# An Evaluation Of Spray Foam Insulation When Used To Stabilize Paleontological Specimens For Recovery

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## Abstract

Plaster of Paris (calcium sulfate hemihydrate; $CaSO_4$ 1/2 $H_2O$) and burlap are the traditional materials used for the stabilization and recovery of fossil and bone specimens. Jackets of this material are adaptable to shape, extremely rigid, and store for years until opened. Their drawbacks include heavy raw materials and finished jackets, labor intensive application, long drying time, and difficulty in opening the jacket. This study examined spray foam insulation products to prove that one or more of them could provide the positive characteristics of the plaster and burlap jacket while also solving the problems encountered with the plaster. The criteria tested included jacket stability and weight, time to apply and harden, adaptability to shape and size, storage and ease of access to the specimen. Five commercial products were tested against Plaster of Paris. Pedestals of clay were created, coated with the various products to a uniform depth and allowed to cure. These jackets were then undercut, turned over and the bottoms were coated with material to complete the jackets. Plaster jackets were formed separately using established application methods. Application times and cure times were recorded. All jackets were then weighed and tested for stability. Adaptability, durability and ease of access were evaluated. Three of the five products created jackets that could be used successfully in the field. They retained the positive characteristics of the plaster, but weighed less, cured quickly, were simple to apply and opened easily. These products could beneficially replace the use of Plaster of Paris to stabilize paleontological specimens in many situations.