

SILICA DUST: The Invisible Hazard DEBU SILIKA by Shereen Montero

The New Asbestos: Bahaya Habuk Silika

Respirable Crystalline Silica (RCS) is a silent killer. These microscopic particles are 100 times smaller than sand, reaching deep into lung tissues where they cause irreversible scarring and permanent inflammation.



KEY FACT: Once inhaled, silica dust stays in the lungs forever. There is no cure for silicosis.

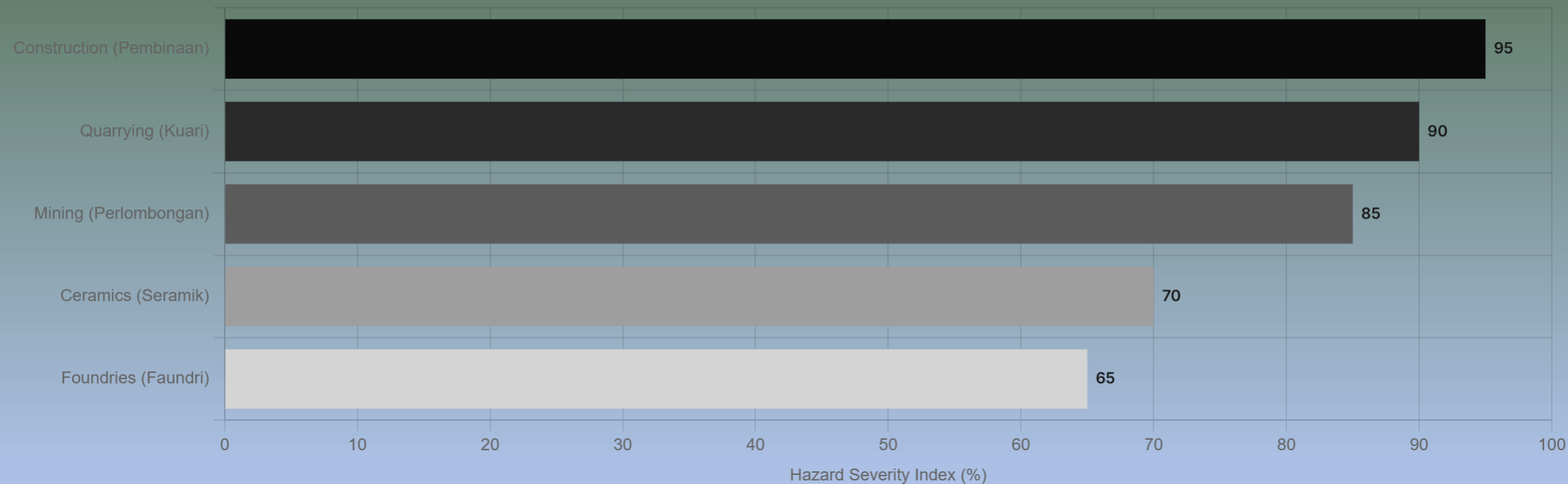
Silica-Containing Materials

High concentrations of silica are found in common Malaysian construction and geological materials. Handling these creates hazardous respirable dust.

- Sandstone (Batu Pasir): Up to 90%
- Concrete (Konkrit): 25–70%
- Granite (Granit): 25–50%
- Bricks & Tiles: Variable content



High-Risk Industries in Malaysia



Source: DOSH Malaysia Industry Profile 2026

The Progression of Silicosis

Exposure leads to more than just lung damage.

Chronic inhalation results in:

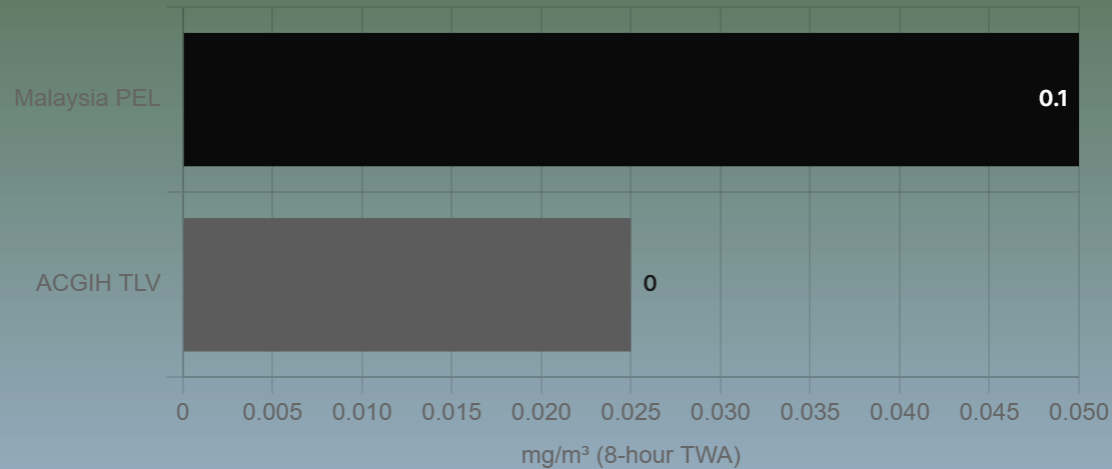
1. Inflammation: Body attacks trapped dust.
2. Fibrosis: Scar tissue builds up (Silicosis).
3. Disease: Lung Cancer, COPD, and Kidney Disease.
4. Failure: Severe respiratory disability.



MEDICAL STATUS: SILICOSIS IS INCURABLE AND PROGRESSIVE. PREVENTION IS THE ONLY REMEDY.

Malaysia PEL & Legal Framework

RM 500,000



MAX PENALTY (OSHA 1994 AMENDMENT 2022)
For inadequate risk control and non-compliance.

All employers must adhere to USECHH Regulations 2000. ACGIH TLV (0.025 mg/m³) is the recognized best-practice reference in Malaysia for 2026.

Malaysia's Hierarchy of Controls

ENGINEERING (Priority)

- Wet cutting methods
- Local Exhaust Ventilation
- Water suppression
- Dust extraction systems

ADMINISTRATIVE (Systemic)

- Worker rotation
- Restricted silica zones
- Safety signage
- Routine risk assessment

PPE (Last Resort)

- N95 / P2 / P3 masks
- RPE with P3 filters
- Mandatory fit testing
- Eye protection

Safe Housekeeping Protocols

STOP: Dilarang Guna Angin Mampat

NEVER use dry sweeping or compressed air to remove dust. This pushes silica particles back into the air, creating a high-risk inhalation zone for all nearby workers.

GO: Wet Methods & HEPA Vacuums

ALWAYS use H-Class HEPA vacuums or wet mopping. These methods capture dust effectively without re-distributing respirable particles into the atmosphere.

Medical Surveillance Requirements

Under USECHH 2000, medical monitoring is mandatory for workers exposed to silica for >30 days/year.

- Baseline Exam: Required before work begins.
- Periodic Review: Chest X-ray and Spirometry every 3 years (AOMEM 2025).
- Qualified Personnel: Must be conducted by a DOSH-registered Occupational Health Doctor (OHD).

Training Summary & Key Takeaways

1. Silica damage is permanent; lungs do not recover once scarred.
2. Wet methods and engineering controls are superior to masks alone.
3. Strict adherence to the 0.05 mg/m^3 PEL is a legal requirement in Malaysia.
4. Prevention is the only cure for Silicosis.

QUICK QUIZ: Is Silicosis curable?

ANSWER: No, it is a progressive occupational disease that can only be prevented.

THANK YOU