



## **PROPER HOUSEKEEPING AND HANDLING PRACTICES FOR HTIW**

This document focuses on ways to reduce airborne fibrous dust concentration and exposure by using engineering and administrative controls, good housekeeping, proper handling practices and, if necessary, respiratory protection.

### **Engineering Controls**

Use engineering controls such as local exhaust ventilation, point of generation dust collection, down draft work stations, emission controlling tool designs and materials handling equipment designed to minimize airborne dust and HTIW emissions.

### **Administrative Controls**

Work areas should be organized to avoid unnecessary worker exposure, for example, by segregating dusty operations from other parts of the facility wherever possible.

Minimize the number of handling steps in each work process as much as possible.

Where possible automate processes to avoid handling or use handling aids, such as moveable benches, to minimize carrying of product.

Training should be given to all members of the workforce. This may take the form of on-the-job training or more formalized training on the importance of good hygiene and working practices.

The workers should have ready access to safety data sheets (SDS) and standard operating procedures in the work area where fiber based products are handled.

### **Housekeeping**

Good housekeeping is essential in any work area where the airborne dust concentration needs to be controlled. The following practices are recommended to minimize secondary exposure, which can occur when fibrous dust that has settled onto the floor or work surfaces is disturbed and becomes airborne again.

- Frequently clean the work area with filtered vacuum cleaner or wet sweeping to minimize the accumulation of debris. Do not use compressed air for clean-up of work areas or workers' clothes.



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1250 Connecticut Avenue NW Suite 700-5295 Washington, DC 20036 tel 240.343.1738 www.htiwcoalition.org

- If it is necessary to use sweeping, ensure the floors are thoroughly wetted before cleaning and use soft bristled brushes to minimize the amount of dust pushed into the air.
- Do not permit waste material to accumulate in the work area. (Waste or scrap material should be placed into a plastic bag or covered container.) Waste or scrap materials should be removed from the work area often to avoid unnecessary generation of airborne dust.
- Product packaging may contain residue. Do not reuse.

### **Handling Practices**

In order to reduce the amount of airborne dust generated when handling fiber based products, the following handling practices are recommended.

- One of the main sources of dust exposure is the handling of products after machining, as the products are covered in excess loose dust from the machining operation. This can be reduced by cleaning the product after finishing, before it is taken out of the pickup area, using a brush (under ventilation) or a filtered vacuum cleaner.
- Most fiber based products are friable and should be handled with care - for example by lifting pieces fully, either manually or with lifting aids for large pieces, and not dragging or rubbing them on rough surfaces.
- Limit use of power tools unless in conjunction with local exhaust ventilation. Use hand tools whenever possible.
- During transport and handling, products may release dust when rubbed against each other or against other rough surfaces. It is therefore important to minimize the contact between pieces, for example, by using spacers when stacking items in cartons.

### **Personal Protective Equipment**

- **Skin Protection**

Wear personal protective equipment (for example gloves), as necessary to prevent skin irritation. Washable or disposable clothing may be used. If possible, do not take unwashed clothing home. If soiled work clothing must be taken home, employees should be informed on best practices to minimize non-work dust exposure (for example,



vacuum clothes before leaving the work area, wash work clothing separately, and rinse washer before washing other household clothes).

- **Eye Protection**

As necessary, wear goggles or safety glasses with side shields.

- **Respiratory Protection**

When engineering and/or administrative controls are insufficient to maintain workplace concentrations below a recommended exposure guideline (REG) or a regulatory occupational exposure limit (OEL), the use of appropriate respiratory protection, pursuant to the requirements of OSHA Standards 29 CFR 1910.134 and 29 CFR 1926.103, is recommended. A NIOSH certified respirator with a filter efficiency of at least 95% should be used. The 95% filter efficiency recommendation is based on NIOSH respirator selection logic sequence for exposure to manmade mineral fibers. Pursuant to NIOSH recommendations, N-95 respirators are appropriate for exposures up to 10 times the NIOSH Recommended Exposure Limit (REL).

With respect to RCF, both the NIOSH REL and the industry REG have been set at 0.5 fibers per cubic centimeter of air ( $f/cm^3$ ). Accordingly, N-95 would provide the necessary protection for exposures up to  $5 f/cm^3$ . Further, the Respirator Selection Guide published by 3M Corporation, the primary respirator manufacturer, specifically recommends use of N-95 respirators for RCF exposures. In cases where exposures are known to be above  $5.0 f/cm^3$ , 8 hour TWA, a filter efficiency of 100% should be used. Other factors to consider are the NIOSH filter series N, R or P -- (N) **N**ot resistant to oil, (R) **R**esistant to oil and (P) oil **P**roof. These recommendations are not designed to limit informed choices, provided that respiratory protection decisions comply with 29 CFR 1910.134.

The evaluation of workplace hazards and the identification of appropriate respiratory protection is best performed, on a case by case basis, by a qualified Industrial Hygienist.

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