PLAYGROUND SAND

Sand is a very popular playground surfacing but do you know what kind of sand you have in your play area? Every year I get several frantic calls from parents or agencies that are concerned about the safety of sand that they are using in their playgrounds. They recently heard that sand is a hazardous material and they want to know if it is true and are the children at risk.

It is true, In California at least, sand has been listed as a hazardous material but you need to understand how that determination was made. The California Safe Drinking Water and Toxic Enforcement act of 1986 (Health and Safety Code Section 25249.5-25249.13) requires the Governor to publish a list of all toxic materials that can cause cancer or reproductive hazards. In 1998 crystalline silica was added to the list because it is serious health concern to workers in high risk jobs such as abrasive blasting, foundry work, stonecutting, rock drilling, quarry work and tunneling. Crystalline Silica can be found in all types of sand but the primary concern is the airborne particles of respirable size that is most common in man made sand such as sand blasting sand, plaster sand and cement sand. If you think about it, one of the qualities that make a sand desirable for use in these products is its ability to become hard.

These types of sand may be natural or manufactured by crushing stone and usually have sharp edges to the particles that are useful attributes when you are looking for sandblasting sand. These sands also have a wide variety of particle sizes including large percentages of finer particles that are more likely to cause exposure. These types of sand compact and have little impact attenuation value because the small particles fill the spaces between the larger particles and the sharp edges help hold the particles in place.

All of the studies that have been done involve job related exposure not playground use. No differentiation is made in the listing of Crystalline Silica as a hazardous material based on use in the work environment verses the playground. The men who are at risk are working with the material on a regular basis, usually in a confined work environment. Children usually only play with the sand for a short time per visit to the play area and do not normally breathe or eat large quantities so the risk to the child is relatively low. I would be much more concerned about sanitation, bacterial counts, insects and foreign objects buried in the sand than the threat of silicosis.

Sand is an acceptable fall surface for impact attenuation but it has a very limited critical height and is not appropriate for higher equipment such as swings. There is a chart in the C PSC Handbook for Public Playground Safety that can be used as a guideline for determining critical height. Sand is not a standard product and will vary even if it comes from the same source so the only way to be sure of the impact attenuation value is to have it field tested. Sand can not be supplied with certification that it complies with ASTM 1292 Impact attenuation or ASTM 1951 Accessibility as man made products such as Engineered Wood Fiber or unitary surfacing can.

Sand is not an accessible material so it can not be used for access routs. If you use sand you will need to also provide a suitable access route from the playground access point to all accessible play components and back to the access point. There is no restriction on the use of sand in playgrounds other than the fact that you must provide an accessible path of travel. Playground sand should be naturally washed sand that has particles with rounded edges and has been screened to minimize the percentage of smaller dust sized particles. A good description of playground sand would be "sugar" sand like the kind that you would typically find in sand urns when smoking was allowed or golf sand traps. These sands will not usually compact under normal conditions.