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PRODUCT DEVELOPMENT

Non-Asbestos Insulag (F-412) (Insul-X)

The original product Insulag has asbestos as a main component in its formulation, which today is recognized as a hazard to health, and its use has been curtailed by OSHA. This precipitated the work to investigate a product without asbestos. Insulag is a product of lightweight, excellent insulating values, and has the ability to bloat when mixed with water. The latter is accomplished by the alkaline media reacting with aluminum powder and thus releases hydrogen gas which permeates the product mass and causes it to raise much the same as the action of yeast or baking powder in a cake. At the same time the cement in the product starts its initial set, so when the gas release is complete, the cement is at the initial settin stage to hold the volume gain from collapsing. The final body now possesses an infinite number of small voids throughout, which aid the insulating value. The bloating characteristic was incorporated primarily to allow the material to be use to completely fill spaces which when cast or gunned would not fill areas due to design or location.

The new non-asbestos product utilizes a minimal amount of glass fiber in place of the asbestos. Its properties todate exceed all the properties experienced with the original Insulag with the exception of the bulk density, which in the case of Insul-X is three to four pounds heavier. All efforts were expended to explore are of change to accommodate for the lowering of the bulk density to that of Insulag without success.

The product (Insul-X) as it is now formulated has much lower linear shrinkage at all temperatures terminating with 1.8% at 2000°F (Insulag at 2000°F has a 3.0% linear change). The cold crush and modulus of rupture values are in most cases approximately twice as strong as the original Insulag.