



Foth Infrastructure & Environment, LLC

Standard Operating Procedure

Removing Dust from Homes

Introduction

The purpose of this Standard Operating Procedures (SOP) is to establish a standard procedure for removing dust that may be found on horizontal surfaces in occupied residential living spaces.

References

Site-Specific Health and Safety Plan.

Definitions

Accessible Surface: Means a surface for which there is a likelihood of frequent contact and exposure. Therefore, it means a horizontal surface inside occupied residential living space that can accumulate dust and is readily accessible for cleaning. Not included are: attics, garages, utility rooms, outbuildings, utility sheds, closets, internal shelving, and drawers in furniture and cabinets. Objects sitting on top of accessible surfaces are to be removed by the owners prior to cleaning and are not part of the SOP.

Contractor: Means the individuals responsible for performing dust removal.

Dust: Means fine particles of earth or other matter which accumulate through airborne deposition on accessible surfaces in a residential living space.

Dust Removal: Means the process of using a HEPA vacuum and wet cleaning agents to remove dust.

Residential living space: Means areas in occupied residences but does not include commercial structures of any kind such as retail establishments, restaurants, and the like, as well as multi-unit apartment buildings or other commercial residential structures.

Personnel Qualifications

Personnel will receive work-specific training including: the scope of work to be performed; the hazards associated with various cleaning chemicals; potential issues associated with working in residential living areas; and standards for behavior when interacting with residents. Personnel will have successfully completed work-specific training as evidenced by 100% attendance and a passing score on a final written examination. Personnel will demonstrate working knowledge of required procedures.

Workers will be:

- ◆ punctual to arrive on-time at the assigned job location;
- ◆ conscientious to perform all work according to required procedures;



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- ♦ cooperative to receive instruction and work with others on a team;
- ♦ honest and trustworthy to work unsupervised; and
- ♦ courteous to residential occupants.

Equipment and Supplies

The following equipment is needed to conduct dust cleaning:

1. All-purpose spray cleaner and cleaners designed for various surfaces
2. Cleaning cloths
3. Bucket(s) with wringer
4. Mop
5. Plastic spray bottle
6. Disposable rubber, latex, or vinyl gloves
7. Protective eyewear or goggles (to protect against splashing)
8. Launderable coveralls
9. HEPA filtered vacuum
10. Replacement HEPA filters
11. Sealable plastic containers for storing wastewater and used work clothing generated during cleaning process
12. Heavy-duty trash bags for containerizing solid materials that are generated (e.g., dust bags, used gloves, and filters).
13. Sample containers for wastewater and solid waste sampling
14. GIS Tracking System

Procedures

The housing unit may be occupied during dust removal, but children and pets should be removed from the rooms being cleaned. The job should be organized so that dust removal is performed within one day to minimize inconvenience to residents. The Contractor will provide educational materials that tell how residents can facilitate the cleaning process. Progress of the work will be tracked using a GIS-based data management system and GPS device.

1. How to Plan and Prepare for Dust Removal

Tenants or homeowners should do the following tasks before dust removal occurs:

- ♦ Store all loose personal belongings in boxes, closets, or drawers to provide easy access to floors and other surfaces that will be cleaned.
- ♦ All objects on surfaces to be cleaned should be removed and stored out of the way for cleaning.
- ♦ Remove and secure pets away from areas being cleaned.



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Contractor personnel should do the following tasks during dust removal:

- ◆ Schedule with residents a date and time for cleaning to be performed.
- ◆ Assure that all cleaning equipment and materials are available and in good working order.
- ◆ Read and be familiar with safe equipment operation
- ◆ Read and be familiar with cleaning product directions and warning labels.
- ◆ Contractor supervisor should ensure all workers comply with this SOP.

Overview of Removing Dust from Occupied Residential Living Space

All accessible horizontal surfaces as defined above need to be cleaned. This includes surfaces such as floors, tops of appliances, window sills, ceiling fans, countertops, desktops, table tops, floor vents, and air registers. A High Efficiency Particulate Air (HEPA) vacuum will be utilized for all vacuuming. Periodic filter replacement is required.

Wet cleaning is necessary for dust removal. Wet cleaning on solid surfaces will be conducted with a cleaner suitable to the surfaces being cleaned.

Cleaning will be performed in two steps:

- Step 1: Use a HEPA Vacuum to remove loose or poorly adhered particles.
Step 2: Use wet cleaning to remove adhered particles.

2. General Cleaning Work Practices

Wear plastic, rubber, or latex gloves when using cleaning liquids. When cleaning a home or apartment, always clean from the higher to lower levels and vacuum before wet cleaning. Within a room, start with the highest-level surface and work down. Do not attempt to repair floors or remove home furnishings. This method of cleaning involves the following cleaning sequence:

- A. Vacuuming
 1. carpets and rugs
 2. surfaces to be wet cleaned
- B. Wet Cleaning
 1. tops of door and window molding
 2. tops of window sashes
 3. ceiling fans and light fixtures
 4. window mullions
 5. interior window sills
 6. window troughs (if accessible)
 7. radiators
 8. floors and floor vents



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Work from cleaned areas to non-cleaned areas to prevent the spread of dust. While performing dust removal, it is necessary to use disposable cleaning cloths or sponges. Replace cloths and sponges, as necessary. Replace rinse water, as necessary.

Dust Removal: A Step-By-Step Guide

- A. Clean one room at a time.
- B. Vacuum the surfaces first.
- C. Clean all horizontal surfaces beginning at the top rear room in the apartment/home, working forward and down by wiping with a cleaning cloth with an all-purpose spray cleaner.
- D. Within rooms, start with the highest surface and work down. Start at the furthest corner of the room and work toward the door. Extra attention may be required to clean hard-to-reach areas, such as the corners of window ledges and crevices.
- E. During wet wiping, rinse rags, sponges, and mops frequently and replace rinse water, as necessary.
- F. Clean until no surface dust is visible. After cleaning, rinse with clean water using a new sponge or cloth.
- G. Dry wetted surfaces with cloths to prevent damage to wood surfaces and eliminate slipping hazards.
- H. HEPA vacuum or wet wipe each surface at least once.

How to Clean Carpets or Rugs

- ◆ Vacuum the top side with a HEPA vacuum equipped with a beater bar or agitator attachment.
- ◆ Vacuum two times going in opposite directions. For example, the first time may be done in an east-west direction, while the second is done in a north-south direction.

How to Clean Floors

- ◆ For floors, a two-bucket system is recommended, but can be performed with one bucket.
- ◆ Mix the cleaning solution (per manufacturer's directions) in one bucket; a second bucket should contain rinse water for the mop head. Change the rinse water as necessary.
- ◆ After cleaning a floor, rinse with clean water.
- ◆ Where possible, clean floors underneath removable rugs.

How to Clean Vents /Registers

- ◆ All air vent registers that cannot be removed should be cleaned in place.
- ◆ Remove the vent register.
- ◆ Vacuum using a HEPA vacuum (if possible).
- ◆ Wash using a cleaning solution.
- ◆ Rinse with clean water and new rags/cloths.
- ◆ Dry and replace the register.

How to Clean a Non Floor Surface

- ◆ Clean household surfaces other than floors by mixing the cleaning solution (cleaning solutions will be selected based on the type of surface being cleaned) in a plastic jug.



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- ◆ Pour or spray the cleaning solution onto the surface being cleaned, or onto clean sponges or cloths.
 - ◆ Frequently rinse the sponge/cloth in a bucket of clean water or throw away any disposable cloths/rags.
 - ◆ Wipe the surface with a water-damp cloth or sponge to remove any cleaning solution residue.
 - ◆ Dry the surface with a clean cloth.

Wastewater and Solid Waste Management

- A. Containerize all wastewater in leak-proof containers.
- B. Containerize all solid waste in sturdy plastic bags. Securely close the bags so the contents cannot be released.
- C. Remove waste materials from the residence and deliver the wastes to a central storage location identified for this purpose. No wastewater or solid waste from the dust removal will be disposed at the residences.

Wastewater and Solid Waste Disposal

- A. Periodically collect and analyze samples of wastewater and solid waste to determine if any specialized handling is needed.
- B. Wastewater will be disposed under a written permit at an off-residence location determined by the local wastewater utility.
- C. Solid waste will be disposed under a written permit at an off-residence location determined by the local solid waste utility.

Health and Safety Rationale

Due to the specialized nature of the work to be completed and the need to perform the dust removal in a careful, controlled, and consistent manner, specialized training for Contractor personnel will be required. Thus, project-specific training will be provided to all Contractor personnel.

Personal Protective Equipment

Personal Protective Equipment (PPE) will be worn by all Contractor personnel to mitigate potential health risks associated with household cleaning chemicals. Contractors will wear standard work clothes: launderable coveralls, water resistant gloves, and eye protection (e.g., clear safety glasses when using cleaning liquids). Contractor personnel will have a neat workman like appearance.

The Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) does not apply to removal of dust in residential areas. The HAZWOPER standard applies to five distinct groups of employers and their employees:

- ◆ cleanup operations—required by a governmental body, whether federal, state, local, or other involving hazardous substances—that are conducted at uncontrolled hazardous waste sites;
- ◆ corrective actions involving cleanup operations at sites covered by the Resources Conservation and Recovery Act of 1976 (RCRA) as amended (42 U.S.C. 6901 et seq.);



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- ♦ voluntary cleanup operations at sites recognized by federal, state, local, or other governmental bodies as uncontrolled hazardous waste sites;
 - ♦ operations involving hazardous wastes that are conducted at treatment, storage, and disposal facilities regulated by Title 40 Code of Federal Regulations Parts 264 and 265 pursuant to RCRA, or by agencies under agreement with U.S. Environmental Protection Agency to implement RCRA regulations; and
 - ♦ emergency response operations for releases of, or substantial threats of releases of, hazardous substances regardless of the location of the hazard (1910.120(a)(1)(i-v) and 1926.65(a)(1)(i-v)).

HAZWOPER does not apply to the work specified in this SOP, because the work areas are not uncontrolled hazardous waste sites, nor are they regulated treatment, storage, and disposal facilities. The dust to be removed is not a hazardous waste, and the work to be performed is not an emergency response operation. The specified PPE in this SOP is designed to provide appropriate protection for normal household cleaning activities.

Based on concern for dioxin exposure in the community of Nitro, West Virginia, indoor dust samples have been collected in various homes in the City of Nitro and the surrounding area. Based on reliable indoor dust measurements, which were analyzed by gas chromatography mass spectrometry (GCMS), only one home had a level of dioxin measured in total equivalency factor (TEQ) above the residential accepted exposure level of 1,000 parts per trillion (ppt). This home was a former office building on an industrial property in Nitro and is not included in this dust removal SOP.

Contact

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Handwritten signature of Brian Symons in cursive script, underlined.