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REPORT
UNITED STATES GYPSUM
RESEARCH CENTER

Wallboard Finishes LABORATORY

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PLAINTIFF'S
EXHIBIT
USG-508

TITLE:

Asbestos Free Dry Powder Joint Compounds

SUMMARY:

During this report period work was continued on the project to eliminate asbestos from dry powder joint compounds. The object at the present time is to obtain acceptable application properties. Two different approaches were tried. One was to replace the asbestos with one or more raw materials. The other method was to use a high viscosity binder, trying the binder as the sole means of increasing water demand and gelling the binder slightly with ammonium pentaborate. The idea behind inducing the gel character was to provide slip for application with the gel.

Tests showed that of the asbestos replacement tried Attagel 40, Kelzan, Kelco SCS-LV, Kelco SCS-HV and CMC-2 showed the most promise. While Attagel 40 provides fair application properties, it does have adverse affects on shrinkage and cracking. It is also very thixotropic and causes the compound to break down too much on trowel applications. Kelzan, Kelco SCS-LV and Kelco SCS-HV all provide good slip for application, however they have a low water requirement and therefore dry out rapidly when being applied. Compounds with CMC-2 had a very high water demand, but lacked the good slip for application. An interesting feature of the compounds with CMC-2 was that even with the high water usage there was no loss in bond or change in shrinkage. Further tests will be conducted with these raw materials both separately and in combination as well as testing new materials.

Tests of the high viscosity binders showed that GP-952-3, a cold water soluble corn starch, was the only binder tested had some promise when asbestos was eliminated. In the compounds tested it gave some slip for application. Although even better application properties were obtained when it was gelled with ammonium pentaborate the compound had

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higher shrinkage and a loss in bond. When some of the GP-952-3 was replaced by Gelvatol 20-60 BP polyvinyl alcohol an even greater improvement in application was found. More tests will be conducted with this starch and more binders will be tested.

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