

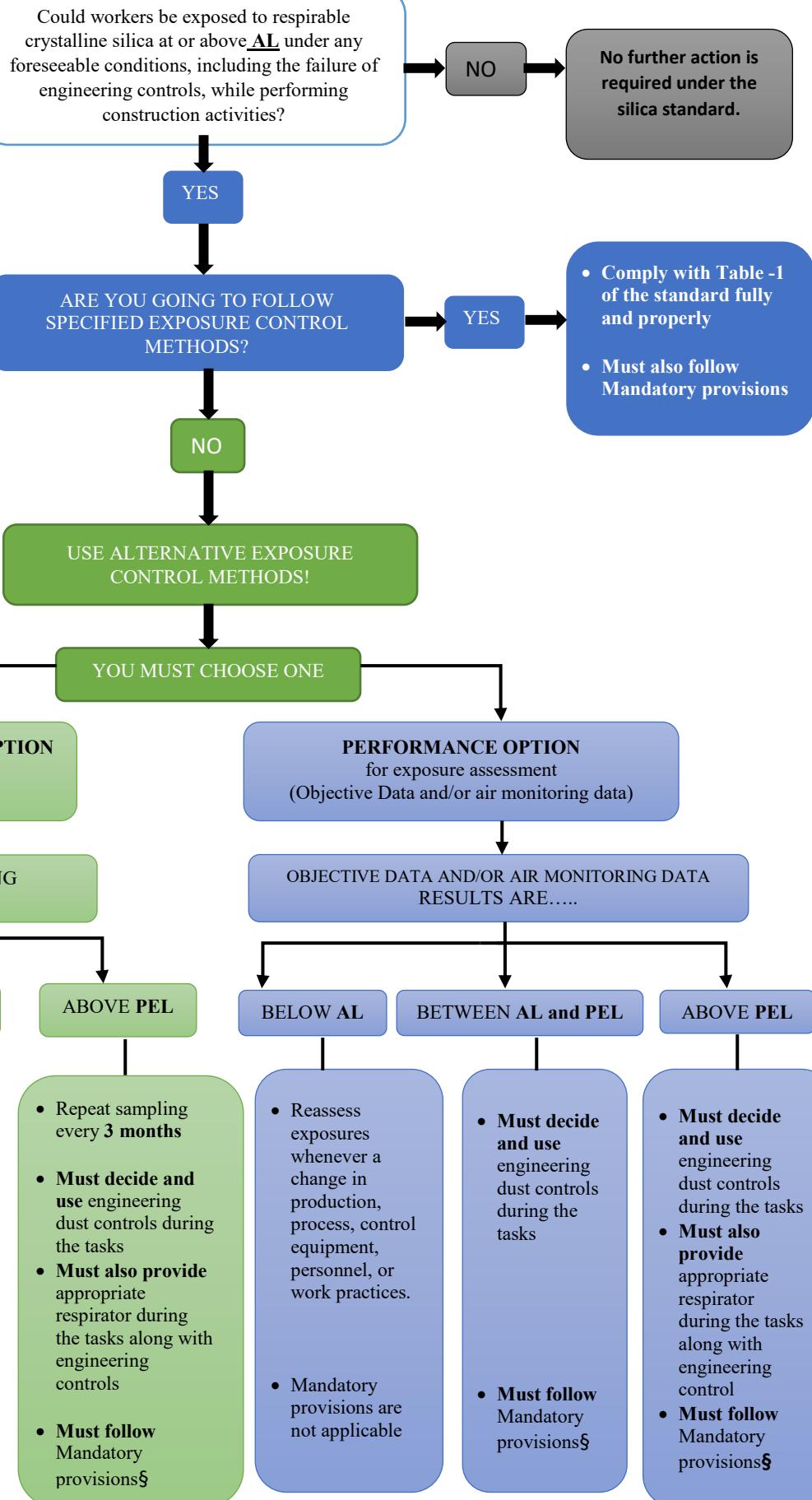
Action level (AL): 25 µg/m<sup>3</sup>, 8-hour time-weighted average (TWA)

Permissible exposure limit (PEL): 50 µg/m<sup>3</sup>, 8-hour TWA

§Mandatory provisions for compliance with the standard when it is applicable:

1. Establish a **written exposure control plan**
2. Designate a **competent person**
3. Restrict **housekeeping** practices that expose workers to silica, where feasible alternatives are available\*\*
4. Offer **medical surveillance** who will be required to wear a respirator under the standard for 30 or more days a year
5. **Communicate hazards and Train workers**
6. **Keep Records** of workers' silica exposure monitoring results (if following alternative exposure control method) and medical exams for any employees who are getting medical examinations

\*\* See standard for housekeeping restrictions



This material was produced under a grant (SH-05039-SH8) from the Occupational Health Administration, U.S. Department of Labor. It does not necessarily reflect the views or policies of the U.S. Department of Labor, nor does the mention of trade names, commercial products, or organization imply endorsement by the U.S. Government.

The materials presented herein are for information and awareness purposes. In no instances and under no conditions should they be used as a reference for compliance with the OSHA Respirable Crystalline Silica Standard (29 CFR 1926.1153).

*PRETEST*

FIRST NAME:

LAST NAME:

1. What serious disease is caused by exposure to respirable crystalline silica?
  - A. Salmonella
  - B. Tombosis
  - C. Silicosis
  - D. Silica does not cause any serious disease
  
2. What is the procedure to determine how much silica dust is present at a worksite?
  - A. Sample the air
  - B. Sample the blood
  - C. Sample the material
  - D. Sample the water
  
3. According to OSHA Silica Standard, which of the following best indicates that the level of respirable silica is too high?
  - A. Difficult breathing
  - B. Permissible Exposure Limit
  - C. Eye irritation
  - D. None of the above
  
4. According to the OSHA's Silica Standard, the average exposure to silica dust should not exceed a **PEL** of \_\_\_\_\_  $\mu\text{g}/\text{m}^3$  during a full 8-hour work shift, and the employer must comply with the standard if the action level (AL) is at or above of \_\_\_\_\_  $\mu\text{g}/\text{m}^3$ 
  - A. 100 and 10
  - B. 75 and 50
  - C. 50 and 25
  - D. 25 and 30
  
5. When specified exposure controls methods presented in Table 1 of the standard are fully and properly implemented to eliminate or reduce silica dust hazards, the employers are not required to comply with the permissible exposure limit (PEL).
  - A. True
  - B. False
  
6. Equipment manufacturing instructions for minimizing dust must be followed when using wet methods to limit exposure to silica. Manufacturer's instructions include
  - A. Water flow rates
  - B. Frequency for changing water
  - C. Equipment operating specifications and recommendations that apply to the specific equipment model including electrical fault protection
  - D. All of the above
  
7. With any type of vacuum system, employee protection from silica is only as good as the filter in the vacuum. The new Silica standard emphasize that a high-efficiency particulate air (HEPA) filter at least 99.97 percent efficient is critical to prevent the escape.
  - A. True
  - B. False

*PRETEST*

8. Which of the following measures are recommended for Vacuum Dust Collection systems for optimal performance?
  - A. Keep the vacuum hose clear and free of debris, kinks and tight bends
  - B. Set up a regular schedule for filter cleaning and maintenance
  - C. Maintain the vacuum at peak performance to ensure adequate airflow through the shroud and ducts
  - D. All of the above
  
9. As a feasible housekeeping practice, employees should use compressed air instead of dry sweeping to remove silica dust buildup.
  - A. True
  - B. False
  
10. If an employee must use a respirator as protection against silica dust, the respirator must be NIOSH approved, and should, per Table 1, have an assigned protection factor (APF) of at least \_\_\_\_\_.
  - A. 10 or 25
  - B. 35 or 50
  - C. 75 or 100
  - D. None of the above
  
11. If a task that generates silica exposure requires the use of respirators, employees must
  - A. Ensure that the respirator fits properly
  - B. Use the same make, model, style, and size of respirator with which the fit testing was conducted
  - C. Not have any facial hair that comes between the sealing surface of the facepiece and the face, or that interferes with valve function
  - D. All of the above is correct.
  
12. According to the OSHA's Silica Standard, if an employer chooses to not follow the Specified Silica Exposure Controls approach by implementing Table 1
  - A. The employer can implement the Hazard Communication Standard
  - B. The employer must choose and implement the Alternative Silica Exposures Control approach
  - C. The employer can start collecting objective data
  - D. None of the above
  
13. If the Time Weighted Average (TWA) exposure calculations yield a workplace silica concentration of 40 ug/m<sup>3</sup>
  - A. The standard does not apply because it is below the PEL of 50ug/m<sup>3</sup>
  - B. The standard applies because it is above the AL of 25ug/m<sup>3</sup>
  - C. The standard applies because it is above the AL of 30ug/m<sup>3</sup>
  - D. None of the above
  
14. Reassessment of silica exposures is not required
  - A. When a task is moved from an indoor to an outdoor location, or when a product is replaced with one that has lower silica content, keeping the same process.
  - B. When a task is moved from an outdoor to an indoor location, or when a product is replaced with one that has lower silica content, keeping the same process.
  - C. When the silica concentration is below the PEL of 50 ug/m<sup>3</sup>
  - D. Reassessment is always required regardless of the silica concentration

*PRETEST*

15. When an exposure assessment reveals exposures above the PEL, the written notification must also describe the corrective action the employer is taking to reduce employee exposures to or below the PEL.
  - A. True
  - B. False
  
16. According to the Hierarchy of Controls principle adopted by the OSHA Silica Standard in the Methods of Compliance section of the standard
  - A. Respirators can be used instead of implementing engineering and workplace controls for reducing exposures
  - B. Respirators are not needed if feasible engineering and workplace controls are fully and effectively implemented even when the PEL is exceeded
  - C. Respirator use is allowed, in addition to implementing feasible engineering and workplace controls, only when they cannot reduce exposures to levels below PEL
  - D. Respirator use is not allowed, because respirators can create safety concerns when they interfere with workers' ability to hear, see, smell, and communicate
  
17. Please indicate as "Yes" or "No" whether you have had any previous training on silica.
  - A. Yes
  - B. No

*POSTTEST*

FIRST NAME:

LAST NAME:

1. What serious disease is caused by exposure to respirable crystalline silica?
  - A. Salmonella
  - B. Tombosis
  - C. Silicosis
  - D. Silica does not cause any serious disease
  
2. What is the procedure to determine how much silica dust is present at a worksite?
  - A. Sample the air
  - B. Sample the blood
  - C. Sample the material
  - D. Sample the water
  
3. According to OSHA Silica Standard, which of the following best indicates that the level of respirable silica is too high?
  - A. Difficult breathing
  - B. Permissible Exposure Limit
  - C. Eye irritation
  - D. None of the above
  
4. According to the OSHA's Silica Standard, the average exposure to silica dust should not exceed a **PEL** of \_\_\_\_\_  $\mu\text{g}/\text{m}^3$  during a full 8-hour work shift, and the employer must comply with the standard if the action level (AL) is at or above of \_\_\_\_\_  $\mu\text{g}/\text{m}^3$ 
  - A. 100 and 10
  - B. 75 and 50
  - C. 50 and 25
  - D. 25 and 30
  
5. When specified exposure controls methods presented in Table 1 of the standard are fully and properly implemented to eliminate or reduce silica dust hazards, the employers are not required to comply with the permissible exposure limit (PEL).
  - A. True
  - B. False
  
6. Equipment manufacturing instructions for minimizing dust must be followed when using wet methods to limit exposure to silica. Manufacturer's instructions include
  - A. Water flow rates
  - B. Frequency for changing water
  - C. Equipment operating specifications and recommendations that apply to the specific equipment model including electrical fault protection
  - D. All of the above
  
7. With any type of vacuum system, employee protection from silica is only as good as the filter in the vacuum. The new Silica standard emphasize that a high-efficiency particulate air (HEPA) filter at least 99.97 percent efficient is critical to prevent the escape.
  - A. True
  - B. False

*POSTTEST*

8. Which of the following measures are recommended for Vacuum Dust Collection systems for optimal performance?
  - A. Keep the vacuum hose clear and free of debris, kinks and tight bends
  - B. Set up a regular schedule for filter cleaning and maintenance
  - C. Maintain the vacuum at peak performance to ensure adequate airflow through the shroud and ducts
  - D. All of the above
  
9. As a feasible housekeeping practice, employees should use compressed air instead of dry sweeping to remove silica dust buildup.
  - A. True
  - B. False
  
10. If an employee must use a respirator as protection against silica dust, the respirator must be NIOSH approved, and should, per Table 1, have an assigned protection factor (APF) of at least \_\_\_\_\_.
  - A. 10 or 25
  - B. 35 or 50
  - C. 75 or 100
  - D. None of the above
  
11. If a task that generates silica exposure requires the use of respirators, employees must
  - A. Ensure that the respirator fits properly
  - B. Use the same make, model, style, and size of respirator with which the fit testing was conducted
  - C. Not have any facial hair that comes between the sealing surface of the facepiece and the face, or that interferes with valve function
  - D. All of the above is correct.
  
12. According to the OSHA's Silica Standard, if an employer chooses to not follow the Specified Silica Exposure Controls approach by implementing Table 1
  - A. The employer can implement the Hazard Communication Standard
  - B. The employer must choose and implement the Alternative Silica Exposures Control approach
  - C. The employer can start collecting objective data
  - D. None of the above
  
13. If the Time Weighted Average (TWA) exposure calculations yield a workplace silica concentration of 40 ug/m<sup>3</sup>
  - A. The standard does not apply because it is below the PEL of 50ug/m<sup>3</sup>
  - B. The standard applies because it is above the AL of 25ug/m<sup>3</sup>
  - C. The standard applies because it is above the AL of 30ug/m<sup>3</sup>
  - D. None of the above
  
14. Reassessment of silica exposures is not required
  - A. When a task is moved from an indoor to an outdoor location, or when a product is replaced with one that has lower silica content, keeping the same process.
  - B. When a task is moved from an outdoor to an indoor location, or when a product is replaced with one that has lower silica content, keeping the same process.
  - C. When the silica concentration is below the PEL of 50 ug/m<sup>3</sup>
  - D. Reassessment is always required regardless of the silica concentration

*POSTTEST*

15. When an exposure assessment reveals exposures above the PEL, the written notification must also describe the corrective action the employer is taking to reduce employee exposures to or below the PEL.
  - A. True
  - B. False
  
16. According to the Hierarchy of Controls principle adopted by the OSHA Silica Standard in the Methods of Compliance section of the standard
  - A. Respirators can be used instead of implementing engineering and workplace controls for reducing exposures
  - B. Respirators are not needed if feasible engineering and workplace controls are fully and effectively implemented even when the PEL is exceeded
  - C. Respirator use is allowed, in addition to implementing feasible engineering and workplace controls, only when they cannot reduce exposures to levels below PEL
  - D. Respirator use is not allowed, because respirators can create safety concerns when they interfere with workers' ability to hear, see, smell, and communicate
  
17. Please indicate as "Yes" or "No" whether you have had any previous training on silica.
  - A. Yes
  - B. No

**PRETEST & POSTTEST ANSWER SHEET**

1. What serious disease is caused by exposure to respirable crystalline silica?
  - A. Salmonella
  - B. Tombosis
  - C. Silicosis**
  - D. Silica does not cause any serious disease
  
2. What is the procedure to determine how much silica dust is present at a worksite?
  - A. Sample the air**
  - B. Sample the blood
  - C. Sample the material
  - D. Sample the water
  
3. According to OSHA Silica Standard, which of the following best indicates that the level of respirable silica is too high?
  - A. Difficult breathing
  - B. Permissible Exposure Limit**
  - C. Eye irritation
  - D. None of the above
  
4. According to the OSHA's Silica Standard, the average exposure to silica dust should not exceed a **PEL** of \_\_\_\_\_  $\mu\text{g}/\text{m}^3$  during a full 8-hour work shift, and the employer must comply with the standard if the action level (AL) is at or above of \_\_\_\_\_  $\mu\text{g}/\text{m}^3$ 
  - A. 100 and 10
  - B. 75 and 50
  - C. 50 and 25**
  - D. 25 and 30
  
5. When specified exposure controls methods presented in Table 1 of the standard are fully and properly implemented to eliminate or reduce silica dust hazards, the employers are not required to comply with the permissible exposure limit (PEL).
  - A. True**
  - B. False
  
6. Equipment manufacturing instructions for minimizing dust must be followed when using wet methods to limit exposure to silica. Manufacturer's instructions include
  - A. Water flow rates
  - B. Frequency for changing water
  - C. Equipment operating specifications and recommendations that apply to the specific equipment model including electrical fault protection
  - D. All of the above**
  
7. With any type of vacuum system, employee protection from silica is only as good as the filter in the vacuum. The new Silica standard emphasize that a high-efficiency particulate air (HEPA) filter at least 99.97 percent efficient is critical to prevent the escape.
  - A. True**
  - B. False

**PRETEST & POSTTEST ANSWER SHEET**

8. Which of the following measures are recommended for Vacuum Dust Collection systems for optimal performance?
  - A. Keep the vacuum hose clear and free of debris, kinks and tight bends
  - B. Set up a regular schedule for filter cleaning and maintenance
  - C. Maintain the vacuum at peak performance to ensure adequate airflow through the shroud and ducts
  - D. **All of the above**
  
9. As a feasible housekeeping practice, employees should use compressed air instead of dry sweeping to remove silica dust buildup.
  - A. True
  - B. False**
  
10. If an employee must use a respirator as protection against silica dust, the respirator must be NIOSH approved, and should, per Table 1, have an assigned protection factor (APF) of at least \_\_\_\_\_.
  - A. **10 or 25**
  - C. 75 or 100
  - B. 35 or 50
  - D. None of the above
  
11. If a task that generates silica exposure requires the use of respirators, employees must
  - A. Ensure that the respirator fits properly
  - B. Use the same make, model, style, and size of respirator with which the fit testing was conducted
  - C. Not have any facial hair that comes between the sealing surface of the facepiece and the face, or that interferes with valve function
  - D. **All of the above is correct.**
  
12. According to the OSHA's Silica Standard, if an employer chooses to not follow the Specified Silica Exposure Controls approach by implementing Table 1
  - A. The employer can implement the Hazard Communication Standard
  - B. The employer must choose and implement the Alternative Silica Exposures Control approach**
  - C. The employer can start collecting objective data
  - D. None of the above
  
13. If the Time Weighted Average (TWA) exposure calculations yield a workplace silica concentration of 40 ug/m<sup>3</sup>
  - A. The standard does not apply because it is below the PEL of 50ug/m<sup>3</sup>
  - B. The standard applies because it is above the AL of 25ug/m<sup>3</sup>**
  - C. The standard applies because it is above the AL of 30ug/m<sup>3</sup>
  - D. None of the above
  
14. Reassessment of silica exposures is not required
  - A. When a task is moved from an indoor to an outdoor location, or when a product is replaced with one that has lower silica content, keeping the same process.**
  - B. When a task is moved from an outdoor to an indoor location, or when a product is replaced with one that has lower silica content, keeping the same process.
  - C. When the silica concentration is below the PEL of 50 ug/m<sup>3</sup>
  - D. Reassessment is always required regardless of the silica concentration

**PRETEST & POSTTEST ANSWER SHEET**

15. When an exposure assessment reveals exposures above the PEL, the written notification must also describe the corrective action the employer is taking to reduce employee exposures to or below the PEL.
  - A. True
  - B. False
  
16. According to the Hierarchy of Controls principle adopted by the OSHA Silica Standard in the Methods of Compliance section of the standard
  - A. Respirators can be used instead of implementing engineering and workplace controls for reducing exposures
  - B. Respirators are not needed if feasible engineering and workplace controls are fully and effectively implemented even when the PEL is exceeded
  - C. **Respirator use is allowed, in addition to implementing feasible engineering and workplace controls, only when they cannot reduce exposures to levels below PEL**
  - D. Respirator use is not allowed, because respirators can create safety concerns when they interfere with workers' ability to hear, see, smell, and communicate
  
17. Please indicate as "Yes" or "No" whether you have had any previous training on silica.
  - A. Yes
  - B. No