



UNC
ENVIRONMENT,
HEALTH & SAFETY

Job Safety Analysis

Safety Information for The University of North Carolina at Chapel Hill

All UNC Shops



Polychlorinated Biphenyls (PCBs) Window Caulk Removal



**The term “caulk” will be used to describe caulking, sealants, or paints.



Title	Work Task	Hazards	Controls
<p>Pre-Operation and Preparing for the Job</p>	<ol style="list-style-type: none"> Contact EHS concerning the presence of PCBs, asbestos and/or lead. Completed the Training Course titled, “Management of PCBs in caulking and Sealants” and Hand and Power Tools Training. Based upon the condition of the caulk, tools may include utility knife, chisel, hammer, crowbar, putty knife, scraper, electrical joint cutter with oscillating blade, and HEPA vacuum. For elastic and soft caulking (primarily in areas protected from sunlight and weather or located indoors), use utility knife, putty knife, or scraper. For hard and brittle (aged and weather-exposed caulks), use chisel, hammer, crowbar, electrical joint cutter with oscillating blade. Always use a HEPA vacuum. 	<ol style="list-style-type: none"> Not having correct tools and training to complete abatement. Injury or possible death. Assess for any electrical hazards, overhead issues. Inhalation hazard associated with PCBs. Skin, eye, ingestion and inhalation hazards. High winds can spread contamination beyond the work area. Heat or dry removal will increase the inhalation risk and contamination. 	<ol style="list-style-type: none"> Understand the building/structure that work will be performed. Assess foliage or other obstacles that might impede access. Ladders or scaffolding to assist with heights. Read the JSAs for ladders, scaffolds, man lifts and fall protection. Wet methods and HEPA vacuum are essential dust control requirements. Review all SDS for the solvent and new caulk application.



	<ol style="list-style-type: none"> 4. Items required include Rags, PIPE-X-METAL-X (solvent for the removal of oily, dirty metal surfaces) or Less-Than-Ten (for porous surfaces such as wood) or a similar product. 5. Containment items required include polyethylene sheeting (minimum of a 4 mil thickness), tape, water, disposal bag and waste drum (provided by EHS HMF location) 6. Ask the Supervisor to alert building occupants of the work request, the hazard and work procedures including PPE requirements. 7. Do not perform any abatement activities in high winds. 		
<p>Selection of Personal Protective Equipment (PPE)</p>	<ol style="list-style-type: none"> 1. Ensure that the employee understands and don's all proper PPE that is adequate for this job description. 	<ol style="list-style-type: none"> 1. Not having adequate PPE can cause injury or death. 	<ol style="list-style-type: none"> 1. HMP Plan-PPE 2. Wear safety glasses, chemical resistant gloves (nitrile), Tyvek® coveralls, and ½ mask air purifying respirator equipped with a dual HEPA and organic vapor cartridges.
<p>Site Preparation</p>	<ol style="list-style-type: none"> 1. Assess and connect to power source for HEPA vacuum and other electrical tools. 2. Install a trough beneath the window using the polyethylene sheeting to capture all solid and liquid waste from the removal activities. 3. Install a poly seal on the interior of the window. 4. Install a layer of 6 mil polyethylene sheeting beneath the work area and extend 10 from the building. Demarcate the area with Red Danger barrier tape. 5. Don necessary PPE. 	<ol style="list-style-type: none"> 1. PCB hazard 2. Slips, trips and fall hazard when working on a ladder/scaffold/man lift. 3. Solvents – eye, skin, ingestion or inhalation hazard. 	<ol style="list-style-type: none"> 1. Dust control measures 2. Review JSA for ladder, man lift and/or scaffolding safety and fall protection. 3. Prepare to install temporary lighting if required. 4. Demarcate the area with Red Danger Tape 5. Isolate and restrict access to any building egress locations within the work zone. 

Title	Work Task	Hazards	Controls
<p>Performing Removal of the Caulking/Cleanup</p>	<ol style="list-style-type: none"> 1. Based upon the condition of the caulk, utilize the necessary tools to begin removing the caulk. Use a HEPA vacuum in conjunction with the removal process if dust is generated. 2. Thoroughly clean all surfaces of loose debris using a HEPA vacuum. 3. Pour or dispense an acceptable cleaning-grade solvent onto the cloth. A plastic (solvent-resistant) squeeze bottle works best. Do not dip the cloth into the container of solvent, as this will contaminate the cleaning agent. 4. Wipe vigorously to remove contaminants. Check the cloth to see if it has picked up contaminants. Rotate the cloth to a clean area and re-wipe until no additional dirt is picked up. 5. Immediately wipe the cleaned area with a separate clean, dry cloth. 6. Allow time for the solvent to completely dry. 7. Collect and place the polyethylene sheeting and all waste into a waste container. 8. Gloves and disposable suits and similar materials resulting from cleanup activities, will be disposed of as construction debris. 9. The caulking, rags, and contaminated polyethylene sheeting must be discarded as hazardous waste. Contact EHS, Environmental Specialist at 919-962-5723. 10. Thoroughly wash hands prior to installing the new caulk. 11. Install new caulk such as Master Seal MP-1. 	<ol style="list-style-type: none"> 1. Potential employee injury 2. Inhalation, eye, ingestion, skin hazard. 3. Cuts, abrasions, or other physical injury when using knives, chisels and hammers. 	<ol style="list-style-type: none"> 1. Wet methods and HEPA vacuum. 2. Containment procedure in place. 3. Prompt cleanup 4. Collection and proper disposal of waste. 

Training	<p>Employees must receive training on this JSA, PPE, ladder safety, scaffolding, and man lifts. EHS website at http://ehs.unc.edu/training/self-study/</p>	<p>Supervisor is responsible for ensuring the employee reviews the JSA and the EHS website guidelines. .</p>
Referenced Material	<p>EHS Website; http://m2polymer.com/html/pcb-removal-cleaning.html?gclid=Cj0KCQjw_o7NBRDgARIsAKvAgt2VWS-yCHgbWeR7fBZLgY_OX2p_oCNMcp5GvOrA1wCRSoVuDwyzxLoaAmBqEALw_wcB, http://www.dowcorning.com/content/publishedlit/weatherproofing_joints_surface_preparation_and_sealant_application.pdf, , https://www.epa.gov/pcbs/steps-safe-pcb-abatement-activities_Assessment ; <i>Remediation of PCBs in the Built Environment</i>, A Publication by American Industrial Hygiene Association.</p>	
Contact Info	<p>For more information about this JSA and other JSAs, contact: <i>Department of Environment, Health and Safety</i> UNC-CH, 1120 Estes Drive Extension, Chapel Hill NC 27599 CB# 1650 (919) 962-5507 http://ehs.unc.edu Prepared By: David Catalano 08.28.17</p>	