Silica litigation overview

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Silica is a common byproduct of construction activity. Often inhaled by workers, it causes silicosis, sometimes also called “sandblasting disease.” Exposure to silica dust is now considered as hazardous to human health as exposure to asbestos. Silica could potentially be the next asbestos in terms of class action litigation, all the more reason to learn as much as possible about it, as we provide an overview of silica in this article.

Background

Silica is abundant in nature. It is normally found within sand and rock, where it cannot be inhaled. However, when used in construction materials, silica dust is a common byproduct of construction activity, and may be inhaled by workers. Due to exposure risks from sandblasting activities, silicosis is sometimes also called “sandblasting disease.” Exposure to silica dust is now considered as hazardous to human health as exposure to asbestos.

What Is Silica?

Silica is the common name for silicon dioxide, which is a compound formed from silicon and oxygen. Silica can exist in crystalline and non-crystalline forms. The most common natural form for silica is quartz, but it is also found in flint, agate, the sand found on beaches, and sandstone. Silica is also the main ingredient in glass.

Issues

Silica Exposure

At least 1.7 million U.S. workers are exposed to respirable crystalline silica in a variety of industries and occupations, including construction, sandblasting and mining. Exposures to respirable crystalline silica occur in a variety of industries and occupations because of its extremely common natural occurrence and the wide uses of materials and products that contain it.

A 1996 fact sheet regarding silica dust exposure prepared by the Occupational Safety & Health Administration (OSHA) of the U.S. Department of Labor states that “every year two million workers in the U.S. are exposed to crystalline silica, which can cause silicosis, a disabling and sometimes fatal disease.” Silicosis can occur when dust containing crystalline silica is inhaled and causes “fibrosis or scar tissue formations in the lungs that reduce the lungs’ ability to work to extract oxygen from the air.” There is no cure. The OSHA fact sheet adds that “about 300 deaths are attributed to silicosis annually.”

In addition, “inhaling airborne crystalline silica dust also has been associated with other diseases such as tuberculosis and lung cancer.” Other silica diseases include acute silicosis, simple silicosis, accelerated silicosis, complicated silicosis, silicotuberculosis and mixed-dust pneumoconiosis.

Although the reported mortality associated with silicosis has declined over the past several decades, many silicosis-associated deaths still occur. In addition, the number of silicosis-associated deaths among persons aged 15 to 44 has not declined substantially [CDC 1998]. An unknown number of workers also continue to die from silica-related diseases such as pulmonary tuberculosis, lung cancer and scleroderma. The number of cases of silicosis and silica-related diseases in the United States today is unknown.

Symptoms of acute silicosis, another form of silicosis, may develop shortly after exposure to high concentrations of respirable crystalline silica. Epidemiologic studies focus on chronic silicosis, which develops years after exposure to relatively low concentrations of respirable crystalline silica. Epidemiologic studies have found that chronic silicosis may
develop or progress even after occupational exposure has ceased. Over a 40- or 45-year working lifetime, workers have a significant chance (at least one in 100) of developing radiographic silicosis when exposed to respirable crystalline silica at the OSHA permissible exposure limit.

Silicosis may be complicated by severe mycobacterial or fungal infections. Epidemiologic studies have firmly established that silicosis is a risk factor for developing tuberculosis.

The carcinogenicity of crystalline silica in humans has been strongly debated in the scientific community. In 1996, the International Agency for Research on Cancer (IARC) reviewed the published experimental and epidemiologic studies of cancer in animals and workers exposed to respirable crystalline silica and concluded that there was sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica in the form of quartz or cristobalite from occupational sources. In the same year, directors of the American Thoracic Society (ATS) adopted an official statement that described the adverse health effects of exposure to crystalline silica, including lung cancer [ATS 1997]. The ATS found that “the available data support the conclusion that silicosis produces increased risk for bronchogenic carcinoma.”

Statistically significant excesses of mortality from stomach or gastric cancer have been reported in various occupational groups exposed to crystalline silica. However, no conclusion about an association has been reached because most studies did not adjust for the effects of confounding factors or assess an exposure-response relationship for crystalline silica. The same problem exists for the infrequent reports of statistically significant numbers of excess deaths or cases of other non-lung cancers in silica-exposed workers.

Significant increases in mortality from non-malignant respiratory disease (a broad category that can include silicosis and other pneumoconioses, chronic bronchitis, emphysema, asthma and other related respiratory conditions) have been reported for silica-exposed workers.

Many case reports have been published about autoimmune diseases or autoimmune-related diseases in workers exposed to crystalline silica or workers with silicosis. In addition, several recent epidemiologic studies reported statistically significant numbers of excess cases or deaths from known autoimmune diseases or immunologic disorders (scleroderma, systemic lupus erythematosus, rheumatoid arthritis and sarcoidosis), chronic renal disease and subclinical renal changes. The pathogenesis of autoimmune and renal diseases in silica-exposed workers is not clear.

Comment

Silica Litigation

Silica litigation continues to grow. Many traditional asbestos plaintiffs’ firms also have large silica dockets. In fact, some of their claimants are simply recycled asbestos plaintiffs looking for a “second bite at the apple.”

Many silica cases cover sandblasting exposure to silica. The occupations of plaintiffs range from a sandblaster or sandblaster’s helper to someone who just happened to work in the vicinity of a sandblasting activity. For example, silica disease can involve truck drivers, bricklayers, electricians, crane operators and ironworkers. Most cases involve a common job site such as an oil refinery, chemical plant, foundry, steel mill, shipyard, cement plant or sandblasting facility. Typically a worker used silica-containing abrasive that was fed into a sandblasting pot that used air supplied by a compressor to force the abrasive out through a nozzle at high speed. This process in turn removed paint, dirt, rust or other unwanted materials from industrial objects such as tanks, pipes and vessels.

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