

Health and Safety Issues on Brick, Refractory and Insulation

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ABSTRACT

The steam and power generating industries, like most, have to pay close attention to health and safety issues pertinent to its industry components. Each component of the boiler island has some special and unique issues that must be addressed. Brick, refractory, and insulation are no exception. They have very specific health and safety issues on just about every type of refractory and insulation material available on the market today. Not to mention the health and safety issues associated with the materials of products no longer manufactured but still found on existing construction. These industries must know about the health and safety issues associated with the products to be installed at their facilities. They must also familiarize themselves with those products that exist on their boilers. Proper material selection and proper preventive practices will prevent any potentially dangerous and health threatening issues. Paying close attention and following all health and safety requirements will protect the health and safety of those working in and around brick, refractory and insulation materials.

BACKGROUND

Those in the steam and power generating industries are mindful of the health and safety issues associated with the products to be installed at their facilities. They must also familiarize themselves with those products that exist on their boilers. For example, it's imperative to know ahead of time as to what products were installed on the steam/heat generating units prior to doing a retrofit. Exposure to potential law suits can be avoided simply by educating yourselves and your labor crafts. Learn to follow closely to the health safety requirements for all products whether new or existing. Only by following all health and safety requirements can you protect the health and safety of the people working in and around brick, refractory and insulation materials.

TERMINOLOGY

Some terms of importance to know:

1. Asbestosis - Chronic lung inflammation caused by prolonged inhalation of asbestos particles - asbestos fibers have barbs that attach to the lung tissue.
2. Carcinogens - Any chemical, biological, or physical agents that can potentially cause cancer. A product can be labeled a carcinogen if it causes a statistically significant increase in anomalous (abnormal) cell growth when applied to previously unexposed organisms.
3. Hexavalent Chromium (CR+6) Carcinogen material found in chromium compounds after the chromium based refractory material has been fired

during operation.

4. M.S.D. Sheets - Material Safety and Data Sheets

5. RCE - Refractory Ceramic Fiber

BRICK

During brick installation the silica dust is created by the use of power saws cutting the bricks. Silica dust is a serious health threat. Use wet saws whenever possible when cutting brick. This will help to cut down on the dust. Also, respirators or air masks should always be used. In cases where a lot of brick will be cut makes it imperative to have exhaust fans installed. Ear and eye protection are always recommended. The high level of noise made from the power saws and the flying air particles demand protection from exposure to this intense environment.

REFRACTORY

The National Institute for Occupational Safety and Health (NIOSH) and the Environmental Protection Agency (EPA) have been keeping the Steam and Power Generating Industries informed as to what products are being classified as a carcinogen or hexavalent material for many years. However, it will be up to those working in, around, and for the Steam and Power Generating Industries to be aware of what, where, and how to protect themselves and those people working on site. For example:

Some refractory materials being used in boiler settings contain chromium compounds as part of the refractory mixture. During operation some of the chromium compounds will be converted into a