

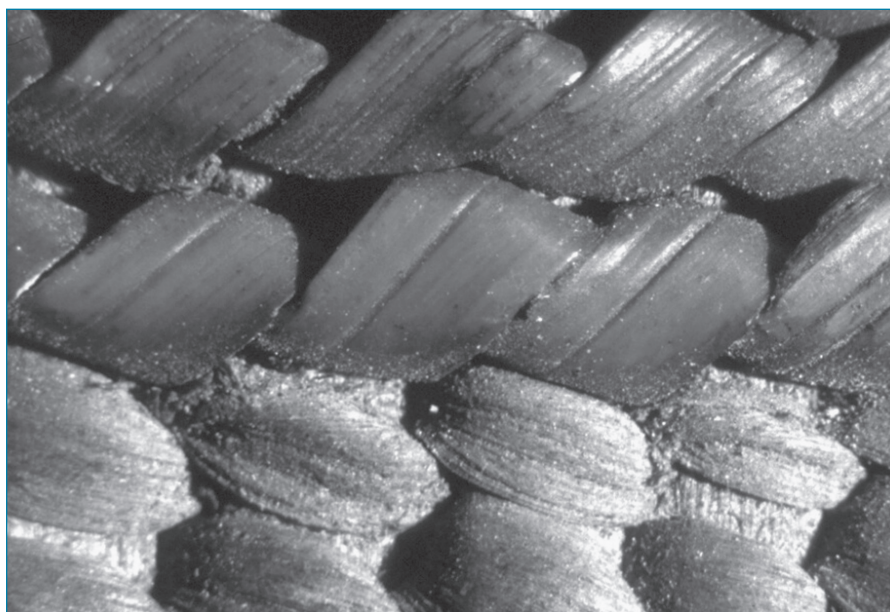
Alaska State Museums BULLETIN

An Information Source for Alaska's Museum Community

Dust in Museum Exhibits

by Ellen Carlee

We have long known that dust causes damage to artifacts. Dust is unsightly and makes your collection look poorly maintained. It is abrasive on a microscopic scale due to tiny sharp mineral particles, such as quartz, and contains pollens, skin cells, insect bits, and other organic matter that feeds biological growth. Dust can be acidic and is hygroscopic—



Basket fibers affected by dust.

meaning it attracts water and holds it against the surface of an object, contributing to staining, corrosion, and biological growth.

Recent articles have given us a new understanding of the impact of dust on our collections. A paper presented at the 2004 conference of the American Institute for Conservation described the forces that help dust stick to surfaces. One of these forces comes from sticky “exopolymers” made as a waste product of microbes (mainly bacteria). Accumulating dust provides more food for these colonies of microbes, and layer upon layer of “biofilm” forms, with the bottom layers becoming firmly adhered to the surface of your artifact. Spikes in humidity can encourage the initial growth and speed the growth of biofilms. Periods of low humidity after high ones can stress the bacteria,

and might cause them to produce even more sticky exopolymers. Yet another reason to try to keep our museum humidity levels stable!

Other recent articles have explored the role of visitors in creating coarse dust. Considerable amounts of dust enter the museum on visitors’ clothes and shoes. Visitors are such a direct contributor to dust that one study showed dust amounts are cut in half for every 3 to 4 feet of distance between a visitor and an object. Fibrous dust, largely from clothing, accounts for only about 3% of the dust in exhibits. However since the particle size is large and visible, fibrous dust contributes significantly to the appearance of dustiness. This dust tends to be thickest at eye level. Dust entering on shoes is more concentrated closer to the entry, and

in greater quantity under wet weather conditions than dry conditions. This kind of dust only rises about 4 or 5 inches off the floor.

Some preventive measures can be taken. Placing objects in cases and further away from visitor traffic is one solution but is not always possible or desirable. Tightly sealed exhibit cases are better than ones with gaps, but require con-

struction materials that do not off-gas harmful chemicals like formaldehyde and acid. Placement of mats in entryways significantly reduces the amount of dirt brought into the building on shoes. Vigorous air movement also increases the rate of dust coverage. Live performances and pathways through exhibits that involve sharp turns are examples of “dust raising” activities. Air movement from fans and open windows encourages dust circulation as well. Sometimes those factors are unavoidable but strategic decisions can be made, particularly in relation to artifacts on open display.

Cleaning of collections on exhibit should be scheduled at least once a year. Objects displayed in the open should be dusted annually. Artifacts in exhibit cases can be cleaned on a ro-

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5 Defenses Against Dusty Exhibits

1. Sealed exhibit cases are the gold standard.
2. Establish regular dusting schedules.
3. Use extra floor mats near doors.
4. Avoid the use of fans and open doors or windows unless absolutely necessary.
5. Avoid drastic swings in humidity levels.
6. Shut down the HVAC when cleaning dust out of the vents.



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FY 2009 Grant-in-Aid Awards

The Alaska State Museum has announced the awarding of 30 grants totaling \$105,600 to Alaska museums. The annual Grant-in-Aid awards are funded by an appropriation from the Alaska State Legislature. Overall, 36 applicants requested more than \$150,000. The requests were to fund improvements in collection storage, upgrades to computer and media equipment, and emergency response planning. The following were awarded a grant:

| Applicant | City | Project | Amount |
|-------------------------------------|---------------|--------------------------------|-----------|
| Nenana Cultural Center | Nenana | Computer and software | \$ 1,880 |
| Palmer Historical Society | Palmer | Computer and software | \$ 1,974 |
| Valdez Museum | Valdez | Computer equipment | \$ 2,000 |
| Wrangell Museum | Wrangell | Expenses for lecture series | \$ 1,600 |
| Copper Valley History Center | Copper Center | Furniture upgrades | \$ 1,874 |
| Clausen Museum | Petersburg | Storage room upgrade | \$ 2,919 |
| Juneau-Douglas City Museum | Juneau | Storage room upgrade | \$ 8,893 |
| Soldotna Historical Society | Soldotna | Computer and software | \$ 1,999 |
| Alpine Historical Park | Sutton | Computer, printer, projector | \$ 1,997 |
| Pioneer Park Museum | Fairbanks | Digitize historical photos | \$ 2,000 |
| Alutiiq Museum | Kodiak | Reformatting oral history | \$ 7,429 |
| Alaska Zoo | Anchorage | Tables and chairs | \$ 7,715 |
| Museum of the Aleutians | Unalaska | Exhibit case refurbishment | \$ 9,520 |
| Tochak Historical Society | McGrath | Software and archival supplies | \$ 1,997 |
| Bald Eagle Foundation | Haines | Rack card and brochure | \$ 2,000 |
| Hope Sunrise Historical Society | Hope | Stove pipe for museum | \$ 734 |
| Eagle Historical Society | Eagle | Catalog conversion/supplies | \$ 1,862 |
| Baranov Museum | Kodiak | Emergency response plan | \$ 2,000 |
| Sam Fox Museum | Dillingham | Exhibit display monitor | \$ 1,933 |
| Kasilof Historical Association | Kasilof | Digital Projector and screen | \$ 1,969 |
| Hammer Museum | Haines | Collection archival supplies | \$ 1,705 |
| Sheldon Museum | Haines | photocopier | \$ 2,000 |
| Palmer Museum | Palmer | Computer monitors/training | \$ 2,000 |
| K'beq Interpretive site | Kenai | Interpretive panels | \$ 2,000 |
| Resurrection Bay Historical Society | Seward | Museum vacuum | \$ 1,742 |
| Museum of Natural History | Anchorage | Collections upgrades | \$ 8,838 |
| Kenai Visitors & Cultural Center | Kenai | Interpretive signage | \$ 1,926 |
| Aviation Heritage Museum | Anchorage | Exhibit mannequins | \$ 10,000 |
| Talkeetna Museum | Talkeetna | Computer | \$ 2,000 |
| Museums Alaska | Anchorage | Statewide conference | \$ 9,104 |

tating schedule, with a few exhibit cases cleaned one year and others the next. After a few years, all cases will be done and the rotation can begin again. It is useful to have a map of exhibit galleries that can be annotated with notes and condition reports if needed.

Good housekeeping is divided into two levels of cleaning. Less-skilled cleaning can be done by untrained individuals, like daily vacuuming and dusting of furniture. Specialized cleaning requires more skill. HEPA-filtered vacuums are especially helpful, since they release less dust back into the air. Closer to collections objects, vacuums with adjustable suction (such as a Nilfisk vacuum with a rheostat) are preferable. Dusting techniques that involve rubbing are abrasive to most surfaces on a microscopic

level and are best avoided. Most items can be cleaned with a soft paintbrush, gently fluffing the dust from the surface into the nozzle of a vacuum cleaner. For fragile surfaces, cover the nozzle with fine nylon netting secured with a rubber band. Feather dusters can be helpful, but beware of any rough quills that could scratch surfaces and be sure to vacuum the feathers frequently to remove dust.

Glass and plexiglass surfaces are often the first to show dust. The Sheldon Jackson Museum in Sitka, which has some of the cleanest exhibit galleries in the state, has found that cleaning glass with paper towels and a mixture of 1 part white vinegar to 4 parts water is as effective as any cleaner. Any cleaner should first be applied to a cloth, and then to the glass or plexi. Fine mist

spray can penetrate cracks of exhibit cases and damage artifacts. Always be careful to let the case air out before closing because of the acetic acid or ammonia vapors released by some cleaners.

Plexiglas® requires a little special attention to prevent the plastic from fogging or scratching. The Alaska State Museum uses specially formulated commercial Plexiglas® cleaners. One product is called Novus®, available through Amazon.com and Tap Plastics, comes in three grades for cleaning and removing scratches.

Good housekeeping is an important part of preventive conservation. Cleaning gives you an opportunity to inspect your exhibits for problems. While updating an exhibit may not be in the budget, dusting that exhibit costs little and refreshes its appearance.



Charles Dean cleans exhibits at the Sheldon Jackson Museum using a soft paintbrush and a Nilfisk HEPA-filtered vacuum with nylon mesh over the nozzle.



Eagle wing before removing dust...



... and wing after dusting.

Ask ASM: Should I use buffered tissue or non-buffered tissue to store my artifacts?

Ah, the “tissue issue!” Considerable dialog has gone on within the museum community about the use of buffered tissues versus non-buffered tissues. The pH of all papers drops over time as they deteriorate – even acid-free papers. Acid-free simply means that the paper had a neutral pH when it was manufactured. Buffered tissues contain a compound (usually calcium carbonate) meant to neutralize acids that form in paper during aging. Buffering makes the tissue last longer. It does not stabilize nearby acidic materials. The amount of “alkaline reserve” is rather small (2-3%) and does not migrate. The products of acid degradation do migrate however, so the tissue acts as a barrier to protect nearby surfaces.

Theoretically, buffered tissues should not be used with artifacts made of proteins, animal parts like feathers and fur or materials derived from animals like silk and wool, because those artifacts prefer a slightly acidic environment. Alkalinity also is known to affect some pigments and dyes, and therefore buffered paper is not recommended with color photographs or pigmented surfaces. Practically speaking,

however, unless the tissue is wet and touching the surface of the object for an extended time, it is questionable if those effects are taking place. Furthermore, the amount of buffering is rather small. At the Alaska State Museum, we don't use buffered tissue. We find it difficult to keep it separate from non-buffered, as they look almost identical. Simple acid-free tissue paper is so beneficial for padding, interleaving, and protecting surfaces that we don't bother with buffered tissues.

Not long ago, The State Museum had a conversation with Dr. Naoko Sonoda of the National Museum of Ethnology in Osaka, Japan. She was showing us her collections storage, where acid-free tissue wrapped or padded nearly everything. We told her about various modern products we use in the U.S. and she told me that, while they are very interested in those products, deep down they feel very comforted by the presence of tissue because they have been using it to preserve their heritage for centuries. A product tried and true over hundreds of years. It is hard to argue with that.

Museum Success Stories

The Haines Sheldon Museum and Cultural Center



The Sheldon Museum and Cultural Center in Haines has successfully remounted their main display of Chilkat robes. The project was funded by an NEH Preservation Assistance Grant which helps small and mid-sized institutions improve their ability to preserve and care for their humanities collections.

The best part of this project was the collaborative effort that brought all the essential elements together. A Chilkat weaver, Lani Hotch, carefully attached Velcro strips to the backs of the robes so they would hang securely. Interestingly, Lani's grandmother wove one of the robes on display. The carpenter

who built the original casework in 1982 was contracted to modify the case to fit the new mounts. The case needed to be deeper to accommodate the slant boards.

Karen Meizner, Exhibitions Coordinator, worked with Scott Carrlee, Curator of Museum Services at ASM, to build the elaborate slant boards needed for the backings. Slant boards hold the robes at a slight angle to mitigate the effects of gravity. Jerrie Clark, Sheldon Museum Director, said, "For two decades the robes hung on carpet tacks. They look nicer and are definitely much safer now."

Note:

There are new books in the ASM Field Services Library. Go to museums.state.ak.us/lending_library.html for a list. Books are available for 30-day loan to Alaskan museums with a postage fee. Contact Scott Carrlee at (888)913-6873 or scott.carrlee@alaska.gov.

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