ASSOCIATION

Statement of

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On the Hearing Re

"Addressing Concerns about the U.S. Department of Labor's Use of Non-Consensus Standards in Workplace Health and Safety"

before the

Workforce Protections Subcommittee
of the
Committee on Education and the Workforce
U.S. House of Representatives

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Mr. Chairman and Members of the Subcommittee, my name is Joseph S. Casper and I am vice president for Environment, Health, and Safety for the Brick Industry Association, headquartered in Reston, Virginia.

The Brick Industry Association ("BIA") is the national trade association representing the brick industry, consisting of companies that manufacture and distribute quality clay brick products (both face and paver brick) across the United States. Thirty-five manufacturer members of the BIA produce between 80 to 85 percent of all 10 billion bricks produced annually. Most of these manufacturers are small businesses. The approximate number of workers employed in our industry (production, distribution, professional services, masons, etc.) is 215,000. All told, the brick industry contributes more than $20 billion annually to the U.S. economy.

Brick continues to be a highly desirable form of wall cladding because of its durability and energy efficiency, as well as its ability to safeguard against both fire and high winds. Brick is available in many different textures, and in an almost limitless number of colors.

BIA's organization has departments devoted to marketing, engineering services, and safeguarding the environment, as well as employee health and safety.

The BIA is committed to efforts to protect the health and safety of our industry's workforce. In 2004, BIA hosted OSHA Administrator John Henshaw for a keynote address at our annual trade show and convention. Also, this past March BIA formally signed an Alliance agreement with OSHA, pledging to collaborate

with the Agency on efforts to improve the provision of practical guidance on worker health and safety issues.

On behalf the brick industry, we very much appreciate the opportunity to testify before you today on the important topic of the U.S. Department of Labor's use of non-consensus standards in workplace health and safety. In that regard, for the reasons set forth below, the BIA strongly supports H.R. 5554, the Workplace Safety and Health Transparency Act of 2006.

Silica and Silicosis in Brick Manufacturing

We wish to speak particularly about silica and silicosis in brick manufacturing. As you will hear, we believe the non-consensus standards regarding crystalline silica, developed by the American Conference of Governmental Hygienists' Threshold Limits Committee utterly fail to take into account the particular conditions of our industry.

To begin, it is good news, indeed, that mortality and morbidity from silicosis across industry, in general, has declined significantly over the past several decades (in 1968 -1168 silicosis-related deaths were reported; in 2002 - 148 silicosis-related deaths were reported). Nevertheless, cases of silicosis continue to occur in the quarrying and cutting of stone, in mining of metallic and nonmetallic ores, in iron and steel foundries, and in construction.[1, 2] However, we want the Subcommittee to know that the experience with cases of silicosis among brick workers in the United States, and elsewhere, is in sharp contrast to the experiences with silicosis in the other industries mentioned above.

Thus, in this country, an early study (1941) in North Carolina examined 1555 workers clinically and by chest x-ray in 48 brick plants and collected 183 dust samples in 28 of those same plants.[3] These chest x-rays were read independently by two physicians who were experienced film readers with the North Carolina Dusty Trades Program, an early prevention program that conducted routine medical examinations of workers in asbestos textile plants, quarries, sand plants, and clay operations in the state. Both of the physicians reported no evidence of silicosis in any of the workers. Average dust exposures ranged from 2 to 138 million particles per cubic foot ("mppcf") and 11 of the 31 jobs had average exposures above 20 mppcf. The current OSHA silica Permissible Exposure Limit ("PEL") for the dust in this study would have been 12.5 mppcf

Similarly, a 1972 study in Canada of workers manufacturing structural clay bricks in Ontario documented extremely high dust levels, some more than 100 times the prevailing occupational limits.[4] Despite these high levels, no cases of silicosis were found. A more recent study (1998) from Croatia found no evidence of pneumoconiosis among 233 workers.[5] Likewise, a 1983 study in Poland by Wiecek and colleagues found no pneumoconiosis among workers making structural clay brick.[6] Lastly, and most recently a 1999 study of more than 1,900 workers in the brick industry in England and Scotland found that x-ray evidence of small rounded nodules consistent with silicosis were exceedingly low and below the background expected in a normal population not exposed to silica dust.[7] This finding was surprising to the authors in that most jobs in the brick plants studied had average

exposures to respirable quartz greater than the current OSHA PEL of 0.1 milligrams per cubic meter of air (mg/m^3).

Indeed, the lack of silicosis in the brick industry has perplexed scientists and caused them to look carefully at what is unique about the silica in brick manufacturing, as contrasted with other industries, in an attempt to disentangle why exposures above "safe" levels are not resulting in cases of silicosis. While not yet definitive, the answer appears to be found in the composition of the raw materials used to manufacture bricks. The principal raw materials used in the manufacture of structural clay brick include clays and shales having a composition of 35 to 50 percent sedimentary clays, but in addition, commonly containing 40 to 50 percent crystalline silica as quartz.[8]

The authors of the 1972 Canadian brick study[4] addressed this issue. In their study of over 1,000 brick workers in Ontario they were surprised that they did not find signs of silicosis in brick workers despite finding that workers were exposed to dust levels eight to 111 times the existing American Conference of Governmental Industrial Hygienists ("ACGIH") Threshold Limit Value ("TLV"). They hypothesized that the aluminum contained in the clays and shales that coated the silica particles may have reduced their ability to produce silicosis. And, indeed, recent laboratory studies by other scientists suggest that the coating of silica particles by aluminum in these clay and shale minerals does indeed reduce its biological activity.[9, 10, 11] Thus, for example, the researchers in the United Kingdom noted the potential impact of aluminum as well as other

metal ions on the surface of quartz particles in heavy clay industry, and pointed specifically to the mineral illite as being effective in reducing the toxicity of inhaled quartz.[7] While the exact mechanism whereby the clays and shales used in brick manufacturing modify the toxicity of silica is a scientific uncertainty, it is evident that a modification takes place, and that brick workers do not have the same risk of developing silicosis as other workers such as granite carvers, foundry workers and metal miners.

To develop a better understanding of silicosis in the brick industry, our Association has sponsored a just-concluded Study, entitled "The Prevalence of Silicosis in the Brick Industry," to determine the prevalence of radiographic signs of silicosis among current workers in the U.S. brick industry. We chose as the Study leader Dr. Patrick Hessel, an epidemiologist with great experience in occupational and environmental lung diseases, who has conducted extensive research on silicosis, and lung cancer. Dr. Hessel and his colleagues studied workers at thirteen plants producing structural clay brick from 94 facilities operated by members of the Brick Industry Association. These workers were selected through a random process, which took account of company size, geographic location, and employee age. Radiographs from 701 workers were read by two NIOSH-certified B-readers. When the two primary readers disagreed on the interpretation of a film, the chest x-ray was ready by a third B-reader. Very importantly, one of the chest x-rays of the 701 workers was consistent with silicosis. These results are consistent with the previous studies mentioned of

brickworkers from the United States, the United Kingdom, Canada, Croatia and Poland, and provide additional evidence that the ACGIH TLVs, as well as other occupational exposure limits for silica, are overly restrictive and inappropriate for the brick industry.

We were pleased that Dr. Hessel's research shows brick workers appear not to be at risk for silicosis at today's exposure levels. Our industry will continue to look for opportunities to sponsor research to fill the critical knowledge gaps regarding the uniqueness of the silica particles found in the brick industry.

Hazard Communication for Silica in Structural Brick

The Brick Industry Association supports the intent of the OSHA Hazard Communication Standard (the "HAZCOM" Standard") that the hazards associated with the use of chemicals should be evaluated, and that information concerning the potential hazards and means of protecting workers should be transmitted to both employers and employees. Indeed, our Association has worked with our member companies on evaluating the hazards from exposure to brick dusts and the means of communicating such information. However, there are provisions of the HAZCOM Standard with which we disagree. One of the most disturbing is the recognition by OSHA of the *latest edition* of the TLVs of the ACGIH as a source showing that the listed chemicals are hazardous for purposes of hazard communication. Even more problematic is the requirement

that Material Safety Data Sheets must include the current ACGIH TLV for each chemical.

The ACGIH and its TLV Committee

We do not wish to denigrate the ACGIH or its TLV Committee, both of which have made significant contributions to the fields of industrial hygiene and occupational health. Over the life of the organization, the TLV process has been one of the better known activities of the ACGIH. However, times have changed and we believe the TLV Committee has failed to keep pace. In 1941, when the TLV Committee was established, and through the next several decades, the TLV Committee process seemed to work well. Committee members, mostly toxicologists and industrial hygienists, met to evaluate the published scientific literature (albeit generally scanty), unpublished industry studies, and often anecdotal accounts of health effects o£ exposures. These evaluations were then followed by a recommendation to the ACGIH's membership for the adoption of threshold limit values that were then to be used as guidelines by trained industrial hygienists.

The most significant factor in outdating the TLV process was the passage of the 1970 Occupational Safety and Health Act ("OSH Act") which established OSHA, as a new and critically important player in the national arena of occupational safety and health. OSHA was mandated, by statute, to carry out development of mandatory safety and health standards--and enforcement of those standards to ensure employers provided safe and healthful workplaces for

employees. The OSH Act created enormous interest in employee safety and health that led to an explosion of quantitative and qualitative information. This information overload was perhaps the single most important factor causing the unraveling of the TLV model.

Thus, for example, when a Medline search of the medical literature for the term "asbestos" returns over 9,000 citations and a search for the term "silicosis" returns almost 7,000 citations, gone are the days when a *volunteer committee* of some 24 scientists could devote the *spare time* to do a credible job in collecting, organizing, reading, evaluating and writing scientific justification for the more than 600 substances for which a TLV has been established.

Other flaws of the ACGIH TLV process, which I only have time to briefly mention, include lack of any meaningful involvement in the Committee's work by other "stakeholders," particularly industry; no real feed-back to stakeholders' legitimate scientific comments (even though such comments are solicited by the Committee), or even any assurances that they were read. In addition, potential conflicts of interest arise from the involvement of government officials on the Committee who are responsible for developing federal safety and health standards. Furthermore, the potential for a conflict exists when federal scientists engaged in research on a substance are asked to prepare scientific justification for a TLV for that substance without rigorous peer review.

Very specifically, from our perspective, the recent changes in the TLV for quartz, a form of crystalline silica that is the second most common mineral in the

earth's crust, is illustrative of the problem. In 2000, the TLV Committee reduced by half the TLV for quartz to 0.05 mg/m^3 from its value of 0.1 mg/m^3 adopted during the 1986-1987 period. Coincidentally, the 0.1 mg/m^3 is essentially equivalent to the TLV that was calculated from the formula for quartz adopted by the TLV Committee in 1972. What this means is that, for all practical purposes, the TLV did not change for 28 years from 1972 until the abovementioned 2000 reduction. On the other hand, in 2006, just six years later, the ACGIH concluded that the science had changed again, to the point that another new TLV and adopted with another halving of the value to 0.025 mg/m^3:

The documentation validating the lowering of the 2006 TLV included only 96 scientific references, even though, as I mentioned previously, a Medline search conducted online from the National Library of Medicine website captures almost 7,000 citations for the term "silicosis". Among those 96 citations, not one of the papers I discussed earlier of studies of silicosis in the brick industry was referenced by the TLV Committee. Those studies indicate that even the earlier TLV of 0.1 is mg/m^3 is probably not appropriate or necessary for silica exposures among brick workers.

Without considering any of the scientific literature I have cited that relates to studies of silicosis among brick workers, the TLV Committee concluded that there is scientific justification for further lowering of the quartz TLV. What this means for the brick industry is that, under existing provisions of the HAZCOM Standard, our member companies were given only three months to update their Material Data

Safety Sheets ("MSDS") materials with a value that is not scientifically defensible for distribution to customers--or face being in violation of the Act. Something is fundamentally wrong with such a regulatory burden being placed on industry, without any means of being able to involve itself through any meaningful input or administrative recourse.

Conclusion

The relevant issue harming our industry is that, for purposes of its HAZCOM Standard, OSHA has recognized the ACGIH TLV list of chemicals as denoting that a substance is a hazard, irrespective of its conditions of use; and that the TLV must be communicated to downstream users regardless of whether it is justifiable scientifically. This naturally can and does cause unnecessary apprehension about the use of our product by our customers, and can adversely affect our ability to sell in a very competitive marketplace.

Therefore, it is for the reasons briefly outlined above, Mr. Chairman and Members of the Subcommittee, that the BIA strongly supports your favorable consideration of H.R. 5554, the Workplace Safety and Health Transparency Act of 2006. If enacted, the Bill will prohibit OSHA from blithely and indiscriminately requiring changes to MSDSs every time the ACGIH changes a TLV. Just as importantly, the Bill will not prevent OSHA from adopting true consensus standards in a timely fashion.

Again the brick industry appreciates the opportunity to share our view with on this important legislation and urges the Subcommittee's rapid approval of H.R. 5554.

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