

FIELD BULLETIN # 060203

TO: Sales, Customer Service, Field Ops,
FM: Bruce R. Wingate ext: 234
Vice President
DT: February 3, 2006
RE: Duroplex® in Tropical Environments & IAQ

Indoor air quality (IAQ) problems in facilities located in hot, humid climates are overwhelmingly caused by the combination of poor building design & construction practices; resulting in high indoor humidity levels and moisture intrusion. When outdoor and indoor humidity levels are high moisture will intrude into a building's envelope and it's occupied space; mildew will grow – and so will complaints from guests and employees. The primary challenge issued by hoteliers is to control or eliminate the consequence of high humidity, moisture, mold & mildew, but that can only be accomplished by a two pronged approach of controlling high humidity in interior spaces through proper construction practices; this translates to proper HVAC design and selecting the proper building materials, including interior wall coverings.

Mold & mildew, a consequence of high humidity levels, adds significantly to the deterioration of coatings and other interior items such as carpeting, wallboard, and most FFE items. This can lead to substantially shorted life cycle on FFE items, room closures, as well potential costly litigation. One of the more recent high profile cases came out of Hawaii at the Kalia Tower of the Hilton Hawaiian Village; an environment that some previously argued is less challenging than the one faced on a number of the Caribbean Islands. The Hilton Hawaii situation is not an isolated case; but it was a major project involving leading A&D firms and premier construction companies. Improper HVAC design, improperly installed lanai doors, and improper partitioning of interior drywall, were among the factors claimed to have led to interior mold and mildew problems, leading to a closure of the tower for an extended period of time.

“Honolulu Advisor
April 22, 2003

Hilton Hotels Corp. filed a lawsuit against 18 contractors, architects, engineers, inspection companies and at least one product manufacturer and one building material supplier. The suit is seeking to recover \$55 million in mold remediation costs as well as business interruption costs after mold contamination forced the 453 room hotel to close in July 2002.”

Kalia Towers is a high profile and perhaps extreme case. One could argue that use of Duroplex alone would not have solved the mold & mildew problems experienced at Kalia Towers, but it might have mitigated some of the damages caused by improper selection

of interior wall coverings. Shown below are some photos from another project renovated just last year. Duroplex was a central part of the solution package to keep this property operating.

Typical Effects of Mold & Mildew Underneath Vinyl Wallcovering
Winter 2004



Building a “mold free property”, which is a relative term, is probably more accurately defined as a “low mold or non-toxic” building, requires careful planning and knowledgeable construction managers. While there is probably “no single silver bullet” that will guarantee a mold free building, there are a number of things that can be done to minimize mold & mildew growth in a building. It starts with careful screening of the A&D firms involved to make sure there is an understanding of the construction challenges. Proper design of the property and appropriate engineering of HVAC systems are critical components. Jobsite execution to specifications is also important, as are the daily construction practices, some items are easy such as storing construction materials under cover and off the ground. Another major item involves the proper selection of interior finishes. Some years ago, the American Society of Building Engineers commissioned a study on hotel construction. One of the conclusions put forth in their study was: INTERIOR FINISHES FOR HOTEL PROJECTS IN THE MORE SOUTHERN LATITUDES SHOULD HAVE A MINIMUM PERMANENCE¹ RATING OF 12 PERMS. This study and the importance of proper interior finishes was further validated by the engineering firm of CH2M Hill in their study called *Preventing Indoor Air Quality Problems in Hot, Humid Climates: Design & Construction Guidelines*.

Duroplex is extremely well suited to handle tropical environments. Duroplex coatings have a long history of supplying wall finishes to the Caribbean and other places around the world where mold & mildew control is a daily battle. Many, if not most, of the major resorts in the Caribbean already use Duroplex. Testimonies abound about before and after situations, where prior to Duroplex there was an extreme problem but there was no problem with surface mold and mildew on the Duroplex once it was installed.

So what is it about Duroplex that results in not experiencing surface mold & mildew growth but when the same construction method using vinyl wall covering, resulted in often serious mold or mildew problems on or behind the vinyl wall covering?

- a) Duroplex breathes. It allows moisture vapor to escape through the coating. Instead of producing a vapor tight seal, as happens with vinyl wallcovering, Duroplex has a 28-perm rating. This means that moisture vapor will move through the coating.
- b) Duroplex was engineered to contain a minimum of digestible organic food sources. Most common construction materials, be it the paper facing of the drywall, paints, or the glue used to hold up the vinyl wallcovering are consumable by mold or mildew. Duroplex does not support the growth of mold & mildew.
- c) Duroplex contains a highly effective mildewcide. Most paint & glue manufacturers are primarily concerned about mold or mildew growing in or on their products while the product is still “wet in the can”. This renders the product “un-sellable”. However long term resistance is much less of concern and much harder to solve due to many variables, some uncontrollable, such as building leaks. Duroplex contains not only a pot life preservative, but also a long life mildewcide that maintains it’s active presence, preventing mold and mildew on the Duroplex for the duration of the warranty period.

In summary, Duroplex has been on the market since 1985. From its inception it was designed to resist surface mold or mildew growth. During the last 20 years, Duroplex has been installed in the most challenging climates and construction conditions imaginable. In the 20 year history of the product there has never been claim on the mold or mildew warranty.

¹ Permance: measurement of the resistance to water vapor passing through a coating. Low permance = high resistance. A measurement 1.0 is considered a sealed surface. The higher the permance value the less resistance to water vapor transmission. Note: too high a value makes it impossible to clean the coating.