

MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

SPECIFICATIONS FOR CEMENT.

Some very useful and commonsense observations on the value of tests for Portland cements are made by Mr. Frederick H. Lewis, member of the Engineers Club of Philadelphia. The ordinary specification tests are either impracticable or undesirable, for the simple reason that the architect or engineer, in specifying them, does not know all the circumstances attending the tests he prescribes, and he forgets to cover requirements which are essential. The writer truly says: "There is a disposition in specifications to adopt new requirements, and to push them to extreme rigour without having ascertained whether they are really advantageous. For example, some engineers insisted for years on requiring 52,000 lb. ultimate strength in bar iron. Certain mills were able to produce such iron, and the apparent advantage of it led to the adoption of this as a requirement. But we now know that 52,000 lb. ultimate in most cases meant 0.2 per cent. phosphorus in the iron, and that we should be better off if the high ultimate had not been required." And it was the same steel. 100,000 lb. per square inch was once demanded, but we have not been working back to a steel approaching the qualities of wrought iron with an ultimate strength close to 50,000 lb. Manufacturers, for their own interest, who can produce certain qualities often suggest these things as requirements to the profession. Mr. Lewis very cogently urges the question, and gives the following good advice: "Frame requirements to cover an essentially good article, and then add nothing whatever to limit competition or advance the price. It logically follows that specifications drafted on this principle should contain no requirements which are not intended to be enforced, and none for which a satisfactory reason cannot be given." In specifications for steel and cement, several requirements are stated, yet they are silent in regard to the methods to be followed in selecting specimen, or in testing them. The manufacturer receiving these selects his own conditions, and thus completely nullifies the requirements. A test is not an absolute fact, but a related one; it is the minor premiss of a syllogism of which the mass of recorded tests are major premises. The application of these and similar principles to the tests of Portland cement is fully shown by the author. A series of tables of tests is given, showing the reasonableness of certain requirements in drafting specifications.

STONE CEMENT. Take an ordinary resin and powder coarsely so as to melt easily, then use of the resin, one ounce; yellow wax, one ounce; venetian red, one ounce. Melt the resin, then add the wax, and lastly, stir in the venetian red. This cement may be "pulled" into sticks and used by melting into place with a hot iron on the piece of iron or stone, or both, if convenient, may be heated hot enough to melt the cement, then if held in position until the cement is cold, they will be found strongly fixed together.

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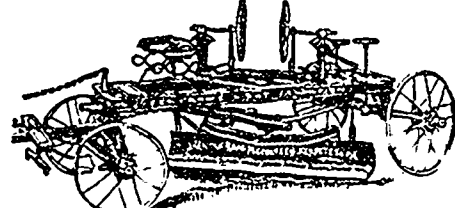
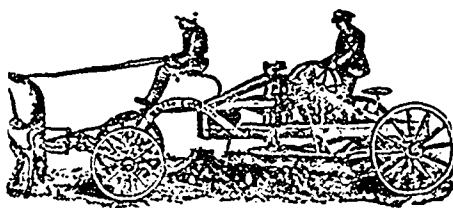
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