

**ZINC COATING ON IRON.**

The Zeitschrift fur Elektrotechnik says on this subject that a coating of zinc on iron acts quite different (a fact not generally known) than when the iron is plated with other metals, such as nickel, silver, or copper. Unlike these other metals, zinc protects the iron electrically by virtue of the fact that in the presence of moisture a galvanic couple will be formed between the zinc and any exposed parts of the iron, which will cause hydrogen to be formed on the exposed iron, and this tends not only to keep rust from forming but will also reduce any rust which may have been formed. To successfully plate iron with zinc is therefore much more important than to nickel plate it, but much more difficult. The Zeitschrift gives the following recipe for the process: The bath should have a specific gravity of 1.135, or contain about ½ lb. of zinc sulphate per quart of water. Its current density should be about 0.1 to 0.2 amperes per square inch, and the solution should be kept stirred. The articles must be very carefully cleaned before plating, and the bath should be replenished with a mixture of zinc dust with about twice its weight of powdered coke suspended in a bag.

Firemen like Sir E. M. Shaw, who have had great experience with building material, generally express confidence in the endurance of sound timber amidst flames. The British Fire Prevention Committee's latest publication contains an account of an experiment of a solid timber floor in March of last year. The floor measured 10 feet by 10 feet, and consisted of 9 inch by 12-inch fir beams laid flat on the walls and bedded in fire clay. The pieces had been used as strong struts, but the holes in them for bolts and mortising were filled with grouting. On the floor a load of bricks weighing a little over a ton was placed. The test lasted from 3.20 p.m. to 4.35 p.m., and the highest temperature was 19.55° Fahr. On examination it was found that the fire had penetrated from 1½ to 2½ inches, while the remainder of the beams were in as good condition when removed as when first operated on. The fire clay in the joints and holes prevented the fire from going through and, there, as in the bedding, remained perfectly soft. The boarding on the top of the beams was not scorched or damaged. The experiment is important from its confirmation of the opinion of experts. It was conducted by Messrs. F. R. Farrow, C. E. Goad and Ellis Marsland.

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