

Amorphous Silica – Nature's Cleanest Pozzolan

Amorphous silica exhibits remarkable pozzolanic properties crucial for the concrete industry. Mined and supplied from Western Australia, this finely processed silica serves as an exceptional supplementary cementitious material. Its high reactivity with calcium hydroxide enhances concrete durability and rapid strength by forming calcium silicate hydrate, fortifying structures against chemical attack and improving long-term performance. Furthermore, it addresses its pivotal role in reducing carbon emissions with a mined footprint of only 88kg of CO₂ per tonne.

Applications



➤ Building Products:

- Supplementary Cementitious Material (SCM)
- Green Concrete
- Metakaolin
- Geopolymers
- FlashBuild™ Panel Systems

➤ Paints and Coatings:

- Inert filler for paints, primers and topcoats

Key Benefits

- **Enhanced Concrete Strength:** Amorphous silica improves the compressive strength of concrete through pozzolanic reactions.
- **Reduced Permeability:** It lowers the permeability of concrete, enhancing its durability and resistance to water penetration.
- **Mitigation of Alkali-Silica Reaction:** Amorphous silica helps mitigate the alkali-silica reaction, preventing concrete cracking.
- **Improved Workability:** It enhances the workability of concrete mixes, aiding in construction processes.
- **Lower Heat of Hydration:** Amorphous silica reduces the heat generated during cement hydration, critical for mass concrete structures.
- **Environmental Sustainability:** Its use reduces the demand for traditional cement, leading to lower carbon emissions.
- **Enhanced Resistance to Sulfate Attack:** Amorphous silica enhances concrete's resistance to sulphate attack, vital in aggressive environments.
- **Long-Term Durability:** It contributes to the long-term durability of concrete structures, reducing maintenance costs.
- **Reduced Shrinkage Cracking:** Amorphous silica minimizes shrinkage cracking, improving concrete aesthetics and performance.
- **Improved Chloride Resistance:** It increases the resistance of concrete to chloride ion penetration, crucial for marine structures.
- **Cost-Effective:** Its incorporation in concrete mixtures can lead to cost savings in construction projects due to improved performance and reduced maintenance.