Preventing isocyanate exposure during epoxy and joint filling

List any isocyanate hazards on the jobsite:

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Explain dangers

Isocyanate is a major ingredient in the production of polyurethane products. Polyurethane is often used for sealants and joint fillers to protect and fill cracks in concrete.

Isocyanates can be absorbed through the skin, eyes, and lungs. They are powerful irritants to the mucous membranes of the eyes and the gastrointestinal and respiratory tracts when absorbed through the body.

Long-term exposure to isocyanates can lead to sensitization. After sensitization, any exposure can cause very severe or deadly asthma attacks, which cause the lungs to constrict and restrict breathing.

Exposed workers that experience recurring eye irritation, nasal congestion, dry or sore throat, cough, shortness of breath, wheezing, or chest tightness should see a doctor who specializes in work-related health.

Identify controls

To reduce or prevent isocyanate exposure, controls at the source (e.g., substitution), along the path (e.g., engineering controls), and at the worker (i.e., personal protective equipment [PPE]) should be considered.

Consider these controls:

- Ensure all workers have up-to-date WHMIS training. Consult the safety data sheet (SDS) for the product and familiarize workers with the health hazards.
- Identify any application processes that would generate fewer isocyanates, such as rolling instead of spraying.
- Ventilate adequately to prevent vapours from accumulating. Store materials in tightly sealed containers when not in use.
- Keep the work area clear of personnel who are not wearing proper PPE.
- Refer to the SDS when selecting PPE for handling products containing isocyanates. PPE could include the following:
    - Supplied-air respiratory protection (or other kinds as described by the SDS)
    - Impermeable gloves, such as neoprene or nitrile
    - Eye protection, such as chemical goggles for handling products in drums
    - Coveralls or other clothing to protect the skin from contact
- Practise good hygiene by washing your hands and face before eating, drinking, or smoking.
- Clean-up any spills quickly, after donning proper PPE.

Demonstrate

Review and follow all manufacturer's recommendations, procedures, and PPE requirements whenever workers will be working with isocyanates.

Ask workers to brainstorm any application process that would generate less isocyanate exposure.