mixture of gypsum (sulphate of lime), brick-dust and slaked lime, these constituents being finely ground before being incorporated together and pressed into the mould. It is chiefly used for ornamental relief-work, cornices, &c., and does not require firing. Some tests of this material were recently carried out by Bohme, and are published in the *Mitt. Konig. Tech. Versuch.* No. IV., pp. 183-185. When air-dried the tensile strength was 10.85, the compressive strength 10.1; when saturated with water the values obtained were respectively 8.68 and 33.5; when saturated with water and frozen, the values obtained by test experiments were 10.60 and 38.8 for tensile and compressive strengths respectively. The specific gravity was 1.21, and the abrasion test gave 52.8. All these figures prove that imitation terra-cotta possesses properties which compare favorably with those of real terra-cotta, and it is stated that it can be made at considerable less cost. This utilization of brick-dust reminds us that Hauenschild, a German expert, has recently produced tiles, showing a satisfactory resistance of frost, from a mixture of two measures of sawdust and one of Portland cement.

CREDIT VALLEY BROWN STONE

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SANDSTONE, fine grained, reddish-brown. Contains quartz, and a little felspar and mica. The stone is in beds of four feet and under, and can be handled in pieces up to five tons. Quarry 300 yards from Railway.

Specimen.	Section under Pressure.	Height.	Crushing Load.	Crushing Stress per sq. in.	Average Crushing Stress per Square Inch.
	Ins.	Ins.	Pds.	Pds.	Pds.
A	2 1/2 x 3	2 1/2	131,000	15,188	
B	2 1/2 x 3	2 1/2	130,000	14,751	
C	2 1/2 x 3	2 1/2	133,000	14,777	14,905
D	3 x 3	2 1/2			

14,905

pounds is the average crushing strength per square inch of our Credit Valley Brown Stone.

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IN confirmation of the facts above stated, we have pleasure in directing your attention to the accompanying table, showing the result of the test of our stone, in connection with the series of tests of building stones conducted in 1892 at the School of Practical Science, Toronto, under the direction of a committee of the Ontario Association of Architects.

By referring to the results of the tests above mentioned, it will be seen that the average crushing stress of the majority of Canadian and American sandstones is far below that of ours, the difference in our favor ranging from 75 to 50 per cent.

The Credit Valley Brown Stone, owing to its modest tone, harmonizes beautifully with red or cream colored brick.

It has been reported that there is difficulty in obtaining Credit Valley Brown Stone. To correct this mistaken notion, we wish to state to architects and the public that we have 40,000 cubic feet of stone ready to ship on the shortest notice, which can be followed up with an unlimited supply. Last year we made extensive additions to our plant and opened up new quarries and mines, and will supply promptly all orders given to us or our agents.

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