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## Alternative methods to asbestos removal

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At a leading research institution like the University of Minnesota, modern and sophisticated laboratories are necessary to attract top researchers. Depending on the individual requirements of the researcher, the cost of renovating and upgrading labs in older buildings can skyrocket.

One variable that affects cost is asbestos; many campus labs were built when asbestos-containing materials were considered mandatory for fire protection. Now the fireproofing *is* the hazard.

In response to health sciences administrators' requests, the Department of Environmental Health and Safety (DEHS) has initiated several pilot programs to reduce costs in asbestos abatement. The most successful project to date involved the testing of a product called Safe Encasement, which seals the fireproofing and keeps it from becoming friable (crumbling and releasing fibers into the air).

The DEHS study results show that Safe Encasement works well (this is not a product endorsement, but simply the product used in the study); in three separate trial areas, the product successfully sealed the fireproofing. Safe Encasement consists of two separate applications. One is an encapsulant, which penetrates the fireproofing and bonds it together into a harder, less friable product. The second is an encasement that acts like a "skin coat" to overlay the still somewhat fragile fireproofing. Together the two applications bond to produce a stable, resilient surface that can withstand impact and disturbance.

In the final test of Safe Encasement, DEHS performed a side-by-side study of the cost and merits of complete removal and replacement of the fireproofing versus the encapsulation/encasement method. As the following results show, time and money spent were both decreased by approximately 40% when using Safe Encasement:

- Results indicate the encasement can be easily applied and air samples and visual inspections show the asbestos-containing fireproofing to be effectively encased. The product performed well in the field trial.
- Costs will be reduced significantly (40 to 60%) when compared to full removal and re-spray of fireproofing. This savings estimate does not include reduced project time.
- The encasement option shows a labor time reduction of approximately 40% as compared to the removal/replacement option. Fire rating is not affected; the product is water based and produces no harmful off-gasses.
- The encasement products were significantly less costly than the cost of the re-spray fireproofing.
- The encasement room was ready five days before the removal/re-spray room.
- The reduction of contracting entities, i.e. the re-spray contractor, simplified project management for the encasement portion.

- Re-spray most often contains a mineral wool component. Mineral wool has been under scrutiny as a possible carcinogen and may become a regulated material in the future.
- The area above the ceiling plane will remain cleaner and dust free in the future as compared to the area re-sprayed with typical fluffy cellulose and mineral wool fireproofing.

One drawback to the encasement method is that the asbestos, though highly stabilized, remains in the building. Any future work requiring disturbance of the fireproofing would need to be performed by licensed and trained asbestos abatement contractors. And in the event of building demolition, under current regulations the asbestos must be removed prior to that demolition. In buildings with extended life expectancies (beyond twenty years), the encasement method proves to be a viable tool to facilitate remodeling/renovation of any spaces that have asbestos fireproofing concerns.

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