



Conserve O Gram

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Removing Dust From Ceramic And Glass Objects

Ceramic and glass objects on exhibit in museums and furnished historic structures have long been routinely cleaned and dusted as part of the overall housekeeping effort. Under most circumstances the removal of dust and other airborne soils from these types of objects aids in their long-term preservation; however, routine cleaning and dusting can remove important historic information and cause damage to certain objects. This *Conserve O Gram* will discuss the types of cleaning that should be avoided, cleaning that can be safely performed on-site by park curatorial staff, and the various procedures to follow.

Avoid Wet Cleaning

Aqueous immersion or wet cleaning of ceramic and glass objects by untrained park staff is not recommended due to the potential for damage. Under certain circumstances, attempts at wet cleaning will only exacerbate the situation (e.g., immersing poorly fired or salt-contaminated earthenware can cause irreversible damage). Scrubbing the surface of clouded glass will not change the appearance because the clouding is not a deposit, but rather the result of chemical leaching action. Repeated scrubbing can damage the surface.

If, after performing the following recommended procedures, it is felt that wet cleaning is necessary to achieve the proper appearance, consult a conservator for specific recommendations before cleaning that object.

Why Dust?

The most obvious reason to remove dust is because dirty museum objects generally do not

accurately reflect the historic scene or the aesthetic intent of the maker, and dust sometimes obscures decorative elements or designs. In addition, dust is abrasive and can scratch glass and glazed ceramics and, if left in place over time, can degrade even the hard, non-porous surfaces found on glass and on glazed ceramics. In a humid environment, dust can react with acids in the atmosphere to further degrade glass and ceramics.

Reduce the Need to Dust

Handling museum objects, including routine housekeeping, creates the potential for damage. Deteriorated glazes and decorative elements could be knocked off, weakened old repairs could break, and an object could be dropped. Therefore, it is advisable to limit the amount of housekeeping necessary to maintain ceramic and glass objects in exhibitable condition.

A preventive conservation approach that emphasizes proper storage and exhibit techniques can lessen the need for handling. Keep objects in dust-proof storage or exhibit cases when possible. It is more difficult to control dust in furnished historic spaces where objects are on open exhibit. Airborne dust can be reduced by frequently vacuuming carpet runners and providing a clean floor surface immediately outside the exhibit space. Air handling systems should be filtered for dust and atmospheric pollutants in all spaces that house museum objects.

Objects Not to be Routinely Dusted

Some ceramic and glass objects should not be routinely dusted without specific recommendations from a conservator.

These include the following objects:

- Archeological objects. These objects are often quite fragile and the surfaces are characteristically friable (able to be easily rubbed off, crumbled, or pulverized).
- Objects that have surface deposits that may contain important information on use or provenance. The potential significance of the deposits should be evaluated before they are removed.
- Objects that are not complete (e.g., with sharp, broken edges) or that have unstable surfaces.

Preparation

Prepare a padded work surface. Expanded polyethylene foam stretched over a table and affixed to the underside works well. Transport the object to and from the work station in a padded box or cart. Handle glazed ceramics and glass with clean, dry hands or wear vinyl gloves to reduce the possibility of having a smooth-surfaced object slip from hold; white cotton gloves are recommended only when handling unglazed ceramics.

The object should be placed on the work surface in the most stable orientation. This will depend on the particular configuration of the object. For example, a tall top-heavy figurine should lay flat while a squat vase should be placed on its bottom surface. The object can be held in place on the table so that it will not fall or roll off by wedging weights (e.g., small polyethylene bags filled with microcrystalline beads or leather-covered lead shot weights) gently against the object.

Always work on an object from the highest point down. Keep the work surface and tools clean.

Procedures for Removing Dust

Vacuuming. When the dust build-up is heavy and the configuration of the object is

irregular or the surface is roughly textured, vacuuming with the aid of a brush is the recommended procedure. Hold the vacuum nozzle approximately one inch from the surface of the object and use a soft artist's brush to remove the dust by brushing towards the vacuum nozzle.

A vacuum cleaner with a high-efficiency particulate air filter (HEPA) is preferable. This type of machine traps even the finest particles instead of exhausting them back into the immediate environment. Use a vacuum with adjustable suction. Reduce the vacuum pressure when cleaning small or fragile objects.

Dust Wiping. Wiping with a dust cloth is the recommended procedure for removing dust from regularly-shaped, smooth-textured objects. The most effective dust cloths are made from Tyvek® material stitched with nylon fibers, called Dust Bunny® Magnetic Wiping Fabric. The Dust Bunny will not scratch the object and is lint-free. Because it is a non-conducting material, a static charge is created as the cloth moves over the object. It attracts and holds onto dust with only a minimum of contact pressure, minimizing the possibility of the dust abrading the object's surface.

Under some circumstances, dry dusting will not remove all the dust and airborne soils. If this is the case, damp wiping can be done on stable glass and high fired ceramic objects, such as stoneware and porcelain, that do not have cracks in the glaze or over-glaze decorations. Dampen a clean cotton cloth with a solution of 10 parts denatured alcohol, 8 parts distilled or deionized water, and 1 part non-detergent household ammonia. Gently wipe the surface of the object, being careful to turn the cloth to a clean surface as it picks up dust and dirt.

Caution: Ammonia can react chemically with unstable glazed and glass surfaces. If any question arises concerning the stability of the surface to be damp-wiped, consult a conservator and the Regional Curator.

For additional information consult the NPS *Museum Handbook*, Part I (Rev 9/90). Appendix P contains information on the physical nature of ceramics and glass, including a section on the agents of deterioration. Appendix I contains special considerations for archaeologically recovered materials.

Sources

Dust Bunny Magnetic Wiping Fabrics are manufactured by Leap Frog® Technologies, Altoona Pennsylvania 16684-0304, (800) 822-3878. They are also available through some suppliers of archival quality material and from Modern Solutions Corporation, 6370 Copps Avenue, Madison, WI 53716, (800) 286-2023. (Modern Solutions will provide a free sample upon request.)

HEPA filter vacuum cleaners are available from laboratory supply companies, such as Lab Safety Supply, P.O. Box 1368, Janesville, WI 53547-1368, (800) 356-0783, and from Nilfisk of America, 300 Technology Drive, Malvern, PA 19355, (213) 647-6420.

Leather covered lead shot weights are available from conservation materials suppliers.

Microcrystalline beads, polyethylene bags, cotton and vinyl gloves are available from suppliers of archival quality materials.

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