

FiberTech Encasement Products



What is Encasement?



Asbestos fireproofing before Encasement



Primed Fireproofing using Fibertech F-50 penetrating primer



Completed Encasement system after application of the FiberTech F-51 sealer coat

In the management of mold, asbestos, and lead-based paint, there are five options: do nothing, encapsulate, enclose, remove and replace, or encase. Of these five, encasement is your best option in terms of cost, time requirements, and disruption. Encasement is a spray, roller, or brush applied liquid sealant that dries to form a solid, monolithic coating that totally encloses (encases) the surface, leaving no possibility for contact with asbestos fibers, mold, or lead transmission.

Encasement coatings include a primer (partially absorbed into the substrate) followed by an outer sealer coating for durability and wear. The completed system bonds into the underlying substrate and forms a highly elastic protective membrane. These water-based, non-toxic acrylic polymer coatings add minimal weight to the substrate, unlike other encapsulants. The hazardous material is rendered safe due to the impervious coating system.

Encasement vs. Removal – The Real Deal

Faster:

Encasement can be completed in substantially less time than a removal, and time savings means money savings. Encasement can often be completed on off-hours and weekends, reducing or eliminating the need to move occupants, resulting in additional rental costs or lost rental/lease revenue.

Less Expensive:

Because encasement is faster than removal, the reduction in downtime (especially in leased/rented space) and relocation of occupants translates into less headaches and increased work efficiency.

On a typical project, cost savings are in the range of 50-80%; however, on some projects savings can reach 95%. This is because the work is less time consuming, much less waste is produced, and no replacement materials are required to replace what is normally removed.

In-place management of asbestos results in no additional costs for re-insulation and for the disposal of asbestos waste generated.

Safe:

Encasement provides the end user with:

A non-toxic, low VOC, long lasting system. This low odour formulation poses virtually no health or other risks to workers. Perfect for all situations, especially in schools, hospitals, and care facilities. Why replace asbestos with similarly harmful replacement fireproofing materials? Some replacements pose similar exposure threshold limits today as asbestos did only a few years ago. Encasement removes the hazard while maintaining the protection. Removals rarely address all of the existing asbestos, and accidental exposure possibilities during abatement can occur. Does not support combustion in a fire.

Ease of Use:

Easy to remove portions of fireproofing – simply tape the enclosure onto the membrane without disturbing any fibers, and remove within the containment.

Easy to repair: simply apply a coating over the area for a seamless patch.

Easy to apply: minimal worker training is required with this non-toxic coating and the application is performed by brush, roller, or sprayer.

Minimal Preparation, minimal mess, reduced cleanup: Application is quick and easy, with minimal waste generated as materials are managed in place, and clean up is with water.

Long-lasting:

Durable, tough coating: with an available 20 yr. warranty for exterior/interior applications, the membrane will last indefinitely in an indoor environment. Repels water, eliminates possibility of disturbed ACM. The flexible acrylic coating shifts with the surface on which it is applied, and will never shrink, chip, or crack, and is seismic resistant.

Aesthetically pleasing: The encasement membrane can be tinted up to 1500 custom colors, and won't negatively affect architectural details on lead-based paint surfaces.

Mold resistant: with a mold-resistant additive, the coating retains its non-toxic properties while providing a mold and mildew protective barrier.

Maintain fire rating: Fire rating performance is not negatively affected, and on asbestos a Grade A rating is maintained.

Improves cohesion/adhesion: Encasement actually improves the integrity of surfaces by increasing the adhesion and cohesion of materials to the substrate, depending on the thickness of the fireproofing.

Variety of uses: Where inhalation and/or ingestion of asbestos, lead-based paint, or mold is an issue, encasement is the best solution.

Approved in many areas: Throughout the U.S., Canada, and around the world, encasement is the preferred choice to typical abatement and governmental approvals illustrates this.

Warranty: All encasement systems can be warranted for up to 20 years, in both exterior and interior applications. In climate controlled indoor environments, the system lasts indefinitely.

Common Questions:

Why should I spend money on a coating when I can just pay to have it removed and never have to worry about it again?

Generally speaking, removals are popular not because they are the best option, but until recently the only option. The belief that removal of asbestos solves the problem forever is problematic, as asbestos replacements (man-made mineral fibers) pose their own set of hazards. For reference, the occupational exposure limit (OEL) for these replacement fibers in Ontario is 1 fiber/cc (1 asbestos fiber per cubic centimeter). In 1999, the OEL for asbestos in Ontario was also 1 fiber/cc. Australia has recently set an OEL for fiberglass, rockwool etc. fibers at 0.5 fibers/cc. An OEL has been set for asbestos replacements such as man-made mineral fibers because they are only marginally 'safer' than asbestos. By removing asbestos and re-insulating with these materials, you truly are replacing one hazard with another, and have committed considerable time and money to the process.

Discretionary removal has never been a regularly accepted practice by governmental occupational health and safety authorities. The EPA, Ontario MOL, OSHA and other agencies believe that such removals are not advisable and may lead to a greater asbestos exposure than responsible in-place management.

Encasement completely removes the hazard posed by asbestos in its typical setting. Workers can work around encased fireproofing without ANY protection provided they do not disturb the membrane. Because the membrane is tough and durable, only very sharp objects or very heavy blows will breach the coating, so typical maintenance work can be performed without any concern of asbestos or lead paint exposure.

Are there situations in which encasement is not recommended?

Encasement has significant benefits in almost every application, and can be applied to fireproofing, asbestos-containing paint, plaster, block etc. Although encasement is always easier and cheaper than removal, all asbestos must be removed in a building prior to demolition. Therefore, if the building is scheduled for demolition in the near future, it makes sense to remove the asbestos rather than encasing it. If the building has a 5-10yr life span remaining, or more, encasement offers major benefits.

I've heard that encasement will prevent delamination of fireproofing from ceiling decks, etc. Is this true? How much weight is added to the substrate?

The adhesion of fireproofing to an underlying substrate is not significantly improved by encasement, unless the fireproofing has been thinly applied. The encasement binds with the fireproofing, and will penetrate a number of millimeters into the substrate. However, the encasement membrane is continuous, and therefore the entire surface bonds together as one unit. As a result, any areas that delaminate are retained in place by the rest of the membrane – while it may not have adhesion to the substrate, it will continue to be a part of the continuous membrane and therefore fallen fireproofing is virtually eliminated. The high-tack penetrating primer has an elasticity of 4000%, more than adequate to retain all materials in place, and significantly improves adhesion and cohesion of the surface over non-encased surfaces.

What is encasement's track record, and where has this technology been used before?

The encasement technology has been in use in the United States since the early 1990's, and has been used in many high-profile locations, such as Penn Station (NY subway system), the parking garage of the World Trade Centers, the TWA terminal, etc. Most recently, FiberTech products were used in the completion of the McMaster University Medical Centre in Ontario Canada, where 40 acres of asbestos-containing fireproofing were encased. Numerous smaller projects have been completed in public and private buildings alike. In all cases, the technology has withstood the test of time and generated remarkable savings to their property owners.

What sort of management and maintenance of encased areas is necessary when the project is complete?

Generally speaking, none. However, for due diligence purposes, encased areas should be inspected regularly as one would inspect other building components as part of a regular inspection cycle.

How difficult is it to remove a patch of fireproofing after encasement?

The encasement of fireproofing allows you to tape enclosures directly onto the membrane. This is ideal for the removal of smaller areas of fireproofing, because containment of the area disturbs no asbestos fibers. Otherwise, you would have to seal an enclosure onto friable fireproofing or extend the enclosure to areas free of asbestos. With encasement, once the containment is in place you simply cut the border of the area to be removed and proceed.

How is fire rating affected?

The encasement system does not negatively affect fire ratings and adds a minimal amount of additional fire rating (about 5-10 minutes). The membrane is non-toxic and will not release any harmful compounds during a fire. This is evidenced by the results of the UPIIT testing conducted on this product which showed no acute lethality of thermal decomposition of the product. Furthermore, the flame and smoke spread are such that there is no propagation of fire events.

What sort of testing has been completed on this material?

The encasement product has undergone extensive testing for fire rating, water vapour transmission, adhesion and cohesion, mold growth, ageing and weathering, elongation, etc. The technical data sheet includes a listing of these tests and other ASTM tests, government approvals, acceptances, and listings.

What is the recommended application thickness and how much material will I need to order?

Generally speaking, for asbestos encasement an application rate of 12-20 wet mils for primer and 12-20 wet mils for sealer coat is recommended. This translates into a dry mil coverage of about 14-20 mils (14-20/1000ths of an inch). On a smooth surface, such as painted drywall, coverage can be as great as 150 ft/gal when the coating is applied at 10 wet mils for both primer and topcoat, but on a rough, porous surface the coverage will be significantly reduced (perhaps 1/3 the coverage or less).

Who would I contact to do this work? Must they be approved applicators? Who warrants the application?

Any asbestos, mold or lead paint remediation contractor is capable of dealing with the hazards of these materials, and with the right equipment, application is not difficult. Painters familiar with airless sprayers can also perform the work, provided that they are trained in the hazards of the material they are coating. There is no formal approval process; however, for the warranty to be applied the installation must be inspected by the manufacturer's agent prior, during, and after completion of the applied encasement system.

What time and money saving can I expect over typical removal and replacement?

This ranges significantly depending on the size of the project. Suffice it to say that cost savings are at least 50% over typical abatement, and are generally up to 80%. The larger the project, the bigger the savings. For example, a large encasement project in Ontario Canada was completed with FiberTech products for approx. \$8 million Canadian (materials and labour). The lowest estimate to perform a removal on this project was in the range of \$125-150 million. Encasement resulted in a savings of about 95% or \$117-142 Million. And of course there is never the worry that the replacements may themselves be hazardous to human health.

Are there any hazards to using the encasement material?

As a non-toxic, water-based coating, the material is not WHMIS controlled nor are there any special shipping requirements. Handling, clean-up and disposal is the same as that for latex paints.

Is a test patch application warranted?

A test patch is recommended if it is necessary to determine coverage rates, if variances can be given to the personal protection required by workers, etc.

How many applications are required to get to an appropriate thickness?

Two – one primer coat and a topcoat/sealer. The thickness can be determined by the applicator– a thinner coat may only require one or two spray coats (the recommended thickness for lead-based paint is 12-14 dry mils), while a few additional passes will increase the thickness to levels of between 20-40 dry mils (for asbestos, 14-20 dry mils is typically recommended).

Are there any restrictions as to where the material can be applied?

These coatings are suitable in any environment, be it a residence, hospital, school, industry etc. As a non-toxic coating, it may be used without any special postings, outside of those required for the surface on which it is being applied. As a low-odour formulation, it is suitable for use in and around ducts as well.

Are asbestos fibers disturbed during the process?

Typically, very few to no fibers are disturbed by this treatment. In some jurisdictions, variances have been granted to allow the application under reduced personal protective measures, as this type of sealant application is much safer than typical encapsulant applications due to the 'locking down' nature of the product.

What other hazards can be eliminated with this technology?

As discussed, encasement is an unparalleled solution for eliminating the hazard of asbestos containing materials, but the technology lends itself equally as well to the containment of lead based paint and mold. The principles remain the same in all these materials, and the solution is to find a cost-effective, timely solution for the management of these issues. Encasement allows property owners to effectively and safely eliminate the hazard without the use of replacement materials which themselves may be potentially hazardous, and does all this in an efficient, safe manner.