Durasein

Solid Surface: Zero Silica. Zero Stress.

In the past couple of years, you may have heard about silicosis—a serious lung disease caused by breathing in tiny particles of the mineral silica (respirable crystalline silica). In the US alone, around 2.3 million workers are at risk of developing silicosis, including many people involved in cutting or fabricating common kitchen and bath materials. With this issue in the news, many of our customers have asked if it is safe to specify or work with Durasein®, so we wanted to share the facts.

Materials used in countertop design

Durasein solid surface material is made with two-thirds natural minerals and one-third high performance acrylic resin and pigments.
We use powdered alumina trihydrate (ATH) bound in an acrylic polymer matrix, along with pigments and inclusions.

There is no added crystalline silica in Durasein solid surface material.

Where is silica commonly found? While some common building materials contain no silica at all, Quartz and other materials are made up of as much as 95% silica:

- Quartz (Quartz Agglomerate, Engineered Stone): An aggregate of crystalline silica (mostly quartz), polymer binders, and other inclusions, it may contain 90% or more crystalline silica.
- Porcelain: Commonly used for fixtures and tile, it may be made up of 5-25% crystalline silica.
- Natural Granite: Content varies according to how the stone was formed. Samples may contain anywhere from 20-45% crystalline silica.
- Natural Marble: The content varies according to the makeup of the rock. Most marble is made up of about 2% crystalline silica.

Important note: These materials do not release respirable crystalline silica dust during normal use after installation. The risk occurs when cutting, grinding or polishing in ways that release dust into the air.

Workers can be exposed to respirable crystalline silica from poor cleaning practices such as dry brooming of dust, allowing dust to accumulate in the workplace, or using non-H class HEPA filtered vacuum cleaners.

Risks are greater when working with quartz/ engineered stone, as it contains up to 95% crystalline silica.

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Silicosis and its effects

Silicosis is a lung disease caused by breathing in tiny particles of respirable crystalline silica. When crystalline silica dust enters the lungs, it causes inflammation that can lead to permanent lung scarring, making it difficult to breathe. Fabricators working with silica rich materials can suffer with different forms of silicosis, such as:

- Acute Silicosis: Results from short-term exposure (weeks or months) to large amounts of silica. Rare.
- Accelerated Silicosis: Results from short-term exposure (5-10 years) to large amounts of silica while using inadequate protection. Once rare, this is becoming more common in quartz workers.
- Chronic Silicosis: Results from long-term exposure (10+ years) to low levels of silica.

While there is no cure and the damage cannot be reversed, silicosis can be prevented by taking three steps:

- Specific Design Choice: Specify materials with zero silica, such as Durasein solid surface material. This is the simplest way to prevent exposure to respirable crystalline silica dust during fabrication and installation.
- Following Guidelines: For other materials that contain silica, US employers must follow OSHA guidelines to protect their workers' health. This includes monitoring the air, isolating the dust-producing operations, and using a combination of water and dust shrouds equipped with LEV and HEPA filters.
- Using Protective Equipment: Equip workers with the proper personal protective equipment (PPE) for the job. When working with materials with high respirable crystalline silica levels, full-face respirators should be used.

Please continue to follow safe practices including local ventilation and dust collection; see our Fabrication & Installation Manual for more information.

Watch to learn more:
Silicosis: is it the 'new asbestosis'
Silicosis among stonemasons

Using Durasein solid surface

Durasein solid surface is a great choice when designing for many reasons beyond avoiding silicosis and other serious health problems. For example, unlike real stone and engineered stone, solid surface is not rigid or brittle. The acrylic polymer base in Durasein means it can be made malleable via thermoforming, allowing fabricators to create smooth, curved 3D forms and to seam pieces uniformly.

Durasein solid surface is also non-porous with a virtually seamless appearance so there is no place for bacteria, mold, or other fungus to reside. The surface is highly durable and easy to clean, with no sealing or special chemicals needed to maintain its beauty and feel. With a wide variety of colors and patterns to choose from, you can even achieve the look of real stone, in a form that is much easier and safer to work with.

Durasein is a hard, non-porous material which does not promote the growth of microbes. Durasein also allows for easy and effective cleaning with common disinfecting agents, making it a practical choice for restaurant and hospitality applications.

From restaurants to healthcare, education, corporate, and residential design, there's so much you can do with silica-free solid surface material from Durasein. Visit our gallery to get inspired and learn more about the qualities and benefits of working with Durasein solid surface.

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