

# Deconstructing OSHA's New Final Rule on Silica

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Recently, the Occupational Safety and Health Administration (OSHA) published a New Rule for worker exposure to respirable crystalline silica (silica), a human lung carcinogen whose particles are dangerous when inhaled. Exposure occurs when workers engage in activities that involve the breaking down of objects containing silica, such as cutting brick. OSHA's New Rule will drastically alter the standards for this exposure, impacting the construction industry as a whole. Smaller construction businesses in particular may have trouble absorbing the cost of compliance.

Suppose that a small construction company specializes in heavy contracting, employs twenty-five people and maintains an average of ten million dollars in annual receipts. The nature of this business would inevitably involve activities exposing its workers to silica, triggering an obligation to comply with OSHA's permissible exposure limit (PEL).

What would happen to a small business if OSHA decided to reduce the PEL by fifty percent? How much would it cost them to comply with this new standard? Could it feasibly comply within the timeframe set by OSHA? Would this new permissible level hamper the construction industry as a whole?<sup>1</sup> This exact scenario is facing the construction industry today.

## **Background**

On March 25, 2016, OSHA published a Final Rule altering the standards for exposure to respirable crystalline silica.<sup>2</sup> Silica is a common mineral that people encounter in everyday life and is a typical component in many materials used in the construction industry, such as rock, sand, brick, concrete, block, and mortar.<sup>3</sup> Workers are exposed to silica dust through various activities utilizing these materials. Inhaling these particles increases the chances of developing silica-related diseases, including silicosis, lung cancer, chronic obstructive pulmonary disease, and kidney disease.<sup>4</sup> OSHA has explained that the purpose of this New Rule is to curb the occurrences of these diseases.

## **Old Standard**

In 1971, OSHA adopted the first standard for workplace exposure to respirable crystalline silica.<sup>5</sup> Prior to the 2016 Final Rule, this standard was unaltered. The previous standard did not include a PEL applicable to all industries and did not use the same formula as the new standard. The old standard's PELs were based on a formula of volume of crystalline silica per cubic meter of air, divided by the percentage of silicon dioxide (SiO<sub>2</sub>) or as millions of particles per cubic foot of air, divided by the percentage of SiO<sub>2</sub>.<sup>6</sup> The new standard utilizes a different methodology of micrograms per cubic meter of air (µg/m<sup>3</sup>), measured as an eight-hour time weighted average (TWA).<sup>7</sup> The old PELs expressed in terms of the new standard's methodology are as follows: "quartz in general industry, 100 µg/m<sup>3</sup>; quartz in construction industry, 250 µg/m<sup>3</sup>; quartz in

shipyard industry, 250 µg/m<sup>3</sup>; cristobalite in all industries, 50 µg/m<sup>3</sup>; and tridymite in all industries, 50 µg/m<sup>3</sup>.”<sup>8</sup> The old standard did not include any additional protective provisions.

### **New Standard**

OSHA’s new Final Rule alters the old rule for respirable crystalline silica substantially. It is codified at 29 CFR Parts 1910, 1915, and 1926, and implements two different standards, one standard for general industry and maritime, and the other for the construction industry. Both standards require compliance with a new PEL of 50 µg/m<sup>3</sup>, averaged over an 8-hour shift.<sup>9</sup>

Both standards set an “action level” at 25 µg/m<sup>3</sup>, averaged over an 8-hour shift<sup>10</sup> and exclude exposures where the employer has data “demonstrating that employee exposure will remain below 25 mg/m<sup>3</sup> as an 8-hour TWA under any foreseeable conditions.”<sup>11</sup> However, when this action level is reached, employers must measure the amount of silica to which workers are exposed.<sup>12</sup> The construction industry can escape the action level-measuring requirement if they comply with Table 1 of the New Rule which contains OSHA approved engineering and work practice controls.<sup>13</sup> If an employer in the construction industry chooses not to comply with Table 1 they will be subjected to the same monitoring requirements as the general industry and maritime.

The general industry and maritime, and construction industry (if opting out of Table 1 compliance) will choose between two monitoring options.<sup>14</sup> The first option is the performance option where “[t]he employer shall assess the 8-hour TWA exposure for each employee on the basis of any combination of air monitoring data or objective data sufficient to accurately characterize employee exposures to respirable crystalline silica.”<sup>15</sup>

The second option is the scheduled monitoring option where each employer will perform an initial monitoring

“[T]o assess the 8-hour TWA exposure for each employee on the basis of one or more personal breathing zone air samples that reflect the exposures of employees on each shift, for each job classification, in each work area. Where several employees perform the same tasks on the same shift and in the same work area, the employer may sample a representative fraction of these employees in order to meet this requirement. In representative sampling, the employer shall sample the employee(s) who are expected to have the highest exposure to respirable crystalline silica.”<sup>16</sup>

If this initial monitoring indicates that employee exposures are below the action level, the employer may stop monitoring for those employees.<sup>17</sup> If the most recent monitoring indicates exposure levels at or above the action level but at or below the PEL, the employer will need to repeat the monitoring in six months.<sup>18</sup> If the most recent monitoring indicates that exposures are above the PEL, the employer will need to repeat the monitoring in three

months.<sup>19</sup> If a recent and non-initial monitoring shows that exposures are below the action level, the employer may discontinue monitoring if after repeating the monitoring within six months of that most recent, non-initial monitoring, two consecutive measurements are taken seven or more days apart that fall below the action level.<sup>20</sup> Note that the employer can only discontinue monitoring for those employees whose exposures are represented by such monitoring.<sup>21</sup>

The New Rule also requires employers to use engineering controls to limit worker exposure, use respirators when engineering controls are not adequate, train workers on silica risks and how to limit their exposure, restrict any housekeeping practices that unnecessarily expose workers to silica, maintain records of worker exposure, offer medical exams (for the construction industry, employers are required to provide these medical exams every three years to workers required to wear respirators for thirty or more days in a year), and develop a written exposure control plan identifying tasks involving exposure and corresponding protective measures.<sup>22</sup>

### **Timeline for Compliance**

These new standards will be phased in over a five-year period. The construction industry has until June 23, 2017, which is one year after the effective date, except requirements for laboratory evaluation of exposure samples, which begin on June 23, 2018.<sup>23</sup> The general industry and maritime have until June 23, 2018, which is two years after the effective date.<sup>24</sup> The hydraulic fracturing industry has until June 23, 2018, which is two years after the effective date for all of the Final Rule's provisions, with the exception of Engineering Controls<sup>25</sup> which must be in compliance by June 23, 2021.<sup>26</sup>

### **Anticipated Cost of Compliance for the Construction Industry**

There is disagreement over the cost of the Final Rule. OSHA estimates that the total cost of compliance for the construction industry will be 1 billion dollars annually.<sup>27</sup> Surprisingly, OSHA does not believe these new requirements will have a significant negative effect on employment in the construction industry or otherwise. However, the Construction Industry Safety Coalition (CISC) believes that the OSHA cost estimate is greatly undervalued.<sup>28</sup> Instead, CISC stated that the *proposed rule* would cost the construction industry \$4.9 billion dollars per year, including \$3.9 billion in direct costs and \$1.05 billion in indirect costs.<sup>29</sup>

### **Opposition**

Much of the opposition to the New Rule has come from small businesses claiming that the rule's costs are too high to bear. The U.S. Chamber of Commerce voiced this concern, stating that small business owners would be hit the hardest by this rule.<sup>30</sup> Further, employer and manufacture groups, such as the Associated General Contractors of America and National Association of Manufacturers, state that compliance with the New Rule is not feasible given current technology and work practices. OSHA is required to consider both the technological and economical feasibility in an adoption of a New Rule.<sup>31</sup> Technological feasibility requires that OSHA "prove a 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."<sup>32</sup> Economic feasibility requires

that “OSHA . . . 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.”<sup>33</sup>

While OSHA estimates that this rule will save over 600 lives and prevent over 900 new cases of silicosis annually,<sup>34</sup> there is a debate as to whether this rule is truly necessary to curb mortality rates due to silica related illnesses. Some organizations, such as the Crystalline Silica Panel of the American Chemistry Council, believe that the current PELs are effective at reducing silica-related deaths.<sup>35</sup> They point to data from the Center for Disease Control and Prevention that they claim shows a 90% reduction in annual silicosis deaths between 1968 and 2010.<sup>36</sup>

Moreover, labor groups have objected to the medical surveillance provisions, offering various alternatives.<sup>37</sup> For example, the National Building Trades Union advocates requiring medical surveillance when worker exposure is over the new PEL, instead of after thirty days of exposure at or above the action level, or thirty days of respirator use for the construction industry.<sup>38</sup>

### **Conclusion**

The anticipated negative consequences of the New Rule have sparked enough opposition as to cause industry representatives to initiate challenges through both the legislature and the courts.<sup>39</sup> Despite this opposition, however, the New Rule is likely here to stay. What remains to be seen is whether small construction businesses will survive its stringent requirements.

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<sup>1</sup> Workers in other industries are affected by respirable crystalline silica and the New Rule also addresses these industries. However, this article will focus primarily on the construction industry.

<sup>2</sup> Occupational Exposure to Respirable Crystalline Silica; Final Rule, 81 FR 16286 (Mar. 25, 2016) (to be codified at 29 CFR § 1910, 1915, and 1926).

<sup>3</sup> U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OSHA FACT SHEET, (2016), <https://www.osha.gov/Publications/OSHA3683.pdf>.

<sup>4</sup> *Id.*

<sup>5</sup> Final Rule, *supra* note 2, at 16294.

<sup>6</sup> 29 C.F.R. § 1910.1000 (2016) TABLE Z-3.

<sup>7</sup> Final Rule, *supra* note 8, at 16294.

<sup>8</sup> *Id.*; Note that quartz, cristobalite, and tridymite are types of crystalline silica with quartz being the most common.

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<sup>9</sup> 29 C.F.R. §1926.1153(d)(1) (2016); 29 C.F.R. §1910.1153(c) (2016).

<sup>10</sup> 29 C.F.R. §1926.1153(b); 29 C.F.R. §1910.1153(b).

<sup>11</sup> 29 C.F.R. §1926.1153(a); 29 C.F.R. §1910.1153(a)(2).; Note that the data for general industry and maritime must be objective. The construction industry date, for this provision, does not need to be objective.

<sup>12</sup> 29 C.F.R. §1926.1153(c).

<sup>13</sup> 29 C.F.R. §1926.1153 TABLE 1.

<sup>14</sup> 29 C.F.R. §1926.1153(d)(2)(i); 29 C.F.R. §1910.1153(d)(1).

<sup>15</sup> 29 C.F.R. §1926.1153(d)(2)(ii); 29 C.F.R. §1910.1153(d)(2).

<sup>16</sup> 29 C.F.R. §1926.1153(d)(2)(iii)(A); 29 C.F.R. §1910.1153(d)(3)(i).

<sup>17</sup> 29 C.F.R. §1926.1153(d)(2)(iii)(B); 29 C.F.R. §1910.1153(d)(3)(ii).

<sup>18</sup> 29 C.F.R. §1926.1153(d)(2)(iii)(C); 29 C.F.R. §1910.1153(d)(3)(iii).

<sup>19</sup> 29 C.F.R. §1926.1153(d)(2)(iii)(D); 29 C.F.R. §1910.1153(d)(3)(iv).

<sup>20</sup> 29 C.F.R. §1926.1153(d)(2)(iii)(E); 29 C.F.R. §1910.1153(d)(2)(v).

<sup>21</sup> *Id.*

<sup>22</sup> *See generally* 29 C.F.R. §1926.1153; 29 C.F.R. §1910.1053; Note that there are additional requirements for the general industry and maritime, such as the designation of restricted areas that were not included for the construction-oriented purposes of this memo.

<sup>23</sup> 29 C.F.R. §1926.1153(k)(1)–(3).

<sup>24</sup> 29 C.F.R. §1910.1053(l)(1)–(4).

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

<sup>27</sup> UNITED STATES CHAMBER OF COMMERCE, STATEMENT OF THE U.S. CHAMBER OF COMMERCE, REVIEWING RECENT CHANGES TO OSHA’S SILICA STANDARDS 1, 3 (2016), [http://edworkforce.house.gov/uploadedfiles/chajet\\_testimony\\_-\\_final.pdf](http://edworkforce.house.gov/uploadedfiles/chajet_testimony_-_final.pdf).

<sup>28</sup> CONSTRUCTION INDUSTRY SAFETY COALITION, COSTS TO THE CONSTRUCTION INDUSTRY AND JOB IMPACTS FROM OSHA’S PROPOSED OCCUPATIONAL EXPOSURE STANDARDS FOR CRYSTALLINE SILICA (2015), [http://www.buildingsafely.org/wp-content/uploads/2015/06/CISC-New-Report-re-Occupational-Exposure-to-Crystalline-Silica\\_Docket-No....pdf](http://www.buildingsafely.org/wp-content/uploads/2015/06/CISC-New-Report-re-Occupational-Exposure-to-Crystalline-Silica_Docket-No....pdf); the CISC is composed of 25 trade organizations from throughout the construction industry.

<sup>29</sup> *Id.*; the Final Rule is not very different from the originally proposed rule. Accordingly, this estimate should still be relevant.

<sup>30</sup> Sandy Smith, *Construction, Aggregates and Industry Groups Voice Serious Concerns about OSHA’s New Silica Standard*, EHS TODAY, (Mar. 28, 2016), <http://ehstoday.com/construction/construction-aggregates-and-industry-groups-voice-serious-concerns-about-oshas-new-sil>.

<sup>31</sup> Final Rule, *supra* note 8, at 16292.

<sup>32</sup> *Id.* (quoting *United Steelworkers of Am., AFL–CIO–CLC v. Marshall*, 647 F.2d 1189, 1272 (D.C. Cir. 1980).

<sup>33</sup> *Id.*

<sup>34</sup> OSHA’S FINAL RULE, *supra* note 8.

<sup>35</sup> SCOTT D. SZYMENDERA, CONG. RESEARCH SERV., R44476, RESPIRABLE CRYSTALLINE SILICA IN THE WORKPLACE: NEW OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS ANALYST IN DISABILITY POLICY 7 (2016), [https://www.aiha.org/government-affairs/Documents/CRS%20Silica%20Report-04-16.pdf?Mobile=1&Source=%2Fgovernment-affairs%2F\\_layouts%2Fmobile%2Fview.aspx%3FList%3Db8e94601-ee94-4078-afa8-b215a3765994%26View%3Ddb102779-04ad-4b6f-8212-5d2401bbf821%26CurrentPage%3D1](https://www.aiha.org/government-affairs/Documents/CRS%20Silica%20Report-04-16.pdf?Mobile=1&Source=%2Fgovernment-affairs%2F_layouts%2Fmobile%2Fview.aspx%3FList%3Db8e94601-ee94-4078-afa8-b215a3765994%26View%3Ddb102779-04ad-4b6f-8212-5d2401bbf821%26CurrentPage%3D1).

<sup>36</sup> *Id.*

<sup>37</sup> *Id.* at 10.

<sup>38</sup> *Id.*

<sup>39</sup> Kim Slowey, *After the dust settles: Construction industry reacts to OSHA’s final silica rule*, CONSTRUCTION DIVE, (April 5, 2016), <http://www.constructiondive.com/news/after-the-dust-settles-construction-industry-reacts-to-oshas-final-silica/416794/>.