CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING TOOLBOX TALK

Identifying Nano-Enabled Construction Materials

Nanomaterials are very small. They are many times thinner than a human hair. Materials that contain engineered nanomaterials are called nano-enabled. Engineered nanomaterials are mostly used in paints, coatings, and sealants. They can also be added to asphalt, concrete, cement, insulation, roofing, lubricants, patching compounds, adhesives, flooring, and other materials. Nanomaterials in solid materials, like cured cement, pose little risk of exposure unless they are disturbed. When workers cut nano-enabled cement or spray nano-enabled paint, for example, they can be exposed to dust or mist containing engineered nanomaterials. Some nanomaterials cause health problems in test animals but many have not been thoroughly tested.

Tom's Story

Tom often sprays coatings on construction materials. He also cuts, grinds, and sands the coated surfaces. Tom's work creates mist and dust in the air that he and his co-workers breathe. He is worried that the coatings contain engineered nanomaterials. Tom wants to know how to protect his health.

- **Have you ever worked with a nano-enabled construction material? If yes, how did you know?**
- **How could you find out if a construction material is nano-enabled?**
- **What could be done to protect workers from breathing dust or mist that contains engineered nanomaterials?**

Remember This

Engineered nanomaterials used in construction:

- Include carbon nanotubes, nanocellulose; and nano-sized titanium dioxide, zinc oxide, silica, and silver.
- Can be self-cleaning, insulating, fire resistant, stronger, and anti-corrosive.

To find out if a material is nano-enabled:

- Ask your employer.
- Check CPWR's online inventory of more than 600 nano-enabled materials at http://nano.elcosh.org. The inventory includes paints or coatings for glass, metal, mineral surfaces, and wood; as well as insulation, cement, lubricants, roofing, adhesives, flooring, patching compounds, and drywall.
- Check the material's label or ask your employer for the safety data sheet (SDS). You can also find SDSs on CPWR's online inventory. Be aware this information may not be reported by the manufacturer on the label or SDS.

To protect your health:

- Use vacuum attachments on power tools or wet methods to capture the dust before it gets in the air.
- Use a respirator with an N95 or P100 filter if the vacuum system or wet method does not capture all the dust or is unavailable.

How can we stay safe today?

What will we do at this worksite to find out if the materials being used are nano-enabled?

1. _____
   _____
2. _____
   _____

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