CONSTRUCTION INDUSTRY SAFETY COALITION

October 9, 2015

The Honorable David Michaels
Assistant Secretary of Labor
Occupational Safety and Health Administration
U.S. Department of Labor
Room S-2002
200 Constitution Ave., NW
Washington, DC 20210

Re: Construction Industry Safety Coalition
Comments to RFI on Chemical Management and Permissible Exposure Limits
(Docket No. OSHA 2012-0023)

Dear Dr. Michaels:

I write on behalf of the Construction Industry Safety Coalition ("CISC"). The CISC respectfully files the enclosed written comments on OSHA's Request for Information ("RFI") on Chemical Management and Permissible Exposure Limits ("PELs"), 79 FR 61384 (Oct. 10, 2014). The CISC appreciates OSHA's consideration of the information presented in these comments.

Sincerely,

JACKSON LEWIS P.C.

Bradford T. Hammock

Enclosures

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The Construction Industry Safety Coalition ("CISC") respectfully files the following written comments on OSHA's Request for Information ("RFI") on Chemical Management and Permissible Exposure Limits ("PELs"), 79 FR 61384 (Oct. 10, 2014). The CISC appreciates OSHA's consideration of the information presented in these comments. The CISC would also welcome the opportunity to sit down with the Agency to discuss the issues presented in the RFI and ways for OSHA to improve the rulemaking process.

I. Introduction.

The CISC is comprised of 25 trade associations representing virtually every aspect of the construction industry. The members of the CISC are as follows:

American Road and Transportation Builders Association
American Society of Concrete Contractors
American Subcontractors Association
Associated Builders and Contractors
Associated General Contractors
Association of the Wall and Ceiling Industry
Building Stone Institute
Concrete Sawing & Drilling Association
Construction & Demolition Recycling Association
Distribution Contractors Association
Interlocking Concrete Pavement Institute
International Council of Employers of Bricklayers and Allied Craftworkers
Leading Builders of America
Marble Institute of America
Mason Contractors Association of America
Mechanical Contractors Association of America
National Association of Home Builders
National Association of the Remodeling Industry
National Demolition Association
National Electrical Contractors Association
National Roofing Contractors Association
National Utility Contractors Association

Natural Stone Council
The Association of Union Constructors
Tile Roofing Institute

Attached as Exhibit A to these comments are one-page descriptions of the CISC participants and their memberships.

The CISC was formed initially in response to OSHA's Proposed Rule on Occupational Exposure to Crystalline Silica, 78 FR 56274 (Sept. 12, 2013). During that rulemaking, the CISC submitted detailed comments for the Agency's consideration related to the application and analysis of the rule *vis-à-vis* the construction industry. Many of the specific comments raised in that rulemaking are applicable to some of OSHA's questions raised in this RFI and the CISC hereby incorporates its pre-hearing written comments, hearing testimony, post-hearing data and brief, and final economic submission in the respirable crystalline silica rulemaking as evidence in this proceeding.[1]

Because of the importance of the issues raised in the RFI to the construction industry, the CISC felt it important to submit its views on some of the questions posed. In particular, the RFI raises questions about how the Agency should conduct its technological and economic feasibility analyses in health standards rulemakings. These areas are of great interest to the CISC as the construction industry's ability to comply with OSHA health standards – both from a technical perspective and a cost perspective – is always a significant challenge. The construction industry is also dominated by small businesses that have a difficult time complying with complicated health standards that require reliance on third party experts or industrial hygienists. Relying on third party experts places a significant cost burden on small businesses, which many are unable to absorb. As OSHA continues to examine the best approaches to rulemaking, the CISC urges the Agency to keep this group of stakeholders in mind and understand the unique compliance challenges that they face.

II. Executive Summary.

OSHA's RFI discusses a wide range of scientific, legal, and technical issues of importance to the OSHA rulemaking process. OSHA seeks public comment on these issues to attempt to improve its analytical approach to health standards rulemaking, but also to improve and streamline the process for finalizing rules.

[1] Please see the following Docket IDs: OSHA-2010-0034-2320, OSHA-2010-0034-2319, OSHA-2010-0034-4023, OSHA-2010-0034-4217, and OSHA-2010-0034-4242.

The CISC appreciates the opportunity to comment on the concepts included in the RFI. The CISC feels strongly that OSHA must not deviate from the substantive and procedural requirements for rulemaking set forth in the Act. The rulemaking requirements and process serve a critical function to ensure the Agency comprehensively evaluates the need for, and potential impact of, a rule on employers and employees. It provides interested parties the opportunity to speak directly to the Agency on threshold issues of risk and feasibility. The CISC strongly objects to any effort by OSHA to short-cut the Act's requirements related to rulemaking or any other legislative reviews mandated by Congress.

Technological and economic feasibility are issues of paramount importance to the construction industry. Control measures to protect employees from health hazards in the general industry environment do not always translate into the construction environment, where work practices, control measures, and environmental conditions are highly variable. Costs of proposed rules may disproportionately affect construction companies, who are predominately comprised of small employers.

However the Agency approaches technological and economic feasibility analyses, it must abide by several key principles:

- Any modeling used by the Agency to buttress its technological feasibility analysis cannot and should not take the place of "on-the-ground" data gathering by the Agency. A well-supported technological feasibility analysis must gather as much data and information as possible to accurately characterize baseline exposures and the effectiveness of control measures. There is no substitute – particularly in construction – for OSHA to actually look at exposures on a construction worksite and how controls impact those exposures.

- Any model that OSHA uses to enhance its technological feasibility analysis must be validated before use. Use of models that have not been validated serve as little more than unsupported assumptions for feasibility.

- Any modeling used to demonstrate that a proposal is technologically feasible must be presented to stakeholders as part of a proposed rule and stakeholders given an opportunity to comment on it. Just like other aspects of OSHA's health effects, risk, and feasibility analyses, use of modeling – which could have a significant impact on the Agency's finding of technological feasibility – must be subject to notice and comment.

- It is critically important that OSHA continue to assess costs and economic feasibility on small entities. As OSHA knows, the impacts of its rules on small entities may differ significantly from the impacts of its rules on large employers, who are often more readily able to absorb regulatory burdens in their operations. The construction industry is dominated by small entities with 90 percent of construction firms employing fewer than 20 employees.[2] Even if OSHA determines that impacts on small entities do not impact economic feasibility, it is critical for OSHA to examine and quantify the impacts on small entities as it may influence OSHA decision-making.

- OSHA should analyze economic feasibility at a micro-level. In the RFI, OSHA questions the degree to which it should be required to analyze feasibility at the 2, 4 or 6-digit NAICS level. For the construction industry, analyzing economic feasibility at an aggregate level is unhelpful in truly assessing the costs and economic impacts of a rule on construction employers as large, aggregated industry groupings lump together construction industries that are highly affected by a proposed rule with other unaffected construction industries, thus diluting the impact of the rule on the most significantly affected.

Finally, the RFI discusses the possibility of OSHA adopting control banding and task-based exposure assessment and control in its health standards. While the CISC is not necessarily opposed to integrating these approaches into construction health standards, it is very concerned with how these approaches would be accomplished in practice. OSHA attempted a task-based approach in the respirable crystalline silica proposal in its "Table 1." The CISC had high hopes for Table 1 before the proposal was issued but, unfortunately, Table 1 was highly flawed and completely unworkable.

III. OSHA's Request for Information.

The RFI raises important issues for the Agency as it considers how to approach health standards rulemaking. In many ways, it is a first-of-its-kind notice that raises conceptual issues and alternatives to health standards rulemaking for stakeholder review and comment. The Agency describes the purpose of the RFI as follows:

[2] U.S. Census Bureau (2001), Statistics of U.S. Businesses.

> The purpose of this RFI is for OSHA to solicit information as to the best approach(es) for the Agency to help employers and employees devise and implement risk management strategies to reduce or eliminate chemical exposures in the 21st century workplace environment. This is likely to involve a multi-faceted plan that may include changing or improving OSHA policies and procedures regarding the derivation and implementation of PELs, as well as pursuing new strategies to improve chemical management in the workplace. The Agency is publishing this notice to inform the public of its consideration of these issues, as well as solicit public input that can be used to inform further deliberations, and the determination of an appropriate approach.

79 FR at 61386.

A. Legal requirements related to OSHA rulemaking.

The RFI includes a discussion of the legal requirements for OSHA standard setting. Several sections of the Occupational Safety and Health Act of 1970 (29 U.S.C. 651 et seq.) define the parameters of OSHA's rulemaking authority and its procedural requirements. OSHA describes the main legal requirements for OSHA health standards as follows:

1. The standard must substantially reduce a significant risk of material harm.

2. Compliance with the standard must be technically feasible. This means that the protective measures required by the standard currently exist, can be brought into existence with available technology, or can be created with technology that can reasonably be developed.

3. Compliance with the standard must be economically feasible. This means that the standard will not threaten the industry's long term profitability or substantially alter its competitive structure.

4. It must reduce risk of adverse health to workers to the extent feasible.

5. The standard must be supported by substantial evidence in the record, consistent with prior agency practice or be supported by some justification for departing from that practice.

Id. at 61387.

These requirements for OSHA rulemaking are dictated by Congress and cannot be changed by the Agency through rulemaking or other means. OSHA's authority to promulgate standards requiring specific behaviors of employers derives from congressional authority as set forth in the OSH Act. OSHA's authority is bounded by the OSH Act and only Congress can change that authority.

B. Reconsideration of current rulemaking process.

OSHA is examining a number of the rulemaking requirements discussed above in the RFI, along with the past methodologies the Agency has used in satisfying these requirements. In large measure, though, the RFI focuses on the following three areas: risk assessment; technological feasibility; and economic feasibility.

1. Risk assessment.

As discussed above, before regulating a potentially hazardous substance, OSHA must show that there is a significant risk to employees from exposure to the substance at current levels. OSHA has typically considered a 1 in 1000 risk of serious illness "significant" based on the U.S. Supreme Court decision reviewing OSHA's benzene standard:

> It is the Agency's responsibility to determine in the first instance what it considers to be a "significant" risk. Some risks are plainly acceptable and others are plainly unacceptable. If, for example, the odds are one in a billion that a person will die from cancer by taking a drink of chlorinated water, the risk clearly could not be considered significant. On the other hand, if the odds are one in a thousand that regular inhalation of gasoline vapors that are 2 percent benzene will be fatal, a reasonable person might well consider the risk significant and take the appropriate steps to decrease or eliminate it.

Id. at 61390 (quoting Industrial Union Department, AFL-CIO v. American Petroleum Institute, 448 U.S. 607, 655 (1980)).

Aside from the precise parameters of what level of risk is "significant," the crux of the Supreme Court's interpretation of the OSH Act is that OSHA does not have the authority to regulate *all* risks that it perceives exist in the workplace. Only those risks that are significant can be regulated by the Agency.

In the RFI, OSHA also discusses its historical approach for conducting risk assessments, which it refers to as a "model-based approach":

> First, the Agency reviews the available exposure-response data for a chemical of interest. It evaluates the available data sets and identifies those best suited for quantitative analysis. Using the best available data, the Agency then conducts extensive statistical analyses to develop an exposure-response model that is able to extrapolate probability of disease at exposures below the observed data. Once the model is developed, OSHA conducts further analyses to evaluate the sensitivity of the model to error and uncertainties in the modeling inputs and approach. The exposure-response model is used to generate estimates of risk associated with a working lifetime of occupational exposure to the chemical of interest over a range of PEL options that often include exposure levels below those considered to be technologically feasible.

Id. at 61390.

In the RFI, OSHA seeks feedback from stakeholders on several issues related to the risk assessment process and, in particular, its use of a model-based approach to assessing risk. OSHA also seeks feedback from employers regarding how risks are assessed at the worksite:

> If there is no OSHA PEL for a particular substance used in your facility, does your company/firm develop and/or use internal occupational exposure limits (OELs)? If so, what is the basis and process for establishing the OEL? Do you use an authoritative source, or do you conduct a risk assessment? If so, what sources and risk assessment approaches are applied? What criteria do facilities/firms consider when deciding which authoritative source to use? For example, is rigorous scientific peer review of the OEL an important factor? Is transparency of how the OEL was developed important?

Id. at 61392.

In the construction industry, most contractors do not have the in-house technical expertise to perform their own risk assessments or develop their own internal OELs. Construction employers in large measure turn to OSHA or organizations to provide information on exposure limits.

2. Technological feasibility.

In order to sustain a rule regulating a health hazard, OSHA must also show that the standard as a whole is technologically feasible for the industries affected. The Supreme Court has defined "feasibility" as "capable of being done, executed, or effected." American Textile Mfrs. Inst. V. Donovan, 452 U.S. 490, 506 n. 25 (1981). The established test for technological feasibility is whether OSHA can prove, through substantial evidence in the rulemaking record, the reasonable possibility that the typical firm will be able to develop and install engineering and work practice controls that can meet the PEL in most of its operations. A standard is technologically feasible if the protective measures it requires already exist, can be brought into existence with available technology, or can be created with technology that can reasonably be expected to be developed. Id. at 513. As the RFI notes, OSHA must analyze whether a standard is technologically feasible on an industry-by-industry basis and reviewing courts expect that different operations within an industry be individually analyzed if necessary to determine if those operations can meet the revised PEL in most of the operations most of the time. United Steelworkers v. Marshall, 647 F.2d 1189, 1279-1308 (D.C. Cir. 1980), cert. denied, 453 U.S. 913 (1981).

The RFI also discusses OSHA's historical approach to analyzing technological feasibility. OSHA collects information from a number of different sources in doing so, including published literature, National Institute for Occupational Safety and Health ("NIOSH") reports, site visits, and enforcement data. OSHA uses this information to develop a baseline profile of affected industries and the availability of controls. "Baseline conditions are developed to allow the Agency to estimate the extent to which additional controls will be required to achieve a level specified by a regulatory alternative." 79 FR at 61397.

OSHA has historically tried to use full-shift personal breathing zone samples to create exposure profiles used in its technological feasibility analyses. Put simply, OSHA attempts to use data that accurately reflects the actual exposure conditions of workers to a particular hazard throughout the course of an entire shift. In many circumstances, however, OSHA does not have full-shift personal breathing zone data and, thus, must make assumptions regarding the extent of employee exposure to a hazardous substance after the sampling period. As discussed more fully below, OSHA was faced with this problem in developing its respirable crystalline silica proposed

rule and, in the CISC's view, made incorrect assumptions regarding the extent of employee exposure to silica following the conclusion of the sampling period.

In the RFI, OSHA also seeks specific information regarding computational fluid dynamics ("CFD") modeling. "CFD modeling uses mathematical models and numerical methods to determine how fluids will behave according to a particular set of variables and parameters." Id. at 61398. The RFI explains that CFD can be used to simulate actual work environments to predict exposures and exposure conditions. OSHA seeks comments on its use of CFD to fill in gaps that might exist in OSHA's data gathering and to provide a more robust picture of actual exposure conditions.

Technological feasibility is particularly difficult in the construction industry, where working conditions are constantly shifting and multiple employers are working and performing operations at the same job site. As OSHA considers how to change the way that it analyzes technological feasibility, it is incumbent on the Agency to acquire "real life" data from "real life" construction sites before finalizing any conclusions that a health standard is technologically feasible. Moreover, the Agency must consider the wide variety of exposure conditions that exist on construction sites. A finding of technological feasibility in a rulemaking shifts the burden of proof to an employer in an enforcement proceeding to demonstrate to OSHA that compliance is technologically "infeasible." OSHA must do its homework in the first instance by showing feasibility in the full range of exposure scenarios before any "burden shifting" is appropriate. OSHA cannot presume that if a standard is technologically feasible on one construction site, it will be feasible on every construction site throughout the United States.

3. Economic feasibility.

In addition to demonstrating technological feasibility, OSHA must also demonstrate that a new standard is economically feasible. A standard is economically feasible if the costs it imposes do not "threaten massive dislocation to, or imperil the existence of, [an] industry." United Steelworkers v. Marshal, 647 F.2d 1189, 1265 (D.C. Cir. 1980), cert. denied, 453 U.S. 913 (1981) (internal quotation marks and citations omitted). To prove economic feasibility, "OSHA must construct a reasonable estimate of compliance costs and demonstrate a reasonable likelihood that these costs will not threaten the existence or competitive structure of an industry, even if it does portend disaster for some marginal firms." As with technological feasibility, OSHA is not required to prove economic feasibility with certainty, but is required to use the best available evidence and to support its conclusions with substantial evidence in the rulemaking record. See id. at 1267; American Iron & Steel Inst. v. OSHA, 939 F.2d 975, 981 (D.C. Cir. 1991).

In the RFI, OSHA discusses its approach to developing economic feasibility analyses:

> OSHA develops detailed estimates of the costs of a health standard for each affected industry, and by the three size categories of establishment. The result is that the economic analyses of health standards routinely contain a series of tables showing costs for each industry by multiple size classes of firms within the industry, and sometimes for more than one process per industry. Each entry in these tables is documented by detailed explanations of how the costs were estimated for each industry and size class and level of exposure.
>
> OSHA then makes a determination for each industry whether or not these costs are likely to threaten the existence or competitive structure of that industry .... For most industries, the costs in comparison to revenues and profits are so small that, in OSHA's view, no reasonable person could think that the costs could possibly be expected to threaten the existence or competitive structure of an industry.

79 FR at 61402.

The RFI asks a number of questions aimed at finding ways to make the economic feasibility analysis less resource intensive. For example, OSHA discusses the possibility of scoping proposed health standards in a more limited way, thus allowing the Agency to more quickly analyze the economic impacts of its rules. OSHA also requests comments on an approach that would analyze feasibility on an aggregate basis for a number of PELs with little to no threat of economic feasibility concerns. If concerns were raised about the feasibility of one of these substances, the Agency would simply pull that substance out of the rulemaking to address in a separate proceeding.

The Agency also suggests that its analyses are too detailed and granular, focusing on the specific costs of the rule as opposed to whether the proposed rule will come close to being feasible or infeasible:

> Too often stakeholders devote significant time and effort questioning cost estimates when even the stakeholders' alternative cost estimate would have no effect on whether the costs would threaten the existence or competitive structure of an industry. The simple fact is that both OSHA and its stakeholders spend far too much time examining the accuracy of cost estimates even when the highest

> cost estimates considered would have little effect on the determination of economic feasibility.

Id. at 61404.

C. Potential alternative approaches.

In addition to the discussion of the legal requirements of OSHA rulemaking and the questions related to alternative approaches, the RFI specifically discusses new concepts in the global regulation of hazardous chemicals and overall alternative approaches to rulemaking. Two of these alternative approaches are of particular interest to the CISC and are discussed below.

1. Control banding.

According to OSHA, "[c]ontrol banding is a well-established approach of using the hazard statements from a label and/or safety data sheet ("SDS") to lead an employer to recommended control measures." 79 FR at 61415. Essentially, control banding determines certain control measures (e.g., ventilation) to be implemented based upon a "band" of hazards identified. As OSHA states:

> This approach is based on the fact that there are a limited number of control approaches, and that many chemical exposure problems have been met and solved before. Control banding uses the solutions that experts have developed previously to control occupational chemical exposures, and suggests them for other tasks with similar exposure situations.

Id.

In OSHA's view, control banding "is a particularly useful way to provide information for small businesses to effectively control chemicals without necessarily going through the process of exposure monitoring and other technical approaches to ensuring compliance." Id.

2. Task-based exposure assessment and control approaches.

OSHA also discusses task-based approaches to health standards management, whereby OSHA identifies certain specific job tasks and acceptable control approaches specific to those tasks. "Control specifications can draw on a broad inventory of exposure controls and

administrative tools to reduce and prevent worker exposures to the identified hazardous substances." Id. at 61418.

OSHA notes that construction operations are "particularly amenable" to these types of approaches given the task-based nature of the work. OSHA also points to the crystalline silica proposal's Table 1 as an example of a task-based approach. The CISC reproduces Table 1 below. Table 1 sets forth certain construction job tasks that OSHA believes are commonly performed and which involve exposure to crystalline silica. OSHA then sets forth control measures – and required respiratory protection – that if followed would constitute compliance with the exposure monitoring requirements of the rule. A construction employer who opts to utilize Table 1 is still on the hook to ensure that all exposures are below the proposed PEL. See Proposed Paragraph (f)(2) ("For the operations listed in Table 1, if the employer fully implements the engineering controls, work practices, and respiratory protection described in Table 1, the employer shall be considered to be in compliance with paragraph (f)(1) of this section. (NOTE: The employer must comply with all other obligations of this section, including the PEL specified in paragraph (c) of this section.).")

The CISC discusses Table 1 below and extensively in its comments to the crystalline silica proposed rule. While Table 1 represented the Agency's attempt at a task-based approach to health standards rulemaking in construction, it was highly flawed and did not present a workable approach to controlling crystalline silica on construction worksites.

TABLE 1—EXPOSURE CONTROL METHODS FOR SELECTED CONSTRUCTION OPERATIONS

Operation	Engineering and work practice control methods	Required air-purifying respirator (minimum assigned protection factor)	
		≤ 4 hr/day	≥ 4 hr/day
Using Stationary Masonry Saws	Use saw equipped with integrated water delivery system. Note: Additional specifications • Change water frequently to avoid silt build-up in water. • Prevent wet slurry from accumulating and drying. • Operate equipment such that no visible dust is emitted from the process. • When working indoors, provide sufficient ventilation to prevent build-up of visible airborne dust. • Ensure saw blade is not excessively worn.	None	Half-Mask (10)

Using Hand-Operated Grinders	Use water-fed grinder that continuously feeds water to the cutting surface. OR Use grinder equipped with commercially available shroud and dust collection system, operated and maintained to minimize dust emissions. Collector must be equipped with a HEPA filter and must operate at 25 cubic feet per minute (cfm) or greater air flow per inch of blade diameter. Note: Additional specifications (wherever applicable): • Prevent wet slurry from accumulating and drying. • Operate equipment such that no visible dust is emitted from the process. • When working indoors, provide sufficient ventilation to prevent build-up of visible airborne dust.	None Half-Mask (10)	Half-Mask (10) Half-Mask (10)
Tuckpointing	Use grinder equipped with commercially available shroud and dust collection system. Grinder must be operated flush against the working surface and work must be performed against the natural rotation of the blade (*i.e.*, mortar debris must be directed into the exhaust). Use vacuums that provide at least 80 cfm airflow through the shroud and include filters at least 99 percent efficient. Note: Additional specifications: • Operate equipment such that no visible dust is emitted from the process. • When working in enclosed spaces, provide sufficient ventilation to prevent build-up of visible airborne dust.	Powered air-purifying respirator (PAPR) with loose-fitting helmet or negative pressure full facepiece (25).	Powered air-purifying respirator (PAPR) with loose-fitting helmet or negative pressure full facepiece (25).
Using Jackhammers and Other Impact Drillers.	Apply a continuous stream or spray of water at the point of impact. OR Use tool-mounted shroud and HEPA-filtered dust collection system. Note: Additional specifications: • Operate equipment such that no visible dust is emitted from the process. • When working indoors, provide sufficient	None None	Half-Mask (10) Half-Mask (10)

	ventilation to prevent build-up of visible airborne dust.		
Using Rotary Hammers or Drills (except overhead).	Use drill equipped with hood or cowl and HEPA-filtered dust collector. Eliminate blowing or dry sweeping drilling debris from working surface. Note: Additional specifications: • Operate equipment such that no visible dust is emitted from the process. • When working indoors, provide sufficient ventilation to prevent build-up of visible airborne dust. • Use dust collector in accordance with manufacturer specifications.	None	None
Operating Vehicle-Mounted Drilling Rigs for Rock.	Use dust collection system around drill bit and provide a low-flow water spray to wet the dust discharged from the dust collector. Note: Additional specifications: • Operate equipment such that no visible dust is emitted from the process. • Half-mask respirator is to be used when working under the shroud. • Use dust collector in accordance with manufacturer specifications. For equipment operator working within an enclosed cab having the following characteristics: • Cab is air conditioned and positive pressure is maintained. • Incoming air is filtered through a prefilter and HEPA filter. • Cab is maintained as free as practicable from settled dust. • Door seals and closing mechanisms are working properly.	None None	None None
Operating Vehicle-Mounted Drilling Rigs for Concrete.	Use dust collection system around drill bit and provide a low-flow water spray to wet the dust discharged from the dust collector. Note: Additional specifications: • Use smooth ducts and maintain duct transport velocity at 4,000 feet per minute. • Provide duct clean-out points.	None	Half-Mask (10)

	• Install pressure gauges across dust collection filters. • Activate LEV before drilling begins and deactivate after drill bit stops rotating. • Operate equipment such that no visible dust is emitted from the process. • Use dust collector in accordance with manufacturer specifications. For equipment operator working within an enclosed cab having the following characteristics: • Cab is air conditioned and positive pressure is maintained. • Incoming air is filtered through a prefilter and HEPA filter. • Cab is maintained as free as practicable from settled dust. • Door seals and closing mechanisms are working properly.	None	None
Milling	For drivable milling machines:. Use water-fed system that delivers water continuously at the cut point to suppress dust. Note: Additional specifications: • Operate equipment such that no visible dust is emitted from the drum box and conveyor areas. For walk-behind milling tools: Use water-fed equipment that continuously feeds water to the cutting surface. OR Use tool equipped with commercially available shroud and dust collection system. Collector must be equipped with a HEPA filter and must operate at an adequate airflow to minimize airborne visible dust. Note: Additional specifications: Use dust collector in accordance with manufacturer specifications including airflow rate.	None None None	Half-Mask (10) Half-Mask (10) Half-Mask (10)
Using Handheld Masonry Saws.	Use water-fed system that delivers water continuously at the cut point. Used outdoors. Used indoors or within partially sheltered	None Half-Mask (10)	Half-Mask (10) Half-Mask (10)

	area. OR Use saw equipped with local exhaust dust collection system. Used outdoors Used indoors or within partially sheltered area Note: Additional specifications: • Prevent wet slurry from accumulating and drying. • Operate equipment such that no visible dust is emitted from the process. • When working indoors, provide sufficient ventilation to prevent build-up of visible airborne dust. • Use dust collector in accordance with manufacturer specifications.	Half-Mask (10) Full Facepiece (50)	Half-Mask (10) Full Facepiece (50)
Using Portable Walk-Behind.	Use water-fed system that delivers water continuously at the cut point. Used outdoors. Used indoors or within partially sheltered area. Note: Additional specifications: • Prevent wet slurry from accumulating and drying. • Operate equipment such that no visible dust is emitted from the process. • When working indoors, provide sufficient ventilation to prevent build-up of visible airborne dust.	None Half-Mask (10)	None Half-Mask (10)
Rock Crushing	Use wet methods or dust suppressants OR Use local exhaust ventilation systems at feed hoppers and along conveyor belts. Note: Additional specifications: • Operate equipment such that no visible dust is emitted from the process. For equipment operator working within an enclosed cab having the following characteristics: • Cab is air conditioned and positive pressure is maintained; • Incoming air is filtered through a prefilter and	Half-Mask (10) Half-Mask (10) None	Half-Mask (10) Half-Mask (10) None

	HEPA filter; • Cab is maintained as free as practicable from settled dust; and • Door seals and closing mechanisms are working properly.		
Drywall Finishing (with silica-containing material).	Use pole sander or hand sander equipped with a dust collection system. Use dust collector in accordance with manufacturer specifications. OR Use wet methods to smooth or sand the drywall seam.	None None	None None
Use of Heavy Equipment During Earthmoving.	Operate equipment from within an enclosed cab having the following characteristics: • Cab is air conditioned and positive pressure is maintained; • Incoming air is filtered through a prefilter and HEPA filter; • Cab is maintained as free as practicable from settled dust; and • Door seals and closing mechanisms are working properly.	None	None

NOTE 1: For the purposes of complying with all other requirements of this section, the employer must presume that each employee performing an operation listed in Table 1 that requires a respirator is exposed above the PEL.

NOTE 2: Where an employee performs more than one operation during the course of a day, and the total duration of all operations combined is > 4 hr/day, the required air-purifying respirator for each operation is the respirator specified for > 4 hr/day. If the total duration of all operations combined is ≤ 4 hr/day, the required air-purifying respirator for each operation is the respirator specified for ≤ 4 hr/day.

IV. The Legal Requirements for OSHA Standards were Set by Congress to Ensure OSHA Fully Analyzes Health Effects, Risk, and Costs before Promulgating any New Standard.

Congress devised an intricate process for OSHA to follow when promulgating new safety and health standards. As set forth above, this involved substantive analytical requirements, along with procedural protections for stakeholders.

First, Section 6(b)(5) of the Act sets forth OSHA's regulatory authority to promulgate health standards: "The Secretary, in promulgating standards dealing with toxic materials or harmful physical agents under this subsection, shall set the standard which most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his working life." 29 U.S.C. 655(b)(5). Each of the words in this section has meaning as they define the parameters of the Agency's decision-making discretion. OSHA may only regulate toxic materials or harmful physical agents "to the extent feasible" and based on the "best available evidence."

Second, Sections 6(b)(1) through 6(b)(4) of the Act devise a hybrid informal rulemaking process to ensure stakeholders have ample opportunity to comment to the Agency on the issues involved in establishing often highly complicated and controversial health and safety standards, as well as other issues germane to the Agency's decision-making process. The rulemaking process is more robust than the basic requirements for rulemaking under the Administrative Procedures Act. For example, under the OSH Act, the Agency must hold a hearing on a proposed rule if requested by "any interested person." 29 U.S.C. 655(b)(3). In addition, the standard of review of the rulemaking is more exacting than that under the APA. OSHA's decisions must be based on substantial evidence in the rulemaking record.

Congress understood the difficult issues that OSHA would have to analyze when regulating toxic materials and harmful physical agents. It designed a framework to ensure that OSHA did its due diligence before promulgating health standards. As Congress noted in its Report on the Act:

> Development of standards is to be based on research, demonstration, experiment, and other appropriate information. In addition to the highest degree of safety and health protection for the employee, other considerations shall be the latest available scientific data in the field, the feasibility of the standards and experience gained under this and other health and safety statutes.

Report to Accompany S. 2193, p. 29. As further noted by the Minority in the Report, "the bill must establish realistic mechanisms which call not only for the development and enforcement of strong standards but will also be fair and accord all parties, including employers subject to regulation, due process." Id. at 61.

One of the primary themes of the RFI is that the rulemaking process has become so cumbersome and the analytical requirements so daunting that the Agency is simply unable to update its health standards on a timely basis. OSHA's effort in 1989 to update all of the PELs in one rulemaking, and its subsequent actions after that effort was struck down by the 11th Circuit Court of Appeals, shows the Agency's frustration with the congressionally-mandated substantive and procedural requirements. The following excerpt from the RFI regarding OSHA's economic feasibility analyses illustrates OSHA's views:

> OSHA can reasonably say that it has found a methodology such that the Agency's determinations of economic feasibility have both been considered adequate by the courts and proven to be accurate in determining regulations to be feasible when re-evaluated by retrospective analysis. However, the resulting methodology is extremely resource intensive and time-consuming because OSHA always has to make detailed cost estimates and provide detailed statistical data for every single process and industry affected. For this reason, OSHA wants to consider whether there may be methods that can short-cut this process and still meet all of OSHA's legal requirements.

79 FR at 61402.

In the CISC's view, the rulemaking requirements and process serve a critical function to ensure the Agency comprehensively evaluates the need for, and potential impact of, a rule on employers and employees. It provides interested parties the opportunity to speak directly to the Agency on threshold issues of risk and feasibility. The CISC strongly objects to any effort by OSHA to short-cut the Act's requirements related to rulemaking or any other legislative reviews mandated by Congress.[3]

The CISC also does not agree with the underlying premise of much of the RFI that the statutory requirements lead to a "paralysis by analysis" with the Agency, causing lengthy delays in the rulemaking process. While the analysis required does take some time, there are a multitude of reasons why a particular health standard may be delayed in its issuance. In the CISC's view, the principle reason that rulemaking is delayed is shifting Agency priorities.

An historical view of OSHA health standards rulemakings demonstrates that the Agency more often than not will shift resources in between various rulemaking activities over the course

[3] Other statutes, such as the Regulatory Flexibility Act ("RFA") and the Small Business Regulatory Enforcement Fairness Act ("SBREFA") place additional requirements on OSHA related to the promulgation of certain major rules.

of several years, impeding the ability of the Agency to timely finalize rules based on the best available evidence. A perfect example of this can be found in OSHA's recent crystalline silica proposal.

As OSHA described in great detail in the crystalline silica proposed rule, the Agency first started examining the regulation of crystalline silica in the early 1970's. In December 1974, OSHA published an Advance Notice of Proposed Rulemaking ("ANPRM") related to crystalline silica based on recommendations made by NIOSH. Despite this initial regulatory activity, however, OSHA did nothing further with respect to silica from a regulatory perspective over the next 15 years. OSHA initiated action to promulgate a rule in 1974, but never took additional steps to finalize it. This had absolutely nothing to do with required analyses or procedural obstacles to rulemaking.

Then, in 1989, OSHA included silica in the PELs update, although it determined that it did not need to reduce the PEL for silica at that time. After the 11th Circuit Court of Appeals vacated the PELs rule, OSHA for the second time decided not to vigorously pursue a separate silica rule. Again, this was a policy decision made by the Agency and was not driven by statutory requirements.

In the mid-to-late 1990s, OSHA started to refocus its regulatory attention onto crystalline silica. However, at the same time, the Agency decided to target almost all of its resources on promulgating an ergonomics program management rule and a revised recordkeeping rule. This change in priority for the Agency moved resources away from a crystalline silica rule, which ultimately delayed advancement of the rule by years. The individuals within the Agency responsible for evaluating risk and feasibility were focused on other Agency priorities and work on the crystalline silica rulemaking came to a virtual standstill.

An OSHA rule on crystalline silica essentially stayed in hibernation for over a decade after the administration of President Clinton, until the current administration put resources back into the effort. The priority placed by this administration on silica resulted in the rule actually moving forward. The crystalline silica rule is complicated on many levels, including risk and feasibility. But, it certainly did not take the Agency 40 years to perform the substantive and procedural requirements for rulemaking placed upon it by Congress. Rather, it was the Agency's own decision-making and priority setting that affected the proposal's development.

Another example can be seen in OSHA's very recently issued beryllium proposal, published on August 7, 2015. See Occupational Exposure to Beryllium and Beryllium Compounds, 80 FR 47566 (August 7, 2015). In that proposal, OSHA gives the very long history

of its efforts to regulate beryllium. OSHA's experience with a beryllium rulemaking goes back to the 1970s. OSHA first proposed a new beryllium standard for all industries in 1975, but never took steps in the 1970's to finalize the effort. 80 FR at 47578.

Over 20 years later (in 1999 and 2001 respectively), OSHA was petitioned by several groups and individuals to promulgate an Emergency Temporary Standard for beryllium in the workplace. Id. Despite these requests, the Agency did not proceed full-steam ahead on a beryllium rule, publishing a Request for Information in 2002 containing questions on employee exposure, health effects, risk assessment, exposure assessment, and other areas. Id. The Agency spent over a decade from there without focusing significant resources on the rule. All told, 40 years after issuance of its first proposal to regulate beryllium, OSHA issued another proposed rule.

The CISC brings up these examples to illustrate that the length of OSHA rulemakings are due to numerous factors that are not at all related to OSHA's requirements to analyze the risk and feasibility of standards. And certainly, the length of OSHA rulemakings should not serve as a reason for OSHA to dispense with performing all of its statutory obligations to promulgate health standards and ensure the public is fully able to participate.

V. Reliance on PELs in the Construction Industry Serves as a Hindrance to Compliance with Health Standards.

One of the issues that underlies the RFI and OSHA health standards rulemaking generally, is whether OSHA's historical approach of setting an 8-hour TWA PEL is the most effective approach to protecting workers. This is an important question and one which will generate significant comment. The CISC strongly believes that health standards that adopt a "general industry" approach to regulation, including the traditional approach of setting a PEL and building requirements around the PEL, are destined to lead to significant compliance challenges in the construction industry.

OSHA has traditionally taken a "general industry" approach to health standards and applied it to the construction industry. Most of the construction industry health standards simply mirror in large measure the approach that OSHA has taken to the regulation of the health hazards in general industry. Thus, most construction health standards have provisions for methods of compliance with the PEL, exposure monitoring, medical surveillance, prohibited practices, regulated areas, training, and recordkeeping. In effect, construction health standards are set up to have the mobile construction employer serve in the role of the stationary general industry employer.

Health standards that emphasize exposure monitoring and compliance with an expressed PEL create significant compliance challenges for contractors. The reality on a construction site is very different from the reality of the stationary general industry location. Many contractors – and especially small contractors – are not able to engage in the type of "Industrial Hygiene 101" that OSHA contemplates in its general industry health standards. That, of course, is not to say that contractors do not want to protect their employees from health hazards. They absolutely do. It means, however, that health standards that rely on general industry approaches to regulation will be met with significant compliance obstacles for construction contractors who operate in conditions that are far different from stationary, general industry worksites.

In the crystalline silica proposal, the Agency attempted through Table 1 to create a concrete, simple, and effective means for construction contractors to protect their employees and comply with the rule. As the CISC stated in its extensive comments on Table 1 and as reiterated below, however, Table 1 as proposed was completely unworkable for the construction industry. OSHA took a concept that was initially supported by industry and made it impossible for any construction employer to utilize. OSHA should go "back to the drawing board" regarding any Table 1 and work with the industry in developing a workable version of it. The CISC could support OSHA including similar approaches to health standards rulemaking in the future, but OSHA must engage the industry and labor beforehand and in a substantive way to craft a Table 1 that will actually work and be accepted by employers and employees.

Finally, with respect to analysis of risk, while the CISC understands OSHA's desire to group similar chemicals for purposes of risk assessment, OSHA must ensure that it analyzes how these chemicals may differ in the context of exposures on construction sites. The environment on a construction worksite is incredibly variable. In fact, during the public testimony on OSHA's crystalline silica rule, NIOSH made a point to emphasize the variable nature of the construction environment, noting that "unlike other industries where production conditions are relatively similar day-to-day, construction conditions change as the building project progresses." OSHA-2010-0034-3579 at 129.

To the extent OSHA groups certain "like" chemicals together for purposes of assessing risk, it must consider the extent to which these chemicals are truly similar in a construction environment, not simply in a laboratory or a fixed general industry worksite. It may in fact be true that in a particular case there is no difference in how a band of chemicals reacts in a construction environment as opposed to a general industry environment. But OSHA may not simply assume that chemicals react the same way in both and must consider the variable exposure conditions in assessing risk.

VI. OSHA Must Thoroughly Analyze the Technological Feasibility of its Rules with Respect to the Construction Industry.

One of the issues of paramount importance to the construction industry with respect to OSHA rules is technological feasibility. Control measures to protect employees from health hazards in the general industry environment do not always translate into the construction environment, where work practices, control measures, and environmental conditions are highly variable. Moreover, contractors' experience and expertise with respect to managing health hazards in the construction environment vary widely and can impact implementation of controls.

As the RFI correctly points out, OSHA has traditionally examined several different pieces of information in analyzing the technological feasibility of its rules. Despite its best efforts, the information gathered is often insufficient in the CISC's view to establish technological feasibility in all of the different exposure scenarios that occur on construction sites. This was most recently seen in the crystalline silica rulemaking.

In the crystalline silica proposal, OSHA concluded that for ten of 12 construction activities that generate respirable crystalline silica, the proposed rule was technologically feasible. The basis for this preliminary conclusion was OSHA's review of the following data sources:

- Published literature;
- OSHA silica Special Emphasis Program (SEP) inspection reports;
- NIOSH reports, including health hazard evaluations, control technology assessments, in-depth surveys, recommendations for exposure control, and engineering control feasibility studies;
- Workplace evaluation reports related to programs on "sentinel event notification system for occupational risks" for silica from the state of Michigan, New Jersey, and Ohio;
- Eastern Research Group (ERG) and OSHA site visits;
- Unpublished information (e.g., unpublished data and research obtained through personal communications, meetings, and presentations); and

- Information available from other federal agencies, state agencies, labor organizations, industry associations, and other groups.

Respirable Crystalline Silica, PEA Chapter IV, p. IV-3. The type of information reviewed by OSHA is precisely the type of information OSHA discusses in the RFI. As the CISC pointed out in its comments, despite OSHA's best efforts, the information reviewed fell far short of actually establishing technological feasibility.

First, OSHA did not actually identify all of the job tasks that could be affected by the proposed rule in the technological feasibility analysis. In just the short amount of time provided for public comment, the CISC identified over 20 operations that OSHA did not consider, including:

- Cement mixing
- Overhead drilling
- Handling and installing pavers
- Compaction of interlocking pavers
- Dowel drilling
- Mixing mortar
- Mixing stucco
- Demolition of concrete and masonry structures
- Loading, hauling, dumping, and placing rocks, stones, sand, gravel
- Placing and compaction of aggregate base
- Placing bedding sand
- Cutting concrete pavers
- Sweeping joint sand into paver joints
- Compacting joint sand
- Cleaning and preparing surfaces for sealing
- Demolishing drywall or plaster walls/ceilings

Second, in the crystalline silica proposal, OSHA made a fundamental error in assuming in the technological feasibility analysis that construction workers have no exposure to silica after the period of time sampled. In the proposal, OSHA adopted an assumption that workers sampled for significant portions of the data underlying the feasibility analysis experienced *zero* exposure to silica for the remainder of the shift for which they were sampled. Id. at IV-9. OSHA made this universal assumption for almost all of its samples that were less than full shift. Id.

This approach systematically understated, often by a lot, the 8-hour TWA to which the sampled construction workers were actually exposed. Furthermore, OSHA's assumption that exposure after sampling was zero in all instances for construction workers was the complete opposite from what it assumed for general industry workers. For general industry, OSHA assumed that the workers' exposure for the sampled and un-sampled portions of the workers' shift remained the same throughout:

> To determine an 8-hour TWA, the exposure level for the period sampled is assumed to have continued over any unsampled portion of the shift. OSHA has preliminarily determined that this sample criterion is valid because workers in general industry are likely to work at the same general task or same repeating set of tasks over most of their shift; thus unsampled periods generally are likely to be similar to the sampled periods.

Id. at IV-7.

As a result of OSHA's assumption, most of the 8-hour TWA exposure data – for both baseline exposures *and* with controls – for construction workers was underestimated by several-fold in the CISC's view. The Agency's rationale for this assumption was that it reflects "real construction site working conditions" and was the "best of the available options." Id. at IV-8 and IV-9. Yet, the Agency never fully explained the reasons why it reflected real construction site working conditions and took a contrary view in other instances in the proposal.

Third, OSHA's analysis did not consider the broad scope of tasks and environments affected. OSHA's technological feasibility assessment attempted to analyze "most" of the construction operations "most" of the time. But OSHA really lacked the data and information to fully analyze "most" of the construction operations "most" of the time. In many instances, the technological feasibility analysis did not include an analysis of the bulk silica content of the material being disturbed by a worker. This means that the same task could be judged as being able to meet the PEL when its *real* ability to meet any PEL was contingent on the percentage of silica in the material being disturbed. OSHA simply did not account for this in the technological feasibility analysis.

Nor did the analysis consider in a meaningful way differences in weather conditions that could affect exposure results. The same job activity performed on the same material in different areas of the country will produce different results, due solely to what part of the country the activity took place in. Cutting block in Phoenix, AZ is not the same as cutting block in Seattle, WA, or Portland, ME, for meteorological and climate conditions (precipitation, humidity, etc.)

can potentially impact the extent and quantity of airborne dust. OSHA did not consider this in its technological feasibility analysis.

Fourth, OSHA's assumption about compliance on multi-employer worksites did not account for exposure affects. Much of OSHA's exposure data did not reflect exposures from several ongoing silica-generating tasks at a worksite, which potentially originate from other employees who may work for other employers. OSHA's contractor, when making its technological feasibility conclusions, assumed no secondary exposure from adjacent work activities, based on its theory that all silica exposure on a construction site would be effectively controlled:

> Exposure from adjacent sources of silica influenced worker respirable silica levels in many job categories. Although ERG noted certain extreme cases, the exposure profile does not generally distinguish between a worker's primary source of exposure and the contribution of secondary exposure from an adjacent source. However, the Technological Feasibility Conclusions assumed a comprehensive effort to control silica throughout the site, *eliminating secondary exposure sources*. ERG based all technological feasibility conclusions for each job category on the assumption that the adjacent sources of exposure were also controlled to the acceptable level. Thus, all of the controls depend on control of the surrounding operations as described for that industry.

Respirable Crystalline Silica, ERG Report, p. 1-4 (emphasis added).

These are just some of the many concerns that the CISC raised with respect to the technological feasibility analysis. OSHA simply failed to gather enough data to support its findings and then attempted to support the lack of data by making incorrect assumptions about exposure that were not based on the reality of work on construction sites.

Interestingly, the RFI essentially recognizes the problems that the CISC pointed out in its crystalline silica comments. Particularly for the construction industry, it is important for OSHA to gather and review a significant amount of data before finding that a health standard is technologically feasible. OSHA did not do that in the crystalline silica proposal.

While the CISC is not opposed as a general matter to the use of modeling in technological feasibility analyses, it feels very strongly that modeling cannot and should not take the place of "on-the-ground" data gathering by the Agency. A well-supported technological feasibility analysis must gather as much data and information as possible to accurately

characterize baseline exposures and the effectiveness of control measures. There is no substitute – particularly in construction – for OSHA to actually look at exposures on a construction worksite and how controls impact those exposures. The CISC would never support the Agency foregoing this critical aspect of its feasibility assessment. Moreover, OSHA would not be relying on the "best available evidence" if it failed to gather and critically review this "real-world" data.

It is also critically important that any model that OSHA uses to enhance its technological feasibility analysis be validated before use. As stated above, one of the CISC's primary concerns with the assumptions made by the Agency in the crystalline silica proposal was that they did not appear to be supported and certainly not based on the best available evidence. While validated modeling may have a place in OSHA's technological feasibility analyses, use of models that have not been validated serve as little more than unsupported assumptions in the CISC's view.

Finally, and perhaps most importantly, any modeling used to demonstrate that a proposal is technologically feasible must be presented to stakeholders as part of the proposal and stakeholders should be given an opportunity to comment on it. Just like other aspects of OSHA's health effects, risk, and feasibility analyses, use of modeling – which could have a significant impact on the Agency's finding of technological feasibility – must be subject to notice and comment. Introducing modeling to simply reinforce conclusions at a final rule stage, without any opportunity for the public to comment on it, would be inappropriate and highly objectionable to the CISC.

VII. OSHA's Approach to Showing Economic Feasibility Must Consider Small Construction Employers.

As stated above, OSHA is mandated by Congress to consider the economic feasibility of its rules on an industry-by-industry basis. Aside from the statutory requirement that OSHA do this, it is good policy. It is critical that OSHA fully assess the extent to which its rules will impact all affected employers.

Additional requirements have been placed on OSHA to analyze the impacts of its rules on small entities. These requirements have been placed on OSHA by Congress through other statutes such as the Regulatory Flexibility Act and the Small Business Regulatory Enforcement Fairness Act. As OSHA knows, the vast majority of the construction industry is comprised of small businesses.

As with the areas discussed above, the CISC is not necessarily opposed to OSHA adopting changes to the way that it analyzes economic feasibility. However, the CISC feels strongly that (1) OSHA must continue to assess costs and economic feasibility for small entities, and (2) OSHA must examine economic feasibility at a micro level.

First, it is critically important that OSHA continue to assess costs and economic feasibility on small entities. In the RFI, OSHA suggests that it is guilty of over-analyzing costs in a way that is not required by the Act and not useful to stakeholders. At least with respect to small entities, the CISC does not agree. As OSHA knows, the impacts of its rules on small entities may differ significantly from the impacts on large employers, who are often more readily able to absorb regulatory burdens in their operations. Even if OSHA determines that impacts on small entities do not affect economic feasibility, it is critical for OSHA to examine and quantify the impacts on small entities as it may influence OSHA decision-making.

For example, based on a detailed review of impacts on small entities, OSHA may determine that certain proposed provisions are not reasonably necessary or appropriate in the rule or are not cost-effective approaches to protecting employees. A detailed review of costs on small entities may encourage the Agency to offer other regulatory alternatives within the rule or at least in the proposal stage, to elicit comments from stakeholders on cost-effective approaches to regulation.

Second, OSHA should analyze economic feasibility at a micro-level. In the RFI, OSHA questions the degree to which it should be required to analyze feasibility at the 2, 4 or 6-digit NAICS level. For the construction industry, analyzing economic feasibility at an aggregate level is unhelpful in truly assessing the costs and economic impacts of a rule on construction employers.

The CISC made this point clearly in its comprehensive comments on the economic feasibility analysis prepared for the crystalline silica rulemaking. In the proposed rule, OSHA analyzed feasibility on the 4-digit NAICS level. Such large, aggregated industry groupings lumped together construction industries that were highly affected by the proposed rule with other unaffected construction industries that worked minimally with silica-containing materials, thus diluting the perceived impact of the proposal.

For example, in its comments to the crystalline silica rule, the CISC pointed to the use of the 4-digit industry "Foundation, Structure and Building Exterior Contractors," which included two likely substantially affected underlying 6-digit industries (masonry contractors and poured concrete contractors) for whom the impacts of the rule were obscured by including other 6-digit

industries that were minimally affected (e.g., framing, glass, roofing, siding, structural steel). As the CISC pointed out in its comments, there was little reason why OSHA should analyze construction industries defined only at the 4-digit level. For General Industry, for example, OSHA estimated costs and impacts for many 6-digit NAICS industries.

Judging feasibility at a highly aggregated level does not truly assess the impacts of OSHA's health standards on construction employers. Looking at masonry contractors and structural steel contractors in terms of the impact of the silica rule on their operations is truly comparing apples to oranges. The CISC feels strongly that OSHA should review the impacts of its rule on as disaggregated a level as possible.

In the RFI, OSHA also generally posits some alternative approaches to its feasibility analyses through OSHA limiting the overall scope and reach of health standards. For example, the RFI speaks of regulating discrete tasks or operations across industries in an attempt to streamline the resources needed to fully analyze an issue. The CISC does not oppose this method of potentially reducing resources for economic feasibility analyses, so long as it is consistent with the two key principles articulated by the CISC above.

In the CISC's comments to OSHA on the crystalline silica rulemaking, it identified several gaps and omissions in OSHA's analyses that, in the CISC's view, had the effect of underestimating the costs and economic impacts of the rule. For example, in its comments the CISC noted several deficiencies in OSHA's economic feasibility analysis:

- OSHA's analysis of the costs for engineering controls needed to reduce construction worker exposure to below the proposed PEL addressed only a limited set of construction occupations performing a limited set of construction tasks that could generate respirable crystalline silica. OSHA omitted from the Agency's analysis of the economic costs and impacts of the proposed rule at least 1.2 million additional workers in the construction industry who also routinely perform dusty tasks on silica-containing materials.

- OSHA failed to estimate the impact that the proposed rule would have on how self-employed workers perform construction work. While the OSH Act does not apply to self-employed workers, the CISC believed that the rule would cause self-employed construction workers eventually to perform silica-generating tasks in the same manner as the proposed rule. OSHA did not include any costs for these employers in its economic feasibility analysis.

- OSHA's analysis focusing on FTEs instead of workers resulted in drastically underestimating control costs involving equipment (LEV, wet methods, etc.). By relying on highly unrealistic assumptions about control equipment deployment and use in the construction industry, OSHA grossly underestimated the costs of complying with the engineering requirements of the proposed rule.

- OSHA's productivity penalties understated actual productivity losses by a significant degree. OSHA's estimates of the percentage losses in time, or productivity penalties, involved in conducting a task while using controls (e.g., LEV or wet methods) relative to conducting the task without using controls were based largely on the best professional judgment of OSHA's contractor. There was little to no data supporting OSHA's estimates and the CISC found them to be very low.

All told, the CISC estimated that compliance with OSHA's proposed standard would cost the construction industry nearly $3.9 billion per year, an amount nearly eight times larger than OSHA's estimate. This did not include the over $1 billion in indirect costs that OSHA did not include in its economic analyses and that the CISC described and submitted to the rulemaking record. Some of the issues raised by the CISC may have been avoided had OSHA taken a more limited approach to regulating crystalline silica.

The CISC would support any changes in OSHA's economic feasibility analyses that more accurately characterizes costs to construction employers, including *all* direct and indirect costs. The Agency must also make reasonable assumptions about baseline compliance and costs for large and small contractors to achieve full compliance with a new, comprehensive health standard.

VIII. Control Banding and Task-based Exposure Assessment May Provide Opportunities for the Construction Industry.

The RFI discusses the possibility of OSHA adopting control banding and task-based exposure assessment and control in its health standards. Integrating these approaches into OSHA health standards rulemaking would be somewhat novel and the CISC would support the Agency continuing to examine these approaches to regulating health hazards on construction worksites.

The CISC has explained that adopting a general industry approach to health standards rulemaking in construction is not conducive to driving compliance. To be sure, OSHA has done so in the past. However, in conversations with CISC member companies, the vast majority prefer simple, straightforward regulatory text that is driven by the implementation of specific control measures to address hazards. Requiring a small construction company to hire an outside

consultant to measure exposures in the array of conditions that might exist and develop control strategies is highly burdensome and somewhat unrealistic. Contractors want to comply with OSHA standards and protect their employees, but they want to do so in the simplest and clearest way possible. Frankly, the concepts of control banding and task-based exposure assessment could – if smartly promulgated by OSHA – make compliance with health standards in construction easier for large and small contractors.

Having said that, the CISC is very concerned with how these approaches would be accomplished in practice. As the RFI points out, OSHA attempted a task-based approach in the respirable crystalline silica proposal in its "Table 1." The CISC had high hopes for Table 1 before the proposal was issued but, unfortunately, Table 1 was highly flawed.

First, Table 1 was unworkable for most construction employers. Primarily, this was due to the "Notes" included in the "Engineering and work practice control methods" section of the Table (see above). These Notes were such that compliance with Table 1 would be essentially impossible.

The primary obstacle to compliance in the Notes section related to the requirement that there be "no visible dust" emitted from a process after the introduction of the engineering control methods. Rarely – if ever – will there be absolutely no visible dust emitted from a silica generating activity with the use of wet methods or other engineering controls. This requirement essentially made Table 1 worthless for most construction employers. Even if there were times where a process could be controlled such that no visible dust could be emitted, the requirement was so stringent that the CISC does not believe any construction employer would run the risk of relying on Table 1 for compliance.

There were other ambiguities and vague terms used throughout the Table that the CISC asserted eliminated Table 1 as a realistic compliance option:

- "Change water frequently to avoid silt build-up in water." This specification provided no guidance on how frequently water should be changed or what level of "silt build-up" would be acceptable.

- "Ensure saw blade is not excessively worn." This specification provided no guidance on what "excessively" means.

- "Cab is maintained as free as practicable from settled dust." This specification provided no guidance regarding the terms "as free as practicable."

With the specifications included in Table 1 and the ambiguity that went along with it, OSHA unfortunately created a compliance option that no construction employer would follow. If Table 1 is any indication, OSHA seems unwilling to truly adopt a task-based approach that will actually work. OSHA needs to shed its historical approach to health standards rulemaking and really trust in a task-based approach developed with active stakeholder involvement, including small employers. If OSHA fails to do this, any task-based approach will likely prove unsuccessful as a valid regulatory alternative.

IX. Conclusion.

The CISC appreciates the opportunity to comment on this important RFI. OSHA is right to explore opportunities to improve the process for developing health standards. The CISC would welcome a continuing dialogue with the Agency in this regard. Notwithstanding this, the CISC strongly believes that the statutory substantive and procedural requirements for rulemaking set by Congress must be followed by the Agency and that the Agency continue to provide notice and an opportunity for comment on all analytical issues and approaches OSHA takes to regulate hazardous chemicals. The CISC also reiterates that OSHA must continue to consider construction separately from general industry and maritime given the unique and variable conditions on construction worksites.

Exhibit A

Associated Builders and Contractors, Inc. (ABC) is a national construction industry trade association with 22,000 chapter members. ABC and its 70 chapters help members develop people, win work and deliver that work safely, ethically and profitably for the betterment of the communities in which they work. ABC member contractors employ workers, whose training and experience span all of the 20-plus skilled trades that comprise the construction industry. Moreover, the vast majority of our contractor members are classified as small businesses. Our diverse membership is bound by a shared commitment to the merit shop philosophy in the construction industry. The philosophy is based on the principles of nondiscrimination due to labor affiliation and the awarding of construction contracts through open, competitive bidding based on safety, quality and value. This process assures that taxpayers and consumers will receive the most for their construction dollar.

AGC of America

THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA

Quality People. Quality Projects.

The Associated General Contractors of America (AGC) is the leading association for the construction industry, and places safety in the construction industry as a priority. Founded in 1918 at the express request of President Woodrow Wilson, AGC is a full service trade association representing nearly 30,000 firms in partnership with a network of 94 exceptional chapters throughout the United States. Among the association's members are approximately 7,500 of the nation's leading general contractors, more than 12,500 specialty contractors, and more than 13,000 material suppliers and service providers to the construction industry. AGC members play a powerful role in sustaining economic growth, in addition to producing structures that add to productivity and the nation's quality of life.

AGC member firms engage in the construction of buildings, shopping centers, factories, industrial facilities, warehouses, highways, bridges, tunnels, airports, waterworks facilities, waste treatment facilities, dams, hospitals, water conservation projects, defense facilities, multi-family housing projects, municipal utilities and other improvements to real property. And unlike many associations in the industry, we proudly represent both union and open-shop construction contractors. AGC is truly the "voice and choice" of the construction industry.

American Subcontractors Association, Inc.

The American Subcontractors Association, Inc. (ASA) is a national trade association representing subcontractors, specialty trade contractors, and suppliers in the construction industry. ASA's 5,000 members work in virtually all of the construction trades and on virtually every type of horizontal and vertical construction. ASA members frequently contract directly a construction owner. More often, they serve as subcontractors dealing with the ultimate construction owner through a prime contractor. More than 60 percent of ASA members are small businesses.

ASA Vision: The American Subcontractors Association is recognized as the united voice dedicated to improving the business environment in the construction industry.

ASA Mission: The American Subcontractors Association amplifies the voice of and leads trade contractors to improve the business environment for the construction industry and to serve as a steward for the community.

ASA Values: The ideals and beliefs of ASA are ethical and equitable business practices, quality construction, a safe and healthy work environment, integrity and membership diversity.

AMERICAN SOCIETY OF
CONCRETE CONTRACTORS

The Only Association By And For All Concrete Contractors

The American Society of Concrete Contractors was formed by and for concrete contractors and others who provide services and goods to the concrete construction industry. It is a powerful organization of contractors who share the same goals – to improve their businesses and their roles as contractors. Members include contracting firms, manufacturers, suppliers, designers and other professionals. There are approximately 500 member companies in the U.S. and abroad in the American Society of Concrete Contractors.

ASCC seeks to be the voice of the concrete contractor, serving as a collective instrument to give members of the concrete construction industry a stronger presence in the construction industry as a whole.

ASCC is committed to helping members enhance the quality of their construction and their businesses. Members of this concrete contractor association become better equipped to improve all aspects of their performance with the help of valuable information and member interaction.

Association of the Wall and Ceiling Industry

AWCI is a trade association providing members with industry information, contacts and leadership for the wall and ceiling industries. Member companies are among the most successful in the industry. They are union and non-union wall and ceiling contractors of all sizes, manufacturers, suppliers and distributors throughout the world.

AWCI represents 2,200 companies and organizations in the acoustics systems, ceiling systems, drywall systems, exterior insulation and finishing systems, fireproofing, flooring systems, insulation, and stucco contractors, suppliers and manufacturers and those in allied trades. Our mission is to provide services and undertake activities that enhance the members' ability to operate a successful business.

AWCI is highly regarded by members of our industry as providing valuable technical and product information, education and training, industry contacts and the collaborations essential to operating a successful business, and is the principal organization advocating the interests of contractors, suppliers and manufacturers in the wall and ceiling industries.

AWCI is a national leader in trade-specific education programs covering the wall and ceiling industry. AWCI continues to expand its list of programs to cover every facet for the wall and ceiling contractor. All AWCI Doing It Right programs (except EIFS—Doing It Right®) are designed specifically for owners, project managers, estimators, superintendents, foremen, architects and code officials. EIFS—Doing It Right® is a certificate program targeting EIFS mechanics, inspectors and industry professionals. All AWCI Doing It Right program content is based on industry accepted standards and best practices.

AWCI is the prime source of information published for the wall and ceiling industries. AWCI members receive technical and news periodicals throughout the year. Experienced staff will assist members with the latest technical documentation and keep them informed of changes in codes, specifications and standards. The largest technical information and resource library for the wall and ceiling industry, which is owned by the Foundation of the Wall and Ceiling Industry, is located at AWCI headquarters.

Established in 1902, the Washington, D.C.-based American Road & Transportation Builders Association (ARTBA) is the "consensus voice" of the U.S. transportation design and construction industry before Congress, federal agencies, the White House, news media and general public. The association's mission is simple: We are a federation whose primary goal is to aggressively grow and protect transportation infrastructure investment to meet the public and business demand for safe and efficient travel. From the beginning, ARTBA has been a major leadership force in the development of federal transportation policy. The association's 5,000+ private and public sector members are involved in the planning, designing, construction and maintenance of the nation's roadways, bridges, ports, airports and transit systems. Our industry generates more than $380 billion annually in U.S. economic activity and sustains more than 3.3 million American jobs.

Since 1919, the Building Stone Institute (BSI) has worked on behalf of the quarries, fabricators, retailers, importers, exporters, carvers, sculptors, restorers, designers, and installers that comprise our diverse membership. BSI provides programs and services that empower our member companies to offer the highest level of quality products and services. BSI resources are necessary tools that enable our members to educate the architectural and design communities on the benefits and uses of natural stone. BSI is a not-for-profit trade association dedicated to serving its member firms, and providing educational materials and continuing education on the uses and benefits of natural stone. We support efforts to continually increase the quality of service, quality of products, and demand for stone. Our website is informative about the organization, abundant in stone awareness and technical guidance plus a convenient resource to locate experts for all aspects of natural stone.

BSI is a proud continuing education provider with the American Institute of Architects & the American Society of Landscape Architects, a founding member of the Natural Stone Council and a member of the U.S. Green Building Council.

The Concrete Sawing & Drilling Association (CSDA) is a nonprofit trade association of contractors, manufacturers and affiliated members from the construction and renovation industry. The CSDA mission is to promote the selection of professional industry contractors and their methods. Diamond tools for projects requiring sawing, drilling, selective demolition, cutting and polishing offers the construction industry many benefits including lower total project costs, precision cutting, maintenance of structural integrity, reduced downtime, reduced noise, dust and debris, limited access cutting and the ability to cut heavily-reinforced concrete. CSDA offers its members access to multiple training programs and safety documents, as well as educational opportunities at its annual convention and online. Founded in 1972, CSDA has 500 member companies worldwide.

CDRA

Construction & Demolition

Recycling Association

The Construction & Demolition Recycling Association promotes the recycling of materials generated from construction and demolition (C&D) projects. These materials can be generated from road, bridge, or building projects. While no official government estimates exist for the total material stream, conservative estimates put the amount of C&D material generated annually in the United States at 350 million tons, with some experts saying as much as 650 million tons is generated. For point of comparison, EPA estimates municipal solid waste generation to be around 240 million tons annually.

Components of the material stream include concrete, asphalt, wood, asphalt shingles, plastics, metals, carpet, and drywall, among other items. By weight, probably the most recycled material in the United States is concrete, at about 140 million tons. Asphalt is close behind. In addition, asphalt shingle generation is about 11 million tons annually, with the amount recycled at about 2 million tons.

The CDRA has 275 members throughout North America. Almost all these companies are privately held small businesses. Obviously the benefits of recycling all these companies bring to the environment is tremendous. For example, that 140 million tons of concrete recycled would otherwise go to landfills, quickly filling them up, while also requiring an equal amount of mining activity to take place. In addition, the industry provides thousands of green jobs to the economy.

DCA represents contractors, suppliers and manufacturers who provide construction services including installation, replacement and rehabilitation of natural gas pipelines, water and wastewater infrastructure, as well as fiber optic, cable and duct systems in communities across the country.

INTERNATIONAL COUNCIL OF EMPLOYERS
of Bricklayers and Allied Craftworkers

ICE is the only wholly union international masonry contractors' association, representing approximately 10,000 signatory contractors who perform, brick, block, stone, tile, marble, terrazzo, cement masonry, plastering and restoration work. Its members employ the highest skilled, safest and best trained workers in the masonry industry. The primary purpose of ICE and its affiliate entities is to engage in labor relations matters with the International Union of Bricklayers and Allied Craftworkers (BAC) and its constituent local unions. The contractor members and officers of ICE are committed to working in harmony with the BAC to further the collective bargaining process, to enhance work opportunities for members of the union and to increase business opportunities for union contractors. ICE works with the BAC to provide union masonry craftworkers with the best training available, safe jobsites, pensions and healthcare. It works with its affiliates and other signatory contractors' associations to provide signatory masonry contractors with labor relations, education, staffing services and political advocacy specifically needed by the signatory contractor.

ICPI
INTERLOCKING CONCRETE PAVEMENT INSTITUTE ®

Celebrating 20 Years

Pavers in Every Project!

As the leading technical organization on segmental concrete pavement systems, the Interlocking Concrete Pavement Institute (ICPI) provides substantial resources to concrete paver producers, contractors, suppliers, design professionals and distributors. Members representing this growing industry support the association's mission while utilizing its wealth of resources to gain a competitive business edge.

Our Mission:
To increase awareness, acceptance and use of segmental concrete pavement systems in North America.

What We Do:

- **Education:** ICPI and its members hold education and certification programs across the US and Canada, providing top quality education for contractors, sales and design professionals, university professors and municipal officials.
- **Communications and Marketing:** ICPI provides continuous communication and marketing efforts to members, users and specifiers regarding the benefits of segmental concrete pavement systems. This is done through various mediums including www.icpi.org, *Interlock Design* magazine, publications and e-newsletters aimed at specific audiences.
- **Government Affairs and Advocacy:** Advocating for our members and promoting the value of our industry is a top priority. ICPI identifies opportunities to educate policymakers and addresses legislative and regulatory issues affecting the segmental concrete pavement industry.
- **Industry Standards and Research and Development:** ICPI staff participates on ASTM and CSA committees governing paving product standards and liaisons with various other associations, to represent industry best interests. ICPI's participation with ASTM and CSA has led to improvements in existing paver standards and test methods.
- **ICPI Foundation:** The ICPI Foundation for Education and Research supports, develops and conducts educational programs, seminars, courses and research, and disseminates information relating to interlocking concrete pavement.

Our Members:
ICPI began in 1993 with 66 charter members, since then membership has grown to over 900 companies. The diverse and unique membership represents manufacturers, contractors, industry suppliers and distributors. Our members are made up of strong, passionate leaders committed to the future growth and success of our industry.

Leading Builders of America (LBA) is a Washington, DC based trade association representing twenty one of the nation's largest homebuilding companies. Our members construct about one third of the new homes sold annually in the United States, generating over $33 billion in revenue and accounting for over 350,000 jobs through direct employment and the engagement of subcontractors. LBA's primary goal is ensuring that new homes remain affordable for American families.

Celebrating 70 Years • 1944-2014

Setting the Standards for Natural Stone

About the Marble Institute of America

Headquartered in Cleveland, Ohio, the Marble Institute of America (MIA) has served as the authoritative source of information on standards of natural stone workmanship and practice and the application of natural stone products for 70 years.

Membership in the association is worldwide and includes over 1,600 natural stone producers, exporters/importers, distributors/wholesalers, fabricators, finishers, installers, and industry suppliers committed to the highest standards of workmanship and ethics.

MIA offers an industry accreditation program for fabricators and installers, markets a range of technical publications and consumer pamphlets on natural stone, sponsors business and technical meetings and seminars on industry-related topics, provides educational programming for architects and construction specification professionals, and conducts the annual Pinnacle Awards competitions recognizing outstanding natural stone projects worldwide.

MIA is also a leading promoter of stone usage in the commercial and residential marketplaces, producing consumer education materials on the use of natural stone and its proper care and maintenance. More information can be found on the association's website: http://www.marble-institute.com.

MIA Position Statement:

The Marble Institute of America (MIA) is urging OSHA to maintain the current silica exposure levels as they are appropriate if adhered to. Data from the U.S. Centers for Disease Control (CDC) show a greater than 90 percent reduction in the silicosis mortality rate from 1968 to 2010. It is doubtful that a further reduction of the allowable exposure limits will impact those numbers.

Advances in wet cutting and stone industry education have positively aided OSHA in the effort to curb silica exposure during the past few years. The MIA believes that OSHA will continue to have a positive impact if attention is focused on compliance at the current exposure levels.

The natural stone industry advocates the use of proper equipment, training, vigilance and continual monitoring to minimize the risk of silicosis. The MIA has produced videos, handouts, and training guidelines on awareness and prevention of silicosis, and is providing many of those resources free-of-charge to stone companies online.

Again, the MIA is 100% committed to workplace safety. The well-being of our member companies, and the stone industry as a whole, is at the core of what we do every day. This new rule will require our members, and all companies in the stone industry, to endure additional burdens, despite the fact that consensus on the safety impact has yet to be reached. Learn more at www.marble-institute.com/silica.

The Mason Contractors Association of America (MCAA) is the national trade association representing all mason contractors both union and open shop. MCAA was incorporated in 1950. Its purpose is to help educate, train, and represent the mason contractor through its various programs aiding members to maintain their competitive edge against other construction methods.

In addition, the MCAA promotes the use of masonry, actively recruits and assists in training of the industries workforce, advocates for federal legislative issues and standards affecting contractors and provide educational programs for the employees of member firms. One such program includes weekly webinars throughout the year through the MCAA webinar series. The MCAA contracts with a lobbying firm in DC to advocate for our positions consistent with our purpose. The MCAA is a 501 C 6 not for profit entity.

In 2008 the MCAA created a new entity called the Masonry Foundation which is controlled by a spate Board, has separate by-laws and operates as an independent foundation. The foundation's purpose is to support education, training and research priorities of the industry. The Masonry Foundation is a 501 C 3 organization and is currently in the process of a five year endowment building campaign.

The MCAA has been operating for nearly 65 years and is proud of it's rich history in advocating for all mason contractors throughout the US.

Mechanical Contractors Association
MCAA
of America

The Association

The Mechanical Contractors Association of America (MCAA) is a non-profit construction trade association representing more than 2,400 members nationwide and overseas. More than 2,000 of MCAA's members are mechanical construction and/or service firms.

- Most MCAA contractor members perform both mechanical construction and mechanical service work;
- All of MCAA's contractor members are union contractors;
- Their companies employ more than 270,000 union workers; and
- The association has 85 local affiliates (chapters) throughout the United States and overseas.

Mechanical Construction

Mechanical construction firms are primarily involved in the installation of:

- Piping systems:
- Plumbing systems:
- Heating systems;
- Ventilation systems;
- Air Conditioning systems;
- Fire Sprinkler systems; and
- Refrigeration systems.

Mechanical Service

Mechanical service firms are primarily involved in the maintenance and repair of:

- Heating Systems;
- Ventilation Systems;
- Air Conditioning Systems; and
- Refrigeration Systems.

National Association of Home Builders

Founded in 1942, the National Association of Home Builders (NAHB) is a Washington, D.C.-based trade association representing more than 140,000 members involved in home building, remodeling, multifamily construction, property management, specialty trade contractor, design, housing finance, building products manufacturing, and all other aspects of the residential and light commercial construction industries. NAHB is affiliated with more than 800 state and local home builders associations (HBAs) located in all 50 states and Puerto Rico. NAHB's members touch on all aspects of the residential construction industry. About one-third of NAHB's members are home builders and/or remodelers. The others are associates working in closely related specialties such as sales and marketing, housing finance, and manufacturing and supplying building materials. Currently, the residential construction sector employs over 2 million people and NAHB's builder members will construct approximately 80 percent of the new housing units projected in the next 12 months, making housing one of the largest engines of economic growth in the country. The more than 14,000 members that belong to NAHB Remodelers Council comprise about one fifth of all firms that specify remodeling as a primary or secondary business activity. The NAHB Multifamily Council is comprised of more than 1,000 builders, developers, owners, and property managers of all sizes and types of multifamily housing comprising condominiums and rental apartments.

For over two decades, NAHB and its members have been at the forefront of enhancing safety and health in residential construction. NAHB has taken part in numerous Occupational Safety and Health Administration (OSHA) rulemakings and our members have experience in complying with the myriad of OSHA regulations that affect the residential construction industry. NAHB has been an active partner with OSHA through its Alliance Program and participation on OSHA's Advisory Committee on Construction Safety and Health (ACCSH). Together, NAHB and OSHA have worked to improve worker safety and prevent workplace fatalities, injuries, and illnesses in the home building industry. Because of this experience and expertise, NAHB is well positioned to provide useful information, advice, and input to federal regulators, such as OSHA.

NARI®

NATIONAL ASSOCIATION OF
THE REMODELING INDUSTRY

NARI is a non-profit trade association with national headquarters based in Des Plaines, IL with 57 local chapters located in most major metro areas. NARI members are engaged in repair/remodel of residential and commercial construction. NARI members voluntarily subscribe to a strict Code of Ethics and Standards of Practice.

NARI is the only national organization dedicated exclusively to the remodeling industry. NARI members are entrusted to work on the most valued asset of their clients and customers—their home.

NARI delivers rigorous education and certification programs including Certified Remodeler, Certified Lead Carpenter, Certified Kitchen and Bath Remodeler, Green Certified Professional and Universal Design Certified Professional and Certified Remodeler Project Manager. These programs are a NARI hallmark.

NARI annually awards Contractor of the Year (CotY) awards which recognize remodeling project excellence and expertise.

NARI'S CORE PURPOSE
To advance and promote the remodeling industry's professionalism, product and vital public purpose

NARI'S CORE VALUES
Professional: Ethical and honest; committed to high standards
Open: Diverse and respectful; inclusive of many views and dedicated to free expression
Progressive: Informed and knowledgeable; resourceful and flexible
Member Focused: Focused on importance of success, return on investment and profit

Legacy: Founded 1983
Strength: 6,500+ member companies
Nationwide Network: 27,730 contractors (includes specialized trade contractors). 340,195 employees of allied companies within the industry (vendors, manufacturers, lumberyards, etc.)
Educated: 1,454 hold at least one NARI certification

Our members:
Small: 79.93% employ between 1-10 people. 46% have between $1-$5 M in revenue.
Experienced: 34% of companies have been in business 6-15 years; another 34% have been in business 16-30 years.

NATIONAL DEMOLITION ASSOCIATION

The National Demolition Association, founded in 1973, is the trade organization for the Demolition Industry in the United States, Canada and beyond. With over 800 members the organization represents the bulk of the entrepreneurial contractors and suppliers involved with the demolition process. In addition to structural dismantlement the industry is involved with implosions, asbestos, lead, and PCB abatement, the safe handling of hazardous and toxic materials, historic preservation, land clearing, facilities decontamination, specialized rigging, landfilling, C&D recycling, industrial recovery, scrap processing, trucking and general contracting. The Demolition Industry around the world is the largest source of feedstock for the scrap recycling industry and often recycles over 90% of the demolition debris in its material stream. The Association is the repository of safe work practice for the Demolition Industry on a global basis. Its Demolition Safety Manual, which was developed under an OSHA "New Directions" grant, is the bible of safe work practice for the industry around the world. The Association, as part of an OSHA Alliance, developed a Disaster Site Worker Training & Certification Program to train demolition workers as Second Responders at any man-made or natural disaster.

NECA began in 1901 when a group of electrical contractors met in Buffalo, NY to form an association that could help in the fostering of trade among electrical contractors and reform abuses in the electrical industry. Part of its mission was to settle differences between its members and promote more enlarged and friendly discourse among its members.

Today over 3500 NECA members from around the country count on NECA to deliver the resources that help them make better business decisions, provide excellent customer service, and take advantage of innovative technology. NECA's national office and local chapters advance the electrical construction industry through advocacy, education, research, and standards development.

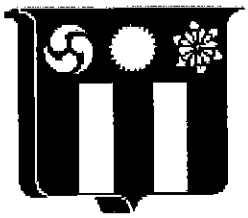
NECA works with members, contractors, building owners, developers, manufacturers, business development staff and NECA chapters to produce training programs, tools, publications and promotional material that position NECA contractors as a customer's full service energy solutions provider.

Our member's voices matters when it comes to the issues, regulations and legislation that affect their businesses. NECA represents members on Capitol Hill with regulatory agencies and federal officials. By monitoring OSHA and DOL rulemaking activities, NECA helps members prepare for and follow the regulations promulgated by those agencies.

By participating with NFPA in the NFPA 70 National Electrical Code making process, NECA can help to ensure better electrical installations for the public. Working with NFPA in the revisions to NFPA 70E, Standards for Electrical Safety in the Workplace, NECA helps its member provide a safe workplace for their employees.

NECA also develops installation standards that are recognized by architects, designers and engineers as the baseline for quality assurance and acceptance. NECA also recognizes emerging technologies such as solar, wind and electric motor vehicles and helps to develop standards with ANSI to ensure these are installed and used in the safest manner possible.

NECA connects our members with the products and services that support their businesses. Electrical contractors count on NECA to deliver the industry's most up-to-date technical guides and e-tools. From PPE Selector to the Manual of Labor Units, NECA can help its members improve productivity, safety and accuracy.



NRCA

National Roofing Contractors Association

Established in 1886, NRCA is one of the nation's oldest trade associations and the voice of professional roofing contractors worldwide. NRCA is an association of roofing, roof deck, and waterproofing contractors; industry-related associate members, including manufacturers, distributors, architects, consultants, engineers, and city, state, and government agencies; and international members. NRCA has approximately 3,600 members located in all 50 states and 51 countries and is affiliated with 100 local, state, regional and international associations. NRCA contractors typically are small, privately held companies, with the average member employing 30-40 people in peak season and having sales of $3.5 million per year. NRCA members install the majority of new construction roof systems and replacement roof systems on commercial and residential structures in the U.S.

One of NRCA's core objectives is to promote worker health and safety in the roofing industry. NRCA has developed more than 50 roofing safety-related publications, programs and training materials on diverse topics including asbestos abatement, hazard communication, fall protection and crane and hoist operation. In addition, over the past 12 years, OSHA has awarded NRCA 11 individual grants to develop programs designed to improve workplace safety in the roofing industry. Many of those grants have dealt with a priority issue for both OSHA and NRCA: protecting roofing workers from falls. NRCA has been a sitting member of and represents the roofing industry in proceedings before OSHA's Advisory Committee for Construction Safety and Health, is a member of the American National Standards Institute's A10 Committee on Construction and Demolition Operations and the SIO 45001 standard's Technical Advisory Group for Occupational Health and Safety Management Systems.

NUCA

REPRESENTING UTILITY & EXCAVATION CONTRACTORS

NUCA is the largest and most influential national trade association working solely for the excavation and utility construction markets. NUCA represents contractors, manufacturers, suppliers, and other service providers engaged in the water, sewer, gas distribution, electric, communications, construction site development and excavation industries. Founded in 1964, NUCA is entering its 50th year of leadership providing high quality safety services, craft training, management education, and advocacy.

Under the direction of our Safety Department, NUCA offers premier confined space and excavation safety training programs, taught by over 100 instructors nationwide. We also offer a bimonthly safety newsletter, publish a monthly safety article in Utility Contractor magazine, conduct an annual 3-day Safety Directors forum, and provide individualized technical assistance from a CSP on a full range of safety issues, including how to establish and implement a successful safety program and remain in compliance with OSHA regulations. We work closely with the Common Ground Alliance for damage prevention best practices. We provide safety training products, recognize exception safety results through our William H. Feather Safety Awards program, and also invite our members to join the Safety Ambassdors Club, which provides funding for a wide variety of new safety activities, resources and initiatives.

Our Vice President of Safety, George Kennedy (CSP), brings 35 years of professional safety experience to work every day and was awarded the National Safety Council's Distinguished Service to Safety Award (DSSA), it highest individual honor, in 2013.

Natural Stone Council
The United Voice of the Natural Stone Industry

GENUINE STONE™

In 2003, the Natural Stone Council (NSC), a not-for-profit organization, was formed to unite a diverse industry of natural stone producers, fabricators and related affiliates to actively promote the attributes of natural stone in commercial, residential, government, institutional, educational and all types of applications interior and exterior, and to proactively position natural stone as the premier construction material. The NSC is comprised of twelve affiliates representing every type of dimensional stone quarried and fabricated in the United States. The NSC affiliates have a combined membership over 2,200 whose companies' employee in excess of 40,000 workers. The dimension stone industry is a major part of the nation's economy. According to recent Department of Labor figures, 4,380 stone quarries themselves directly employed 35,248 workers, and 2,125 fabrication facilities directly employed 23,666 workers. Additional indirect employment is estimated to be greater than 100,000 people with a total estimated payroll for the industry approaching $4 billion annually.

The affiliates include Allied Stone Industries, Building Stone Institute, Elberton Granite Association, Indiana Limestone Institute, Marble Institute of America, Mason Contractors Association of America, National Building Granite Quarries Association, National Slate Association, Natural Stone Alliance, New York State Bluestone Association, Northwest Granite Manufacturers Association, and Pennsylvania Bluestone Association.

By pooling resources and launching a united branding campaign including the use of a Genuine Stone® coin logo, NSC has successfully established awareness for natural stone's authenticity. Natural stone producers and retailers now have a trusted symbol by which designers and consumers can recognize natural stone and differentiate it from imitation stone products.

To further promote the sustainability of natural stone, the NSC has funded the development of an environmental ANSI based standard, NSC 373, to which stone producers and products can become certified.

The NSC Environmental Compliance Sub-Committee which also includes MSHA-OSHA focused interests is an interdisciplinary group of professionals with expertise in air, land, water and waste resources, management, and regulatory obligations. The committee is made up of professional engineers, professional geologist, and operations leaders to provide a wide understanding of the impacts of environmental compliance on operations. The mission of the sub-committee is to keep members of the Natural Stone Council up to date on the environmental trends and upcoming regulations that may have an impact on the industry and to support related NSC initiatives.

The Natural Stone Council is committed to supporting sustainable initiatives and innovations at all levels of the production of Genuine Stone products. As such, best practices of the industry have been identified and these guidance documents created to provide assistance in implementing environmentally-preferable operations.

Located across the Potomac River from Washington, D.C.'s corridors of power, The Association of Union Constructors (TAUC) -- "The Voice for Union Construction" -- occupies a unique space in the nation's capital as the premier national trade association for the union construction industry.

TAUC is made up of more than 2,000 contractor companies that utilize union labor for their projects, as well as local contractor associations and vendors in the industrial maintenance and construction fields.

TAUC's mission is to act as an advocate for union contractors and enhance cooperation between the three entities involved in the successful completion of construction projects: the union, the contractor and the owner-client, the company for which the work is being completed. By encouraging this "tripartite dialogue," many potential issues and delays are eliminated before work even begins.

We strive to demonstrate that union construction is the best option because it is safer and more productive, and also provides a higher-quality and cost-competitive product. We aim to enhance labor-management cooperation, workplace safety and health and collaboration among construction users with the greater goal of making union contractors more competitive in the marketplace.

Founded in 1969 under the auspices of the National Erectors Association, the organization originally served as the voice for union steel erector companies. Over the years, however, the need became apparent for a single national organization to represent all industrial maintenance and construction companies that realize the value of the union workforce, and soon other non-steel erection contractors would join up as well. In recognition of this newfound diversity, in 2007 the association changed its name to The Association of Union Constructors.

TILE ROOFING
INSTITUTE

Founded in 1971 (Incorporated in the state of California, non-profit 501C6), the Tile Roofing Institute (TRI) - originally named the National Tile Roofing Manufacturers Association (NTRMA) - has been the leading voice for the concrete and clay tile Industry. The TRI has over 95% of the capacity for roofing tiles within its ranks and has several hundred roofing contractors, distributors and suppliers of related materials. The primary focus of the TRI has been in the development of technical manuals, industry positions and research studies for code language and preferred installation practices within all the major code bodies nationwide. TRI has played a major role in establishing tile performance and recommendations for severe weather, fire and seismic conditions, as well as developing legislation of building codes.

A few instances where TRI's presence has proven to be invaluable include:

- TRI developed the first industry-based series installation guides for all climatic regions in North America.
- TRI assisted the Committee for Firesafe Dwellings in the creation of legislation to ban combustible roofing materials in California.
- TRI guided the tile roofing industry's successful efforts to revise code for high- wind applications and worked with local building officials to upgrade installation standards following Hurricanes that have hit within the USA.
- TRI along with the University of Southern California (USC) determined that tile roofs--when installed under current building codes--withstand forces two-to-three times those generated by the Northridge Earthquake.
- TRI worked with the American Society of Testing Materials (ASTM) to develop standardized testing methods for roof tile.

In addition to the technical aspects of roofing tiles, the TRI provides certified training programs for installation, Specialty and high wind certification. These programs target roofing installers, inspectors and industry professionals on proper, code approved methods to installing concrete and clay tile roofs. TRI is dedicated to growing the tile roofing market through technical expertise, training, and building awareness for the many benefits of tile.

The TRI is an active liaison for roofing tile initiatives with all of the regional roofing contractor associates allowing industry to collaborate with the roofing professionals in developing recommended and best practices that address product, installation and safety concerns.